CITY OF
CHULA VISTA

Otay Ranch Village Four SPA Plan

Final Environmental Impact Report

EIR

SCH No.

2016041080

March 2018

276 Fourth Ave. • Chula Vista • California • 91910

FINAL

Otay Ranch Village Four SPA Plan
Environmental Impact Report

Prepared for:

City of Chula Vista
276 Fourth Avenue
Chula Vista, California 91910

Prepared by:

DUDEK
605 Third Street
Encinitas, California 92024
Contact: Brian Grover, AICP

MARCH 2018

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TABLE OF CONTENTS

RESPONSE TO COMMENTS.....RTC-1

1 EXECUTIVE SUMMARY 1-1
1.1 Project Location and Setting 1-1
1.2 Project Background 1-1
1.3 Project Description 1-2
1.3.1 Project Objectives 1-3
1.3.2 Discretionary Actions 1-4
1.4 Areas of Controversy 1-4
1.5 Issues to be Resolved by the City Council 1-5
1.6 Project Alternatives 1-5
1.6.1 No Project/No Build Alternative 1-5
1.6.2 Reduced Development Alternative 1-6
1.7 Summary Table 1-6

2 INTRODUCTION 2-1
2.1 Project Purpose and Background 2-1
2.2 Hierarchy of Otay Ranch Planning Documents 2-1
2.2.1 City of Chula Vista General Plan 2-1
2.2.2 Otay Ranch General Development Plan 2-2
2.2.3 Otay Ranch Resource Management Plan and Multiple Species Conservation Program 2-2
2.2.4 Sectional Planning Area Plans 2-3
2.2.5 Subdivisions and Building Permits 2-3
2.3 Scope of the Environmental Impact Report 2-3
2.4 Environmental Procedures 2-4
2.4.1 California Environmental Quality Act Compliance 2-4
2.4.2 Notice of Preparation and Scoping 2-4
2.4.3 Overview of the EIR Process 2-5
2.5 Intended Uses of the EIR 2-6
2.6 Organization and Content of the EIR 2-6
2.7 Mitigation Monitoring and Reporting Program 2-7

3 ENVIRONMENTAL SETTING 3-1
3.1 Existing Site Conditions 3-1
3.1.1 Surrounding Land Uses 3-1
3.1.2 Existing Topography and Soils 3-1
3.1.3 Climate 3-2
3.1.4 Access 3-2
3.2 Existing Land Use Designations 3-2

4 PROJECT DESCRIPTION 4-1
4.1 Location 4-1
4.2 Background 4-1
4.3 Project Objectives 4-2
4.4 Project Description 4-7
4.4.1 Land Uses 4-7
4.4.2 Access and Circulation Network 4-19
4.4.3 Public Services and Utilities 4-31
4.4.4 Boundary Adjustment 4-41
4.4.5 Tentative Map 4-41
4.4.6 Conceptual Grading 4-41
4.4.7 Construction and Phasing 4-42
4.5 Discretionary Actions/Approvals 4-42
5 ENVIRONMENTAL IMPACT ANALYSIS 5.1-1
5.1 Land Use, Planning, and Zoning 5.1-1
5.1.1 Existing Conditions 5.1-1
5.1.2 Thresholds of Significance 5.1-20
5.1.3 Impacts 5.1-20
5.1.4 Level of Significance Prior to Mitigation 5.1-28
5.1.5 Mitigation Measures 5.1-28
5.1.6 Level of Significance After Mitigation 5.1-29
5.2 Landform Alteration/Aesthetics 5.2-1
5.2.1 Existing Conditions 5.2-1
5.2.2 Thresholds of Significance 5.2-10
5.2.3 Impacts 5.2-10
5.2.4 Level of Significance Prior to Mitigation 5.2-29
5.2.5 Mitigation Measures 5.2-29
5.2.6 Level of Significance After Mitigation 5.2-29
5.3 Biological Resources 5.3-1
5.3.1 Existing Conditions 5.3-1
5.3.2 Methodology 5.3-39
5.3.3 Thresholds of Significance 5.3-44
5.3.4 Impacts 5.3-45
5.3.5 Level of Significance Prior to Mitigation 5.3-102
5.3.6 Mitigation Measures 5.3-102
5.3.7 Level of Significance After Mitigation 5.3-114
5.4 Cultural Resources 5.4-1
5.4.1 Existing Conditions 5.4-1
5.4.2 Thresholds of Significance 5.4-12
5.4.3 Impacts 5.4-12

5.4.4 Level of Significance Prior to Mitigation 5.4-15
5.4.5 Mitigation Measures 5.4-15
5.4.6 Level of Significance After Mitigation 5.4-17
5.5 Transportation, Circulation, and Access 5.5-1
5.5.1 Existing Conditions 5.5-1
5.5.2 Thresholds of Significance 5.5-11
5.5.3 Impacts 5.5-15
5.5.4 Level of Significance Prior to Mitigation 5.5-31
5.5.5 Mitigation Measures 5.5-32
5.5.6 Level of Significance After Mitigation 5.5-33
5.6 Air Quality 5.6-1
5.6.1 Existing Conditions 5.6-1
5.6.2 Thresholds of Significance 5.6-18
5.6.3 Impacts 5.6-19
5.6.4 Level of Significance Prior to Mitigation 5.6-36
5.6.5 Mitigation Measures 5.6-36
5.6.6 Level of Significance After Mitigation 5.6-38
5.7 Hazards and Risk of Upset 5.7-1
5.7.1 Existing Conditions 5.7-1
5.7.2 Thresholds of Significance 5.7-15
5.7.3 Impacts 5.7-16
5.7.4 Level of Significance Prior to Mitigation 5.7-25
5.7.5 Mitigation Measures 5.7-26
5.7.6 Level of Significance After Mitigation 5.7-27
5.8 Noise 5.8-1
5.8.1 Existing Conditions 5.8-1
5.8.2 Thresholds of Significance 5.8-12
5.8.3 Impacts 5.8-13
5.8.4 Level of Significance Prior to Mitigation 5.8-35
5.8.5 Mitigation Measures 5.8-35
5.8.6 Level of Significance After Mitigation 5.8-37
5.9 Water Quality and Hydrology 5.9-1
5.9.1 Existing Conditions 5.9-1
5.9.2 Thresholds of Significance 5.9-7
5.9.3 Impacts 5.9-8
5.9.4 Level of Significance Prior to Mitigation 5.9-21
5.9.5 Mitigation Measures 5.9-21
5.9.6 Level of Significance After Mitigation 5.9-21
5.10 Geology and Soils 5.10-1
5.10.1 Existing Conditions 5.10-1

5.10.2 Thresholds of Significance 5.10-10
5.10.3 Impacts 5.10-13
5.10.4 Level of Significance Prior to Mitigation 5.10-17
5.10.5 Mitigation Measures 5.10-18
5.10.6 Level of Significance After Mitigation 5.10-18
5.11 Public Services and Utilities 5.11-1
5.11.1 Fire Protection and Emergency Medical Services 5.11-1
5.11.2 Police Protection 5.11-11
5.11.3 Library 5.11-16
5.11.4 Schools 5.11-22
5.11.5 Parks and Recreation 5.11-30
5.11.6 Water 5.11-39
5.11.7 Recycled Water 5.11-57
5.11.8 Sewer 5.11-63
5.11.9 Solid Waste Disposal 5.11-73
5.11.10 Energy 5.11-77
5.12 Climate Change 5.12-1
5.12.1 Existing Conditions 5.12-1
5.12.2 Thresholds of Significance 5.12-36
5.12.3 Impacts 5.12-37
5.12.4 Level of Significance Prior to Mitigation 5.12-48
5.12.5 Mitigation Measures 5.12-48
5.12.6 Level of Significance After Mitigation 5.12-49
5.13 Housing and Population 5.13-1
5.13.1 Existing Conditions 5.13-1
5.13.2 Thresholds of Significance 5.13-5
5.13.3 Impacts 5.13-5
5.13.4 Level of Significance Prior to Mitigation 5.13-7
5.13.5 Mitigation Measures 5.13-7
5.13.6 Level of Significance After Mitigation 5.13-7
5.14 Paleontological Resources 5.14-1
5.14.1 Existing Conditions 5.14-1
5.14.2 Thresholds of Significance 5.14-2
5.14.3 Impacts 5.14-3
5.14.4 Level of Significance Prior to Mitigation 5.14-4
5.14.5 Mitigation Measures 5.14-4
5.14.6 Level of Significance After Mitigation 5.14-5

6 CUMULATIVE IMPACTS 6-1
6.1 Introduction 6-1

6.2 Methodology 6-1
6.3 Cumulative Projects 6-3
6.3.1 Land Development 6-3
6.3.2 Adopted Plans 6-4
6.4 Cumulative Impact Analysis 6-4
6.4.1 Land Use, Planning, and Zoning 6-7
6.4.2 Landform Alteration/Aesthetics 6-7
6.4.3 Biological Resources 6-9
6.4.4 Cultural Resources 6-10
6.4.5 Transportation, Circulation, and Access 6-11
6.4.6 Air Quality 6-12
6.4.7 Hazards and Risk of Upset 6-14
6.4.8 Noise 6-15
6.4.9 Water Quality and Hydrology 6-16
6.4.10 Geology and Soils 6-17
6.4.11 Public Services and Utilities 6-18
6.4.12 Climate Change 6-19
6.4.13 Housing and Population 6-20
6.4.14 Paleontological Resources 6-20

7 GROWTH INDUCEMENT 7-1
7.1 Growth Inducement due to Population Growth 7-2
7.2 Growth Inducement due to Economic Growth 7-3
7.3 Growth Inducement due to Additional Housing 7-3
7.4 Growth Inducement due to Removal of Obstacles 7-4
7.5 Taxation of Existing Public Facilities and Services 7-5

8 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES 8-1
8.1 Irreversible Environmental Changes 8-1

9 EFFECTS FOUND NOT TO BE SIGNIFICANT 9-1
9.1 Agriculture and Forestry Resources 9-1
9.2 Mineral Resources 9-1

10 PROJECT ALTERNATIVES 10-1
10.1 Introduction 10-1
10.2 Project Objectives 10-1
10.3 Alternatives Under Consideration 10-2
10.4 Alternatives Impact Summary 10-2
10.5 Environmentally Superior Alternative 10-10

11 REFERENCES 11-1

12 LIST OF PREPARERS 12-1

APPENDICES

A NOP Comment Letters
B1 Biological Resources Technical Report
B2 Preserve Edge Plan
C Cultural Resources Inventory Report
D Traffic Impact Analysis
E Air Quality and Greenhouse Gas Emissions Technical Report
F Fire Protection Plan
G Noise Assessment
H1 Drainage Study
H2 Stormwater Quality Management Plan
I Geotechnical Investigation
J1 Water Service Study
J2 Water Conservation Plan
J3 Sewer Service Study
J4 Non-renewable Energy Conservation Plan
K Paleontological Resources Memorandum
L Proposed General Development Plan Amendments

FIGURES

4-1 Regional Map 4-3
4-2 Vicinity Map 4-5
4-3 Project Site Plan 4-9
4-4 Community Purpose Facility 1 – Conceptual Site Plan 4-13
4-5 Community Purpose Facility 2 – Conceptual Site Plan 4-15
4-6 Landscape Plan 4-17
4-7 Circulation Plan 4-21
4-8 Pedestrian Circulation Plan 4-23
4-9 Bicycle Circulation Plan 4-25
4-10 Main Street - Typical Street Sections 4-27
4-11 Residential Streets - Typical Street Sections 4-29
4-12 Proposed Water System 4-33
4-13 Proposed Water System 4-35
4-14 Proposed Sewer System 4-37
4-15 Proposed Storm Drain System 4-39
4-16 Tentative Map 4-43
4-17 Conceptual Grading Plan 4-45
4-18 Cut and Fill Map 4-47
5.1-1 Adopted Chula Vista General Plan Land Use Designations 5.1-5

5.1-2 Adopted Otay Ranch General Development Plan Land Uses 5.1-11
5.1-3 Brown Field Airport Influence Area 5.1-17
5.2-1 Viewpoint Locations Map 5.2-11
5.2-2 Village Four–Key View 1 ..... 5.2-13
5.2-3 Village Four–Key View 2 ..... 5.2-15
5.3-1 Vegetation Map – Village Four Development 5.3-9
5.3-2 Wetland Delineation Map – Village Four Development 5.3-15
5.3-3 Special-Status Species Map – Village Four Development 5.3-23
5.3-4 Wildlife Corridors 5.3-37
5.3-5 Special-Status Species Impacts Map – Village Four and Off-site Areas 5.3-47
5.3-6 Vegetation Impacts Map - Village Four and Off-site Areas 5.3-57
5.3-7 Wetland Delineation Impacts Map - Village Four Development and Off-site Areas 5.3-59
5.3-8 Site Plan with Sewer/Storm Drain Alignment 5.3-71
5.3-9 Site Plan with Sewer/Storm Drain Alignment Biological Resources Map 5.3-73
5.3-10 Village Four Give/Take Analysis – Proposed Change in Preserve 5.3-83
5.3-11 Village Four Give/Take Analysis – Vegetation/Species Map within Give/Take Areas 5.3-85
5.3-12 Village Four Give/Take Analysis - Ultimate Preserve Boundary 5.3-87
5.3-13 Maritime Succulent Scrub and Otay Tarplant Restoration Locations 5.3-93
5.7-1 Fuel Modification Zone Exhibit 5.7-23
5.8-1 Field Noise Measurement Locations 5.8-9
5.8-2 Modeled Roadway Segments 5.8-15
5.8-3 Approximate Soundwall Locations & Modeled Receiver Locations 5.8-17
5.8-4 Modeled Roadway Segments and Off-Site Receiver Locations 5.8-27
5.8-5 Brown Field Airport Influence Area 5.8-33
5.9-1 Proposed Drainage Management 5.9-9
5.9-2 FEMA Flood Hazard Zones 5.9-15
5.9-3 Dam Inundation Zones 5.9-19
5.10-1 Geologic Map 5.10-5
5.10-2 Nearby Active Faults 5.10-11
5.11-1 Proposed On-site Water Facilities 5.11-53
5.11-2 Proposed On-site Recycled Water 5.11-61
5.11-3 Proposed On-site Sewer Facilities 5.11-69
6-1 Cumulative Projects 6-5
9-1 Agricultural Land 9-3
9-2 Mineral Resources 9-5

TABLES

1-1 Village Four Sectional Planning Area Plan Land Use Summary 1-2
1-2 Summary of Significant Environmental Impacts and Mitigation 1-7
4-1 Village Four Sectional Planning Area Plan Land Use Summary 4-7
5.3-1 Vegetation Communities and Land Cover Within the Project Site (Quarry Boundary, Village Three, and Village Four)..... 5.3-7
5.3-2 Jurisdictional Wetlands and Waters on Village Four 5.3-14
5.3-3 Data Station Point Summary..... 5.3-14
5.3-4 Off-Site Jurisdictional Wetlands and Waters within Village Three 5.3-17
5.3-5 Special-Status Plant Populations within the Project Site and Preserve Prior to Proposed Boundary Line Adjustment..... 5.3-21
5.3-6 Schedule of Surveys for Village Four Project Site 5.3-40
5.3-7 Permanent Impacts to Special-Status Plant Species within the Project Site and Off-Site Areas 5.3-46
5.3-8 Permanent Impacts to Special-Status Wildlife Species within the Project Site..... 5.3-49
5.3-9 Impacts Associated with the Project Site..... 5.3-54
5.3-10 Impacts Associated within Off-Site Areas..... 5.3-55
5.3-11 Impacts to Jurisdictional Wetlands and Waters within the Village Four Project Site..... 5.3-56
5.3-12 Impacts to Jurisdictional Waters within the Off-Site Areas 5.3-61
5.3-13 Impacts to Vegetation Communities and Land Covers Associated with Planned and Future Facilities by Ownership 5.3-68
5.3-14 Summary of Impacts to Vegetation Communities and Land Covers Associated with Planned and Future Facilities 5.3-68
5.3-15 Impacts to Jurisdictional Aquatic Resources Associated with Planned and Future Facilities..... 5.3-69
5.3-16 Summary Impacts to Covered and Narrow Endemic Plant Species 5.3-70
5.3-17 Summary Impacts to Covered Wildlife Species 5.3-70
5.3-18 Summary Facilities Siting Criteria – Detention Basin and Associated Facilities 5.3-75
5.3-19 Summary of Facilities Siting Criteria –Village Four Main Street and Associated Utilities 5.3-77
5.3-20 Preserve Boundary Line Adjustment Vegetation Impacts..... 5.3-82
5.3-21 Summary of Give/Take for Covered and Non-Covered Special-Status Plant Species 5.3-91
5.3-22 Impacts to Vegetation Communities and Land Covers Associated with Off-Site Development Impacts 5.3-101
5.4-1 Previous Technical Studies that Have Included the Project Development Boundary.....5.4-5

5.4-2 Recorded Cultural Resources Relative to the Project Development Boundary 5.4-6
5.4-3 Located Resources Within and Near the Project Development Boundary 5.4-10
5.5-1 Signalized and Unsignalized Intersection Level of Service Criteria 5.5-2
5.5-2 Roadway Segment Level of Service Thresholds 5.5-4
5.5-3 Intersection Lane Volume (ILV) Operational Thresholds 5.5-5
5.5-4 Existing Conditions Intersection Level of Service 5.5-9
5.5-5 Existing Conditions Roadway Segment Level of Service 5.5-9
5.5-6 Village Four Project Trip Generation 5.5-14
5.5-7 Freeway Segment Level of Service Thresholds 5.5-22
5.5-8 Existing Conditions Freeway Segment Analysis 5.5-24
5.5-9 Mid-Term (2020) Freeway Segment Analysis 5.5-25
5.5-10 Long-Term (2030) Freeway Segment Analysis 5.5-26
5.5-11 ILV Analysis for Caltrans Ramp Intersections 5.5-27
5.6-1 Ambient Air Quality Standards 5.6-8
5.6-2 San Diego Air Basin Attainment Classification 5.6-16
5.6-3 Local Ambient Air Quality Data 5.6-17
5.6-4 City of Chula Vista Air Quality Significance Thresholds 5.6-19
5.6-5 Blasting Emissions 5.6-22
5.6-6 Rock Crushing Emissions 5.6-23
5.6-7 Estimated Maximum Daily Construction Criteria Air Pollutant Emissions - Unmitigated 5.6-23
5.6-8 Estimated Daily Maximum Daily Operational Criteria Air Pollutant Emissions 5.6-25
5.6-9 Pollutants, Sources, Health Effects, and Attainment Status 5.6-28
5.6-10 CALINE4 Predicted Carbon Monoxide Concentrations 5.6-34
5.6-11 Estimated Daily Maximum Construction Emissions - Mitigated 5.6-39
5.7-1 Hazardous Sites Identified within 2-Mile Radius Search 5.7-11
5.8-1 City of Chula Vista Exterior Land Use/Noise Compatibility Guidelines 5.8-3
5.8-2 City of Chula Vista Exterior Property-Line Noise Limits 5.8-4
5.8-3 Existing On-Site Noise Levels 5.8-8
5.8-4 Existing Measured Average Sound Levels Associated with Local Roadways Near Village Four and Validation Results 5.8-11
5.8-5 Existing Community Noise Equivalent Level (CNEL) Associated with Local Roadways 5.8-12
5.8-6 Traffic Noise Modeling Results (Year 2030) – Village Four 5.8-19
5.8-7 Traffic Noise Modeling (Year 2030) Results for Distances Beyond the Parcel Boundary Line 5.8-21
5.8-8 Parcels Requiring Subsequent Noise Analysis 5.8-22
5.8-9 Project Contribution to Off-Site Traffic Noise – Existing Plus Project (Off-Site Traffic Noise Level Increase) 5.8-26

5.8-10 Project Contribution to Off-Site Traffic Noise – Year 2030 (Off-Site Traffic Noise Level Increase) 5.8-26
5.8-11 Typical Noise Levels from Construction Activities for Large Construction Projects 5.8-29
5.10-1 Principal Active Faults Near Village Four 5.10-9
5.11-1 City of Chula Vista Fire Station Facilities 5.11-4
5.11-2 Chula Vista Fire Department Staffing 5.11-4
5.11-3 Fire Station Call Volumes 5.11-7
5.11-4 Project Area Schools 5.11-25
5.11-5 Recommended Sewer Design Unit Generation Rates 5.11-64
5.11-6 Sewer Generation Factors 5.11-67
5.12-1 GHG Sources in California 5.12-4
5.12-2 Estimated Annual Construction Greenhouse Gas Emissions 5.12-37
5.12-3 Estimated Annual Operational Greenhouse Gas Emissions 5.12-40
5.12-4 Compliance with Chula Vista CO_2-Reduction Plan 5.12-41
5.12-5 Project Consistency with Scoping Plan GHG Emission Reduction Strategies 5.12-45
5.13-1 San Diego Region vs. City of Chula Vista Population, Housing, and Employment Forecast 5.13-2
5.13-2 Chula Vista Projected Population in 2030 ..... 5.13-3
5.13-3 Existing Otay Ranch GDP Planned Residential for Village Four 5.13-4
5.13-4 Otay Ranch GDP Planned Residential for Village Four 5.13-6
6-1 Geographic Scope of Cumulative Impact Analyses 6-2
6-2 Cumulative Projects 6-3
6-3 Project Contribution to Off-Site Traffic Noise – Year 2030 (Off-Site Traffic Noise Level Increase) 6-16
10-1 Alternatives Impact Summary 10-10

FINAL ENVIRONMENTAL IMPACT REPORT FOR THE OTAY RANCH VILLAGE FOUR SECTIONAL PLANNING AREA PLAN

The City of Chula Vista, as the Lead Agency under the California Environmental Quality Act (CEQA), has prepared this Final Environmental Impact Report (Final EIR) for the proposed Otay Ranch Village Sectional Planning Area project, located within the Otay Ranch subregion of the City of Chula Vista. As described in Sections 15089 and 15132 of the CEQA Guidelines, the lead agency must prepare a Final EIR before approving a project. Pursuant to CEQA Guidelines Section 15132, a Final EIR shall consist of:

a. The Draft EIR or a revision of the draft.

b. Comments and recommendations received on the Draft EIR either verbatim or in summary.

c. A list of persons, organizations, and public agencies commenting on the Draft EIR.

d. The responses of the Lead Agency to significant environmental points raised in the review and consultation process; and

e. Any other information added by the Lead Agency.

Pursuant to these guidelines, this Final EIR (State Clearinghouse No. 2016041080) includes in the following order: a list of persons, organizations, and agencies that provided comments on the Draft EIR; responses to comments received on the Draft EIR; the Draft EIR.

COMMENTS RECEIVED ON THE DRAFT EIR AND RESPONSES

The Draft EIR was circulated for public review on October 20, 2017 through December 6, 2017, in accordance with the 45-day comment period required under Section 15105(a) of the CEQA Guidelines. A total of seven comment letters were received on the Draft EIR from agencies as shown in the list below. In response to the comments received during public review and to City staff input subsequent to distribution of the Draft EIR, minor revisions, clarifications, and/or additions have been made to the document which do not change the conclusions of the Final EIR regarding the project's potential environmental impacts and required mitigation. These minor revisions do not represent significant new information. No new significant environmental impacts would occur from these modifications, and similarly, no substantial increase in the severity of environmental impacts would occur.

A list of the agencies commenting on the Draft EIR is provided below:

- Comment Letter A: State Clearinghouse, Scott Morgan
- Comment Letter B: Native American Heritage Commission, Gayle Totton
- Comment Letter C: Golden State Environmental Justice Alliance

- Comment Letter D: California Department of Fish and Wildlife, Gail K. Sevrens
- Comment Letter E: County of San Diego, Deborah Mosley
- Comment Letter F: City of San Diego, Laura Ball
- Comment Letter G: California Department of Transportation, Keri Robinson

Copies of all letters received by the City of Chula Vista regarding the Draft EIR and the responses to comments follow.

Comment Letter A

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

Edmund G. Brown Jr.
Governor

Ken Alex
Director

December 7, 2017

Jeff Steichen
City of Chula Vista
276 Fourth Avenue
Chula Vista, CA 91910

Subject: Otay Ranch Village Village Four Sectional Planning Area Plan
SCH#: 2016041080

Dear Jeff Steichen:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on December 6, 2017, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL (916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

A-1

Document Details Report
State Clearinghouse Data Base

SCH#	**2016041080**
Project Title	Otay Ranch Village Village Four Sectional Planning Area Plan
Lead Agency	Chula Vista, City of
Type	EIR Draft EIR
Description	The project consists of a request for a specific planning area plan and tentative map to allow fro a 350 unit residential development on 166.02 acres. The project will include 73 single family and 277 multi family units along with 2.08 acres of community purpose facility, 20.19 acres of private open space and 97.2 acres of open space preserve.

Lead Agency Contact

Name	Jeff Steichen		
Agency	City of Chula Vista		
Phone	619-585-5778	***Fax***	619-585-5778
email			
Address	276 Fourth Avenue		
City	Chula Vista	***State*** CA	***Zip*** 91910

Project Location

County	San Diego		
City	Chula Vista		
Region			
Lat / Long	32° 36' 27.49" N / 116° 59' 7.85" W		
Cross Streets	Olympic Parkway and La Media Rd		
Parcel No.	644-060-24		
Township	***Range***	***Section***	***Base***

Proximity to:

Highways	SR 125, I-805
Airports	
Railways	
Waterways	OtayRiver
Schools	Heritage ES, McMillin ES, Hedencamp ES, Wolf Canyon ES, Rancho d
Land Use	residential low medium, parks and rec, and open space preserve
Project Issues	Biological Resources; Aesthetic/Visual; Air Quality; Noise; Water Quality; Geologic/Seismic; Soil Erosion/Compaction/Grading; Public Services; Population/Housing Balance; Agricultural Land; Archaeologic-Historic; Cumulative Effects; Drainage/Absorption; Flood Plain/Flooding; Forest Land/Fire Hazard; Growth Inducing; Landuse; Minerals; Recreation/Parks; Schools/Universities; Sewer Capacity; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Supply; Wetland/Riparian
Reviewing Agencies	Resources Agency; Department of Fish and Wildlife, Region 5; Department of Parks and Recreation; California Highway Patrol; Caltrans, District 11; Regional Water Quality Control Board, Region 9; Air Resources Board, Major Industrial Projects; Native American Heritage Commission; State Lands Commission

Date Received 10/23/2017 ***Start of Review*** 10/23/2017 ***End of Review*** 12/06/2017

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

A-1
Cont.

STATE OF CALIFORNIA
NATIVE AMERICAN HERITAGE COMMISSION
Environmental and Cultural Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone (916) 373-3710
Fax (916) 373-5471

Clear 12/06/17
E

Edmund G. Brown Jr., Governor

Governor's Office of Planning & Research

NOV 16 2017

STATE CLEARINGHOUSE

November 3, 2017

Jeffrey Steichen
City of Chula Vista
276 Fourth Avenue
Chula Vista, CA 91910

Re: SCH# 2016041080, Otay Ranch Village, Village Four Sectional Planning Area Plan Project, City of Chula Vista; San Diego County, California

Dear Mr. Steichen:

The Native American Heritage Commission (NAHC) has reviewed the Draft Environmental Impact Report prepared for the project referenced above. The review included the Executive Summary with Table I-2, Summary of Significant Environmental Impacts and Mitigation Measures; the Introduction and Project Description; the Environmental Impact Analysis; and Appendix C, Cultural Resources Inventory Report, prepared by Dudek for the City of Chula Vista. We have the following concerns:

1. While the Cultural Resources section 5.4 includes a brief discussion of Tribal Cultural Resources, there is no Tribal Cultural Resources section or subsection in the Environmental Impact Analysis that address the questions of significance as outlined in the California Natural Resources Agency (2016) "Final Text for tribal cultural resources update to Appendix G: Environmental Checklist Form," http://resources.ca.gov/ceqa/docs/ab52/Clean-final-AB-52-App-G-text-Submitted.pdf

2. There is no documentation of **government-to-government consultation by the lead agency** under AB-52 with Native American tribes traditionally and culturally affiliated to the project area as required by statute, or that mitigation measures were developed in consultation with the tribes. The statements regarding consultation outreach do no clearly state that the outreach was done by the City of Chula Vista. Information requests by consultants during the Cultural Resources Assessments are not formal consultation.

ADDITIONAL INFORMATION:
The California Environmental Quality Act (CEQA)[1], specifically Public Resources Code section 21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment.[2] If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an environmental impact report (EIR) shall be prepared.[3] In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources with the area of project effect (APE).

CEQA was amended in 2014 by Assembly Bill 52. (AB 52).[4] **AB 52 applies to any project for which a notice of preparation or a notice of negative declaration or mitigated negative declaration is filed on or after July 1, 2015.** AB 52 created a separate category for "tribal cultural resources"[5], that now includes "a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment.[6] Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.[7] Your project may also be subject to **Senate Bill 18 (SB 18)** (Burton, Chapter 905, Statutes of 2004), Government Code 65352.3, if it also involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space. **Both SB 18 and AB 52 have tribal consultation requirements.** Additionally, if your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966[8] may also apply.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

[1] Pub. Resources Code § 21000 et seq.
[2] Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, § 15064.5 (b); CEQA Guidelines Section 15064.5 (b)
[3] Pub. Resources Code § 21080 (d); Cal. Code Regs., tit. 14, § 15064 subd.(a)(1); CEQA Guidelines § 15064 (a)(1)
[4] Government Code 65352.3
[5] Pub. Resources Code § 21074
[6] Pub. Resources Code § 21084.2
[7] Pub. Resources Code § 21084.3 (a)
[8] 154 U.S.C. 300101, 36 C.F.R. § 800 et seq.

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Cont.

Agencies should be aware that AB 52 does not preclude agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52. For that reason, we urge you to continue to request Native American Tribal Consultation Lists and Sacred Lands File searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/. Additional information regarding AB 52 can be found online at http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf, entitled "Tribal Consultation Under AB 52: Requirements and Best Practices".

The NAHC recommends lead agencies consult with all California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources.

A brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments is also attached.

Please contact me at gayle.totton@nahc.ca.gov or call (916) 373-3710 if you have any questions.

Sincerely,

Gayle Totton, B.S., M.A., Ph.D
Associate Governmental Project Analyst

Attachment

cc: State Clearinghouse

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Cont.

Pertinent Statutory Information:

Under AB 52:
AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:
Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a **lead agency** shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice.
A **lead agency** shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project.[9] and **prior to the release of a negative declaration, mitigated negative declaration or environmental impact report.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code § 65352.4 (SB 18).[10]
The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

a. Alternatives to the project.
b. Recommended mitigation measures.
c. Significant effects.[11]

1. The following topics are discretionary topics of consultation:
   a. Type of environmental review necessary.
   b. Significance of the tribal cultural resources.
   c. Significance of the project's impacts on tribal cultural resources.

If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency.[12]
With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process **shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code sections 6254 (r) and 6254.10.** Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public.[13]
If a project may have a significant impact on a tribal cultural resource, **the lead agency's environmental document shall discuss** both of the following:

a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code section 21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource.[14]

Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.[15]

Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code section 21080.3.2 **shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program**, if determined to avoid or lessen the impact pursuant to Public Resources Code section 21082.3, subdivision (b), paragraph 2, and shall be fully enforceable.[16]
If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, **the lead agency shall consider feasible mitigation** pursuant to Public Resources Code section 21084.3 (b).[17]
An environmental impact report **may not be certified**, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code sections 21080.3.1 and 21080.3.2 and concluded pursuant to Public Resources Code section 21080.3.2.
b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code section 21080.3.1 (d) and the tribe failed to request consultation within 30 days.[18]

[9] Pub. Resources Code § 21080.3.1, subds. (d) and (e)
[10] Pub. Resources Code § 21080.3.1 (b)
[11] Pub. Resources Code § 21080.3.2 (a)
[12] Pub. Resources Code § 21080.3.2 (a)
[13] Pub. Resources Code § 21082.3 (c)(1)
[14] Pub. Resources Code § 21082.3 (b)
[15] Pub. Resources Code § 21080.3.2 (b)
[16] Pub. Resources Code § 21082.3 (a)
[17] Pub. Resources Code § 21082.3 (e)
[18] Pub. Resources Code § 21082.3 (d)

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This process should be documented in the Tribal Cultural Resources section of your environmental document.

Under SB 18:
Government Code § 65352.3 (a) (1) requires consultation with Native Americans on general plan proposals for the purposes of "preserving or mitigating impacts to places, features, and objects described § 5097.9 and § 5091.993 of the Public Resources Code that are located within the city or county's jurisdiction. Government Code § 65560 (a), (b), and (c) provides for consultation with Native American tribes on the open-space element of a county or city general plan for the purposes of protecting places, features, and objects described in Sections 5097.9 and 5097.993 of the Public Resources Code.

- SB 18 applies to **local governments** and requires them to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf
- Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.**[19]
- There is no Statutory Time Limit on Tribal Consultation under the law.
- Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research,[20] the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code sections 5097.9 and 5097.993 that are within the city's or county's jurisdiction.[21]
- Conclusion Tribal Consultation: Consultation should be concluded at the point in which:
  - The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
  - Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation.[22]

NAHC Recommendations for Cultural Resources Assessments:

- Contact the NAHC for:
  - A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
  - A Native American Tribal Contact List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.
    - The request form can be found at http://nahc.ca.gov/resources/forms/.
- Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
  - If part or the entire APE has been previously surveyed for cultural resources.
  - If any known cultural resources have been already been recorded on or adjacent to the APE.
  - If the probability is low, moderate, or high that cultural resources are located in the APE.
  - If a survey is required to determine whether previously unrecorded cultural resources are present.
- If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
  - The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
  - The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

Examples of Mitigation Measures That May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

- Avoidance and preservation of the resources in place, including, but not limited to:
  - Planning and construction to avoid the resources and protect the cultural and natural context.
  - Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

[19] (Gov. Code § 65352.3 (a)(2)).
[20] pursuant to Gov. Code section 65040.2,
[21] (Gov. Code § 65352.3 (b)).
[22] (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

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- Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
  - Protecting the cultural character and integrity of the resource.
  - Protecting the traditional use of the resource.
  - Protecting the confidentiality of the resource.
- Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
- Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed.[23]
- Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated.[24]

The lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

- Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources.[25] In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
- Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
- Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code section 7050.5, Public Resources Code section 5097.98, and Cal. Code Regs., tit. 14, section 15064.5, subdivisions (d) and (e) (CEQA Guidelines section 15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

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[23] (Civ. Code § 815.3 (c)).
[24] (Pub. Resources Code § 5097.991).
[25] per Cal. Code Regs., tit. 14, section 15064.5(f) (CEQA Guidelines section 15064.5(f))

5

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

clear 12/6/17

Governor's Office of Planning & Research

DEC 06 2017

STATE CLEARINGHOUSE

December 5, 2017

Mr. Jeff Steichen
City of Chula Vista
276 Fourth Avenue
Chula Vista, California 91910

Subject: Notice of Availability of a Draft Environmental Impact Report for the Village Four Sectional Planning Area (SPA) Plan, City of Chula Vista, California (SCH No. 2016041080)

Dear Mr. Steichen:

The California Department of Fish and Wildlife (Department) has reviewed the above-referenced Notice of Availability, dated October 24, 2017, for a draft Environmental Impact Report (DEIR). The Department has identified potential effects of this project on wildlife and sensitive habitats. The project details provided herein are based on the information provided in the DEIR and associated documents including information submitted as part of the Functional Equivalency Analysis for Otay Ranch Village 4 Boundary Adjustment (City of Chula Vista, July 2017). The comments and recommendations provided are based on our knowledge of sensitive and declining vegetation communities in the City of Chula Vista (City) and our participation in regional conservation planning efforts.

The Department is a Trustee Agency and a Responsible Agency pursuant to the California Environmental Quality Act (§§15386 and 15381, respectively; CEQA) and is responsible for ensuring appropriate conservation of the State of California's (State's) biological resources, including rare, threatened, and endangered plant and animal species pursuant to the California Endangered Species Act (Fish and Game Code §2050 *et seq.*) and other sections of the Fish and Game Code. The Department also administers the Natural Community Conservation Planning (NCCP) program (Fish and Game Code 2800, *et seq.*). In November 2003, the Department and the U.S. Fish and Wildlife Service (Service), jointly referred to as the Wildlife Agencies, issued their respective permits for the City's Multiple Species Conservation Program (MSCP) Subarea Plan (SAP). The City's SAP is the mechanism by which the City has committed to assemble a preserve consistent with the goals of the MSCP Subregional Plan.

Otay Valley Quarry, LLC is proposing to develop the approximately 165-acre site identified as Village Four in the Otay Ranch General Development Plan. Development of the site would consist of 73 single-family residential dwelling units and up to 277 multi-family residential dwelling units on approximately 34 acres of the project site, as well as approximately 12 acres for roadways and circulation right-of-way. The project is considered a covered project under the City of Chula Vista SAP. The primary entry point into Village Four is from La Media Road. The project proposes an approximately 2-mile eastern extension of Main Street, which would provide additional access to the project site. Main Street (Rock Mountain Road) and facilities associated with the new sewer alignment that would connect with the Salt Creek Interceptor south of the project site, storm drains, and detention basin are included in the project as Planned and Future Facilities under the Chula

Conserving California's Wildlife Since 1870

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Vista SAP. The project also includes a Boundary Line Adjustment (BLA) to realign Main Street, which provides an addition of 1.72 acres to the preserve, for which the Department and the U.S. Fish and Wildlife Service (collectively the Wildlife Agencies) responded with a concurrence letter dated August 2, 2017. Approximately 117.22 acres of the project site would be designated as open space. Approximately 19.73 of those acres would be for fuel modification areas, perimeter slopes and passive recreation, and approximately 97.49 acres would be dedicated to the MSCP Preserve.

We offer the following comments and recommendations to assist the City in avoiding, minimizing, and adequately mitigating project-related impacts to biological resources, and to ensure that the project is consistent with all applicable requirements of the approved SAP.

1. In Section 1.3.2, the DEIR states that one of the discretionary actions is the "Approval of amendments to the Otay Ranch General Development Plan." However, the DEIR does not discuss the specific amendments. Additionally, Section 5.1 discusses Land Use Planning and Zoning, including the General Development Plan, and finds the project consistent, even though an amendment is required. Please include a discussion of the amendments, and how the project proposes to avoid, minimize, and mitigate any of the potential impacts that may arise from the changes to the General Development Plan that were not addressed by the original EIR for the GDP.

2. The Wildlife Agency NOP response letter dated June 3, 2016 states that the "DEIR should address the proposed increase in density along open space preserve areas and wildlife corridors within Wolf Canyon which may conflict with the Land Use and Transportation Element, General Plan Land Use Policy 77.2 (LUT 77.2), which limits land uses in this area to low/medium density and large lot single family residential." The information provided in the DEIR shows high density development adjacent to the Preserve boundary. The City should address the project's consistency with LUT 77.2 as well as the Otay Ranch Wildlife Corridor Study and related General Development Plan Programmatic EIR, which determined that increased residential density along the urban/preserve interface could be incompatible with adjacent wildlife corridors. The Department is available to discuss measures that may be implemented to address concerns about impacts to the Preserve from high density residential development.

3. On page 4-12 of the DEIR, the document discusses park uses associated with the project: "In Village Four, park obligation addressed through the provision of two pocket parks overlooking Wolf Canyon, on the north side of Main Street and the payment of the Park In-Lieu fee. The overlooks provide residents and visitors the opportunity to picnic and enjoy the view [of] Wolf Canyon." Main Street is a Planned Facility within the preserve, and is an allowed use with the Preserve. However, "pocket parks" are not an allowed use within the Preserve, and are therefore inconsistent with 6.3.3.1 of the City's SAP. Additionally, the pocket parks were not disclosed as part of the BLA process. Pocket parks, if included in the project, should be located within the development footprint and not encroach on Preserve areas; therefore, the DEIR should be revised to remove the pocket parks from the project description. If the Applicant intends to retain pocket parks that would encroach within the Preserve, the BLA, equivalency findings, and required mitigation would require further discussion, refinement, and approval by the Wildlife Agencies.

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4. There are multiple endangered, threatened, MSCP-covered, and narrow endemic species and their habitats known to occur in and around the project area. Based on maps of the proposed project, we are specifically concerned about impacts to the federally threatened and State endangered Otay tarplant [*Deinandra* (*Hemizonia*) *conjugens*]. The Otay tarplant population in Wolf Canyon, bordering the northern boundary of the project, is considered a major population within the MSCP. In our NOP letter, we stated that a BLA should not result in substantial additional losses to covered species that are not adequately offset. The DEIR addresses Otay tarplant but does not specifically reference the *Otay Tarplant and Maritime Succulent Scrub Compensation and Mitigation Plan (Otay Tarplant Plan)* that was developed for the BLA and approved by the Wildlife Agencies. One factor for the approval of the BLA by the Wildlife Agencies is implementation of this plan.

   The DEIR first mentions the Otay Tarplant Plan on page 5.3-79, but the document does not specifically note the Otay Tarplant Plan by name. Other parts of the DEIR state that it is not yet developed. Although the document indicates the Otay Tarplant Plan is in Appendix B1, it does not appear to be included in the DEIR or Appendices and associated documents. Since it is a condition of the approval of the BLA, we recommend that the Otay Tarplant Plan, as submitted with the approved the BLA, be included in the DEIR appendices and referenced consistently throughout the DEIR when addressing mitigation for Otay tarplant for both the BLA and Planned and Future Facilities. This would apply to discussions about the project mitigation measures and the Mitigation and Monitoring Reporting Program (MMRP).

5. In the discussion of the Otay Tarplant Plan the document states, "The restoration plan would focus on the following goals and objectives:" including to "Establish a stable trail alignment within the degraded road area and restore disturbed maritime succulent scrub habitat in PMA4 Subunit 4-2b." This is an artifact of an earlier version of the restoration plan when the proposed restoration site was off site in the Central City Preserve and is no longer applicable to the proposed project. This should be removed from the document.

6. Section 4.4.1.3 of the DEIR states that 80.29 acres of the on-site open space will be conserved to satisfy mitigation requirements for a separate project, the Otay Quarry reclamation. We understand that habitat impacts from the Village Four project will primarily be mitigated off site; however, we are concerned that the proposed development may interfere with mitigation requirements of the Otay Quarry reclamation project. We are also concerned that the proposed on-site restoration projects to address impacts to Otay tarplant and maritime sage scrub may overlap with Otay Quarry reclamation requirements. The City should clearly demonstrate how these two projects and their respective mitigation requirements can be implemented given the geographic overlap.

7. Table 5.3-16 of the DEIR, which discusses impacts to covered and narrow endemic species, is inconsistent with other information provided in the Biological Technical Report (BTR) provided in Appendix B1. We believe Table 5.3 should be revised to be consistent with Table 5.4 of the BTR.

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8. The DEIR and appendices are inconsistent in the account of observations of the white-tailed kite, a California Fully Protected Species for which no direct impacts are permitted. Figure 5.3-9 shows an occurrence of white-tailed kite in the Village Three off-site area adjacent to the access road, and it is also noted in Appendix B as being detected on site. However, Appendix G indicates that it was not verified on site and states that it is "Not expected to nest in the project area. High potential to nest in the riparian forest in the Otay River and Wolf Canyon." Since work in the Village Three off-site area is part of this project and within the riparian forest of Wolf Canyon, there is high potential for nesting within the project footprint. Please address this inconsistency and revise the DEIR and appendices as necessary. Mitigation Measure Bio 9 calls for preconstruction surveys and notes, "If nesting birds are detected, a letter report or mitigation plan, as deemed appropriate by the City, shall be prepared and include proposed measures to be implemented to ensure that disturbance of breeding activities are avoided." If a white-tailed kite is observed nesting on site, please consult with the Department to ensure that all direct and indirect impacts are avoided.

9. Page 5.3-52 of the DEIR states, "Quino checkerspot butterfly was been [sic] recorded on site in the recent survey, but it is known to be present nearby within the Salt Creek Preserve." As written, this section appears to state that the project site is occupied by Quino, which is inconsistent with other sections of the document. Please clarify if this is a typographical error and revise as necessary. The City's SAP in 4.4.3.2 calls for a shrub barrier to prevent the loss of Quino checkerspot butterfly to high traffic areas in the road segment between Rock Mountain Road and Wolf Canyon. Rock Mountain Road has been renamed Main Street in this area, and is being constructed as part of this project. We recommend that the DEIR address the project's consistency with the shrub barrier requirement.

10. Page 5.3-51 of the DEIR indicates that there is a pair of California gnatcatchers near the detention basin. However, it is unclear from the maps provided which occurrence the statement is referencing, as none are shown adjacent to the detention basin in Figure 5.3-9. Please revise by adding the detention basin occurrence to the map and tables discussing impacts, or revise the EIR discussion to clarify.

11. The Wildlife Agency NOP response letter requested an explanation of why water quality needs cannot be met on site for the planned facility. This explanation was not include in the DEIR, so we again request an explanation in the final EIR as to why the detention basin could not be located in the development footprint.

12. The document is inconsistent when identifying the total acres of impacts to jurisdictional waters from the off-site portion of the project. For example, page 5.3-61 states, "Off-site facilities (i.e., outside of the Village Four Development Area boundary) could impact a total of 0.01 acre of non-wetland waters/streambed under ACOE, RWQCB, and CDFW jurisdiction from Planned Facilities within Village Three." However, Table 5.3-12 shows 0.02 acre of impact to unvegetated channel for the Village Three component. It is also inconsistent in the finding on page 5.3-76. Please revise accordingly throughout the document.

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13. In reference to wildlife movement, the document states on page 5.3-63, "only a small portion occurs on the slope above Wolf Canyon, and will not preclude wildlife from using Wolf Canyon and the Otay River Valley to the south. Main Street will not impede a major regional linkage, and culverts will not be required within the Preserve." Main Street is a "6 lane prime arterial," bisecting the existing open area, leaving an approximately 500-foot wide corridor between the existing quarry and Main Street, which would further be divided by the detention basin/sewer access road. We believe additional discussion is warranted regarding the determination that wildlife movement will not be impacted. One possible measure to aid wildlife movement would be to install fencing along the southern side of Main Street abutting the preserve to guide wildlife to cross under the future bridge that is proposed for where Main Street traverses Wolf Canyon. The Wildlife Agencies are available to discuss potential measures to minimize impacts to wildlife movement.

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We appreciate the opportunity to comment on the subject DEIR. If you have questions regarding this letter, please contact Elyse Levy of the Department at (858) 467-4237 or Elyse.Levy@wildlife.ca.gov.

Sincerely,

Gail K. Sevrens
Environmental Program Manager
South Coast Region

ec: Karen Goebel, USFWS
State Clearinghouse

Response to Comment Letter A

California State Clearinghouse
Scott Morgan
December 7, 2017

A-1 This letter acknowledges that the Otay Ranch Village Four Sectional Planning Area (SPA) Plan Project (proposed project) has complied with the public review requirement of the California Environmental Quality Act (CEQA). This letter included copies of public review comment letters from state agencies. Please refer to Responses to Comment Letters B and D.

INTENTIONALLY LEFT BLANK

Comment Letter B

STATE OF CALIFORNIA
NATIVE AMERICAN HERITAGE COMMISSION
Environmental and Cultural Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone (916) 373-3710
Fax (916) 373-5471

Edmund G. Brown Jr., Governor



November 3, 2017

Jeffrey Steichen
City of Chula Vista
276 Fourth Avenue
Chula Vista, CA 91910

Re: SCH# 2016041080, Otay Ranch Village, Village Four Sectional Planning Area Plan Project, City of Chula Vista; San Diego County, California

Dear Mr. Steichen:

The Native American Heritage Commission (NAHC) has reviewed the Draft Environmental Impact Report prepared for the project referenced above. The review included the Executive Summary with Table I-2, Summary of Significant Environmental Impacts and Mitigation Measures; the Introduction and Project Description; the Environmental Impact Analysis, and Appendix C, Cultural Resources Inventory Report, prepared by Dudek for the City of Chula Vista. We have the following concerns:

1. While the Cultural Resources section 5.4 includes a brief discussion of Tribal Cultural Resources, there is no Tribal Cultural Resources section or subsection in the Environmental Impact Analysis that address the questions of significance as outlined in the California Natural Resources Agency (2016) "Final Text for tribal cultural resources update to Appendix G: Environmental Checklist Form," http://resources.ca.gov/ceqa/docs/ab52/Clean-final-AB-52-App-G-text-Submitted.pdf

2. There is no documentation of **government-to-government consultation by the lead agency** under AB-52 with Native American tribes traditionally and culturally affiliated to the project area as required by statute, or that mitigation measures were developed in consultation with the tribes. The statements regarding consultation outreach do no clearly state that the outreach was done by the City of Chula Vista. Information requests by consultants during the Cultural Resources Assessments are not formal consultation.

B-1

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B-3

ADDITIONAL INFORMATION:
The California Environmental Quality Act (CEQA)[1], specifically Public Resources Code section 21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment.[2] If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an environmental impact report (EIR) shall be prepared.[3] In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources with the area of project effect (APE).

CEQA was amended in 2014 by Assembly Bill 52: (AB 52).[4] **AB 52 applies to any project for which a notice of preparation or a notice of negative declaration or mitigated negative declaration is filed on or after July 1, 2015.** AB 52 created a separate category for "tribal cultural resources"[5], that now includes "a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment."[6] Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.[7] Your project may also be subject to **Senate Bill 18 (SB 18)** (Burton, Chapter 905, Statutes of 2004), Government Code 65352.3, if it also involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space. **Both SB 18 and AB 52 have tribal consultation requirements.** Additionally, if your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966[8] may also apply.

B-4

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

[1] Pub. Resources Code § 21000 et seq.
[2] Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, § 15064.5 (b); CEQA Guidelines Section 15064.5 (b)
[3] Pub. Resources Code § 21080 (d); Cal. Code Regs., tit. 14, § 15064 subd (a)(1); CEQA Guidelines § 15064 (a)(1)
[4] Government Code 65352.3
[5] Pub. Resources Code § 21074
[6] Pub. Resources Code § 21084.2
[7] Pub. Resources Code § 21084.3 (a)
[8] 154 U.S.C. 300101, 36 C.F.R. § 800 et.seq.

Agencies should be aware that AB 52 does not preclude agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52. For that reason, we urge you to continue to request Native American Tribal Consultation Lists and Sacred Lands File searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/. Additional information regarding AB 52 can be found online at http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf, entitled "Tribal Consultation Under AB 52: Requirements and Best Practices".

The NAHC recommends lead agencies consult with all California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources.

A brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments is also attached.

Please contact me at gayle.totton@nahc.ca.gov or call (916) 373-3710 if you have any questions.

Sincerely,

Gayle Totton, B.S., M.A., Ph.D
Associate Governmental Project Analyst

Attachment

cc: State Clearinghouse

B-4
Cont.

Pertinent Statutory Information:

Under AB 52:
AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:
Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a **lead agency** shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice.
A **lead agency** shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project.[9] and **prior to the release of a negative declaration, mitigated negative declaration or environmental impact report**. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code § 65352.4 (SB 18).[10]
The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

a. Alternatives to the project.
b. Recommended mitigation measures.
c. Significant effects.[11]

1. The following topics are discretionary topics of consultation:
   a. Type of environmental review necessary.
   b. Significance of the tribal cultural resources.
   c. Significance of the project's impacts on tribal cultural resources.

If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency.[12]
With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process **shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code sections 6254 (r) and 6254.10.** Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public.[13]
If a project may have a significant impact on a tribal cultural resource, **the lead agency's environmental document shall discuss** both of the following:

a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code section 21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource.[14]

Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.[15]

Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code section 21080.3.2 **shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program**, if determined to avoid or lessen the impact pursuant to Public Resources Code section 21082.3, subdivision (b), paragraph 2, and shall be fully enforceable.[16]
If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, **the lead agency shall consider feasible mitigation** pursuant to Public Resources Code section 21084.3 (b).[17]
An environmental impact report **may not be certified**, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code sections 21080.3.1 and 21080.3.2 and concluded pursuant to Public Resources Code section 21080.3.2.
b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code section 21080.3.1 (d) and the tribe failed to request consultation within 30 days.[18]

[9] Pub. Resources Code § 21080.3.1, subds. (d) and (e)
[10] Pub. Resources Code § 21080.3.1 (b)
[11] Pub. Resources Code § 21080.3.2 (a)
[12] Pub. Resources Code § 21080.3.2 (a)
[13] Pub. Resources Code § 21082.3 (c)(1)
[14] Pub. Resources Code § 21082.3 (b)
[15] Pub. Resources Code § 21080.3.2 (b)
[16] Pub. Resources Code § 21082.3 (a)
[17] Pub. Resources Code § 21082.3 (e)
[18] Pub. Resources Code § 21082.3 (d)

3

This process should be documented in the Tribal Cultural Resources section of your environmental document.

Under SB 18:
Government Code § 65352.3 (a) (1) requires consultation with Native Americans on general plan proposals for the purposes of "preserving or mitigating impacts to places, features, and objects described § 5097.9 and § 5091.993 of the Public Resources Code that are located within the city or county's jurisdiction. Government Code § 65560 (a), (b), and (c) provides for consultation with Native American tribes on the open-space element of a county or city general plan for the purposes of protecting places, features, and objects described in Sections 5097.9 and 5097.993 of the Public Resources Code.

- SB 18 applies to **local governments** and requires them to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf
- Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.**[19]
- There is no Statutory Time Limit on Tribal Consultation under the law.
- Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research,[20] the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code sections 5097.9 and 5097.993 that are within the city's or county's jurisdiction.[21]
- Conclusion Tribal Consultation: Consultation should be concluded at the point in which:
  - The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
  - Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation.[22]

NAHC Recommendations for Cultural Resources Assessments:

- Contact the NAHC for:
  - A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
  - A Native American Tribal Contact List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.
    - The request form can be found at http://nahc.ca.gov/resources/forms/.
- Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
  - If part or the entire APE has been previously surveyed for cultural resources.
  - If any known cultural resources have been already been recorded on or adjacent to the APE.
  - If the probability is low, moderate, or high that cultural resources are located in the APE.
  - If a survey is required to determine whether previously unrecorded cultural resources are present.
- If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
  - The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
  - The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

Examples of Mitigation Measures That May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

- Avoidance and preservation of the resources in place, including, but not limited to:
  - Planning and construction to avoid the resources and protect the cultural and natural context.
  - Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

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[19] (Gov. Code § 65352.3 (a)(2))
[20] pursuant to Gov. Code section 65040.2
[21] (Gov. Code § 65352.3 (b))
[22] Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18)

- Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
  - Protecting the cultural character and integrity of the resource.
  - Protecting the traditional use of the resource.
  - Protecting the confidentiality of the resource.
- Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
- Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed.[23]
- Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated.[24]

The lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

- Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources.[25] In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
- Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
- Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code section 7050.5, Public Resources Code section 5097.98, and Cal. Code Regs., tit. 14, section 15064.5, subdivisions (d) and (e) (CEQA Guidelines section 15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

[23] (Civ. Code § 815.3 (c)).
[24] (Pub. Resources Code § 5097.991).
[25] per Cal. Code Regs., tit. 14, section 15064.5(f) (CEQA Guidelines section 15064.5(f)).

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Response to Comment Letter B

Native American Heritage Commission
Gayle Totton, BS, MA, PhD, Associate Governmental Project Analyst
November 3, 2017

B-1 Comment noted. This comment is introductory in nature and does not raise an environmental issue related to the adequacy of the EIR.

B-2 Please refer to Response to Comment B-3. No tribal representatives informed the City of the presence of tribal cultural resources within or around the project site as defined by Assembly Bill 52 (AB 52). Therefore, no impacts to tribal cultural resources would occur.

B-3 The City initiated consultation under Senate Bill 18 (SB 18) with tribal representatives on July 20, 2015. Through this invitation to consult under SB 18, tribal representatives were notified of the project as required by AB 52. Pursuant to AB 52, it is the responsibility of the tribal representative to request formal consultation after receiving notification of a project. On September 10, 2015, the Viejas Band of Kumeyaay Indians requested a copy of the project's cultural resources report. On that same date, the City provided the cultural report, which included a Sacred Lands File search, to the Viejas Band of Kumeyaay Indians. The Viejas Band of Kumeyaay Indians have not contacted the City again to request formal consultation. No other Native American tribes have requested consultation of this project under AB 52. Therefore, the City has complied with the requirements of AB 52.

B-4 Comment noted. This comment provides additional information regarding AB 52 and SB 18. This comment also concludes the letter and does not raise an environmental issue related to the adequacy of the EIR.

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Comment Letter C

P.O. Box 79222
Corona, CA 92877

December 5, 2017

VIA ELECTRONIC MAIL

Jeff Steichen, Associate Planner
City of Chula Vista
276 Fourth Avenue
Chula Vista, CA 91910
jsteichen@chulavistaca.gov

SUBJECT: COMMENTS ON OTAY RANCH VILLAGE 4 SPA PLAN EIR

To whom it may concern:

Thank you for the opportunity to comment on the Environmental Impact Report (EIR) for the proposed Otay Ranch Village 4 SPA Plan. Please accept and consider these comments on behalf of Golden State Environmental Justice Alliance. Also, Golden State Environmental Justice Alliance formally requests to be added to the public interest list regarding any subsequent environmental documents, public notices, public hearings, and notices of determination for this project. Send all communications to Golden State Environmental Justice Alliance P.O. Box 79222 Corona, CA 92877

C-1

1.0 Summary

As we understand it, the proposed project includes a request for a Specific Planning Area (SPA) Plan and Tentative Map to allow for a 350 unit residential development on 166.02 acres. The

C-2

project will include 73 traditional single-family homes, 160 small-lot single family/duplexes/ townhomes, and 117 multi-family units along with 2.08 acres of Community Purpose Facility (CPF), 20.19 acres of private open space and 97.2 acres of open space preserve.

1.3.2 Discretionary Actions

The following discretionary actions are associated with the proposed project and would be considered by the City:

-Certification of a Final EIR and adoption of a Mitigation Monitoring and Reporting Program pursuant to CEQA

-Approval of amendments to the Otay Ranch General Development Plan

-Approval of the Otay Ranch Village Four Sectional Planning Area Plan

-Approval of the Tentative Map for Otay Ranch Village Four

-Boundary Adjustment

C-2 Cont.

No section of the EIR provides details or any information regarding the proposed amendments to the Otay Ranch GDP. This does not comply with CEQA's requirements for meaningful disclosure, especially since the proposed amendments are referred to throughout the EIR in order to conclude that the project does not conflict with any applicable plans or result in significant impacts, unjustly so without discussion or details regarding the proposed amendments. The EIR must be amended and recirculated to provide information regarding the proposed amendments and analysis of those amendments throughout the EIR.

C-3

4.0 Project Description

4.2 Background

The EIR states that "Village Four was designed to contain a maximum of 350 residential units." The EIR leaves out details from the Otay Ranch GDP, including that Village Four contains a maximum of 350 "single-family residential units." This is misleading to the public and decision-makers, especially as the project proposes 277 units that the EIR refers to as "multi-family" when multi-family residential is not contemplated or permitted in Village Four of the GDP. Further, the EIR does not discuss the target density of Village Four is set as 4.2 units per acre while the project proposes 10.15 units per acre.

C-4

5.1 Land Use

The EIR states that "the land use plan for Village Four…provides a diverse range of housing opportunities. The project adheres to the Otay Ranch GDP specific directives for Villages Four that creates residential neighborhoods that offer a variety of housing styles and densities". The Village Four land use plan only provides for L-M zoning, single-family residential, and a maximum density of 4.2 units per acre while the proposed project includes R-1, R-2, and R-3 designations and an overall target density of 10.15 dwelling units per acre. The EIR must provide explanation and evidence supporting this conclusion because the proposed project conflicts with the applicable approved plans. C-5

Further, the EIR includes *Figure 5.1-1 Existing General Plan Land Use* which shows the project site with a low-medium density designation. The EIR does not state that the project proposes a General Plan amendment to change this designation when it appears that an amendment will be required to develop the site with the proposed R-1, R-2, and R-3 designations and densities. The EIR must be revised to clarify how the existing General Plan land use designation permits the proposed land use designations and densities. C-6

The EIR does not describe the proposed amendments to the Otay Ranch GDP or present a proposed land use map exhibit to reflect the changes. This information and exhibit must be included in a revised EIR. C-7

5.6 Air Quality

The CalEEEMod sheets of the Air Quality Analysis indicate that the project was not accurately analyzed. The land use subtypes entered include single family residential, apartments high rise, and apartments mid rise. The CalEEEMod analysis should have utilized condo/townhouse as the land use subtype for the small lot single family/duplexes/townhomes. This must be revised in both the construction and operational analysis. For example, in the trip analysis portion of the operational analysis, 8 trips/du for apartments and 10 trips/du for single-family were assumed. This underestimated the number of trips per unit because the 160 small lot single-family units should have been analyzed at 10 trips/du as single-family instead of 8 trips/du as apartments. Further, the EIR makes it difficult for the reader to decipher which subtype should be utilized for the attached multi-family units because the EIR does not state how many levels will be built. The EIR must be revised to include this information and analysis. C-8

Section 17.24.040 (C)(8) of the Chula Vista Municipal Code prohibits construction activity between the hours of 10:00 P.M. and 7:00 A.M. Monday through Friday, and between 10:00 P.M. and 8:00 A.M. on Saturday and Sunday. Thus, the legal hours of construction in the City of Chula Vista are 7:00 A.M. - 10:00 P.M., Monday - Friday and 8:00 A.M. - 10:00 P.M. on Saturday and Sunday. MM-N-6 limits construction to between the hours of 7:00 A.M. - 6:00 P.M., Monday - Friday and 8:00 A.M. - 6:00 P.M. on Saturday. The EIR does not provide a "worst-case scenario" analysis of construction equipment emitting pollutants for the legal 11 hours per weekday plus 10 hours on Saturday. It is legal for construction to occur for much longer hours and an additional day (6 days per week total) than modeled in the Air Quality Analysis. The Air Quality modeling must be revised to account for these legally possible longer construction days and increased number of construction days in order to provide a "worst-case scenario" analysis.

C-9

The EIR states in the operational analysis that "the proposed project would not result in an increase in land use intensity", resulting in consistence "at a regional level with the underlying growth forecasts, development, and associated vehicle trips as anticipated in the RAQS" and no cumulatively considerable impacts. Again, the EIR does not present or consider that the project requires amendments to the Otay Ranch GDP to increase the land use designation in Village Four from LM to multi-family zoning. The EIR must be revised to include a finding of significance because the project as proposed increases the land use intensity of the project site.

C-10

5.8 Noise

The noise analysis mentions that the nearest sensitive receptors are Olympian High School and Wolf Canyon Elementary School located approximately 0.5 mile northeast of the project site and existing single-family residences located 0.6 mile north of the site. However, the EIR does not present analysis of the construction or operation noise impacts on these sensitive receptors. The only noise analysis presented includes the future residents of the nearby Village Eight. The EIR must be revised to include analysis of the potential impacts to the *existing* nearest sensitive receptors in order to comply with CEQA requirements for noise analysis.

C-11

5.8.5 Mitigation Measures

MM-N-1 represents deferred mitigation in violation of CEQA (Madera Oversight Coalition, Inc. v. County of Madera (2011) 199 Cal.App.4th 48). The EIR states that "a subsequent acoustical study based on the final map design and *implementation of any measures recommended as a result of the analysis* to the satisfaction of the Development Services Director." The same is true for MM-N-2 which states an "acoustical analysis shall be prepared to the satisfaction of the

C-12

Director of Development Services (or their designee), and *all required noise control measures identified in the acoustical analysis shall be made conditions of building permit issuance.*" Even though they are labeled as mitigation measures in the EIR, these provisions are a statement that the lead agency will decide the mitigation to be adopted after it receives the recommendation of a professional acoustic analysis, improperly deferring the formulation of actual mitigation measures to a future date without involvement from the public or decision-makers.

C-12 Cont.

5.13 Housing and Population

The EIR calculates the project's projected population by defining the R-2 and R-3 development areas as multi-family residential. Throughout the EIR, the R-2 development is referred to as multi-family residential even though in section 4.4.1.1 the types of dwelling units that will be built in the R-2 area are described as "small-lot single family/duplexes/townhomes." The EIR understates the amount of population generated by the R-2 development throughout the EIR, but here especially as the R-2 area is composed of single family development.

The EIR continues by describing the project as compliant with Otay Ranch GDP even though the project description states that an amendment to Otay Ranch GDP is required as part of the proposed project. Village Four of the GDP specifically allows only low-medium density single-family homes while the project proposes R-1, R-2, and R-3 development. The EIR must be revised to include this relevant information for analysis and to include details of the request to amend the Otay Ranch GDP.

C-13

6.0 Cumulative Impacts

Cumulative Projects

The EIR analyzes five cumulative projects that are within the proposed project's "study area". The EIR does not define the study area for the project and the EIR must be revised to include information to define the study area. The five projects provided are only within the immediate vicinity of the Otay Ranch GDP and does not include any projects outside the Otay Ranch GDP. The EIR must be revised to include potential impacts from cumulative projects including, but not limited to:

-Chula Vista PCS 15-005, Lynndale Place Subdivision/MND
-Chula Vista DR 16-0029, Otay Ranch Sectional Planning Area One, 4.5 acre senior care facility
-Chula Vista DR 15-0035/CUP 15-0030, 205 guest room hotel in the Eastlake Business Center

C-14

Further, the EIR must be revised to include each cumulative project considered for analysis pictured on a map for identification in order for public verification of the adequacy of the cumulative impact analysis (CEQA § 15130). C-15

6.4.1 Land Use, Planning, and Zoning

The EIR concludes that because "the cumulative projects would be required to demonstrate compliance with the MSCP Subarea Plan and the RMP as part of project approval" there is no significant impact. The EIR does not provide supporting evidence that the projects do not violate the MSCP Subarea Plan or the RMP. The projects potentially could not comply with the applicable plans and thus have significant impacts in an EIR approved with a statement of overriding consideration. The EIR must be revised to support its claim that each of the cumulative projects complies with these plans in order to meaningfully disclose the potential cumulative impacts. C-16

6.4 Cumulative Impacts Analysis

6.4.1 Land Use, Planning, and Zoning

Again, the EIR states that "the proposed project's amendments to the GDP would ensure no conflicts with an adopted plan, policy, or regulation governing land use" without describing details of the proposed amendments or changes to the GDP. The EIR must be revised to include details on the proposed GDP amendments. C-17

Notice of Availability

Finally, the Notice of Availability published by the lead agency was insufficient. CEQA § 15087 (c)(4) requires that the NOA include a "list of the significant environmental effects anticipated as a result of the project". The NOA only includes the following statement: "The EIR contains the Mitigation Monitoring and Reporting Program (MMRP) *which identifies* ***mitigatable impacts*** *for the following issue areas*: biology; cultural resources; transportation, circulation and access; Air Quality; Hazards and Risk of Upset; Noise; Geology and Soils; Public Facilities and Services." The EIR finds significant impacts in Landform Alterations/Aesthetics, Transportation/ Circulation/Access, Air Quality, and Climate Change (Greenhouse Gases), which is not included in the NOA. The EIR must be recirculated for public review due to the insufficient NOA. C-18

Conclusion

For the foregoing reasons, GSEJA believes the EIR is flawed and an amended EIR must be prepared for the proposed project and recirculated for public review. Golden State Environmental Justice Alliance requests to be added to the public interest list regarding any subsequent environmental documents, public notices, public hearings, and notices of determination for this project. Send all communications to Golden State Environmental Justice Alliance P.O. Box 79222 Corona, CA 92877.

C-19

Sincerely,

Board of Directors
Golden State Environmental Justice Alliance

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Response to Comment Letter C

Golden State Environmental Justice Alliance
Board of Directors
December 5, 2017

C-1 Comment noted. Golden State Environmental Justice Alliance has been added to the notification list of all future actions related to the proposed project.

C-2 The commenter correctly describes the proposed project and its required discretionary actions except with regard to the proposed residential unit breakdown. As shown in Table 1-1 of the Final EIR, the project consists of 73 single-family low- to medium-density residential dwelling units on 15.18 acres, 150 multi-family medium- to high-density residential dwelling units on 12.15 acres, and 127 multi-family high-density residential dwelling units on 7.16 acres, for a total of 350 units.

C-3 The Otay Ranch General Development Plan (Otay Ranch GDP) will be amended to reflect the proposed project analyzed in the Final EIR. Specifically, the description, land use table, and a portion of the policies of Village Four contained in Part II of the Otay Ranch GDP (beginning on page II-86 of the Otay Ranch GDP) will be updated. The land use designation figures contained in the Otay Ranch GDP also will be amended to reflect the proposed project. The proposed revisions to the Otay Ranch GDP will be included in the application package presented to the decision makers.

The Final EIR describes Village Four as currently adopted within the Otay Ranch GDP in Chapter 3, Environmental Setting; Chapter 4, Project Description; Section 5.1, Land Use, Planning, and Zoning; and shows the current Village Four in Figure 5.1-2, Adopted Otay Ranch General Development Plan Land Uses. The Final EIR describes the proposed project, which provides for different land uses compared to the adopted Otay Ranch GDP, in detail in Chapter 4, Project Description, of the Final EIR. Section 4.5, Discretionary Actions/Approvals, of the Final EIR, has been revised to clarify that the GDP amendments will remove the existing description of Village Four and replace it revised text and graphics to reflect the proposed project. The proposed amendments to the Otay Ranch GDP, including a comparison between existing and proposed figures, tables, and text, are included in Appendix L to the Final EIR. These revisions to the Final EIR are presented in ~~strikeout~~/underline format. Those changes are insignificant as the term is used in Section 15088.5(b) of the CEQA Guidelines and the Final EIR need not be recirculated for additional public review.

C-4 Please refer to Response to Comment C-3 regarding the specific Otay Ranch GDP amendments proposed.

The City acknowledges that the currently adopted Otay Ranch GDP specifies a designation for 350 single family residential units. Section 4.2 of the Final EIR has been revised to clarify this background information. The City, however, does not believe that the Final EIR is misleading, as it is clearly indicated that the existing planned use for Village Four within the Otay Ranch GDP is 350 single family residential units elsewhere in the Final EIR (for instance, Section 5.13, Housing and Population). These revisions to the Final EIR are presented in ~~strikeout~~/underline format.

The General Plan Land Use Diagram designates the project site as Low- Medium Residential, as shown on Figure 5.1-1 of the Final EIR. Pursuant to General Plan Section 4.9.2 (General Plan, pages LUT-43 through 48), the density for the Low Medium Residential designation ranges from 3.1 to 6 dwellings per gross acre. The maximum density under this land use designation is therefore 6 units per acre, not 4.2 units per acre as stated in the comment.

Moreover, the General Plan provides that "gross residential density is defined as the area devoted to residential use, including dedicated parks, plus local serving streets, exclusive of arterials having more than four lanes." (General Plan, page LUT-36). Using this definition, the area devoted to residential use within the project site is 58.0 acres, including the residential pad areas (34.5 acres), Community Purpose Facility areas (2.1 acres), private open space (20.2 acres) and internal streets (1.2 acres). The gross residential density for the project per the General Plan definition is 6.0 units per acre (350 units/58.0 acres), not 10.15 units per acre as stated in the comment.

Consistent with General Plan Policy LUT 29.1 (General Plan, page LUT-123) the project is proposing "clustering in response to site constraints" to accomplish "preservation of natural landforms; significant reduction in the amount and extent of grading; response to geologic, soil or other hazards; and protection of sensitive biological resources." The General Plan further provides that "using a cluster development concept, other housing types could be consistent with this designation such as single-family attached units (townhouses, row homes, and patio homes) or smaller lot and zero-lot-line detached single-family dwellings." (General Plan, page LUT-44). General Plan Policy LUT 29.3 (General Plan, page LUT-124) clarifies that "clustering shall not result in the creation of dwelling product types that are substantially out of character with the intended dwelling type for the subject general plan residential classification" and states that "the introduction of some unit types typically applicable to the next highest residential density classification may be allowed provided that the predominant character of the project maintains consistency with the applicable residential classification."

Per General Plan Table 5-4 (General Plan, page LUT-47), the appropriate zoning districts to use to implement the Low Medium Residential designation that applies to the project are R-1, R-2, and PC. The project proposes 80 percent of the gross residential acreage as R-1 zoning (15.18 acres) and R-2 zoning (12.15 acres), which means that the predominant character of the project will be consistent with the Low Medium Residential designation. Pursuant to General Plan Policies LUT 29.1 and LUT 29.3, and because the project includes clustered development, the remaining 20% of the total gross residential acreage (7.16 acres) may use the R-3 zone designation, which the General Plan identifies as an appropriate zone to implement the next highest residential density classification, Medium Residential.

The project is therefore consistent with the General Plan.

C-5 Please refer to Response to Comment C-4.

C-6 Pursuant to the City of Chula Vista General Plan Section 1.4.5 (General Plan, page LUT-8), a Sectional Planning Area (SPA) Plan and a General Development Plan (GDP) "must be adopted as a prerequisite to develop land in Planned Community (PC) Zone". The project is a portion of Village Four and is in a PC Zone. The project applicant, therefore, is processing a SPA Plan and a GDP amendment as required by the General Plan.

Please refer to Response to Comments C-3 and C-4.Since a GDP "is a smaller scale version of a General Plan" pursuant to the GP Section 1.4.4 (General Plan, page LUT-6), a General Plan amendment is not necessary provided the GDP is "in conformance with the General Plan." The project is consistent with the General Pan because the gross residential density is in conformance with the Low-Medium Residential density range; the predominant zoning (R-1 and R-2) used to implement this designation is consistent with the General Plan Table 5-4; and using the General Plan clustering provisions, it introduces product types typically applicable to the next highest residential density classification.

C-7 Please refer to Response to Comment C-3.

C-8 The trip rates and land use types used for the air quality and greenhouse gas (GHG) analysis (Appendix E to the Final EIR) were based on the traffic impact analysis (TIA) included as Appendix D to the Final EIR. As provided in the TIA, the multi-family units would produce 8 trips per dwelling unit and the single-family units

would produce 10 trips per dwelling unit, resulting in a total of 2,950 weekday trips[1]. The CalEEMod default trip rates in the air quality and GHG analysis were updated to reflect the 2,950 weekday trips calculated for the project.

Project details regarding the approximate height or number of floors for the proposed multi-family residential uses are currently unknown. The analysis therefore assumed that a portion of the total multi-family residential units would be medium density and the balance would be high density. The construction and operational emissions are based on CalEEMod default values. Notably, CalEEMod assumes the same energy (electricity and natural gas), water usage, and waste generation rates for both apartment land use types. Trip generation rates, however, assumed in the air quality modeling were informed by the project's TIA. Therefore, additional modeling would not be required because the trip generation rates accurately reflect the project.

C-9 As discussed in Section 5.6, Air Quality, of the Final EIR, the project applicant provided construction activity detail (i.e. phasing, durations, equipment, and vehicle trips) to the best of their knowledge. The project applicant did not indicate that construction activity would occur for more than 8 hours per day, nor did the project applicant indicate construction would take place on Saturdays or Sundays. Therefore, the air quality and GHG modeling assumed that heavy construction equipment would be operating at the site for approximately 8 hours per day, 5 days per week during the duration of project construction.

While Section 17.24.040 (C)(8) of the City of Chula Vista Municipal Code regulates construction activity and heavy equipment operation between the hours of 7:00 AM through 10:00 P.M. on weekdays and 8:00 AM through 10:00 P.M. on weekends, construction within a 15-hour per day period permitted on weekdays and a 14-hour per day permitted on weekends was determined to not be representative of the project. Project construction would not occur for more than 8 hours on any given day, and has been restricted beyond what is allowed per the City's Municipal Code as indicated in the Final EIR, specifically in MM-N-6. While that restricted construction schedule would allow for construction on Saturdays, the results of the air quality modeling do not need to be revised, as that analysis compares maximum daily pollutant emissions to a threshold that is based on daily emissions. Based on these considerations, the

[1] Note: The TIA utilized a proposed unit breakdown of 75 single family units (10 trips per unit) and 275 multi-family units (8 trips per unit) for an estimated total of 2,950 daily trips. The project was later revised prior to public review with a unit breakdown of 73 single family units and 277 multi-family units. Using the same trip generation rates, the revised breakdown would result in an estimated total 2,946 daily trips. Therefore, because the revised unit count would result in fewer trips, the previously estimated 2,950 daily trips was still utilized for a conservative traffic analysis in Section 5.5 and Appendix D of the Final EIR.

project's construction emissions and noise analysis would not need to be re-analyzed for the "worst case scenario" pertaining to the City's noise ordinance as the commenter stated.

C-10 The Otay Ranch GDP allocated 350 residential units to the project site at buildout, with a planned population increase of 1,141 persons. If a project proposes development that is greater than that anticipated in the Otay Ranch GDP and SANDAG's growth projections upon which the RAQS is based, the project would be in conflict with the RAQS and SIP. As previously discussed, the project would not exceed the Otay Ranch GDP growth assumptions and would not exceed the growth assumptions in the RAQS and SIP. The project, which maintains the same overall number of residential units, but includes higher density multi-family development along Main Street to better support future transit use contemplated along Main Street, would result in a buildout population of 958 persons. That total is less than the population at buildout anticipated in the Otay Ranch GDP, and therefore, the project would not conflict with or obstruct implementation of the applicable air quality plan.

C-11 Contrary to the comment, Section 5.8, Noise, and the Noise Assessment Technical Report (included as Appendix G to the Final EIR), do not identify Olympian High School, Wolf Canyon Elementary School, or the existing residences to the north within Village Two as sensitive receptors. They are not identified as such because both of these schools and the existing residences are more than 2,500 feet from the project site. Due to this distance none of these existing land uses would be subjected to noise levels in excess of City standards. The Final EIR correctly identifies future residents of Village Three and Village Eight as the nearest noise sensitive land uses and adequately analyzes construction and operational noise resulting from the proposed project.

C-12 The City does not agree with the commenter's suggestion that mitigation measures MM-N-1 and MM-N-2 constitute deferred mitigation. Both measures include specific requirements of the subsequent acoustical studies, performance standards, and required actions based on the results. Therefore, the Final EIR adequately discloses potential noise impacts and provides enforceable mitigation to reduce potential impacts to a level below significance.

C-13 As stated in Section 4.4.1.1 of the Final EIR, "Three basic residential unit types are anticipated in the Village Four SPA: single-family, small-lot single-family/duplexes/townhomes, and attached multi-family units. One single-family Planning Area (R-1) is provided for traditional single-family home development. Planning Areas R-2a and R-2b are provided for duplexes/townhomes and other

similar products that allow a variety of housing types. The R-3 Planning Area is anticipated to provide traditional multi-family products such as stacked flats and grouped parking." Therefore, the Final EIR correctly identifies Planning Area R-2 as containing typical multi-family residential units and uses this information to accurately estimate the potential population resulting from the project.

Threshold A, in Section 5.13, Housing and Population, of the Final EIR, states that the proposed project would be consistent with the maximum residential unit count and population buildout for Village Four set forth by the General Plan and Otay Ranch GDP. Threshold B, in Section 5.13, Housing and Population, of the Final EIR, explains that the proposed project would be consistent with the City of Chula Vista Housing Element, Guidelines to the Balanced Communities Policy, and the Otay Ranch GDP with the incorporation of an Affordable Housing Program Implementation Plan. The proposed project would therefore be consistent with the applicable objectives and policies included in both the General Plan and Otay Ranch GDP, and impacts would to be less than significant.

Please also refer to Responses to Comments C-3, C-4 and C-6.

C-14 Please refer to Section 6.2 of the Final EIR for the methodology of analyzing cumulative impacts. Table 6-1 describes the different geographic scopes for cumulative impacts analysis by environmental issue area. Therefore, contrary to the commenter's assertion, the Final EIR does define the cumulative study area.

The projects included in Table 6-2 of the Final EIR include the other larger village projects within the Otay Ranch area of the City of Chula Vista as those developments have the greatest potential to combine with the proposed project to result in cumulative impacts. As noted in Section 6.3.1, the list of cumulative projects was used for cumulative analysis for all environmental issues areas other than air quality, greenhouse gas emissions, noise, and transportation/traffic. Air quality, greenhouse gas emissions, noise, and transportation/traffic cumulative impacts were evaluated using the summary of projections method because impacts can only be analyzed on a broad, area-wide scope, and in a cumulative context.

The commenter is correct in noting that the three listed projects provided in the comment are not listed in Table 6-2, Cumulative Projects, of the Final EIR.

The projects included in the comment are:

- A 14-unit single family subdivision located on Lynndale Lane, analyzed in the Mitigated Negative Declaration IS-14-0001.

- A senior care facility located on the CPF-5 site, the last undeveloped parcel in Village Five, analyzed in Final EIR 90-01. This project is located approximately 1.8 miles to the northeast of Village Four.
- A 205-room hotel located at 2424 Fenton Street, analyzed in Final EIR 92-01. This project is located approximately 3.5 miles to the northeast of Village Four.

In response to this comment, these three projects have been added to Table 6-2. Additionally, the cumulative analysis has been revised as necessary to include these additional projects. These revisions to the Final EIR are presented in ~~strikeout~~/underline format. The inclusion of these new cumulative projects do not alter the conclusions of the Final EIR. Therefore, the Final EIR does not require circulation for additional public review pursuance to CEQA Guidelines Section 15088.5(b).

C-15 In response to this comment, Figure 6-1, Cumulative Projects, has been inserted into the Final EIR.

C-16 All cumulative projects, including the proposed project would be required to demonstrate compliance with the MSCP Subarea Plan and the RMP as part of project approval. Chapter 6 of the Final EIR has been revised to clarify this requirement. These revisions to the Final EIR are presented in ~~strikeout~~/underline format. This clarification does not alter the conclusions of the Final EIR. Therefore, the Final EIR does not require circulation for additional public review pursuance to CEQA Guidelines Section 15088.5(b).

C-17 Please refer to Responses to Comment C-3, C-4 and C-6.

C-18 The purpose of a NOA is to provide public notice that a Draft EIR is available for review and comment. (Pub.Res.Code §21092; 14 Cal.Code Regs. §15087(a).) A NOA satisfies the "statutory requirements for public notice . . . if the public agency makes a good faith effort to follow the procedures prescribed by law." (*Newberry Springs Water Association v. County of San Bernardino* (1984) 150 Cal.App.3d 740, 746.) Here, the NOA made more than a good faith effort. It included all of the necessary elements, including the significant effects of the project that could be mitigated below a level of significance, a link to electronically access the Draft EIR, and information on where hard copies were available for review. Due to an oversight, however, the significant and unmitigated effects were not listed in the NOA. This minor clerical error did not prevent the public from providing comments on the Draft EIR. Comment letters were received from five public agencies and interested persons, including GSEJA, who managed to provide comments on air quality – one of the significant and unmitigated impact areas erroneously left off of the NOA.

Moreover, CEQA requires recirculation when "significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification." (14 Cal.Code Regs. §15088.5(a).) Notably, CEQA does not require recirculation for a minor printing omission in the NOA, particularly where the Draft EIR adequately and accurately identifies all of the significant and unmitigated impacts of the project in numerous locations. In this case, the project's significant and unmitigated impacts have been disclosed in Table 1-2 of the Executive Summary, as well as in each section of the Final EIR where a significant and unmitigated impact was identified (Sections 5.2, 5.5, 5.6, 5.12, and Chapter 6).

Given that the NOA substantially complies with CEQA's notice requirements, and given that multiple comments were submitted to the City and responded to in the Final EIR, recirculation is not required. (Pub.Res.Code §21092(b)(2); 14 Cal.Code Regs. §§15087(c), 15088.5(a).)

C-19 The City does not believe that recirculation is required for the reasons stated in the Responses to Comments provided above. The commenter will be included on all public notice regarding future action for the proposed project.

Comment Letter D

State of California – Natural Resources Agency
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South Coast Region
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EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

December 5, 2017

Mr. Jeff Steichen
City of Chula Vista
276 Fourth Avenue
Chula Vista, California 91910

Subject: Notice of Availability of a Draft Environmental Impact Report for the Village Four Sectional Planning Area (SPA) Plan, City of Chula Vista, California (SCH No. 2016041080)

Dear Mr. Steichen:

The California Department of Fish and Wildlife (Department) has reviewed the above-referenced Notice of Availability, dated October 24, 2017, for a draft Environmental Impact Report (DEIR). The Department has identified potential effects of this project on wildlife and sensitive habitats. The project details provided herein are based on the information provided in the DEIR and associated documents including information submitted as part of the Functional Equivalency Analysis for Otay Ranch Village 4 Boundary Adjustment (City of Chula Vista, July 2017). The comments and recommendations provided are based on our knowledge of sensitive and declining vegetation communities in the City of Chula Vista (City) and our participation in regional conservation planning efforts. D-1

The Department is a Trustee Agency and a Responsible Agency pursuant to the California Environmental Quality Act (§§15386 and 15381, respectively; CEQA) and is responsible for ensuring appropriate conservation of the State of California's (State's) biological resources, including rare, threatened, and endangered plant and animal species pursuant to the California Endangered Species Act (Fish and Game Code §2050 *et seq.*) and other sections of the Fish and Game Code. The Department also administers the Natural Community Conservation Planning (NCCP) program (Fish and Game Code 2800, *et seq.*). In November 2003, the Department and the U.S. Fish and Wildlife Service (Service), jointly referred to as the Wildlife Agencies, issued their respective permits for the City's Multiple Species Conservation Program (MSCP) Subarea Plan (SAP). The City's SAP is the mechanism by which the City has committed to assemble a preserve consistent with the goals of the MSCP Subregional Plan.

Otay Valley Quarry, LLC is proposing to develop the approximately 165-acre site identified as Village Four in the Otay Ranch General Development Plan. Development of the site would consist of 73 single-family residential dwelling units and up to 277 multi-family residential dwelling units on approximately 34 acres of the project site, as well as approximately 12 acres for roadways and circulation right-of-way. The project is considered a covered project under the City of Chula Vista SAP. The primary entry point into Village Four is from La Media Road. The project proposes an approximately 2-mile eastern extension of Main Street, which would provide additional access to the project site. Main Street (Rock Mountain Road) and facilities associated with the new sewer alignment that would connect with the Salt Creek Interceptor south of the project site, storm drains, and detention basin are included in the project as Planned and Future Facilities under the Chula D-2

Conserving California's Wildlife Since 1870

Vista SAP. The project also includes a Boundary Line Adjustment (BLA) to realign Main Street, which provides an addition of 1.72 acres to the preserve, for which the Department and the U.S. Fish and Wildlife Service (collectively the Wildlife Agencies) responded with a concurrence letter dated August 2, 2017. Approximately 117.22 acres of the project site would be designated as open space. Approximately 19.73 of those acres would be for fuel modification areas, perimeter slopes and passive recreation, and approximately 97.49 acres would be dedicated to the MSCP Preserve.

D-2 Cont.

We offer the following comments and recommendations to assist the City in avoiding, minimizing, and adequately mitigating project-related impacts to biological resources, and to ensure that the project is consistent with all applicable requirements of the approved SAP.

1. In Section 1.3.2, the DEIR states that one of the discretionary actions is the "Approval of amendments to the Otay Ranch General Development Plan." However, the DEIR does not discuss the specific amendments. Additionally, Section 5.1 discusses Land Use Planning and Zoning, including the General Development Plan, and finds the project consistent, even though an amendment is required. Please include a discussion of the amendments, and how the project proposes to avoid, minimize, and mitigate any of the potential impacts that may arise from the changes to the General Development Plan that were not addressed by the original EIR for the GDP.

D-3

2. The Wildlife Agency NOP response letter dated June 3, 2016 states that the "DEIR should address the proposed increase in density along open space preserve areas and wildlife corridors within Wolf Canyon which may conflict with the Land Use and Transportation Element, General Plan Land Use Policy 77.2 (LUT 77.2), which limits land uses in this area to low/medium density and large lot single family residential." The information provided in the DEIR shows high density development adjacent to the Preserve boundary. The City should address the project's consistency with LUT 77.2 as well as the Otay Ranch Wildlife Corridor Study and related General Development Plan Programmatic EIR, which determined that increased residential density along the urban/preserve interface could be incompatible with adjacent wildlife corridors. The Department is available to discuss measures that may be implemented to address concerns about impacts to the Preserve from high density residential development.

D-4

3. On page 4-12 of the DEIR, the document discusses park uses associated with the project: "In Village Four, park obligation addressed through the provision of two pocket parks overlooking Wolf Canyon, on the north side of Main Street and the payment of the Park In-Lieu fee. The overlooks provide residents and visitors the opportunity to picnic and enjoy the view [of] Wolf Canyon." Main Street is a Planned Facility within the preserve, and is an allowed use with the Preserve. However, "pocket parks" are not an allowed use within the Preserve, and are therefore inconsistent with 6.3.3.1 of the City's SAP. Additionally, the pocket parks were not disclosed as part of the BLA process. Pocket parks, if included in the project, should be located within the development footprint and not encroach on Preserve areas; therefore, the DEIR should be revised to remove the pocket parks from the project description. If the Applicant intends to retain pocket parks that would encroach within the Preserve, the BLA, equivalency findings, and required mitigation would require further discussion, refinement, and approval by the Wildlife Agencies.

D-5

4. There are multiple endangered, threatened, MSCP-covered, and narrow endemic species and their habitats known to occur in and around the project area. Based on maps of the proposed project, we are specifically concerned about impacts to the federally threatened and State endangered Otay tarplant [*Deinandra* (*Hemizonia*) *conjugens*]. The Otay tarplant population in Wolf Canyon, bordering the northern boundary of the project, is considered a major population within the MSCP. In our NOP letter, we stated that a BLA should not result in substantial additional losses to covered species that are not adequately offset. The DEIR addresses Otay tarplant but does not specifically reference the *Otay Tarplant and Maritime Succulent Scrub Compensation and Mitigation Plan (Otay Tarplant Plan)* that was developed for the BLA and approved by the Wildlife Agencies. One factor for the approval of the BLA by the Wildlife Agencies is implementation of this plan.

   The DEIR first mentions the Otay Tarplant Plan on page 5.3-79, but the document does not specifically note the Otay Tarplant Plan by name. Other parts of the DEIR state that it is not yet developed. Although the document indicates the Otay Tarplant Plan is in Appendix B1, it does not appear to be included in the DEIR or Appendices and associated documents. Since it is a condition of the approval of the BLA, we recommend that the Otay Tarplant Plan, as submitted with the approved the BLA, be included in the DEIR appendices and referenced consistently throughout the DEIR when addressing mitigation for Otay tarplant for both the BLA and Planned and Future Facilities. This would apply to discussions about the project mitigation measures and the Mitigation and Monitoring Reporting Program (MMRP). D-6

5. In the discussion of the Otay Tarplant Plan the document states, "The restoration plan would focus on the following goals and objectives:" including to "Establish a stable trail alignment within the degraded road area and restore disturbed maritime succulent scrub habitat in PMA4 Subunit 4-2b." This is an artifact of an earlier version of the restoration plan when the proposed restoration site was off site in the Central City Preserve and is no longer applicable to the proposed project. This should be removed from the document. D-7

6. Section 4.4.1.3 of the DEIR states that 80.29 acres of the on-site open space will be conserved to satisfy mitigation requirements for a separate project, the Otay Quarry reclamation. We understand that habitat impacts from the Village Four project will primarily be mitigated off site; however, we are concerned that the proposed development may interfere with mitigation requirements of the Otay Quarry reclamation project. We are also concerned that the proposed on-site restoration projects to address impacts to Otay tarplant and maritime sage scrub may overlap with Otay Quarry reclamation requirements. The City should clearly demonstrate how these two projects and their respective mitigation requirements can be implemented given the geographic overlap. D-8

7. Table 5.3-16 of the DEIR, which discusses impacts to covered and narrow endemic species, is inconsistent with other information provided in the Biological Technical Report (BTR) provided in Appendix B1. We believe Table 5.3 should be revised to be consistent with Table 5.4 of the BTR. D-9

8. The DEIR and appendices are inconsistent in the account of observations of the white-tailed kite, a California Fully Protected Species for which no direct impacts are permitted. Figure 5.3-9 shows an occurrence of white-tailed kite in the Village Three off-site area adjacent to the access road, and it is also noted in Appendix B as being detected on site. However, Appendix G indicates that it was not verified on site and states that it is "Not expected to nest in the project area. High potential to nest in the riparian forest in the Otay River and Wolf Canyon." Since work in the Village Three off-site area is part of this project and within the riparian forest of Wolf Canyon, there is high potential for nesting within the project footprint. Please address this inconsistency and revise the DEIR and appendices as necessary. Mitigation Measure Bio 9 calls for preconstruction surveys and notes, "If nesting birds are detected, a letter report or mitigation plan, as deemed appropriate by the City, shall be prepared and include proposed measures to be implemented to ensure that disturbance of breeding activities are avoided." If a white-tailed kite is observed nesting on site, please consult with the Department to ensure that all direct and indirect impacts are avoided. D-10

9. Page 5.3-52 of the DEIR states, "Quino checkerspot butterfly was been [sic] recorded on site in the recent survey, but it is known to be present nearby within the Salt Creek Preserve." As written, this section appears to state that the project site is occupied by Quino, which is inconsistent with other sections of the document. Please clarify if this is a typographical error and revise as necessary. The City's SAP in 4.4.3.2 calls for a shrub barrier to prevent the loss of Quino checkerspot butterfly to high traffic areas in the road segment between Rock Mountain Road and Wolf Canyon. Rock Mountain Road has been renamed Main Street in this area, and is being constructed as part of this project. We recommend that the DEIR address the project's consistency with the shrub barrier requirement. D-11

10. Page 5.3-51 of the DEIR indicates that there is a pair of California gnatcatchers near the detention basin. However, it is unclear from the maps provided which occurrence the statement is referencing, as none are shown adjacent to the detention basin in Figure 5.3-9. Please revise by adding the detention basin occurrence to the map and tables discussing impacts, or revise the EIR discussion to clarify. D-12

11. The Wildlife Agency NOP response letter requested an explanation of why water quality needs cannot be met on site for the planned facility. This explanation was not include in the DEIR, so we again request an explanation in the final EIR as to why the detention basin could not be located in the development footprint. D-13

12. The document is inconsistent when identifying the total acres of impacts to jurisdictional waters from the off-site portion of the project. For example, page 5.3-61 states, "Off-site facilities (i.e., outside of the Village Four Development Area boundary) could impact a total of 0.01 acre of non-wetland waters/streambed under ACOE, RWQCB, and CDFW jurisdiction from Planned Facilities within Village Three." However, Table 5.3-12 shows 0.02 acre of impact to unvegetated channel for the Village Three component. It is also inconsistent in the finding on page 5.3-76. Please revise accordingly throughout the document. D-14

13. In reference to wildlife movement, the document states on page 5.3-63, "only a small portion occurs on the slope above Wolf Canyon, and will not preclude wildlife from using Wolf Canyon and the Otay River Valley to the south. Main Street will not impede a major regional linkage, and culverts will not be required within the Preserve." Main Street is a "6 lane prime arterial," bisecting the existing open area, leaving an approximately 500-foot wide corridor between the existing quarry and Main Street, which would further be divided by the detention basin/sewer access road. We believe additional discussion is warranted regarding the determination that wildlife movement will not be impacted. One possible measure to aid wildlife movement would be to install fencing along the southern side of Main Street abutting the preserve to guide wildlife to cross under the future bridge that is proposed for where Main Street traverses Wolf Canyon. The Wildlife Agencies are available to discuss potential measures to minimize impacts to wildlife movement.

D-15

We appreciate the opportunity to comment on the subject DEIR. If you have questions regarding this letter, please contact Elyse Levy of the Department at (858) 467-4237 or Elyse.Levy@wildlife.ca.gov.

Sincerely,

Gail K. Sevrens
Environmental Program Manager
South Coast Region

D-16

ec: Karen Goebel, USFWS
State Clearinghouse

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Response to Comment Letter D

Department of Fish and Wildlife
Gail K. Sevrens, Environmental Program Manager
December 5, 2017

D-1 Comment noted.

D-2 The comment summarizes the proposed project, including the acreages designated as open space, recreational areas, and MSCP Preserve. However, the acreages provided in the comment letter are not correct. Please refer to Table 4-1 of the Final EIR for the correct acreages.

D-3 Please refer to Responses to Comments C-3, C-4 and C-6 regarding the amendments to the Otay Ranch General Development Plan.

D-4 Planning Area R-2b, which is located along the Preserve edge, would have a density of 9.43 dwelling units per acre, which according to the General Plan Land Use and Transportation Element Policy LUT-44, is considered a medium density development. In addition, the Preserve Edge Plan (Appendix B2 to the Final EIR) outlines potential edge effects (noise, lighting, etc.) associated with the proposed project and the corresponding Best Management Practices to reduce those impacts. These Best Management Practices are also included as mitigation measures MM-BIO-16 and MM-BIO-17. Therefore, the project is consistent with General Plan Policy LUT 77.2 and the Otay Ranch Wildlife Corridor Study, and the project will not impact adjacent wildlife corridors within Wolf Canyon.

D-5 The areas previously identified as pocket parks have been redefined as overlooks. All references to pocket parks have been removed from Section 4.4.1.3 of the Final EIR and the project description has been updated accordingly. The project's parkland obligation will be met through the payment of in-lieu fees for land dedication, as stated in Section 4.4.1.3 of the Final EIR.

D-6 Section 5.3 of the Final EIR has been revised to include specific references to the Otay Tarplant and Maritime Succulent Scrub Compensation and Mitigation Plan for the Otay Ranch Village Four Project where appropriate and to delete statements indicating that this plan had not yet been developed. The Otay Tarplant and Maritime Succulent Scrub Compensation and Mitigation Plan is Appendix H to the Biological Resources Technical Report, which is included in Final EIR Appendix B1.

In accordance with CEQA Guidelines section 15088.5(b), recirculation is not required because the new information clarifies, amplifies, or makes insignificant modifications to the Final EIR.

D-7 The referenced text has been removed from Final EIR Section 5.3. Please refer to Response to Comment D-6.

D-8 The comment is correct; there are 1.29 acres of overlap between the project's impact for a section of Main Street associated with Village Four and the Otay Quarry Reclamation Project coastal sage scrub restoration area as shown on Figure 1 included in this response to comment below. The Wildlife Agency Concurrence Letter (dated September 14, 2010) regarding the Otay Quarry MSCP Boundary Adjustment states the following:

> The Boundary Adjustment would involve the restoration to coastal sage scrub… within the Preserve, where mining activities have damaged the habitat… The City's General Plan depicts the future Rock Mountain Road[2] as traversing some of the land to be restored, and restored habitat within the alignment may eventually be eliminated by road construction; however, it is premature to exclude this alignment of the road from the proposed restoration.

Therefore, the 1.29 acres of overlap between the project's impact for a section of Main Street associated with Village Four and the Otay Quarry coastal sage scrub restoration area is an impact that was envisioned to potentially occur by the agencies in 2010. Main Street is an allowable use as a planned facility under the City's MSCP Subeara Plan.

As shown on Figure 8 of the Otay Tarplant and Maritime Succulent Scrub Compensation and Mitigation Plan (Appendix H, of Appendix B1 in the Final EIR), and also provided on Figure 1 below, areas of maritime succulent scrub and Otay tarplant that are proposed for restoration for Village Four are located on the northwestern side of the development within the Otay Ranch RMP Preserve. These areas are located within the portion of the Otay Ranch RMP Preserve that will be conveyed as the mitigation obligation for the Otay Quarry Reclamation Project, but they are not located within the restoration area of that project. There are no restrictions within the SAP or Otay Ranch RMP that state that areas of conveyance cannot later be restored to provide mitigation for impacts caused by another project.

[2] It should be noted that Rock Mountain Road is now Main Street.

Therefore, the project's proposed restoration will not interfere with the conveyance associated with the Otay Quarry Reclamation project.

D-9 The comment states that Table 5.3-16 of the Final EIR is inconsistent with Table 5-4 in the BTR. The commenter is correct and Table 5.3-16 in the Final EIR has been revised to be consistent with Table 5-4 of the BTR.

D-10 White-tailed kite are not expected to nest in the project area due to lack of suitable habitat, and no white-tailed kite were observed during the biological surveys conducted for the project. However, the species was observed foraging within the Village Three off-site area during surveys conducted for the Village Three North, Eight East, and Ten Project. Appendix G of the BTR (Appendix B1 of the Final EIR) has therefore been revised to clearly state that the individuals were observed foraging on portions of the project site (i.e., the Village Three off-site area). As suggested in the comment, MM-BIO-9 has been revised to include the following statement: "Additionally, if a white-tailed kite is observed nesting, CDFW shall be consulted to ensure all direct and indirect impacts are avoided."

In accordance with CEQA Guidelines section 15088.5(b), recirculation is not required because the revisions to the Final EIR clarify, amplify, or make insignificant modifications to the Final EIR.

D-11 The typographical error in Final EIR Section 5.3.4 has been revised to state that Quino checkerspot butterfly has not been observed in recent surveys.

A shrub barrier will be included between Main Street and the Preserve to prevent impacts to Quino checkerspot butterfly, as required in Section 4.4.3.2 of the Chula Vista MSCP Subarea Plan. The shrub barrier separating Main Street from the Preserve is shown on Figure 1 in the Preserve Edge Plan in Appendix B2 of the Final EIR. Compliance with the Preserve Edge Plan is incorporated into mitigation measure MM-BIO-16.

D-12 Section 5.3 of the Final EIR and Section 5.1.4 of the BTR currently state the following: "For the detention basin location, the [coastal California gnatcatcher] pair likely uses the habitat; however, there is a large area of Preserve that is within the territory and, as noted above, avian species are mobile and will use a relatively large expanse of habitat, thus there would be no direct impacts to the pair using habitat within the detention basin. However, the habitat is considered to be occupied."

In accordance the City's standard practice, special-status species within the portions of the Preserve that are not being impacted directly by a proposed project are not

shown on the figures within a project's BTR or EIR. Since this pair was observed within a portion of the Preserve farther south of the proposed basin that would not be impacted by the project, the location was not provided on any of the figures. Nevertheless, the information provided within the EIR acknowledges that habitat for the pair will be impacted and provides measures to ensure that nesting pairs are not impacted by the proposed project (see MM-BIO-9).

D-13 As stated in Table 5.3-18 of the Final EIR, the location of the detention basin, which functions as water quality/hydromodification was determined based on topography, the ability for the basin to function appropriately, and consideration was given to placement within an area previously disturbed by off-road activity. The basin for Village Four is in a location that provides water quality function for all of Village Four, including Main Street. There are no areas outside of the Preserve that are at an elevation or location capable of providing water quality or hydromodification for the westerly 1,800 linear feet of Main Street.

Chapter 6.0 of the City's MSCP Subarea Plan (City of Chula Vista 2003[3]) identifies permitted uses within the Preserve, and a detention basin is an allowable use as long as it adheres to the Facilities Siting Criteria of the MCSP Subarea Plan. The Facilities Siting Criteria ensure that facilities located within the Preserve have been sited within the least environmentally sensitive areas and that impacts to the Preserve have been minimized to the maximum extent practical. Table 5.3-18 of the Final EIR, and included above, summarizes how the detention basin complies with the Facilities Sitting Criteria.

D-14 The correct acreage of impacts to jurisdictional resources has been revised throughout the document. A total of 0.02 acre of impacts to jurisdictional resources would occur within off-site areas with project implementation.

D-15 The portion of Main Street within Village Four is on the slope above Wolf Canyon, adjacent to the proposed development, and would therefore not preclude wildlife movement. The portion of Main Street outside the Village Four boundary spans Wolf Canyon and is not a part of this project. Any proposed crossing of Wolf Canyon will be required to address wildlife movement. However, this area is not within the Village Four boundary and therefore not further discussed in the Final EIR.

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[3] City of Chula Vista. 2003. *City of Chula Vista MSCP Subarea Plan.* February 2003. Accessed December 15, 2011. http://www.chulavistaca.gov/City_Services/Development_Services/Planning_Building/Planning/Enviromental/subAreaPlan.asp.

Consistent with the comment, MM-BIO-17 requires that prior to the issuance of grading permits, the "Applicant shall submit wall and fence plans depicting appropriate barriers to prevent unauthorized access to the Preserve. The wall and fence plans shall illustrate the locations and cross-sections of proposed walls and fences along the Preserve boundary, subject to the approval the City's Development Services Director (or their designee)."

The locations of the wall and fencing proposed to separate the project from the Preserve are shown on Figure 1 in the Preserve Edge Plan, which is included in Appendix B2 of the Final EIR. The wall and fencing included along the southern side of Main Street abutting the Preserve will provide a barrier for wildlife and will aid in guiding wildlife to cross under the proposed Main Street bridge.

D-16 Comment noted.

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Comment Letter E

County of San Diego
DEPARTMENT OF PARKS AND RECREATION
5500 OVERLAND AVENUE, SUITE 410, SAN DIEGO, CA 92123
Administrative Office (858) 694-3030
www.sdparks.org

BRIAN ALBRIGHT
DIRECTOR
(858) 966-1201

December 6, 2017

Jeff Steichen
City of Chula Vista
276 Fourth Avenue
Chula Vista, California

Via E-mail: jsteichen@chulavistaca.gov

COMMENTS ON THE VILLAGE FOUR SECTIONAL PLANNING AREA PLAN – NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL IMPACT REPORT EIR 17-001 (SCH No. 2016041080)

Dear Mr. Steichen:

The County of San Diego, Department of Parks and Recreation (DPR) has reviewed the Notice of Availability (NOA) and Draft Environmental Impact Report (DEIR) for the Sectional Planning Area Plan for Village Four.

The Village Four development proposal is immediately north of the Otay Valley Regional Park (OVRP) and adjacent to the Otay Ranch Preserve.

1. The County partners with the Cities of San Diego and Chula Vista to plan, operate, and maintain OVRP through a Joint Exercise Powers Agreement.
    a. As an OVRP implementing partner DPR appreciates the incorporation of project objective number 8 to "establish multi-use trail linkages to the Chula Vista Greenbelt, consistent with the Greenbelt Master Plan and Otay Valley Regional Park Concept Plan."
        i. DPR understands that these trail linkages from Village 4 to OVRP will occur along the north side of Main Street and will be adjacent to the roadway within the landscape buffer. The trail will be 10' wide to accommodate pedestrians and bicycles. Main Street will connect Village 3 on the west and Village 8 on the each, which will both have trail access to OVRP. Additionally, Village 4 will have a pathway and a neighborhood trail connecting to Village 8.

E-1

E-2

b. DPR also appreciates the discussion and compliance with the OVRP Concept Plan and the OVRP Design Standards and Guidelines within portions of the DEIR.

c. DPR is concerned with potential impacts to regional park facilities within the project area and vicinity.

   i. The Otay Ranch GDP calls for a 70 acre park within the Village Four development area and a second community park facility, however the 70 acre park is not a part of the project as noted in Section 5.11.5 Regulatory Framework. Please address whether the removal of this community park facility would be a significant impact on the OVRP as it is the closest regional park to the proposed project.

   ii. Section 5.1 Land Use Planning and Zoning (page 5.1 – 26) discusses project impacts related to the Otay Valley Regional Park Concept Plan. Please include a discussion on how the project is consistent with the OVRP policies presented in the DEIR including adding the following policy, " Policy: Encourage private development that occurs within or adjacent to OVRP to provide linkages with OVRP trails and, as appropriate, to provide open space, recreational facilities, staging and viewing areas in conjunction with the [OVRP]." The discussion that follows on page 5.1-27 refers to the Otay Ranch POM conveyance requirements, but does not directly discuss how the project would propose multi-use trail connections or linkages to the OVRP trail system.

   iii. Sections 5.11.5 A and C reference Otay Ranch POM conveyance lands as meeting the need for SPA park obligations. Typically lands conveyed into Otay Ranch Preserve are not open to the public or for recreational purposes, as their primary purpose is for habitat restoration. Please clarify what regulation or policy allows for preserve lands to meet active recreation park obligations, or revise text for accuracy.

   iv. How is the project consistent with General Plan Objective PFS 16: "Develop active and passive recreational uses within portions of the Otay Valley Regional Park located within the City of Chula Vista, in accordance with the MSCP," as the discussion in section 5.11.5 D does not clearly explain how this will be achieved. Please confirm if, through the payment of the recreation portion of the PFDIF, these funds would pay for active and passive recreational uses in Active Rec Areas 10 and 11 (PA 20 in Otay Ranch). If so, the contribution to the OVRP should be explicit. The response also notes "impacts would be potentially significant if these PFDIF mechanisms are not enforced." If the mitigation measure is not enforceable the impact should be called out as significant.

   v. Chapter 6.4 Cumulative Impact Analysis, Section 6.4.11 Public Services and Utilities discussion on cumulative impacts to park facilities, please clarify what park facilities will be provided in conjunction with build-out of the proposed development. Cumulative impacts from Village four and other

E-2 Cont.
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nearby developments may contribute to the degradation of resources of the OVRP.

vi. Chapter 7 Growth Inducement (page 7-2) states, "Additionally, the proposed project would contribute open space through conveyance to the Otay Ranch Preserve area, Chula Vista Multiple Species Conservation Program (MSCP) Subarea, and Otay Valley Regional Park." Please clarify what lands within the Otay Valley Regional Park boundary are being conveyed and to which entity. If no lands are being conveyed to any of the OVRP JEPA partners, please remove this statement from the EIR.

vii. Chapter 10 Project Alternatives, consider adding an additional project alternative which would include the development of the park and recreation/CPF facilities as originally outlined in the Otay Ranch GDP for Village Four.

d. It is recommended that the OVRP Citizen's Advisory Committee receive direct notice of the DEIR and be provided the opportunity to review and comment.

2. The County and City of Chula Vista are joint Preserve Owner Managers (POM) for the Otay Ranch Preserve. Any potential impacts to preserve lands conveyed to the POM including off-site infrastructure improvements should be discusses and coordinated with County POM staff, Melanie Tylke, Land Use Environmental Planner III, (858) 966 -1377/ Melanie.tylke@sdcounty.ca.gov.

DPR appreciates the opportunity to participate in the review process for this project. We look forward to receiving future environmental documents related to this project. If you have any questions or need additional information, please contact Melanie Tylke, Land Use Environmental Planner III, at (858) 966-1377 or Melanie.Tylke@sdcounty.ca.gov.

Sincerely,

DEBORAH MOSLEY
Group Program Manager
Resource Management Division

e-mail cc:
Laura Ball, City of San Diego
Michael Walker, City of Chula Vista
Marcus Lubich, County of San Diego

E-7 Cont.

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Response to Comment Letter E

County of San Diego Department of Parks and Recreation
Deborah Mosley, Group Program Manager
December 6, 2017

E-1 Comment noted.

E-2 The comment outlines the County's interest in the Otay Valley Regional Park (OVRP) and accurately summarizes the Village Four trail linkages identified in the Final EIR.

E-3 The Community Park has not been eliminated from Village Four. Village Four has been processed in four portions: this project is one of those portions. Consistent with the Otay Ranch GDP, land uses may be moved between villages with the proper permitting. A 42.29 acre park has already been offered for dedication to the City on Map 15350. In addition, there is a compilation of further acreage adjoining this park to the south, comprising park obligations from Village Three, Village Eight West, Village Eight East and Village Nine which has not yet been formalized into maps, but is intended to provide approximately 70 acres of community park in Village Four.

The proposed project, which is a portion of Village Four, has a direct park requirement of approximately 2.94 acres, which the applicant will satisfy by paying an in-lieu fee.

E-4 This portion of Village Four is not located within or adjacent to the OVRP. However, the project is consistent with the OVRP policy referenced in the comment because the project provides trail linkages into Otay Ranch Village Eight West that connect the project to the OVRP trail system as noted by the commenter in Comment E-2.

The project also provides two viewing areas adjacent to Main Street and overlooking Wolf Canyon. The overlook areas are not calculated in either the project’s preserve conveyance obligation or the park obligation.

E-5 Section 5.11.5 of the Final EIR has been revised to state that POM conveyance lands will not be used to meet active recreation park obligations. Otay Ranch Preserve conveyance land is in addition to, and not instead of, the project’s park obligations. The applicant proposes to pay an in-lieu park fee to meet its obligation for 2.94 acres of park land.

E-6 The project is consistent with General Plan Objective PFS 16 because the applicant will pay approximately $5,025,396 in Parkland Acquisition and Development Fees and $444,150 in Public Facilities Development Impact Fees attributable to Recreation Facilities. The project's potentially significant park impact is adequately mitigated through the payment of PFDIF, which directly contribute to the provision of parks and recreational facilities in the City. The specific expenditure of the PFDIF funds paid by the applicant are beyond the scope of the Final EIR and subject to the discretion of the City.

E-7 No park improvements are proposed with the development of this portion of Village Four. The applicant will pay in lieu fees of approximately $5,025,396 in Parkland Acquisition and Development Fees and $444,150 in Public Facilities Development Impact Fees attributable to Recreation Facilities that will be available to the City for the acquisition of park land and construction of improvements.

E-8 Approximately 97.20 acres of Open Space Preserve (Parcels OS-7, OS-10, OS-11, and OS-12) are available within the project area to convey to the Preserve. However, 80.29 acres of that total are obligated as conveyance land to satisfy the Otay Valley Quarry Reclamation Plan requirements. Therefore, only 16.91 acres within the project area are available for on-site conveyance into the MSCP Preserve with the development of this portion of Village Four. The project's remaining conveyance obligation (approximately 51.99 acres) will be satisfied by the conveyance of acreage within Village 14 with recordation of the Final Map(s). It should be noted that the area of land within Village 14 which will be conveyed is under the same ownership as Village Four.

E-9 No additional project alternate is required because the park and recreation facilities identified in the GDP will be provided at a site to be determined by the City of Chula Vista, the project's park and recreation obligation will be mitigated below a level of significance with the payment of in lieu fees, and the Community Purpose Facility requirement of the GDP will be provided on-site.

E-10 Comment noted. The City will provide notice of future actions related to the proposed project to the OVRP Citizen’s Advisory Committee.

E-11 Comment noted.

E-12 Comment noted.

Comment Letter F

The City of SAN DIEGO **Park and Recreation Department**

Via email and US Mail

December 6, 2017

Jeff Steichen
Associate Planner
City of Chula Vista
276 Fourth Avenue
Chula Vista, CA 91910

SUBJECT: OTAY RANCH VILLAGE 4 SPA PLAN DRAFT ENVIRONMENTAL IMPACT REPORT EIR 17-001 (SCH No. 2016041080)

Dear Mr. Steichen:

The City of San Diego Park and Recreation Department Open Space Division has reviewed DEIR for the OTAY RANCH VILLAGE 4 SPA PLAN and has the following comments:

1. As a partner in the Otay Valley Regional Park Joint Exercise of Powers Agreement with the County of San Diego and the City of Chula Vista, the City of San Diego approves of project objective number 8 to "Establish multi-use trail linkages to the Chula Vista Greenbelt, consistent with the Greenbelt Master Plan and Otay Valley Regional Park Concept Plan" and the discussion and compliance with the OVRP Concept Plan and OVRP Design Standards and Guidelines within the DEIR. F-2
2. Section 4.4.1.3 Open Space – Other Open Space references a future access road to Otay Valley Regional Park. Does this access road have the potential to be a future trail connection to the development? If so, who would maintain it? If not, how would public use of the access road be addressed or prevented? F-3
3. Address whether the removal of Community Park from Village 4 would be a significant impact on the OVRP. (Section 5.11.5 Regulatory Framework omits the 70 acre park in Village Four, however mentions it in Section 5.1.1.1 under Parks and Recreation Master Plan.) F-4
4. Section 5.1 Land Use, Planning, and Zoning page 26 Otay Valley Regional Park Concept Plan impacts discussion, please explain how the project is consistent with the OVRP policies presented including the following policy "Policy: Encourage private development that occurs within or adjacent to OVRP to provide linkages with OVRP trails and, as appropriate, to provide open space, recreational facilities, staging and viewing areas in conjunction with the Park." The discussion that follows on page 5.1-27 refers to the Otay Ranch POM Conveyance requirements, but does not directly discuss how the project would propose multi-use trail connections or linkages to the OVRP Trails. F-5
5. Address whether Otay Ranch Preserve conveyance lands meet the need for park obligations. Typically lands conveyed into Otay Ranch Preserve are not open to the public or for recreation, with the primary purpose being habitat preservation. Please refer to Sections 5.11 A and C. F-6
6. Address how the project is consistent with General Plan Objective PFS 16: "Develop active and passive recreational uses within portions of the Otay Valley Regional Park F-7

Open Space Division
202 C Street, MS 5D
San Diego, CA 92101

located within the City of Chula Vista, in accordance with the MSCP." Please confirm if, through the payment of the recreation portion of the PFDIF, these funds would pay for active and passive recreational uses in Active Rec Areas 10 and 11 (PA 20 in Otay Ranch). If so, the contribution to the OVRP should be explicit. The response also notes "impacts would be potentially significant if these PFDIF mechanisms are not enforced." If the mitigation measure is not enforceable the impact should be called out as significant.

7. In the Chapter 6.4 Cumulative Impact Analysis, Section 6.4.11 Public Services and Utilities discussion on cumulative impacts to park facilities, please clarify what park facilities will be provided in conjunction with build out of the proposed development. Cumulative impacts from Village 4 and other nearby developments may contribute to the degradation of the resources of the OVRP.
8. Chapter 7 Growth Inducement (page 7-2) states, "Additionally, the proposed project would contribute open space through conveyance to the Otay Ranch Preserve area, Chula Vista Multiple Species Conservation Program (MSCP) Subarea, and Otay Valley Regional Park." Please clarify what lands within Otay Valley Regional Park are being conveyed and to which entity. If no lands are being conveyed to any of the JEPA partners (City of Chula Vista, County of San Diego and City of San Diego), please remove this statement from the EIR.
9. Chapter 10 Project Alternatives. Consider a adding an additional project alternative which would include the development of park and recreation/CPF facilities as originally outlined in the Otay Ranch GDP for Village Four.

Additionally, it is recommended that the OVRP Citizen's Advisory Committee receive direct notice of the DEIR and be provided the opportunity to review and comment.

Please let me know if you have any question regarding these comments.

Sincerely,

Laura Ball

Laura Ball

cc: Michael Walker, Chula Vista
Melanie Tylke, County of San Diego

F-7 Cont.

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Response to Comment Letter F

The City of San Diego Park and Recreation Department
Laura Ball
December 6, 2017

F-1 Comment noted.

F-2 Comment noted.

F-3 As shown on Figures 4-3, 4-14, and 4-16 in the Final EIR, a utility/access easement road would be located within Wolf Canyon and connect the project's sewer lines to the existing Salt Creek Sewer Interceptor. This road would also serve as emergency access and would be improved to allow for emergency vehicles. This road has not been planned to serve as a future trail connection. Public use of the access road is not intended, and signage at both the north and south ends of the road would indicated that public access is prohibited.

F-4 Please refer to Response to Comment E-3.

F-5 Please refer to Response to Comment E-4.

F-6 Please refer to Response to Comment E-5.

F-7 Please refer to Response to Comment E-6.

F-8 Please refer to Response to Comment E-7.

F-9 Please refer to Response to Comment E-8.

F-10 Please refer to Response to Comment E-9.

F-11 Please refer to Response to Comment E-10.

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Comment Letter G

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 11
4050 TAYLOR STREET, MS-240
SAN DIEGO, CA 92110
PHONE (619) 688-3193
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www.dot.ca.gov

Making Conservation a California Way of Life.

January 2, 2018

11-SD -125, PM 1.45
11-SD -805, PM 4.42
Otay Ranch Village Four Sectional Planning Area Plan
Draft EIR / SCH#2016041080

Mr. Jeff Steichen, Project Manager
Development Planning Division
City of Chula Vista
276 Fourth Avenue
Chula Vista, CA 91910

Dear Mr. Steichen:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Draft Environmental Impact Report (DEIR) for the Otay Ranch Village Four Sectional Planning Area Plan located near State Route 125 (SR-125) and Interstate (I) 805. The mission of Caltrans is to provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability. The Local Development-Intergovernmental Review (LD-IGR) Program reviews land use projects and plans to ensure consistency with our mission and state planning priorities. G-1

Caltrans has the following comments:

Traffic Impact Analysis (TIA)

SR-125 Corridor

1. When comparing the SR-125 southbound ramps at Birch Road in Table 4.1 and Table 5.1b, the existing plus project delay decreases or remains the same when compared to the existing. Explain and/or justify why the delay would remain unchanged and decrease. G-2
2. Figure 3-3B shows the 2030 trip distributions for SR-125 all using the anticipated SR-125 and Main Street Interchange. However, the total distribution for SR-125 is less when compared to the Figure 3-2a 2020 total trip distribution at SR-125 and Birch Road. Please explain and/or justify why the total distribution will be less on SR-125 in 2030. G-3
3. The following intersections and segments are considered to be significantly impacted from the project: G-4
   - In Table 10.4 the Level of Service (LOS) "D" and 2,126 pc/ln/hr for SR-125 South of Main Street is not acceptable per Caltrans standards. Per Caltrans Standards, the 2,126 pc/ln/hr is LOS "E" and the V/C is also 0.01 away from LOS "E."

- In Table 7.1 the LOS "D" for the SR-125 Southbound (SB) Ramps & Birch Road is not an acceptable LOS per Caltrans standards.

4. Please provide fair share calculations for impacts to Caltrans facilities. If additional traffic volumes are added to LOS "D" facilities, it is considered an impact per Comment #3 above. Fair share calculations are to reflect impacts per Comment #3 above. The Otay Ranch Village Four development needs to contribute the fair share toward mitigation for the impacts in Comment #3 above.
5. Currently, there are no funding mechanisms or environmental approvals for the interchange at SR-125 and Main Street. Please provide a traffic analysis for a scenario where this interchange is not built.

I-805 Corridor

6. Page 8, 2.0 Study Methodology, Signalized Intersection Analysis: All the intersections within Caltrans Right-of-Way (R/W) must be analyzed using the 2010 Highway Capacity Manual.
7. Page 12, Analysis of Caltrans: There is a contradiction from what is stated in this section. This section states that this Traffic Impact Analysis (TIA) used the 2010 Highway Capacity Manual, when this TIA uses the 2000 Highway Capacity Manual. Please explain.
8. Page 13, Description of Significant Impacts: This TIA does not refer to or use the Caltrans "Guide for Preparation of Traffic Impact Studies." The "Caltrans Guide for the Preparation of Traffic Impact Studies" states, "Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" on State highway facilities." The guide also states, "If an existing State highway facility is operating at less than the appropriate target LOS, the existing measures of effectiveness should be maintained." Appendix C, Page 3 of the guide also clearly shows the transition line above LOS "D." According to these Caltrans standards LOS "D" is not an acceptable LOS, and any volume added to facility currently operating at LOS "D" is considered a significant impact. This TIA must use the Caltrans developed guidelines.
9. Page 27, 5.0 Existing Plus Project Conditions: This project does contribute to the overall degradation in traffic flow at both southbound and northbound I-805 ramps at Olympic Parkway, which contradicts with the findings in this section. The data included in this TIA clearly shows an increase delay in the PM Peak at the intersection of Olympic Parkway and I-805 SB Ramps and in the AM Peak at the intersection of Olympic Parkway and I-805 Northbound (NB) Ramps.
10. Page 29, Table 5.1, Existing Plus Project Conditions Intersection Level of Service: Intersection 1, I-805 SB Ramps and Olympic Parkway clearly shows an increase in delay from an existing 62.7 to existing plus project delay of 64.7 for the PM Peak. Intersection 2, 805 NB Ramps and Olympic Parkway also shows an increase in delay from an existing 65.0 to an existing plus project delay of 71.2 in the AM Peak. Therefore this is a direct impact and mitigations and operational improvements are needed through a fair share contribution.

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11. Page 38, Table 7.1, Mid-Term (2020) Conditions Intersection Level of Service, Intersections 1 and 2: clearly indicate a progressive worsening in the time delay. This would require fair share contributions for future projects to mitigate for these impacts. G-12
12. Page 39, Table 7.1, Mid-Term (2020) Conditions Intersection Level of Service: Intersections 11, I-805 SB Ramps and Main Street clearly show an increase in delay from an existing 22.3 to a mid-term (2020) plus project delay of 52.6 in the PM Peak. Therefore, this is considered an impact to our facility and mitigations and operational improvements are needed through a fair share contribution. G-13
13. Page 39, Table 7.1, Mid-Term (2020) Conditions Intersection Level of Service: Intersections 12, I-805 NB Ramps and Main Street clearly show an increase in delay from an existing 26.5 to a mid-term (2020) plus project delay of 38.7 in the PM Peak. Therefore, this is considered an impact to our facility and mitigations operational improvements are needed through a fair share contribution. G-14
14. Page 47, Table 8.1, Long-Term (2030) Conditions Intersection Level of Service, Intersections 1 and 2: Clearly indicates a progressive worsening in the time delay. This would require fair share contributions for future projects to mitigate for these impacts. G-15
15. Page 47, Table 8.1, Long-Term (2030) Conditions Intersection Level of Service, Intersections 11 and 12: Clearly indicates a progressive worsening in the time delay. This would require provide fair share contributions for future projects to mitigate for these impacts. G-16
16. Page 59, Table 10.3, Mid-Term (2020) Freeway Segment Analysis, I-805, Olympic Parkway to Main Street: Shows a change of the V/C rate from and existing 0.39 to 0.87, which indicates a significant impact to our freeway facility that must be mitigated with a fair share contribution on a future project. G-17
17. Page 59, Table 10.3, Mid-Term (2020) Freeway Segment Analysis, I-805, South of Main Street: Shows a change of the V/C rate from and existing 0.44 to 0.85, which indicates a significant impact to our freeway facility that must be mitigated with a fair share contribution on a future project. G-18
18. Page 60, Table 10.4, Long-Term (2030) Freeway Segment Analysis, I-805, North of Olympic Parkway: Shows a V/C rate 1.12 and LOS "F", which indicates a significant impact to our freeway facility that must be mitigated with a fair share contribution on a future project. G-19
19. Page 60, Table 10.4, Long-Term (2030) Freeway Segment Analysis, I-805, Olympic Parkway to Main Street: Shows a V/C rate 1.12 and LOS "F", which indicates a significant impact to our freeway facility that must be mitigated with a fair share contribution on a future project. G-20
20. Page 60, Table 10.4, Long-Term (2030) Freeway Segment Analysis, I-805, South of Main Street: Shows a V/C rate 1.11 and LOS "F", which indicates a significant impact to our freeway facility that must be mitigated with a fair share contribution on a future project. G-21

Mitigation

Caltrans endeavors that any direct and cumulative impacts to the State Highway System be eliminated or reduced to a level of insignificance pursuant to the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) standards.

G-22

Caltrans recommends consideration of "fair share" funds towards future improvements associated with the I-805 improvements. Since Project's direct and cumulative impacts are considered signification, feasible mitigation measures to State facilities should be identified in the TIA. Impacts that are significant and unavoidable need to have an alternative mitigation identified in the DEIR TIA. Recommended feasible mitigation measures include "fair share" contribution towards, but not limited to, the following projects:

- Intersection 1: The widening and construction of two exclusive right turn only lanes on the I-805 SB Ramp to Westbound (WB) Olympic Parkway and maintaining the two exclusive left turn lanes to Eastbound (EB) Olympic Parkway.
- Intersection 1: The extension of the two left turn storage lanes for the WB Olympic Parkway to I-805 SB On-Ramp.
- Intersection 2: The extension of the two left turn storage lanes for the EB Olympic Parkway to I-805 NB On-Ramp.
- Intersection 2: The widening and construction of two exclusive right turn only lanes on the I-805 NB Exit Ramp to EB Olympic Parkway and maintaining the two exclusive left turn lanes to WB Olympic Parkway.
- Intersection 2: The widening of WB Olympic Parkway to provide two exclusive right turn only lanes on to the I-805 NB On-Ramp and maintaining two exclusive WB through lanes.
- Intestate 805: The widening of the freeway to provide inside HOV lanes and outside auxiliary lanes on I-805 between Main Street and Olympic Parkway for both the northbound and southbound directions.

G-23

Mitigation identified in the traffic study, subsequent environmental documents, and mitigation monitoring reports, should be coordinated with Caltrans to identify and implement the appropriate mitigation. This includes the actual implementation and collection of any "fair share" monies, as well as the appropriate timing of the mitigation. Mitgation improvements should be compatible with Caltrans concepts.

Right-of-Way (R/W)

Any work performed within Caltrans R/W will require discretionary review and approval by Caltrans and an encroachment permit will be required for any work within the Caltrans R/W prior to construction. As part of the encroachment permit process, the applicant must provide an approved final environmental document including the CEQA determination addressing any environmental impacts within the Caltrans's R/W, and any corresponding technical studies.

If you have any questions, please contact Mark McCumsey, of the Caltrans Development Review Branch, at (619) 688-6802 or by e-mail sent to Mark.McCumsey@dot.ca.gov.

G-24

Sincerely,

KERI ROBINSON, Acting Branch Chief
Local Development and Intergovernmental Review Branch

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Response to Comment Letter G

Department of Transportation
Keri Robinson
January 2, 2018

G-1 Comment noted.

G-2 As discussed in the TIA (on Page 8 of Appendix D to the Final EIR), the signalized intersection analysis conforms to the operational analysis methodology outlined in Chapter 16 of the *2000 Highway Capacity Manual (HCM 2000), Transportation Research Board Special Report 209*. The PM peak period delay decreases by one (1) second between Existing and Existing Plus Project because the overall intersection delay is based on a weighted average delay for each turning movement at the intersection. Therefore, weighted averages will be reduced when traffic is added to a movement with higher volume and lower delay, such as through movements on the major roadways. The analysis results reported in Table 4.1 and Table 5.1b of the TIA (Appendix D to the Final EIR) and Section 5.5 of the Final EIR are accurate.

G-3 The trip distribution shown in Figure 3-3B reflects the roadway network under Year 2030 conditions. As discussed in Section 5.5 of the Final EIR, the TIA uses the SANDAG Series 11 "Southbay 2" traffic forecast model with the most current relevant information available from the City of Chula Vista in order to determine the distribution of project trips through the study area at General Plan buildout. The general distribution patterns were used to develop trip distribution patterns for existing plus project and future year 2020 conditions, when many of the planned future roadways do not exist. In contrast, the 2030 trip distribution reflects the construction of several roadways in the study area, such as Heritage Road, Main Street, and Otay Valley Road. Therefore, Figure 3-3B is accurate and does not need to be revised.

G-4 The freeway operations analysis is consistent with the *Traffic Impact Study Guidelines* prepared by SANTEC/ITE for the San Diego region, which is the technical approach that is used and adopted by the City of Chula Vista. These guidelines state that a significant impact along a freeway segment is forecast to occur if one of the following two conditions exist:

1. If the level of service with Project is LOS E, then a change in the volume / capacity (V/C) ratio of greater than 0.01 (1%) occurs; or

2. If the level of service with Project is LOS F, then a change in the V/C ratio of greater than 0.005 (0.5%) occurs.

The City has relied upon these thresholds for each of the previously approved Villages at Otay Ranch, and Caltrans has never before questioned the applicability of those thresholds. In addition, Caltrans did not request that new thresholds be applied in response to the project's NOP.

As shown in Table 10.4 of the TIA (Appendix D to the Final EIR, and in Table 5.5-10 of the Final EIR), SR-125 south of Main Street operates at LOS D and the project's contribution to the total traffic volume is 0.3%, which does not constitute a significant impact.

For intersections, the SANTEC/ITE guidelines state that a direct project impact occurs if both of the following two conditions are met:

a. Level of Service is LOS E or LOS F; and

b. Project Trips comprise 5% or more of entering volume.

If only "a" is met, then the project results in a cumulative impact.

Similar to the significance thresholds for freeway facilities discussed above, the City has relied upon these thresholds for each of the previously approved Villages at Otay Ranch, and Caltrans has never before questioned the applicability of those thresholds. In addition, Caltrans did not request that new thresholds be applied in response to the project's NOP.

As shown in Table 7.1 of the TIA (Appendix D to the Final EIR, and referenced in Section 5.5 of the Final EIR), the SR-125 southbound ramps & Birch Road intersection operates at LOS D and the percent of project trips is less than 4.5%, which does not constitute a significant impact.

G-5 Please refer to Response to Comment G-4 for an explanation of the significance thresholds used in the Final EIR.

The Otay Ranch Village Four project will contribute fair share mitigation payments towards the City of Chula Vista's Transportation Development Impact Fee (TDIF) program to mitigate project impacts at City owned intersections. The City has no mechanism to collect funds from private developments for improvements in another jurisdiction. As stated in the TIA prepared for the project (included as Appendix D of the Final EIR), "the impacts identified on the I-805 ramps cannot be mitigated

through payment of Transportation Development Impact Fees (TDIF) because they are Caltrans owned facilities. At the time this report was prepared, no feasible mitigation measures or fee programs were in place to mitigate the identified cumulative impacts at the I-805/Olympic Parkway ramps or through the interchange. Therefore, these impacts are forecast to be significant and unavoidable."

The City recognizes that Caltrans has expressed the need for a funding mechanism to implement improvements on the state highway system. However, a commitment to pay fees is not adequate mitigation if there is no evidence that the mitigation will actually result. (*Gray v County of Madera* (2008) 167 Cal.App.4th 1099, 1122.) Caltrans has not identified any fee programs into which mitigation payments may be made, and the City is unaware of any programs. Mitigation fees require the preparation of a nexus study to clearly demonstrate the relationship between project impacts, mitigation measures and required funding contributions (CEQA Guidelines § 15130(a)(3)). The nexus study should provide a holistic analysis of anticipated regional development and its contribution to regional traffic impacts to develop a fee program and provide a legal mechanism for the consistent payment of mitigation fees. Thus, the City cannot impose a fair share mitigation fee to fund an extra-territorial improvement that is not within the City's control and that is not included in an established mitigation program identifying specific improvements to be undertaken and plans for their funding (Kostka and Zischke, *Practice Under the California Environmental Quality Act*, 2d Ed., § 14.19, *citing*, *Tracy First v. City of Tracy* (2009) 177 Cal.App.4th 912, 938.).

Further, Caltrans' comment addresses motor vehicle impacts. Pursuant to the *Local Development Intergovernmental Review Project Interim Guidance Implementing Caltrans Strategic Management Plan 2014-2020 Consistent with SB 743* (Interim Guidance), issued by Caltrans on November 9, 2016, Caltrans should provide comments on CEQA documents that focus on reducing vehicle miles traveled (VMT) and improving pedestrian, bike, and transit service rather than providing comments that primarily accommodate motor vehicle travel. The Interim Guidance directs Caltrans to focus on travel efficiency and issues related to VMT impacts on the State Highway System, not on vehicle delay or road capacity impacts. Caltrans' comment does not comply with the Interim Guidance as it addresses traffic congestion and significant traffic impacts. Rather than providing comments that seek fair share impact to an unknown fee program, Caltrans should instead be supporting the project as it is consistent with the Otay Ranch General Development Plan, which was adopted in 1993, to create a complete and balanced community clustered into villages with conveniently located housing, shops, work places, schools, parks, civic facilities, and open spaces. The project is part of this master planned community with

pedestrian pathways, bicycle facilities, and transit access provided throughout the development to promote multi-modal travel and reduce VMT, consistent with the Interim Guidance.

G-6 The extension of Main Street to SR-125 is assumed in place under future Year 2030 conditions. As stated in the Section 5.5 of the Final EIR, the analysis of 2030 considers buildout of the City of Chula Vista General Plan Circulation Element. Future planned roadways are considered to be built by Year 2030 including the construction of the SR-125 Ramps at Main Street. To address the commenter's concern that planned projects maynot be constructed, Section 5.5 of the Final EIR states the following:

If the first final map is submitted for approval prior to the construction of identified improvements by others and open to traffic, then one of the following steps shall be taken, each to the satisfaction of the City Engineer:

A. Development of Village 4 South shall stop until those assumed future roadways are constructed by others as presently planned; or

B. City and the applicant shall meet to determine the need for the incomplete roadway segments. Because of a number of factors, including changes to the tolling structure at SR-125, may affect future traffic patterns in Otay Ranch, additional traffic analysis of the roadway network and level of service assessment may be necessary at that time to determine: (i) if such improvements are in fact necessary; and (ii) the scope and timing of additional circulation improvements, if any; or

C. Applicant shall construct the missing roadway links and receive a transportation development impact fee credit for those improvements as applicable; or

D. An alternative measure is selected by the City in accordance with the City of Chula Vista Growth Management Ordinance.

G-7 As discussed in the TIA (Appendix D to the Final EIR), the signalized intersection analysis conforms to the operational analysis methodology outlined in Chapter 16 of the *2000 Highway Capacity Manual (HCM 2000), Transportation Research Board Special Report 209*. HCM 2000 was used in the intersection operations analysis because when the analysis was conducted, HCM 2010 had not yet been adopted by the City of Chula Vista and/or SANTEC for the use in intersection analyses.

G-8 HCM 2000 was used for the intersection operations analysis and HCM 2010 was used for the freeway mainline analysis, per the City of Chula Vista's Impact Study Guidelines.

G-9 Please refer to Responses to Comment G-4 and G-5.

G-10 Please refer to Responses to Comment G-4 and G-5.

While the overall intersection delay increases at the southbound and northbound I-805 ramps at Olympic Parkway with the addition of project traffic, the total project traffic added to the intersection is less than 5% under Existing Plus Project Conditions (Table 5.1 of the TIA in Appendix D to the Final EIR, and referenced Section 5.5 of the Final EIR). Therefore, according to the significance criteria used in the EIR, this is not a direct project impact.

In contrast, and as stated on Page 27 of the TIA (Appendix D to the Final EIR and Section 5.5 of the Final EIR), the southbound I-805 ramps at Olympic Parkway would operate at LOS E during the p.m. peak hour and the northbound I-805 ramps at Olympic Parkway would operate at LOS E during the a.m. peak hour. Therefore, as shown in Table 5.1 of the TIA (Appendix D to the Final EIR, and Section 5.5 of the Final EIR), a cumulative impact was identified at these locations.

G-11 Please refer to Responses to Comment G-4 regarding the significance criteria used in this Final EIR and G-5 regarding the requested fair share contribution.

While the overall intersection delay increases at the I-805 southbound and northbound ramps and Olympic Parkway with the addition of project traffic, the total project traffic added to the intersection is less than 5% under Existing Plus Project Conditions (Table 5.1 of the TIA in Appendix D to the Final EIR and Section 5.5 of the Final EIR). Therefore, according to the significance criteria used in the EIR, this is not a direct project impact. As noted in Table 5.1 of the TIA (Appendix D to the Final EIR and Section 5.5 of the Final EIR), however, a cumulative impact was identified at these locations due to LOS E operations during the a.m. or p.m. peak hour (the southbound I-805 ramps at Olympic Parkway would operate at LOS E during the p.m. peak hour and the northbound I-805 ramps at Olympic Parkway would operate at LOS E during the a.m. peak hour).

G-12 Please refer to Responses to Comment G-4 regarding the significance criteria used in this Final EIR and G-5 regarding the requested fair share contribution.

While the delay increases with the addition of project traffic at Intersections 1 and 2 under Mid-Term Conditions, the total project traffic added to the intersection is less than 5% (Table 7.1 of the TIA in Appendix D to the Final EIR, and Section 5.5 of the Final EIR). Therefore, according to the significance criteria used in the EIR, this is not a direct project impact. As noted in Table 7.1 of the TIA (Appendix D of the Final EIR and Section 5.5 of the Final EIR), however, a cumulative impact was identified at these locations due to LOS F operations during both peak hours.

G-13 Please refer to Responses to Comment G-4 regarding the significance criteria used in this EIR and G-5 regarding the requested fair share contribution.

While the delay increases with the addition of project traffic at Intersection 11 in the mid-Term Conditions, the total project traffic added to the intersection is less than 1% and the intersection operates at LOS D or better during the a.m. and p.m. peak hours as shown in Table 7.1 of the TIA (Appendix D to the Final EIR). Therefore, according to the significance criteria used in the EIR, this is not a significant project impact and is also not a cumulative impact.

G-14 Please refer to Responses to Comment G-4 regarding the significance criteria used in this EIR and G-5 regarding the requested fair share contribution.

While the delay increases with the addition of project traffic at Intersection 12 in the Mid-Term Conditions, the total project traffic added to the intersection is less than 1% and the intersection operates at LOS D or better during the a.m. and p.m. peak hours as shown in Table 7.1 of the TIA (Appendix D to the Final EIR), according to the significance criteria used in the EIR, this is not a significant project impact and is also not a cumulative impact.

G-15 Please refer to Responses to Comment G-4 regarding the significance criteria used in this EIR and G-5 regarding the requested fair share contribution.

While the delay increases with the addition of project traffic at Intersections 1 and 2 under Long-Term Conditions, the total project traffic added to the intersection is less than 5% (Table 8.1 of the TIA in Appendix D to the Final EIR). Therefore, according to the significance criteria used in the EIR, this is not a direct project impact. As noted in Table 8.1 of the TIA (Appendix D to the Final EIR), however, a cumulative impact was identified at these locations due to LOS F operations at Intersection 1 during the p.m. peak hour and LOS E operations at Intersection 2 during the a.m. peak hour.

G-16 Please refer to Responses to Comment G-4 regarding the significance criteria used in this EIR and G-5 regarding the requested fair share contribution.

While the delay increases with the addition of project traffic at Intersections 11 and 12 under Long-Term Conditions, the total project traffic added to the intersection is less than 5% as shown in Table 8.1 of the TIA (Appendix D to the Final EIR) and the intersections operate at LOS D or better during the peak hours. Therefore, according to the significance criteria used in the EIR, this is not a significant project impact and is also not a cumulative impact.

G-17 Please refer to Responses to Comment G-4 regarding the significance criteria used in this EIR and G-5 regarding the requested fair share contribution.

Table 10.3 of the TIA (Appendix D to the Final EIR) and Table 5.5-9 of the Final EIR report a V/C of 0.87 resulting in LOS D operations in Mid-Term (2020) conditions on the I-805 from Olympic Parkway to Main Street. In addition, Table 10.3 of the TIA and Table 5.5-9 of the Final EIR show the project's contribution of project trips of 0.12%. Therefore, according to the significance criteria used in the EIR, this is not a significant project impact and is also not a cumulative impact.

G-18 Please refer to Responses to Comment G-4 regarding the significance criteria used in this EIR and G-5 regarding the requested fair share contribution.

Table 10.3 of the TIA (Appendix D to the Final EIR) and Table 5.5-9 of the Final EIR report a V/C of 0.85 resulting in LOS D operations in Mid-Term (2020) conditions on the I-805 south of Main Street. In addition, Table 10.3 of the TIA and Table 5.5-9 of the Final EIR show the project's contribution of project trips of 0.13%. Therefore, according to the significance criteria used in the Final EIR, this is not a significant project impact and is also not a cumulative impact.

G-19 Please refer to Responses to Comment G-4 regarding the significance criteria used in this EIR and G-5 regarding the requested fair share contribution.

Table 10.4 of the TIA (Appendix D to the Final EIR) and Table 5.5-10 of the Final EIR report a V/C of 1.12 resulting in LOS F operations in Long-Term (2030) conditions on the I-805 north of Olympic Parkway. In addition, Table 10.4 of the TIA and Table 5.5-10 of the Final EIR show the project's contribution of project trips of 0.11%. According to the SANTEC/ITE guidelines, a significant impact to the freeway mainline occurs when a project causes an increase in per lane V/C ratio greater than 0.005 (0.5%) for segments operating at LOS F. Therefore, according to the

significance criteria used in the Final EIR, this is not a significant project impact and is also not a cumulative impact.

G-20 Please refer to Responses to Comment G-4 regarding the significance criteria used in this EIR and G-5 regarding the requested fair share contribution.

Table 10.4 of the TIA (Appendix D to the Final EIR) and Table 5.5-10 of the Final EIR report a V/C of 1.12 resulting in LOS F operations in Long-Term (2030) conditions on the I-805 from Olympic Parkway to Main Street. In addition, Table 10.4 of the TIA and Table 5.5-10 of the Final EIR show the project's contribution of project trips of 0.13%. According to the SANTEC/ITE guidelines, a significant impact to the freeway mainline occurs when a project causes an increase in per lane V/C ratio greater than 0.005 (0.5%) for segments operating at LOS F. Therefore, according to the significance criteria used in the Final EIR, this is not a significant project impact and is also not a cumulative impact.

G-21 Please refer to Responses to Comment G-4 regarding the significance criteria used in this EIR and G-5 regarding the requested fair share contribution.

Table 10.4 of the TIA (Appendix D to the Final EIR) and Table 5.5-10 of the Final EIR report a V/C of 1.11 resulting in LOS F operations in Long-Term (2030) conditions on the I-805 south of Main Street. In addition, Table 10.4 of the TIA and Table 5.5-10 of the Final EIR show the project's contribution of project trips of 0.06%. According to the SANTEC/ITE guidelines, a significant impact to the freeway mainline occurs when a project causes an increase in per lane V/C ratio greater than 0.005 (0.5%) for segments operating at LOS F. Therefore, according to the significance criteria used in the Final EIR, this is not a significant project impact and is also not a cumulative impact.

G-22 Please refer to Response to Comment G-5.

The City recognizes that Caltrans has a desire to mitigate impacts to the state highway system. The Final EIR and the TIA (Appendix D to the Final EIR) disclose project impacts along with all feasible mitigation measures.

G-23 Please refer to Response to Comment G-5.

G-24 The City understands that any work performed within Caltrans right-of-way will require an encroachment permit.

CHAPTER 1
EXECUTIVE SUMMARY

This Environmental Impact Report (EIR) is an informational document intended for the use by the City of Chula Vista (City), other public agencies, and members of the general public in evaluating the potential environmental effects of the proposed Village Four Sectional Planning Area (SPA) Plan Project (project).

California Environmental Quality Act (CEQA) Statute Section 21002 requires that an EIR identify the significant effects of a project on the environment and provide measures or alternatives that can mitigate or avoid these effects. This Draft EIR evaluates the environmental effects associated with development of the project and discusses the manner in which the project's significant effects can be reduced or avoided through the implementation of mitigation measures or feasible alternatives to the proposed project. In accordance with Section 15130 of the CEQA Guidelines, this EIR also includes an examination of the effects of cumulative development.

This summary provides a brief synopsis of (1) the proposed project, (2) results of the environmental analysis contained within this environmental document, (3) alternatives to the proposed project that were considered, and (4) major areas of controversy and issues to be resolved by decision-makers. This summary does not contain the extensive background and analysis found throughout the individual chapters within the EIR. Therefore, the reader should review the entire document to fully understand the project and its environmental consequences.

1.1 PROJECT LOCATION AND SETTING

Otay Valley Quarry LLC is proposing to develop an approximately 166.02-acre site (Assessor's Parcel Number 644-060-24) within the Otay Ranch area of the City of Chula Vista. The project site is located within the southern portion of the City, in southwestern San Diego County, California. The site is located north of the active Vulcan Chula Vista Rock Quarry, east and south of Wolf Canyon, east of Otay Ranch Village Three North, and west of Otay Ranch Village Eight West. The project site is approximately 6.15 miles southeast of downtown Chula Vista, and 12.5 miles southeast of downtown San Diego. The project site is located immediately west of La Media Road, and approximately 1 mile south of Olympic Parkway

1.2 PROJECT BACKGROUND

The Otay Ranch General Development Plan (GDP) was adopted on October 28, 1993, with the concept to create a complete and balanced community clustered into villages with conveniently located housing, shops, work places, schools, parks, civic facilities, and open spaces. The Otay Ranch GDP/Subregional Plan is an integrated policy document that combines the requirements of the City of Chula Vista and the County of San Diego (City of Chula Vista and County of San Diego 1993).

The entire Village Four site as identified in the Otay Ranch GDP is composed of approximately 528 acres and was intended to be a lower-density village compared to surrounding villages due to its scenic location near Rock Mountain and limited area, being bound by the Otay River Valley and Wolf Canyon. Village Four was designed to contain a maximum of 350 residential units, with a buildout population of approximately 1,141. Because of the lower density of Village Four and its relatively small area, it is likely that Village Four would use the services of Villages Seven and Eight, relying on them for retail and other services.

1.3 PROJECT DESCRIPTION

The proposed project is primarily a residential project with associated infrastructure and open space areas. The proposed land uses are summarized in Table 1-1 and shown in Figure 4-3, Site Plan, in Chapter 4, Project Description. Approximately 117.22 acres of the project site would be designated as open space. Approximately 19.73 of those acres would be for fuel modification areas, perimeter slopes, and passive recreation, and approximately 97.49 acres would be dedicated to the Multiple Species Conservation Program (MSCP) Preserve.

Table 1-1
Village Four Sectional Planning Area Plan Land Use Summary

Land Use	Planning Area	Units	Gross Acres	Target Density
Residential				
Single-Family Residential – 3-6 du/ac				
SF	R-1	73	15.18	4.81
Multi-Family (Medium-High) Residential – 11-18 du/ac				
MF	R-2a	110	7.91	13.91
MF	R-2b	40	4.24	9.43
Multi-Family (High) Residential – 18-27 du/ac				
MF	R-3	127	7.16	17.74
	Residential Totals	*350*	*34.49*	*10.15*
Community Purpose Facility (CPF)				
CPF-1	CPF	–	1.21	-
CPF-2	CPF	–	0.87	-
	CPF Sub-Total	-	*2.08*	-
Open Space (OS)				
OS-1	OS	–	0.59	-
OS-2	OS	–	3.03	-
OS-3	OS	-	3.08	-
OS-4	OS	-	1.57	-
OS-5	OS	-	0.59	-
OS-6	OS	-	3.11	-
OS-8	OS	-	1.35	-
OS-9	OS	-	6.87	-
	Total Private Open Space	-	*20.19*	-

Table 1-1
Village Four Sectional Planning Area Plan Land Use Summary

Land Use	Planning Area	Units	Gross Acres	Target Density
Open Space Preserve (OSP)				
OS-7	Preserve	-	1.37	-
OS-10	Preserve	-	6.67	-
OS-11	Preserve	-	44.27	-
OS-12	Preserve	-	44.89	-
Total Preserve Open Space		-	*97.20*	-
Open Space Sub-Total		-	*117.39*	-
Circulation				
Main Street	Circulation	-	10.82	-
Internal Streets	Circulation	-	1.24	-
Circulation Sub-Total		-	*12.06*	-
Totals		**350**	**166.02**	**-**

MSCP = Multiple Species Conservation Program

* The exact amount of community purpose facility for the project and on the north side of Main Street will be calculated in conjunction with the processing of Site Plan approval for the High Density Residential (R-3).

1.3.1 Project Objectives

Following are the objectives of the proposed project:

1. Establish a pedestrian-oriented village designed to complement and support the neighboring Village Eight West land uses; reduce reliance on the automobile; and promote multimodal transportation, including walking and the use of bicycles, buses, and regional transit.
2. Promote synergistic uses between Village Four and Village Eight West and the University/Regional Technology Park to balance employment, retail, and educational activities, as well as services, housing, and public facilities.
3. Implement the goals, objectives, and policies of the Chula Vista General Plan; the Multiple Species Conservation Program (MSCP) Subarea Plan; the Otay Ranch General Development Plan; the Otay Ranch Phase 1 and Phase 2 Resource Management Plan; the Otay Ranch Facility Implementation Plan; the Otay Ranch Village Phasing Plan; and the Otay Ranch Service/Revenue Plan.
4. Implement the City of Chula Vista's Growth Management Ordinance to ensure that public facilities are provided in a timely manner and financed by the parties creating the demand for, and benefiting from, the improvements.
5. Foster development patterns that promote orderly growth and prevent urban sprawl.

6. Develop, maintain, and enhance a sense of community identity that complements Village Eight West.
7. Accentuate the relationship of the land use plan with its natural setting and the physical character of the region, and promote effective management of natural resources by concentrating development into less sensitive areas while preserving large contiguous open space areas with sensitive resources.
8. Establish multi-use trail linkages to the Chula Vista Greenbelt, consistent with the Greenbelt Master Plan and Otay Valley Regional Park Concept Plan.
9. Add to the creation of a unique Otay Ranch image and identity that differentiates Otay Ranch from other communities.
10. Establish a land use and facility plan that ensures the viability of the SPA Plan area in consideration of existing and anticipated economic conditions.
11. Provide a wide variety of housing options, including affordable housing, to City residents, future students, and faculty of the planned 4-year university and employees of the Regional Technology Park, Village Eight West, and Village Nine Town Center.

1.3.2 Discretionary Actions

The following discretionary actions are associated with the proposed project and would be considered by the City:

- Certification of a Final EIR and adoption of a Mitigation Monitoring and Reporting Program pursuant to CEQA
- Approval of amendments to the Otay Ranch General Development Plan
- Approval of the Otay Ranch Village Four Sectional Planning Area Plan
- Approval of the Tentative Map for Otay Ranch Village Four
- Boundary Adjustment

1.4 AREAS OF CONTROVERSY

Pursuant to Section 15082 of the CEQA Guidelines, the City circulated a Notice of Preparation (NOP) dated April 21, 2016, to begin a 30-day public scoping period, to interested agencies, organizations, and parties. The NOP was also sent to the State Clearinghouse at the California Office of Planning and Research. The State Clearinghouse assigned a state identification number (SCH No. 2016041080) to this EIR.

Comments received during the NOP public scoping period were considered during the preparation of this EIR. The NOP and comments are included in Appendix A to this EIR. Eight comment letters were received in response to the NOP and public scoping meeting. Comments covered a variety of topics, including increases in traffic within Chula Vista and surrounding jurisdictions, school developer fees, and impacts to biological resources.

1.5 ISSUES TO BE RESOLVED BY THE CITY COUNCIL

The issues to be resolved by the decision-making body are whether to adopt the proposed project and how to mitigate significant effects created by its implementation. The City will decide if benefits of the project outweigh any significant unmitigable impacts associated with, landforms and aesthetics (direct and cumulative), climate change (direct and cumulative), traffic (cumulative), air quality (direct and cumulative), cultural (cumulative) and energy (cumulative).

The City will also decide if the significant impacts associated with the environmental issues of transportation and traffic, air quality, noise, cultural resources, paleontological resources, biological resources, geology and soils, and hazards and risk of upset have been fully mitigated below a level of significance. Lastly, the City would determine whether any alternative might meet the key objectives of the project while reducing its environmental impact.

1.6 PROJECT ALTERNATIVES

Pursuant to the CEQA Guidelines, EIRs are required to "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives" (14 California Code of Regulations (CCR) 15126.6(a)). This EIR "must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation" (14 CCR 15126.6(a)). The alternatives discussion is required even if these alternatives "would impede to some degree the attainment of the project objectives, or would be more costly" (14 CCR 15126.6(b)).

1.6.1 No Project/No Build Alternative

CEQA Guidelines Section 15126.6 requires the inclusion of a No Project Alternative to be analyzed. Per CEQA, a No Project/No Build Alternative would entail analysis of no build and no development would occur on the Village Four site. Accordingly, the site characteristics of this alternative would be equivalent to the existing conditions for each category analyzed in Chapter 5 of this EIR. Although no development would occur, surrounding land uses and villages would continue to be built-out.

1.6.2 Reduced Development Alternative

The Reduced Development Alternative would include the development of 61 single family residential units, south of Main Street, in the same location as the proposed project. This alternative would still include the Community Purpose Facilities and Open Space as proposed under the project, however, it is assumed that all areas not to be developed as residential would now be left as Open Space. The Main Street extension would still occur in the future separate of this alternative, as with the proposed project.

1.7 SUMMARY TABLE

Table 1-2 is a summary of the project's environmental impacts under CEQA.

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
5.2 Landform Alteration and Aesthetics			
Substantially degrade the existing visual character or quality of the site and its surroundings?	The project would result in the permanent alteration to existing landforms (direct and cumulative).	No feasible mitigation.	Significant and unavoidable.
5.3 Biological Resources			
Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Wildlife Service?	Significant direct impacts to "covered" sensitive plant species include the following species: Otay tarplant, variegated dudleya, and San Diego barrel cactus. Otay tarplant and variegated dudleya are identified in the Subarea Plan as Narrow Endemic Species. Significant impacts to non-covered species include singlewhorl burrobrush. Implementation of the proposed project would result in the direct loss of habitat for the following special-status wildlife species: southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), horned lark (*Eremophila alpestris actia*), coastal cactus wren	**MM-BIO-1:** **Preserve Conveyance.** Prior to the approval of the first final map for the project, the project applicant shall coordinate with the City of Chula Vista (City) Engineer and annex the project area within the Otay Ranch Preserve Community Facilities District No. 97-2. Prior to the recordation of each final map, the applicant shall convey land within the Otay Ranch Preserve to the Otay Ranch Preserve Owner/Manager or its designee at a ratio of 1.188 acres for each "Developable Area" as defined by the Resource Management Plan (RMP). Access for maintenance purposes shall also be conveyed to the satisfaction of the Preserve Owner/Manager. Each tentative map (TM) shall be subject to a condition that the applicant shall execute a maintenance agreement with the Preserve Owner/Manager stating that it is the responsibility of the applicant to maintain the conveyed parcel until the Preserve Community Facilities District has generated sufficient revenues to enable the Preserve Owner/Manager to assume maintenance responsibilities. The applicant shall maintain and manage the offered conveyance property consistent with the RMP Phase 2 until the Preserve Community Facilities District has generated sufficient revenues to enable the Preserve Owner/Manager to assume maintenance and management responsibilities. **MM-BIO-2:** **Mitigation for Maritime Succulent Scrub.** Prior to the issuance of any land development permits that impact maritime succulent scrub, including clearing and grubbing or grading permits, the project applicant shall prepare a restoration plan to restore impacts to maritime succulent scrub at a 2:1 ratio pursuant to the Otay Ranch RMP. Restoration will occur within the Village Four Preserve. Impacts would include 0.20 acre from the approved Preserve Boundary Adjustment and 0.52 acre from the	Less than significant.

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

<table>
<tr><th>Environmental Issue</th><th>Result of Impact Analysis</th><th>Mitigation</th><th>Impact Level After Mitigation</th></tr>
<tr><td></td><td>(Campylorhynchus brunneicapillus sandiegensis), California gnatcatcher (Polioptila californica), black-tailed jackrabbit (Lepus californicus), San Diego desert woodrat (Neotoma lepida intermedia) loggerhead shrike (Lanius ludovicianus), and Coronado Island skink (Plestiodon skiltonianus interparietalis).

Construction of the proposed project would also potentially impacts nesting birds.

While burrowing owls were not detected, pre-construction surveys would be required.

Quino habitat assessments and protocol surveys are required for off-site preserve areas where planned and future facilities are proposed.

Indirect impacts from increased human presence</td><td>Village Four Project (including 0.07 acre from the development area and 0.45 acre from Planned Facilities within the Preserve). Therefore, compensation of maritime succulent scrub loss associated with the Preserve Boundary Adjustment is discussed collectively with mitigation of maritime succulent scrub from the Village Four Project impacts as specified in the table below.

Compensation and Mitigation for Impacts to Maritime Succulent Scrub

<table><tr><th>Vegetation Community</th><th>Permanent Impacts (acres)</th><th>Cause of Impact</th><th>Replacement Type</th><th>Mitigation Ratio</th><th>Mitigation Required (acres)</th></tr><tr><td>Maritime Succulent Scrub</td><td>0.20</td><td>Preserve Boundary Adjustment</td><td>Compensation</td><td>1:1</td><td>0.20</td></tr><tr><td>Maritime Succulent Scrub</td><td>0.07</td><td>Development Impacts - Outside Preserve</td><td>Mitigation</td><td>2:1</td><td>0.14</td></tr><tr><td>Maritime Succulent Scrub</td><td>0.45</td><td>Planned Facilities Impacts - Inside Preserve</td><td>Mitigation</td><td>2:1</td><td>0.90</td></tr><tr><td>Total</td><td>0.72</td><td>--</td><td>--</td><td>--</td><td>1.24</td></tr></table>
The maritime succulent scrub restoration shall be prepared by a City-approved biologist and to the satisfaction of the Development Services Director (or their designee) pursuant to the Otay Ranch RMP restoration requirements. The restoration</td><td></td></tr>
</table>

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
	could also occur to sensitive plants and wildlife.	plan shall include, at a minimum, an implementation strategy; species salvage and relocation; appropriate seed mixtures and planting method; irrigation; quantitative and qualitative success criteria; a maintenance, monitoring, and reporting program; an estimated completion time; and contingency measures. The project applicant shall also be required to implement the revegetation plan subject to the oversight and approval of the Development Services Director (or their designee). Additionally, since the maritime succulent scrub impacted is assumed to be suitable for coastal cactus wren, the restoration monitoring shall include surveys within the mitigation areas to determine if coastal cactus wren are present. **MM-BIO-3** **On-site Revegetation Plan.** Prior to issuance of land development permits, including clearing, grubbing, grading and construction permits, for the Future and Planned Facilities associated with Village Four, the project applicant shall provide a revegetation plan for any give areas that are included within the Preserve and that might be impacted by the proposed road construction. The give areas would be restored to native habitat and monitored with a 5-year mitigation and monitoring program to verify meeting success criteria. Additionally, the project applicant shall provide a revegetation plan for the take area. Although it would be removed from the Preserve area, the take area will be a manufactured graded slope and would be landscaped with native species to provide a buffer for the Preserve. The revegetation plan must be prepared by a qualified City-approved biologist familiar with the City's MSCP Subarea Plan and must include, but not be limited to, an implementation plan; appropriate seed mixtures and planting method; an irrigation method; quantitative and qualitative success criteria; a maintenance, monitoring, and reporting program; an estimated completion time; and contingency measures. The project applicant shall be required to prepare and implement the revegetation plan subject to the oversight and approval of the Development Services Director (or their designee). **MM-BIO-4:** **Biological Monitor.** Prior to issuance of land development permits, including clearing, grubbing, grading, and/or construction permits, for any areas adjacent to the Preserve and the off-site facilities located within the Preserve, the project applicant shall provide	

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		written confirmation that a City-approved biological monitor has been retained and shall be on site during clearing, grubbing, and/or grading activities. The biological monitor shall attend all pre-construction meetings and be present during the removal of any vegetation to ensure that the approved limits of disturbance are not exceeded and provide periodic monitoring of the impact area including, but not limited to, trenches, stockpiles, storage areas, and protective fencing. The biological monitor shall be authorized to halt all associated project activities that may be in violation of the City's MSCP Subarea Plan and/or permits issued by any other agencies having jurisdictional authority over the project. Before construction activities occur in areas containing sensitive biological resources within the off-site facilities area, all workers shall be educated by a City-approved biologist to recognize and avoid those areas that have been marked as sensitive biological resources. **MM-BIO-5** **Construction Fencing.** Prior to issuance of grading permits in portions of the Village Four Development Area that are adjacent to the Preserve, the project applicant shall install fencing. Prior to issuance of land development permits, including clearing, grubbing, grading, and/or construction permits, the project applicant shall install fencing in accordance with Chula Vista Municipal Code 17.35.030. Prominently colored, well-installed fencing and signage shall be in place wherever the limits of grading are adjacent to sensitive vegetation communities or other biological resources, as identified by the qualified monitoring biologist. Fencing shall remain in place during all construction activities. All temporary fencing shall be shown on grading plans for areas adjacent to the Preserve and for all off-site facilities constructed within the Preserve. Prior to release of grading and/or improvement bonds, a qualified biologist shall provide evidence that work was conducted as authorized under the approved land development permit and associated plans. **MM-BIO-6:** **Construction Plan Notes.** Prior to issuance of land development permits, including clearing, grubbing, grading, and construction permits, the following notes shall be	

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		included on the applicable construction plans to the satisfaction of the Development Services Director (or their designee): • A qualified biologist shall be on site to monitor all vegetation clearing and periodically thereafter to ensure implementation of appropriate resource protection measures. • Dewatering shall be conducted in accordance with standard regulations of the Regional Water Quality Control Board. A permit to discharge water from dewatering activities would be required. This would minimize erosion, siltation, and pollution within sensitive communities. • During construction, material stockpiles shall be placed such that they cause minimal interference with on-site drainage patterns. This would protect sensitive vegetation from being inundated with sediment-laden runoff. • Material stockpiles shall be covered when not in use. This would prevent fly-off that could damage nearby sensitive vegetation communities. • Graded areas shall be periodically watered to minimize dust that may affect adjacent vegetation. **MM-BIO-7:** **HLIT for Off-Site Areas.** Prior to issuance of any land development permits, including clearing or grubbing and grading and/or construction permits, the project would be required to obtain a HILT Permit pursuant to Section 17.35 of the Chula Vista Municipal Code for impacts to Chula Vista MSCP Tier I, II, and III vegetation communities as shown in the table below (Mitigation for Permanent Impacts to Upland Vegetation Outside of Otay Ranch (HLIT)) and in accordance with Table 5-3 of the Chula Vista MSCP Subarea Plan. These impacts are due to the Planned Facilities and fuel modification. Mitigation for off-site impacts outside of Otay Ranch would be in accordance with the Chula Vista MSCP Subarea Plan and the City's Habitat Loss and Incidental Take (HLIT) Ordinance and as provided in the HLIT Findings (Appendix B1). Prior to issuance of any land development permits, the applicant shall mitigate for direct impacts pursuant to Section 5.2.2 of the City's MSCP Subarea Plan. In compliance with the City's Subarea Plan, the applicant shall secure mitigation credits within a City- and wildlife agency-approved Conservation Bank or other approved	

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

<table>
<tr><th>Environmental Issue</th><th>Result of Impact Analysis</th><th>Mitigation</th><th>Impact Level After Mitigation</th></tr>
<tr><td></td><td></td><td>location offering mitigation credits consistent with the ratios specified in the following table below or pay into a City established mitigation fee program:

Mitigation for Permanent Impacts to Upland Vegetation Outside of Otay Ranch (HLIT)
<table>
<tr><th>Off-Site Area</th><th>Vegetation Community</th><th>Tier</th><th>Permanent Impacts (acres)</th><th>Location of Impact</th><th>Mitigation Ratio</th><th>Mitigation Required (acres)</th></tr>
<tr><td>Otay Quarry-Extension of Planned Facilities</td><td>Desert Saltbush Scrub</td><td>II</td><td><0.01</td><td>Outside Preserve</td><td>1:1</td><td><0.01</td></tr>
<tr><td rowspan="3">Otay Quarry-Fuel Modification Zone</td><td>Coastal sage scrub</td><td>II</td><td>0.24</td><td>Outside Preserve</td><td>1:1</td><td>0.24</td></tr>
<tr><td>Non-native grassland</td><td>III</td><td>1.47</td><td>Outside Preserve</td><td>1:1</td><td>1.47</td></tr>
<tr><td colspan="5">Total for Otay Quarry</td><td>1.71</td></tr>
</table>
Note: Tiers and mitigation ratios are in accordance with the Chula Vista MSCP Subarea Plan's HLIT Upland Habitat Mitigation Ratios. No mitigation is required for Tier IV habitat types (i.e., non-sensitive vegetation communities and land covers including disturbed land, ornamental, or developed land). It is assumed that mitigation would be located inside the Preserve. Mitigation outside of the Preserve (i.e., Chula Vista MSCP Subarea Plan or Planning Area boundary) would require increased mitigation per Table 5-3 of the Chula Vista MSCP Subarea Plan.

The applicant shall be required to provide verification of purchase to the City prior to issuance of any land development permits.

In the event that a project applicant is unable to secure mitigation through an established mitigation bank approved by the City and wildlife agencies, the project applicant shall secure the required mitigation through the conservation of an area containing in-kind habitat within the City's MSCP Subarea Plan or MSCP Planning Area in accordance with the mitigation ratios contained in Table 5-3 of the City's MSCP Subarea Plan and subject to wildlife agency concurrence.</td><td></td></tr>
</table>

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		Prior to issuance of any land development permit, and to the satisfaction and oversight of the City's Development Services Director (or their designee), the applicant shall secure the parcel(s) that would be permanently preserved for in-kind habitat impact mitigation, prepare a long-term management and monitoring plan for the mitigation area, secure an appropriate management entity to ensure that long-term biological resource management and monitoring of the mitigation area is implemented in perpetuity, and establish a long-term funding mechanism for the management and monitoring of the mitigation area in perpetuity. The long-term management and monitoring plan shall provide management measures to be implemented to sustain the viability of the preserved habitat and identify timing for implementing the measures prescribed in the management and monitoring plan. The mitigation parcel shall be restricted from future development and permanently preserved through the recordation of a conservation easement or other mechanism approved by the wildlife agencies as being sufficient to insure that the lands are protected in perpetuity. The conservation easement or other mechanism approved by the wildlife agencies shall be recorded prior to issuance of any land development permits. The project applicant shall be responsible for maintaining the biological integrity of the mitigation area and shall abide by all management and monitoring measures identified in the management and monitoring plan until such time as the established long-term funding mechanism has generated sufficient revenues to enable a City-approved management entity to assume the long-term maintenance and management responsibilities. **MM-BIO-8:** **Resource Salvage Plan.** Prior to the issuance of land development permits, including clearing or grubbing and grading permits, for areas with salvageable sensitive biological resources, including Otay tarplant, variegated dudleya, and San Diego barrel cactus, (including plant materials and soils/seed bank), the project applicant shall prepare a resource salvage plan. The Resource Salvage Plan shall be prepared by a City-approved biologist to the satisfaction of the Development Services Director	

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		(or their designee). The Resource Salvage Plan shall, at a minimum, evaluate options for plant salvage and relocation, including individual cactus salvage, native plant mulching, selective soil salvaging, application of plant materials on manufactured slopes, and application/relocation of resources within the Preserve. The Resource Salvage Plan shall include incorporation of relocation efforts for non-covered species, including singlewhorl burrobrush, which is considered special status according to the California Environmental Quality Act and that would be impacted with project implementation. Relocation efforts may include seed collection and/or transplantation to a suitable receptor site and would be based on the most reliable methods of successful relocation. The program shall also contain a recommendation for method of salvage and relocation/application based on feasibility of implementation and likelihood of success. The program shall include, at a minimum, an implementation plan, maintenance and monitoring program, estimated completion time, and any relevant contingency measures. The program shall also be subject to the oversight of the Development Services Director (or their designee). **MM-BIO-9:** **Nesting Birds.** To avoid any direct impacts to raptors and/or any migratory birds protected under the Migratory Bird Treaty Act, removal of habitat that supports active nests on the proposed area of disturbance should occur outside of the breeding season for these species. The breeding season is defined as February 15–August 15 for coastal California gnatcatcher and other non-raptor birds and January 15–August 31 for raptor species. If removal of habitat on the proposed area of disturbance must occur during the breeding season, the project applicant shall retain a City-approved biologist to conduct a pre-construction survey to determine the presence or absence of nesting birds on the proposed area of disturbance. The pre-construction survey must be conducted within 10 calendar days prior to the start of construction, and the results must be submitted to the City for review and approval prior to initiating any construction activities. If nesting birds are detected, a letter report or mitigation plan, as deemed appropriate by the City, shall be prepared and include proposed measures	

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		to be implemented to ensure that disturbance of breeding activities are avoided. The report or mitigation plan shall be submitted to the City for review and approval and implemented to the satisfaction of the City. The City's mitigation monitor shall verify and approve that all measures identified in the report or mitigation plan are in place prior to and/or during construction. **MM-BIO-10: Northern Harrier.** Prior to issuance of any land development permits, including clearing, grubbing, and grading permits, the project applicant shall retain a City-approved biologist to conduct focused surveys for northern harrier to determine if the species is nesting within 900 feet of the construction area. The pre-construction survey must be conducted within 10 calendar days prior to the start of construction. In the event that surveys are conducted and these construction activities do not start within 30 days, additional surveys shall be conducted to comply with this 30-day requirement. Furthermore, in the event that surveys are conducted and construction activities begin but then stop for a period longer than 30 days, additional surveys shall be conducted prior to resuming construction activities. The results of the survey must be submitted to the City for review and approval. If active nests are detected by the City-approved biologist, a bio-monitor shall be on site during construction to minimize construction impacts and ensure that no nests are removed or disturbed until all young have fledged. **MM-BIO-11: Burrowing Owl.** Prior to issuance of any land development permits, including clearing, grubbing, and grading permits, the project applicant shall retain a City-approved biologist to conduct focused pre-construction surveys for burrowing owls. The surveys shall be performed no earlier than 30 days prior to the commencement of any clearing, grubbing, or grading activities. In the event that surveys are conducted and these construction activities do not start within 30 days, additional surveys shall be conducted to comply with this 30-day requirement. Furthermore, in the event that surveys are conducted and construction activities begin but then stop for a period longer than 30 days, additional surveys shall be conducted prior to resuming construction activities. If occupied burrows are detected, the City-approved biologist	

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		shall prepare a passive relocation mitigation plan subject to review and approval by the wildlife agencies and the City, including any subsequent burrowing owl relocation plans to avoid impacts from construction-related activities. **MM-BIO-12** **Quino Checkerspot Butterfly**. During the spring, prior to applying for land development permits (including clearing, grubbing, and grading permits), a habitat assessment and an adult flight season survey would be conducted within the footprint of potential Planned and Future Facilities within the Preserve. The adult flight season survey would conducted in accordance with the most recent survey protocol adopted by USFWS. Impacts to habitat for Quino checkerspot butterfly, if observed, shall be avoided to the maximum extent practicable. If Quino checkerspot butterfly is observed, the property owner shall redesign or eliminate facilities to Quino checkerspot butterfly habitat to the maximum extent practicable. Any redesign shall be submitted to the satisfaction of the Development Services Director (or their designee) prepared by a qualified biologist to the satisfaction of the Development Services Director (or their designee). **MM-BIO-16** **Preserve Edge Plan.** Prior to the issuance of grading permits, the project applicant shall submit evidence, to the satisfaction of the Development Services Director (or their designee), showing that the following features of the Preserve Edge Plan (Appendix B2) have been incorporated into grading and landscaping plans: • Provide post markers and loge pole railing and signage for sensitive habitat adjacent to trails. Prior to the issuance of land development permits, including clearing or grubbing and grading and/or construction permits, for the project, the project owner shall submit wall and fence plans depicting appropriate barriers to prevent unauthorized access to the Preserve. The wall and fence plans shall, at a minimum, illustrate the locations and cross-sections of proposed walls, fences, informational and directional signage, access controls, and/or boundary markers along the Preserve boundary and off-site pedestrian trails as conceptually described in the Preserve Edge Plan. The required wall and fence plan shall be subject to the approval of the Deputy City Manager/Development Services Director (or their designee).	

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		• Install storm drains, drainage outfalls, and drainage basins to prevent erosion of drainage and wetlands within the Preserve. • Prevent release of toxins, chemicals, petroleum products, exotic plant materials, and other elements that might degrade or harm the natural environment or ecosystem within the Preserve. • Implement all necessary requirements for water quality as specified by the state and local agencies. • No invasive, non-native plant species shall be introduced into areas immediately adjacent to, or within, the Preserve. All slopes immediately adjacent to, or within, the Preserve shall be planted with native species that reflect the adjacent native habitat, per the Preserve Edge Plan (Appendix B2). Prior to the issuance of land development permits, including clearing or grubbing and grading and/or construction permits, for 1) areas within the 100-foot Preserve edge, and 2) infrastructure (e.g., roads, trails, utilities, etc.) sited within the Preserve, the project applicant shall prepare and submit to the satisfaction of the Development Services Director (or their designee) landscape plans to ensure that the proposed plant palette is consistent with the plant list contained in the Preserve Edge Plan (Appendix B2). The landscape plan shall also incorporate a manual weeding program for areas adjacent to the Preserve. The manual weeding program shall describe, at a minimum, the entity responsible for controlling invasive species, the maintenance activities and methods required to control invasive species, and a maintenance/monitoring schedule. • Incorporate all fuel modification areas into development plans and do not include any areas within the Preserve. **MM-BIO-17** **Indirect Impacts.** In accordance with the City's Adjacency Management Guidelines, the following mitigation measures shall be implemented to further reduce indirect impacts (from lighting, noise, invasive species, toxic substances, and public access) to sensitive biological resources located in the adjacent Preserve areas: • **Lighting.** In compliance with the Chula Vista MSCP Subarea Plan, all lighting shall be shielded and directed away from the Preserve. Concurrent with design	

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		review and prior to issuance of a building permit for any development located adjacent to the Preserve, the applicant shall prepare a lighting plan and photometric analysis to the satisfaction of the Development Services Director (or their designee), for review and approval. The lighting plan shall illustrate the location of the proposed lighting standards and type of shielding measures. Low-pressure sodium lighting shall be used, if feasible, and shall be subject to the approval of the Development Services Director (or their designee). • **Noise.** Noise impacts adjacent to the Preserve lands shall be minimized. Berms or walls shall be constructed adjacent to commercial areas and any other use that may introduce noises that could impact or interfere with wildlife utilization of the Preserve. Construction activities shall include noise reduction measures or be conducted outside the breeding season of sensitive bird species. • **Noise, Coastal California Gnatcatcher.** For any work proposed between February 15 and August 15, prior to issuance of any land development permits, including clearing, grubbing, grading, and construction permits, associated with the off-site facilities located within the Preserve, the project applicant shall retain a City-approved biologist to conduct a pre-construction survey for the coastal California gnatcatcher to reaffirm the presence and extent of occupied habitat. The pre-construction survey area for the coastal California gnatcatcher shall encompass all habitats within the project work zone, as well as within a 300-foot buffer. The survey shall be performed to the satisfaction of the Development Services Director (or their designee) by a qualified biologist familiar with the City's MSCP Subarea Plan. The results of the pre-construction survey must be submitted in a report to the Development Services Director (or their designee) for review and approval prior to the issuance of any land development permits and prior to initiating any construction activities. If the coastal California gnatcatcher is detected, a minimum 300-foot buffer delineated by orange biological fencing shall be established around the detected birds to ensure that no work shall occur within the occupied habitat from February 15 through August 15 and on-site noise reduction techniques shall be implemented to ensure that construction noise levels do not exceed 60 A-weighted decibels $L_{eq\text{-}h}$ at the location of any occupied	

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		sensitive habitat areas. The Development Services Director (or their designee) shall have the discretion to modify the buffer width depending on site-specific conditions. If the results of the pre-construction survey determine that the survey area is unoccupied, the work may commence at the discretion of the Development Services Director (or their designee) following the review and approval of the pre-construction report. • **Invasive Species.** Prior to the issuance of land development permits, including clearing or grubbing and grading and/or construction permits, for 1) areas within the 100-foot Preserve edge, and 2) infrastructure (e.g., roads, trails, utilities, etc.) sited within the Preserve, the project applicant shall prepare and submit to the satisfaction of the Development Services Director (or their designee) landscape plans to ensure that the proposed plant palette is consistent with the plant list contained in the Preserve Edge Plan (Appendix B2). The landscape plan shall also incorporate a manual weeding program for areas adjacent to the Preserve. The manual weeding program shall describe, at a minimum, the entity responsible for controlling invasive species, the maintenance activities and methods required to control invasive species, and a maintenance/monitoring schedule. • **Toxic Substances.** See MM-BIO-4, MM-BIO-6, MM-BIO-12, and MM-BIO-14. • **Public Access.** Prior to the issuance of grading permits, the project applicant shall submit wall and fence plans depicting appropriate barriers to prevent unauthorized access to the Preserve. The wall and fence plans shall illustrate the locations and cross-sections of proposed walls and fences along the Preserve boundary, subject to the approval the City's Development Services Director (or their designee).	
Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans,	Sensitive vegetation communities to be permanently impacted within the Development Area and the Planned and Future Facilities include coastal	MM-BIO-1 through MM-BIO-7, MM-BIO-16, and MM-BIO-17 above.	Less than significant.

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
policies, regulations, or by the California Department of Fish and Game or U. S. Fish and Wildlife Service?	sage scrub, desert saltbush scrub, disturbed coastal sage scrub, maritime succulent scrub, non-native grassland, tamarisk scrub, and unvegetated channel. Indirect impacts would also occur from increased human presence.		
Have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	The proposed project would result in impacts to jurisdictional areas within the Village Four Development Area, as well as within the Village Four Preserve. Indirect, adverse edge effects to jurisdictional waters and wetlands include potential runoff, sedimentation, erosion, exotics introduction, and habitat type conversion in the short and long term, particularly within the Wolf Canyon drainage.	MM-BIO-4, MM-BIO-5, MM-BIO-6, MM-BIO-16, MM-BIO-17 above. **MM-BIO-13: Jurisdictional Resource Mitigation.** The City requires that impacts to wetlands be avoided to the maximum extent possible and where impacts are unavoidable, compensatory mitigation within the Chula Vista Subarea or Chula Vista Planning Area shall be required resulting in no overall net loss of wetlands. A total of 0.12 acre of CDFW-only jurisdictional wetland and 0.03~~2~~ acre of waters of the United States/state within the project area may be impacted as a result of project implementation. Off-site areas may impact a total of 0.02 acre of permanent impacts to non-wetland waters/streambed under ACOE, RWQCB, and CDFW jurisdiction. Prior to issuance of land development permits, including clearing, grubbing, and grading permits that impact jurisdictional waters, the project applicant shall prepare a wetlands mitigation and monitoring plan to the satisfaction of the City and the resource agencies. This plan shall include, at a minimum, an implementation plan, a maintenance and monitoring program, an estimated completion time, and any relevant contingency measures. Mitigation areas shall occur within the Otay River watershed in accordance with the wetlands mitigation and monitoring plan to the satisfaction of the City and the resource agencies. The project applicant shall also be required to implement the wetlands mitigation and monitoring plan subject to the oversight of the City, and the resource agencies. Areas under the jurisdictional authority of all three resources agencies shall be delineated on all grading plans.	Less than significant.

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		MM-BIO-14: Resource Agency Permits. Prior to issuance of land development permits, including clearing, grubbing, and grading permits, for areas that impact jurisdictional wetlands and waters, the project applicant shall provide evidence that all required regulatory permits, such as those required under Section 404 of the federal Clean Water Act, Section 1600 of the California Fish and Game Code, and the Porter-Cologne Water Quality Control Act, have been obtained. **MM-BIO-15: SWPPP.** Prior to issuance of grading permits in portions of the SPA Plan areas that are adjacent to the Preserve, the project applicant shall develop a stormwater pollution prevention plan (SWPPP). The SWPPP shall be developed, approved, and implemented during construction to control stormwater runoff such that erosion, sedimentation, pollution, and other adverse effects are minimized. The following performance measures contained in the Edge Plans shall be implemented to avoid the release of toxic substances associated with urban runoff: 1. Sediment shall be retained on site by a system of sediment basins, traps, or other appropriate measures. 2. Where deemed necessary, storm drains shall be equipped with silt and oil traps to remove oils, debris, and other pollutants. Storm drain inlets shall be labeled "No Dumping—Drains to Ocean." Storm drains shall be regularly maintained to ensure their effectiveness. 3. The parking lots shall be designed to allow stormwater runoff to be directed to vegetative filter strips and/or oil-water separators to control sediment, oil, and other contaminants. 4. Permanent energy dissipaters shall be included for drainage outlets. 5. The best management practices contained in the SWPPP shall include, but are not limited to, silt fences, fiber rolls, gravel bags, and soil stabilization measures such as erosion control mats and hydro-seeding. The project area drainage basins would be designed to provide effective water quality control measures, as outlined in the Water Quality Technical Reports (Appendices H1	

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		and H2). Design and operational features of the drainage basins would include design features to provide maximum infiltration and maximum detention time for settling of fine particles; maximize the distance between basin inlets and outlets to reduce velocities; and establish maintenance schedules for periodic removal of sedimentation, excessive vegetation, and debris.	
Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?	Refer to project impacts described above. Mitigation measures have been provided to ensure compliance with the Otay Ranch RMP, MSCP Subarea Plan, and HLIT Ordinance.	MM-BIO-1 through MM-BIO-17 above.	Less than significant.
5.4 Cultural Resources			
Cause a substantial adverse change in the significance of an archaeological resource as defined in CEQA Guidelines Section 15064.5?	The project has the potential to encounter previously unidentified subsurface cultural deposits, as well as sites P-37-004738, P-37-014543, P-37-014611, and P-37-032400.	**MM-CUL-1** A. Prior to beginning construction activities, the Project Archaeologist and Native American representative shall attend any pertinent preconstruction meetings with the construction manager and/or grading contractor to provide recommendations and answer questions relating to the archaeological monitoring program. The Project Archaeologist shall be familiar with the cultural inventory conducted for the current project and be prepared to introduce any pertinent information concerning expectations and probabilities of discovery during ground-disturbing activities. Prior to the initiation of construction, the cultural consultant shall acquire all evaluation information and the draft evaluation report, if a report was prepared by Brian Smith & Associates. B. An archaeological monitor familiar with local resources and Native American monitor shall be present full-time during the initial disturbances of soil with potential to contain cultural deposits. All areas of initial project-related subsurface disturbance shall be assumed to have potential to contain cultural deposits. Monitoring of initial ground disturbance shall not exceed a depth of 5 feet (1.5 meters) unless cultural resources are identified or if, through direct inspection of	Less than significant direct impacts. Significant and unavoidable cumulative impacts.

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		subsurface exposures by the Project Archaeologist, an area is observed to have the potential to support the presence archaeological deposits at greater depths. Cultural resources monitoring may be reduced from initial full-time monitoring to periodic spot checks, or discontinued if appropriate, once the Project Archaeologist determines that there is little or no risk to encounter cultural material. C. Installation of temporary fencing along project limits within 100 feet of previously recorded sites located outside of the area of direct impact (P-37-004738, P-37-014543, P-37-014611, and P-37-032400) for the duration of earth-moving activities to avoid any indirect impacts to these resources. Archaeological monitors shall be tasked with installation of these exclusionary temporary fences prior to the initiation of construction. Periodic checks shall be made to ensure that these fences remain in sound condition throughout construction. To remain compliant with CEQA and City of Chula Vista–mandated confidentiality restrictions, temporary fencing, and signage as appropriate, shall not directly reference the presence of cultural resources. D. Daily archaeological and Native American monitoring logs shall be prepared. Logs shall include monitor names and affiliations, a description of general activities observed, cultural discoveries, and comments or concerns as applicable. E. In the event of an archaeological discovery, and when requested by the archaeological monitor or Native American monitor, the resident contractor shall divert, redirect, or temporarily halt ground-disturbing activities in the area of discovery or impacts to allow for preliminary inspection of potentially significant archaeological resources or impacts. The significance of the discovered resources or impacts shall be determined by the archaeologist, in consultation with the City of Chula Vista. For significant cultural resources, a Research Design and Data Recovery Program shall be prepared and carried out to mitigate impacts before grading activities in the area of discovery is allowed to resume. F. The Project Archaeologist shall be responsible for ensuring that all cultural materials collected are cleaned, catalogued, and permanently curated with an	

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		appropriate institution; that a letter of acceptance from the curation institution has been submitted to the City of Chula Vista; that all artifacts are analyzed to identify function and chronology as they relate to the history of the area; that faunal material shall be identified as to species; and specialty studies are completed, as appropriate. The Project Archaeologist shall make a good faith effort to ensure that all archaeological material collected through previous work conducted by Brian Smith & Associates is appropriately curated with any material recovered through construction monitoring. G. If human remains are discovered, work shall halt in that area and procedures set forth in the California Public Resources Code (Section 5097.98) and State Health and Safety Code (Section 7050.5) shall be followed by the archaeological monitor after notification to the County Coroner by the supervising archaeologist. If Native American remains are present, the County Coroner shall contact the Native American Heritage Commission to designate a Most Likely Descendent, who shall arrange for the dignified disposition and treatment of the remains. H. Within 3 months following the completion of monitoring, two copies of a monitoring results report (even if negative) and/or evaluation report, if applicable, that describes the results, analysis, and conclusions of the archaeological monitoring program (with appropriate graphics) shall be submitted to the City of Chula Vista. I. For significant archaeological resources encountered during monitoring, the Research Design and Data Recovery Program shall be included as part of the final evaluation monitoring report. Two copies of the final monitoring report for significant archaeological resources, if required, shall be submitted to the City of Chula Vista. This final monitoring report shall also incorporate a summary of the evaluation results and analyses previously conducted by Brian Smith & Associates for the archaeological sites recorded within the project site. J. The archaeologist shall be responsible for recording (on the appropriate California Department of Parks and Recreation 523 Series forms) any significant or potentially significant resources encountered during the archaeological monitoring program in accordance with the CEQA and City of Chula Vista's	

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		Cultural Resources Guidelines, and submittal of such forms to the South Coastal Information Center at San Diego State University with the final monitoring results report.	
Disturb any human remains, including those interred outside of formal cemeteries?	The project has the potential to inadvertently encounter human remains.	MM-CUL-1 above.	Less than significant.
5.5 Transportation, Circulation, and Access			
Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	The project would have potentially significant cumulative impacts in the Existing Plus Project, Mid-Term (2020), and Long Term (2020) scenarios.	**MM-TCA-1** Prior to the issuance of ~~the final map~~each building permit for the Village Four project, the applicant or its designee shall pay its fair share payment, through the Traffic Development Impact Fee program, proportionate to its cumulative impact toward improvements at the following locations: • Olympic Parkway / Brandywine Avenue • Olympic Parkway / Heritage Road • Olympic Parkway: Brandywine Avenue to Oleander Avenue • Olympic Parkway: Oleander Avenue to Heritage Road • Olympic Parkway / Interstate (I) 805 Southbound (SB) Ramps • Olympic Parkway / I-805 Northbound (NB) Ramps • Olympic Parkway: I-805 SB Ramps to I-805 NB Ramps • Olympic Parkway: I-805 NB Ramps to Oleander Avenue	City facilities would be reduced to less than significant. All Caltrans facilities would remain significant and unavoidable.
5.6. Air Quality			
Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	Project construction would exceed significant thresholds for emissions (direct and cumulative).	**MM-AQ-1** Prior to approval of any construction-related permits, the project applicant or its designee shall place the following requirements on all plans, which shall be implemented during grading of each phase of the project to minimize carbon monoxide (CO) nitrogen oxide (NO_x) emissions: • Heavy-duty diesel-powered construction equipment shall be equipped with Tier 4 Final or better diesel engines, except where Tier 4 Final or better engines are not available for specific construction equipment. The County shall verify and approve all pieces within the construction fleet that would not meet Tier 4 Final standards;	Significant and unavoidable.

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		• Minimize simultaneous operation of multiple construction equipment units. During construction, vehicles in loading and unloading queues shall not idle for more than 5 minutes and shall turn their engines off when not in use to reduce vehicle emissions; • All construction equipment shall be properly tuned and maintained in accordance with manufacturer's specifications; • The use of electrical or natural gas-powered construction equipment shall be employed where feasible including forklifts and other comparable equipment types; • The use of catalytic reduction for gasoline-powered equipment shall be employed where feasible; • Electrical hookups shall be provided on site for the use of hand tools such as saws, drills, and compressors used for building construction to reduce the need for electric generators and other fuel-powered equipment; • All diesel-fueled on-road construction vehicles shall meet the emission standards applicable to the most current year to the greatest extent possible. To achieve this standard, new vehicles shall be used, or older vehicles shall use post-combustion controls that reduce pollutant emissions to the greatest extent feasible. • The effectiveness of the latest diesel emission controls is highly dependent on the sulfur content of the fuel. Therefore, diesel fuel used by on- and off-road construction equipment shall be low sulfur (less than 15 parts per million) or other alternative, low-polluting diesel fuel formulation. **MM-AQ-2** Prior to approval of any grading permits, and during project construction, the project applicant or its designee shall require implementation of the City of Chula Vista's standard construction best management practices (BMPs) to minimize PM_{10} and $PM_{2.5}$ emissions, including the following, to be shown as notes on the Grading Plan: • Water or use another acceptable San Diego Air Pollution Control District dust control agent on, the grading areas at least twice daily to minimize fugitive dust. • Stabilize grading areas as quickly as possible to minimize fugitive dust.	

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		• Install wheel washers adjacent to a paved apron prior to vehicle entry on public roads. • Wet wash the construction access point at the end of the workday if any vehicle travel on unpaved surfaces has occurred. • Provide sufficient perimeter erosion control to prevent washout of silty material onto public roads. • Cover haul trucks or maintain at least 12 inches of freeboard to reduce blow-off during hauling. • Suspend all soil disturbance and travel on unpaved surfaces if winds exceed 25 miles per hour (mph). • Cover/water on-site stockpiles of excavated material. • Enforce a 20 mph speed limit on unpaved surfaces. • Pave permanent roads as quickly as possible to minimize dust. **MM-AQ-3** The following measure shall be included as part of the proposed project's Fugitive Dust Plan to reduce emissions associated with blasting and rock crushing activities: a. During blasting activities, the construction contractor shall implement all feasible engineering controls to control fugitive dust including exhaust ventilation, blasting cabinets and enclosures, vacuum blasters, drapes, water curtains or wet blasting. Watering methods, such as water sprays and water applications shall be implemented during blasting, rock crushing, cutting, chipping, sawing, or any activity that would release dust particles to reduce fugitive dust emissions. b. During rock crushing transfer and conveyance activities, material shall be watered prior to entering the crusher. Crushing activities shall not exceed an opacity limit of 20% (or Number 1 on the Ringelmann Chart) as averaged over a 3 minute period in any period of 60 consecutive minutes, in accordance with SDAPCD Rule 50, Visible Emissions. A qualified opacity observer shall monitor opacity from crushing activities once every 30 days while crushers are employed on site to ensure compliance with SDAPCD Rule 50. Water sprayers, conveyor belt enclosures or other mechanisms shall be employed to reduce fugitive dust generated during to transfer and conveyance of crush material.	

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	Although emissions would be below the thresholds at the project level, generation of these criteria pollutant emissions when combined with other cumulative projects, particularly those occurring simultaneously during various construction periods of the proposed project, could potentially result in a temporary significant cumulative impact to air quality.	MM-AQ-1, MM-AQ-2, and MM-AQ-3, above.	Construction would remain significant and unavoidable. Operation would be less than significant.
5.7 Hazards and Risk of Upset			
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?	There is the potential some areas containing contaminated soils exist on site from previous agricultural uses.	**MM HAZ-1** Prior to issuance of the grading permit for Otay Ranch Village Four Sectional Planning Area Plan Project, the applicant shall prepare a soils assessment to the satisfaction of the City of Chula Vista Engineer to determine if residual pesticides, herbicides, and/or arsenic are present on site. The assessment shall be prepared by a Registered Environmental Assessor in accordance with Department of Toxic Substances Control guidance document. The assessment shall include analysis for organochlorine pesticides that include compounds such as toxaphene, dichlorodiphenyldichloroethane (DDD), dichlorodiphenyltrichloroethane (DDT), and dichlorodiphenyldichloroethylene (DDE), which have been historically identified at properties in the site vicinity. The concentrations of the contaminants shall be compared to regulatory agency soil screening levels for residential land use (e.g., U.S. Environmental Protection Agency Region IX Soil Screening Levels). If levels of contamination exceeding the soil screening levels are found on site, a Soil Reuse Plan shall be prepared prior to construction on site. The Soil Reuse Plan shall include a determination of the suitability of the soils for on-site or off-site reuse, any special handling provisions that shall be incorporated as part of the site grading activities, and	Less than significant.

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation		Impact Level After Mitigation
			the procedure for the proper remediation and disposal of the contaminated soils, either on site or off site. The results of the limited soil assessment and the Soil Reuse Plan shall be submitted to the County of San Diego Department of Environmental Health, the Development Services Director (or their designee), and/or the Regional Water Quality Control Board for review and approval, prior to implementation.	
Is located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport and would result in a safety hazard for people residing or working in the project area?	Due to the proximity of Brown Field Airport, impacts would be potentially significant.	**MM HAZ-2**	Prior to issuance of a building permit for the first structure and/or dwelling unit within the Airport Influence Area of Brown Field, the applicant shall prepare and file a Form 7460-1, Notice of Proposed Construction or Alteration, with the Federal Aviation Administration to ensure that no objects related to development would present a hazard to air navigation.	Less than significant.
		MM HAZ-3	Prior to the issuance of a building permit for the first structure and/or dwelling unit within the Airport Influence Area of Brown Field, the applicant shall obtain and provide proof of Federal Aviation Administration clearance to the satisfaction of the Development Services Director (or their designee).	
		MM HAZ-4	Prior to approval of the first Final Map for those areas within the overflight notification area for Brown Field, the applicant shall record the Airport Overflight Agreement with the County of San Diego Recorder's office, and provide a signed copy of the recorded Airport Overflight Agreement to the City of Chula Vista's Development Service Director (or their designee).	
5.8 Noise				
Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	The first row of homes aligned closest to Main Street would be exposed to traffic noise levels ranging from 68 to 73 dBA CNEL from future traffic Second-floor exterior uses such as usable balconies (if these are incorporated into	**MM-N-1**	Prior to the approval of grading permits for residential development adjacent to Main Street, the project applicant or its designee shall be responsible for the preparation of a subsequent acoustical study based on the final map design and implementation of any measures recommended as a result of the analysis to the satisfaction of the Development Services Director (or their designee). The study shall include the following: 1. Location, height, and building material of the noise barriers in accordance with Figure 6 (Approximate Sound Wall Locations), contained in the Noise Assessment Technical Report for the Otay Ranch Village Four Project (Appendix	Less than significant.

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
	the residential designs) fronting along Main Street would exceed the City's 65 dBA CNEL noise standard. Additionally, interior noise levels at residences adjacent to Main Street would have the potential to exceed 45 dBA CNEL.	G to the EIR). The sound wall noise barriers shall be a minimum of 6 feet in height, must have a surface density of at least 4 pounds per square foot, and be free of openings and cracks. The wall may be constructed of acrylic glass, masonry material, earthen berm, or a combination of these materials. Heights are provided relative to final pad elevation. Required heights may be achieved through construction of walls, berms or a wall/berm combination. 2. A detailed analysis that demonstrates that barriers and/or setbacks have been incorporated into the project design, such that noise exposure to residential receivers placed in all useable outdoor areas, including multi-family residential patios and balconies, are at or below 65 dBA CNEL. 3. Should pad grade elevations, lot configuration/site design, and/or traffic assumptions change during the processing of any final maps, the barriers shall be refined to reflect those modifications. **MM-N-2** Site-Specific Acoustic Analysis – Single-Family Residences. Concurrent with design review and prior to the approval of building permits for single-family residential development where the exterior noise level exceeds 60 dBA CNEL and/or where usable outdoor area (patios or balconies) noise levels exceed 65 dBA CNEL (as shown on Figure 5.8-3 of the EIR), the applicant shall prepare an acoustical analysis ensuring that interior noise levels due to exterior noise sources are at or below 45 dBA CNEL and the City of Chula Vista's Exterior Land Use/Noise Compatibility Guidelines for outdoor use areas (i.e., 65 dBA CNEL) are met. Design-level architectural plans shall be used to calculate the exterior-to-interior transmissions loss for habitable rooms. Contingent on the results of the interior acoustical analysis, units may need to include an air conditioning system to provide a habitable interior environment with the windows closed while meeting the interior standard of 45 dBA CNEL. The acoustical analysis shall be prepared to the satisfaction of the Director of Development Services (or their designee), and all required noise control measures identified in the acoustical analysis shall be made conditions of building permit issuance. **MM-N-3** Site-Specific Acoustic Analysis – Multi-Family Residences. Concurrent with design	

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation		Impact Level After Mitigation
			review and prior to the approval of building permits for multi-family areas where first and/or second floor exterior noise levels exceed 60 dBA CNEL and/or where usable outdoor area (patios or balconies) noise levels exceed 65 dBA CNEL (as shown on Figure 5.8-3 of the EIR), the applicant shall prepare an acoustical analysis demonstrating compliance with California's Title 24 Interior Noise Standards (i.e., 45 dBA CNEL) and the City of Chula Vista's Exterior Land Use/Noise Compatibility Guidelines for outdoor use areas (i.e., 65 dBA CNEL). Design-level architectural plans shall be available during design review and will permit the accurate calculation of transmissions loss for habitable rooms. For these areas, it may be necessary for the windows to be able to remain closed to ensure that interior noise levels meet the interior standard of 45 dBA CNEL. Consequently, the design for buildings in these areas may need to include a ventilation or air conditioning system to provide a habitable interior environment with the windows closed based on the result on the interior acoustical analysis.	
Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	Construction related blasting and rock crushing could result in substantial vibration and noise impacts.	**MM-N-4**	Prior to the issuance of a grading permit, a blasting plan shall be required in the event that blasting is proposed in Village Four. The project applicant or its designee shall prepare a blasting plan to ensure that exterior noise levels and vibrations at noise sensitive land uses are in compliance with the City of Chula Vista General Plan Exterior Land Use / Noise Compatibility Guidelines and the City's Noise Ordinance Exterior Noise Limits. The plan shall be prepared by a licensed blasting engineer and identify when such blasting events would occur, the approximate amount of explosives to be used (which amount shall be limited to the extent practicable so as to minimize resulting noise), and the location and proximity of the blasting event relative to sensitive receptors. If deemed beneficial for noise reduction purposes, the plan shall include a requirement that blasting mats be used. The blasting plan shall also detail the surrounding zone in which noise-sensitive land uses would be notified of planned blasting activities, and of the nature of audible warning signals to be used just prior to blasting. The blasting plan shall be prepared to the satisfaction of the Development Services Director (or their designee), and all noise control measures identified in the blasting plan shall be made conditions of grading permit issuance.	Less than significant.
		MM-N-5	The project applicant, or its designee, shall ensure that on-site rock crusher facilities	

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		are located a minimum of 600 feet from the property line of occupied residences or other noises-sensitive uses.	
A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	The generation of noise from construction activities during noise-sensitive time periods upon completed and occupied components of the project is considered a significant impact.	MM-N-4 and MM-N-5 above. **MM-N-6** All project-related site preparation and construction activities shall be limited to the hours between 7 a.m.–6 p.m., Monday–Friday, and between 8 a.m.–6 p.m. Saturday. No construction activities shall occur on federal holidays (e.g., Thanksgiving, July 4th, Labor Day). All maintenance of construction equipment shall be limited to the same hours. This language shall be added to the project grading plans. Non-noise-generating construction activities such as interior painting are not subject to these restrictions.	Less than significant.
		5.10 Geology and Soils	
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?	The surficial soil within the project site consists of topsoil, colluvium, alluvium, and compressible portions of the landslide debris. These soils are not considered suitable for the support of the proposed project development.	**MM-GEO-1** Prior to the issuance of the grading permit, the applicant(s) shall verify that the applicable recommendations of the Preliminary Geotechnical Investigation: Otay Ranch Village 4, prepared by Geocon Inc. on March 15, 2015, have been incorporated into the project design and construction documents and conforms to the most recent California Building Code to the satisfaction of the City of Chula Vista Engineer. Recommendations include the following: 1. Potential for soil expansion shall be evaluated once final grade is achieved. 2. During grading, compressible soils shall be removed and replaced with compacted fill. 3. Site drainage and moisture protection measures, such as provisions for underground utilities, landscaping, and maintaining adequate site drainage to prevent soil movement, shall be ensured. 4. Additional geotechnical report updates shall made as development of Village Four continues to assess proposed grading for each neighborhood.	Less than significant.
Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks	Underlying geologic soils exhibit high expansivity.	MM-GEO-1 above.	Less than significant.

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
to life or property?			
5.11 Public Services and Utilities			
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 fire protection and emergency services?	The project would result in an incremental increase in demand for fire and emergency services.	**MM-PUB-1** Prior to the issuance of each building permit for any residential dwelling units, the Applicant(s) shall pay a Public Facilities Development Impact Fee (PFDIF) in accordance with the fees in effect at the time of building permit issuance and phasing approved in the Public Facilities Finance Plan, unless stated otherwise in a separate development agreement.	Less than Significant.
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	The project would result in an incremental increase in demand for police services.	MM-PUB-1 above.	Less than Significant.

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police protection services? The City's EIR Scoping Letter Contents and Thresholds states that the proposed project would have a significant impact on police services if it would: i. Exceed the City's Threshold standards to respond to Priority One emergency calls throughout the City (within seven minutes and 81% of the cases and an average response time to all Priority One calls of 5.5 minutes of less). ii. Exceed the City's threshold standards to respond to Priority Two urgent			

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
calls throughout the City (within seven minutes in 57% of cases and an average response time to all Priority Two calls of 7.5 minutes or less). Be inconsistent with General Plan objectives and policies regarding police protection thereby resulting in a significant physical impact?			
Result in substantial adverse physical impact 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	The project would result in an incremental increase in demand for library services.	MM-PUB-1 above.	Less than Significant.

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
for library services? The City's EIR Scoping Letter Contents and Thresholds states that the proposed project would have a significant impact on library services if it would: Fail to meet the City's threshold standard of 500 gross square feet of library space, adequately equipped and staffed, per 1,000 population. Be inconsistent with General Plan, GDP or other objectives and policies regarding library services thereby resulting in a significant physical impact?			
Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically	The project would result in an incremental increase in demand for schools.	**MM-PUB-2** Prior to the issuance of each building permit for any residential dwelling units, the Applicant(s) shall provide evidence or certification by the Chula Vista Elementary School District (CVSD) that any fee charge, dedication or other requirement levied by the school district has been complied with or that the district has determined the fee, charge, dedication or other requirements do not apply to the construction or that the Applicant has entered into a school mitigation agreement. School Facility Mitigation Fees shall be in accordance with the fees in effect at the time of building permit	Less than Significant.

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
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 educational facilities services? Be inconsistent with General Plan, GDP, and other objectives and policies regarding school services thereby resulting in a significant physical impact?		issuance.	
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? The City's EIR Threshold Standards Policy states that the proposed project would have a significant impact on	The project would result in an incremental increase in demand for parks.	MM-PUB-1 above.	Less than Significant.

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
parks and recreation services if it would: Fail to meet the City's growth management threshold standard for parks and recreation of three acres of neighborhood and community parkland per 1,000? Be inconsistent with General Plan, GDP or other relevant objectives and policies regarding parks thereby resulting in a significant physical impact?			
Increase the demand of energy resources to exceed the City's available supply or cause a need for new and expanded facilities the construction of which would cause significant environmental impacts in order to maintain acceptable service ratios, response times or other performance objectives.	Because no assurance can be made that long-term energy would be supplied to the site and other planned sites, at full buildout and beyond, impacts would be cumulatively considerable.	No feasible mitigation.	Significant and unavoidable cumulative impact.
Be inconsistent with General Plan, GDP or	The proposed project would result in an incremental	**MM PUB-3** The Applicant shall finance or install all on-site and off-site sewer facilities required to serve development ~~in each village~~ in accordance with the fees and phasing in the	Less than Significant.

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
other relevant objectives and policies regarding wastewater thereby resulting in a significant physical impact?	increase in demand for sewer services.	approved PFFP to the satisfaction of the City Engineer. Prior to issuance of each building permit, the Applicant shall pay the Salt Creek Basin Development Impact Fee at the rate in effect at the time of building permit issuance. If at any time the City Engineer determines that the City of Chula Vista does not have adequate sewer treatment capacity with San Diego Metro, building permits shall not be issued for the project.	
5.12 Climate change			
Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	The proposed project's service population-based emissions would be more than the City's proposed efficiency metric of 1.3 MT CO_2E/SP/yr	**MM-GHG-1** **Greenhouse Gas Emissions Reduction Measures.** The following GHG emissions reduction measures shall be implemented: • Use of 100% reclaimed water for outdoor water use (project design feature) • Prior to the issuance of a Building Permit, the floor plans and/or exterior elevations submitted in conjunction with the Building Permit application shall show use of low flow water fixtures such as low flow toilets, faucets, showers, etc (project design feature) • Use of low speed vehicles (LSV) as alternative modes of travel between the Otay Ranch Villages (project design feature) • Multi-family residential uses to provide preferential parking for carpool, shared, electric, and hydrogen vehicles. Single-family uses to include wiring for at least one electric car charging station. • Exceed Title 24 Building Energy Efficiency Standards by 15%. • Equip the pool(s) and spa(s) with active solar water heating systems. • Use of energy efficient lighting for all street, parking, and area lighting associated with the proposed project, including all on-site and off-site lighting. • Implement energy-efficient design practices such as high-performance glazing, Energy Star compliant systems and appliances, radiant heat roof barriers, insulation on all pipes, programmable thermostats, solar access, and sealed ducts. • Use native species and drought tolerant species for a minimum of 50% of the ornamental plant palette in non-turf areas for to minimize water demand. • Ensure recycling of construction debris and waste through administration by an on-site recycling coordinator and presence of recycling/separation areas.	Significant and unavoidable direct and cumulative impacts.

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	The proposed project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.	MM-GHG-1 above.	Significant and unavoidable direct and cumulative impacts.
5.14 Paleontological Resources			
Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Underlying geologic formations have moderate sensitivity for paleontological resources and would be impacted by excavation.	**MM-PAL-1** Prior to the issuance of grading permits, the project applicant shall provide written confirmation to the City of Chula Vista that a qualified paleontologist has been retained to carry out an appropriate mitigation program (a qualified paleontologist is defined as an individual with an M.S. or Ph.D. in paleontology or geology who is familiar with paleontological procedures and techniques). A pre-grade meeting shall be held among the paleontologist and the grading and excavation contractors. A paleontological monitor shall be on site at all times during the original cutting of previously undisturbed sediments of highly sensitive geologic formations (i.e., Otay Formation and Quaternary alluvial and terrace deposits) to inspect cuts for contained fossils (a paleontological monitor is defined as an individual who has experience in the collection and salvage of fossil materials). The paleontological monitor shall work under the direction of a qualified paleontologist. The monitor shall be on site on at least a half-time basis during the original cutting of previously undisturbed sediments of moderately sensitive geologic formations (e.g., unnamed river terrace deposits and the Mission Valley Formation) to inspect cuts for contained fossils. However, neither of these rock units have been mapped within the project site, and are, therefore, not anticipated to be impacted during construction. The monitor shall be on site on at least a quarter-time basis during the original cutting of previously undisturbed sediments of low-sensitivity geologic formations (e.g., Lindavista Formation and Santiago Peak Volcanics [metasedimentary portion only]) to inspect cuts for contained fossils. However, these deposits have not been mapped within the project site, and are, therefore, not anticipated to be impacted during construction. The monitor shall periodically (every several weeks) inspect original cuts in deposits with an unknown resource sensitivity (i.e., Quaternary alluvium).	Less than significant.

Table 1-2
Summary of Significant Environmental Impacts and Mitigation

Environmental Issue	Result of Impact Analysis	Mitigation	Impact Level After Mitigation
		In the event that fossils are discovered in unknown, low, or moderately sensitive formations, the applicant shall increase the per-day field monitoring time. If fossils are not discovered and at the discretion of the City of Chula Vista's Deputy City Manager/Development Services Director or her/his designee, monitoring shall be reduced. A paleontological monitor is not needed during grading of rocks with no resource sensitivity (i.e., Santiago Peak Volcanics, metavolcanic portion). When fossils are discovered, the paleontologist (or paleontological monitor) shall recover them. In most cases, this fossil salvage can be completed in a short period of time. However, some fossil specimens (such as a complete whale skeleton) may require an extended salvage time. In these instances, the paleontologist (or paleontological monitor) shall be allowed to temporarily direct, divert, or halt grading to allow recovery of fossil remains in a timely manner. Because of the potential for the recovery of small fossil remains such as isolated mammal teeth, it may be necessary in certain instances and at the discretion of the paleontological monitor to set up a screen-washing operation on the site. Prepared fossils, along with copies of all pertinent field notes, photos, and maps, shall be deposited in a scientific institution with paleontological collections, such as the San Diego Natural History Museum. A final summary report shall be completed. This report shall include discussions of the methods used, stratigraphy exposed, fossils collected, and significance of recovered fossils.	

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CHAPTER 2
INTRODUCTION

This chapter of the Environmental Impact Report (EIR) describes the purpose, scope and legislative authority of the EIR, the intent of the California Environmental Quality Act (CEQA) and other pertinent environmental rules and regulations, and the environmental review process. The section also includes the structure, required contents, and relationship of the EIR to other potential responsible or trustee agencies.

2.1 PROJECT PURPOSE AND BACKGROUND

This EIR addresses the environmental effects associated with the proposed Village Four Sectional Planning Area (SPA) Plan (proposed project). Implementation of the proposed project requires an Otay Ranch General Development Plan (GDP) Amendment.

This EIR was prepared in accordance with CEQA (Public Resources Code, Section 21000 et seq.), the CEQA Guidelines (14 CCR 15000 et seq.), and the City of Chula Vista's (City) environmental review procedures. The City is the lead agency for the EIR and processing of the proposed project.

This EIR provides decision makers, public agencies, and the public with detailed information about the potential for significant adverse environmental impacts to occur as a result of the proposed project. Similarly, responsible agencies will use this EIR to fulfill their legal authority associated with permits issued for the proposed project. The analysis and findings in this document reflect the independent judgment of the City.

2.2 HIERARCHY OF OTAY RANCH PLANNING DOCUMENTS

2.2.1 City of Chula Vista General Plan

California law requires that each county and city adopt a General Plan "for the physical development of the County or City, and of any land outside its boundaries which…bears relation to its planning" (California Government Code, Section 65300). Each General Plan must be internally consistent and all discretionary land use plans and projects must also be consistent with the General Plan.

The City of Chula Vista City Council adopted an updated General Plan on December 13, 2005 (Resolution Nos. 2005-424, 2005-425, 2005-426). The City's General Plan outlines goals, objectives, and policies for land use in the City in response to the community's vision for the City. This General Plan also guides day-to-day decision making to ensure that there is a continuing progress toward the attainment of the General Plan goals.

The General Plan Update includes Area Plans for specific parts of the City, including the East Planning Area, where the proposed project is located. Otay Ranch is one of six subareas within the East Planning Area and is further broken down into four Planning Districts: Western District, Central District, Otay Valley District, and Eastern University District.

The vision for the Otay Ranch Subarea is "villages that integrate neighborhoods, shops and employment opportunities with parks, schools, and other civic facilities that create a community with a shared sense of pride and place" (City of Chula Vista 2005). A series of objectives and policies are intended to guide development within the Otay Ranch toward the overall vision. In addition, each district has its own vision, objectives, and policies to provide additional guidance for development in these areas.

2.2.2 Otay Ranch General Development Plan

Otay Ranch is an approximately 23,000-acre master planned community in southern San Diego County within the limits of the City. The Otay Ranch GDP includes plans for multiple urban villages and town centers, a resort village, a university site, a regional technology park, a regional open space Preserve, freeway commercial area, the Eastern Urban Center, industrial areas, and two rural estate planning areas. Overall, there are approximately 11,375 acres of land identified as the Otay Ranch Preserve.

The Otay Ranch GDP groups residential areas into "Villages." The heart of the village is the "village core." Pursuant to the guidelines in the Otay Ranch GDP, village cores are strategically located within each village. These are mixed-use areas designed to contain essential facilities and services such as elementary schools, shops, civic facilities, childcare centers, local parks, and higher-density housing.

The Otay Ranch GDP was amended in conjunction with the General Plan Update process in 2005 and was most recently updated in February 2013 to address provisions relating to Villages Eight, Nine, and Ten/University, which were deferred for an interim period by the City Council.

In addition to establishing community-wide land use policies, the Otay Ranch GDP includes an Overall Design Plan, which provides a design context for the entire Otay Ranch and serves as the basis for Village Design Plans prepared for each village.

2.2.3 Otay Ranch Resource Management Plan and Multiple Species Conservation Program

The project site is part of the Otay Ranch Resource Management Plan (RMP). The RMP was approved concurrently with the Otay Ranch GDP by the County of San Diego and the City in October 1993. The RMP comprises two separate documents, the Phase 1 RMP and Phase 2 RMP.

The Phase 1 RMP identifies Preserve areas within Otay Ranch and contains policies regarding species and habitat conservation and long-term management of the Preserve. The Phase 2 RMP includes ranch-wide studies that were conducted pursuant to the Phase 1 RMP and provides additional detail on conveyance, management, and funding (City of Chula Vista and County of San Diego 1993, 2002).

The municipalities of southern San Diego County collaborated in producing the Multiple Species Conservation Program (MSCP) Subregional Plan. The MSCP Subregional Plan is implemented through individual Subarea Plans adopted by each jurisdiction receiving "take" authorization for covered species. The Chula Vista MSCP Subarea Plan provides for conservation of upland habitats and species through Preserve design, regulation of impacts and uses, and management of the Preserve (City of Chula Vista 2003).

2.2.4 Sectional Planning Area Plans

The Otay Ranch GDP is implemented through more detailed plans called "Sectional Planning Areas" (or SPA) Plans. A SPA Plan implements the plans, policies, and objectives of the Otay Ranch GDP by further defining land uses, development standards, and zoning for a particular portion of the Otay Ranch. SPA Plans also establish design criteria and define the type and amount of development permitted. Section E.1.a of the Otay Ranch GDP specifies the contents of a SPA Plan. The proposed project constitutes the Village Four SPA Plan.

2.2.5 Subdivisions and Building Permits

Upon approval of SPA Plans, property may be subdivided in accordance with the California Subdivision Map Act and the applicable Subdivision Ordinances. Thereafter, building permits may be issued. The proposed project includes Tentative Maps for development of Village Four.

2.3 SCOPE OF THE ENVIRONMENTAL IMPACT REPORT

Pursuant to Section 15161 of the CEQA Guidelines, this document was prepared as a "project EIR" and is "focused primarily on the changes in the environment that would result from the development" (i.e., the build out of the proposed project). Where environmental impacts have been determined to be potentially significant, this EIR presents mitigation measures directed at reducing those adverse environmental effects. The development of mitigation measures provides the lead agency with ways to substantially lessen or avoid the significant effects of the project on the environment, to the degree feasible. Alternatives to the proposed project are presented to evaluate whether there are alternative development scenarios that can further minimize or avoid significant impacts associated with the project.

2.4 ENVIRONMENTAL PROCEDURES

2.4.1 California Environmental Quality Act Compliance

The California Public Resources Code (Section 21000 et seq.) requires the preparation and certification of an EIR for any project that a lead agency determines may have a significant effect on the environment. This EIR has been prepared in compliance with all criteria, standards, and procedures of the CEQA Guidelines (14 CCR Section 15000 et seq.).

2.4.2 Notice of Preparation and Scoping

CEQA establishes mechanisms whereby the public and decision makers can be informed about the nature of a proposed project and the extent and types of impacts that the project and its alternatives would have on the environment, should the project or alternatives be implemented. Pursuant to Section 15082 of the CEQA Guidelines, the City circulated a Notice of Preparation (NOP) dated April 21, 2016, to begin a 30-day public scoping period, to interested agencies, organizations, and parties. The NOP was also sent to the State Clearinghouse at the California Office of Planning and Research. The State Clearinghouse assigned a state identification number (SCH No. 2016041080) to this EIR.

The NOP is intended to encourage interagency communication regarding the proposed action so that agencies, organizations, and individuals are afforded an opportunity to respond with specific comments and/or questions regarding the scope and content of the EIR. A public scoping meeting was held on May 9, 2016, beginning at 2:30 p.m., at 276 Fourth Avenue (Building A, Executive Conference Room), Chula Vista, California, 91910, to gather additional public input.

Comments received during the NOP public scoping period were considered during the preparation of this EIR. The NOP and comments are included in Appendix A to this EIR. Eight comment letters were received in response to the NOP and public scoping meeting. Comments covered a variety of topics, including increases in traffic within Chula Vista and surrounding jurisdictions, school developer fees, and impacts to biological resources.

Based on the scope of the proposed project as described in the NOP, the following issues were determined to be potentially significant and are addressed in Chapter 5, Environmental Impact Analysis, of this EIR:

- Land Use, Planning, and Zoning
- Landform Alteration/Aesthetics
- Transportation, Circulation, and Access
- Air Quality

- Noise
- Cultural Resources
- Biological Resources
- Agricultural Resources
- Water Quality and Hydrology
- Geology and Soils
- Public Services and Utilities
- Climate Change
- Hazards and Risk of Upset
- Housing and Population
- Paleontological Resources

2.4.3 Overview of the EIR Process

This EIR will be made available to members of the public, agencies, and interested parties for a 45-day public comment period in accordance with Section 15105 of the CEQA Guidelines. Public comment of the EIR is intended to focus "on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated" (14 CCR 15204). The Notice of Completion of the EIR will be filed with the State Clearinghouse as required by Section 15085 of the CEQA Guidelines. In addition, the Notice of Availability of the EIR will be distributed pursuant to Section 15087 of the CEQA Guidelines. Interested parties may provide comments on the EIR in written form. This EIR and all related technical appendices are available for review upon request during the 45-day public comment period at the following locations:

- The offices of the City of Chula Vista, Development Services Department, located at 276 Fourth Avenue, Chula Vista, California 91910
- The Chula Vista Public Library, 365 F Street, Chula Vista, California 91910

Once the 45-day public comment period has concluded, the City will review all public comments on the EIR, provide written responses to comments, and authorize revisions to the EIR text, if necessary. The final Mitigation Monitoring and Reporting Program (MMRP) will be incorporated into the Final EIR. Mitigation measures contained in the EIR consider future monitoring requirements and are written in sufficient detail to address impacts of the proposed project, referencing the appropriate implementing permits and plans. If one or more significant environmental impacts are determined, written findings for each of those significant effects, accompanied by an overriding justification and rationale for each finding in the form of a

statement of overriding considerations will also be included in the Final EIR, if necessary. The Final EIR includes all comment letters received, final written response to comments, a Final EIR preface, if applicable, edits made to the EIR as a result of public review/comment, and findings of fact and statement of overriding considerations, if necessary.

2.5 INTENDED USES OF THE EIR

According to Section 21002.1(a) of the Public Resources Code (CEQA), "[t]he purpose of an environmental impact report is to identify the significant effects of a project, to identify alternatives to the project, and to indicate the manner in which those significant effects can be mitigated or avoided." This EIR provides relevant information concerning the potential environmental effects associated with construction and operation of the proposed project and identifies and evaluates potentially significant effects that may result from implementation of the proposed project. It is intended for use by decision makers and the public.

As the designated lead agency, the City has assumed responsibility for preparing this EIR. When deciding whether to approve the proposed project, the City will use the information provided in this EIR to consider potential impacts to the physical environment associated with the proposed project. The City will consider all written comments received on the EIR during the 45-day public comment period in making its decision to certify the EIR as complete and in compliance with CEQA and in making its determination whether to approve or deny the project. In the final review of the document, environmental considerations, and economic and social factors will be weighed to determine the most appropriate course of action.

After certification of the Final EIR, agencies with permitting authority over all or portions of the project will use the Final EIR as the basis for their evaluation of environmental effects related to the project and approval or denial of other applicable permits or authorizations.

2.6 ORGANIZATION AND CONTENT OF THE EIR

This EIR is organized to provide a tiered project-level analysis of the potentially significant environmental impacts, mitigation measures, and alternatives for the proposed project. To describe the direct, indirect, and cumulative impacts, mitigation measures, and alternatives for the proposed project, this EIR is organized as follows:

- Chapter 1, Executive Summary, outlines the conclusions of the environmental analysis and a summary of the project as compared to the alternatives analyzed in the EIR. This section also includes a table summarizing all environmental impacts identified in this EIR along with the associated mitigation measures proposed to reduce or avoid each impact.

- Chapter 2, Introduction, serves as a foreword to this EIR, introducing the project background, applicable environmental review procedures, and format of the EIR.
- Chapter 3, Environmental Setting, describes the project location and physical environmental setting.
- Chapter 4, Project Description, provides a thorough description of the proposed project and required discretionary approvals.
- Chapter 5, Environmental Impact Analysis, provides an analysis of the potentially significant environmental impacts identified, and proposed mitigation measures to reduce or avoid any potentially significant impacts.
- Chapter 6, Cumulative Impacts, provides an analysis of the cumulative effects of the proposed project.
- Chapter 7, Growth Inducement, discusses the project's potential growth-inducing impact.
- Chapter 8, Significant Irreversible Environmental Changes, addresses impacts that have been identified as significant and irreversible.
- Chapter 9, Effects Found not to be Significant, address impacts that were determined to not be significant during the scoping process.
- Chapter 10, Alternatives, analyzes a range of reasonable alternatives to the proposed project that would lessen or avoid significant environmental effects of the proposed project.
- Chapter 11, References, provides a compiled list of references cited in each section of the EIR.
- Chapter 12, List of Preparers, provides a list of persons that contributed to the preparation of this EIR.
- Appendices include various technical studies and correspondence prepared for the project, as listed in the table of contents.

2.7 MITIGATION MONITORING AND REPORTING PROGRAM

The City will prepare an MMRP prior to project approval. The MMRP will include all mitigation measures outlined in the EIR, the responsible entity for implementation, implementation timing (prior to construction, during construction, post-construction), and any follow-up reporting requirements (such as submittal of materials to regulatory agencies). The City, as the designated lead agency, is responsible for enforcing and verifying that each mitigation measure is implemented as required.

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CHAPTER 3
ENVIRONMENTAL SETTING

This chapter provides a description of the existing site conditions, surrounding land uses, and land use planning context relevant to the proposed Village Four Sectional Planning Area (SPA) Plan (project). Additionally, this chapter includes a description and map of related projects and growth factor assumptions for the project area.

3.1 EXISTING SITE CONDITIONS

Otay Ranch lies within the East Planning Area of the City of Chula Vista (City), as identified in the City's General Plan (City of Chula Vista 2005). The proposed project is a component of the Otay Ranch General Development Plan (GDP), which organizes the Otay Ranch into 20 villages, or planning areas (City of Chula Vista and County of San Diego 1993). The approximately 165.93-acre project site is located within the Otay Valley Parcel of the Otay Ranch GDP area. The project site is composed of a portion of Village Four, which owned by Otay Valley Quarry LLC. The entire Village Four site as identified in the Otay Ranch GDP is composed of approximately 528 acres and was intended to be a lower-density village compared to surrounding villages due to its scenic location near Rock Mountain and limited area, being bound by the Otay River Valley and Wolf Canyon.

Historically, the Otay Valley parcel, including the project site, has been used for ranching, grazing, dry farming, and truck farming activities. Village Four currently consists of vacant and undeveloped land. There are a number of dirt roads traversing the project site.

3.1.1 Surrounding Land Uses

The project site is surrounded by other Otay Ranch villages and a variety of land uses and natural features. Village Four is surrounded by Village Three to the west, Villages Two and a portion of Village Four under a different SPA Plan to the north, Village Eight West to the east, and the Vulcan Materials mining operations to the south.

3.1.2 Existing Topography and Soils

The project area is topographically diverse, with elevations ranging from approximately 165 feet above mean sea level at the storm drain outlet and sewer tie-in located just outside Otay River within off-site quarry lands to 610 feet above mean sea level along the southeastern boundary of Village Four. There are two drainages on site that drain into Wolf Canyon and ultimately the Otay River, which is located immediately south of Main Street.

Soils on site consist of Diablo clays, gravel pits, Linne clay loams, Las Posas stony fine sandy loam, Olivenhain cobbly loam, and Salinas clay loam (Appendix B). Village Four soils are

dominated by the Diablo clays and Linne clay loam. Geotechnical surveys confirmed four surficial deposits consisting of undocumented fill, topsoil/colluvium, landslide debris, and alluvium (Appendix I). The undocumented fill is attributed to the existing quarry. The topsoil/colluvium consists of sandy clay to clayey sand with gravel and cobble, the alluvium is composed of material found within the canyon drainages, and the landslide debris is generated from the Otay Formation (Appendix I).

3.1.3 Climate

The San Diego Air Basin experiences warm summers, mild winters, infrequent rainfalls, light winds, and moderate humidity. This usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The weather of the San Diego region, as in most of Southern California, is influenced by the Pacific Ocean and its semipermanent high-pressure systems that result in dry, warm summers and mild, occasionally wet winters. The average temperature ranges (in degrees Fahrenheit (°F)) from the mid-40s to the high 90s. Most of the region's precipitation falls during November through April, with infrequent (approximately 10%) precipitation during the summer. The average seasonal precipitation in Chula Vista is approximately 9 inches; the amount increases with elevation as moist air is lifted over the mountains to the east (WRCC 2016).

3.1.4 Access

Primary regional access to Village Four is from State Route 125 and Interstate 805 via Olympic Parkway and La Media Road. There is currently no public roadway access to or within the site.

3.2 EXISTING LAND USE DESIGNATIONS

Land uses within the project site are designated in both the City of Chula Vista General Plan and the Otay Ranch GDP. Zoning within the project site is designated by the City of Chula Vista Zoning Map (City of Chula Vista 2016a), which specifies the zoning for the entire Otay Ranch as Planned Community (PC), as defined in Chapter 19.48 of the Chula Vista Municipal Code (City of Chula Vista 2016b). Within the General Plan, the project site is designated as Residential Low Medium, Parks and Recreation, and Open Space Preserve (City of Chula Vista 2005). Within the Otay Ranch GDP, the project site is designated as Low Medium Density Residential, Parks and Recreation, and Chula Vista Open Space Preserve (City of Chula Vista and County of San Diego 1993).

CHAPTER 4
PROJECT DESCRIPTION

This section provides a description of the proposed Otay Ranch Village Four Sectional Planning Area (SPA) Plan Project (project). As required by Section 15124 of the California Environmental Quality Act (CEQA) Guidelines, this section of the environmental impact report (EIR) includes the precise location of the project site, a statement of the project objectives, a general description of project characteristics that accounts for public service facilities, and summary of the discretionary actions that would be required.

4.1 LOCATION

Otay Valley Quarry LLC is proposing to develop an approximately 166.02-acre site (Assessor's Parcel Number 644-060-24) within the Otay Ranch area of the City of Chula Vista (Figure 4-1, Regional Map, and Figure 4-2, Vicinity Map). The project site is located within the southern portion of the City of Chula Vista (City), in southwestern San Diego County, California. The site is located north of the active Vulcan Chula Vista Rock Quarry, east and south of Wolf Canyon, east of Otay Ranch Village Three North, and west of Otay Ranch Village Eight West. The project site is approximately 6.15 miles southeast of downtown Chula Vista, and 12.5 miles southeast of downtown San Diego. The project site is located immediately west of La Media Road, and approximately 1 mile south of Olympic Parkway.

4.2 BACKGROUND

The Otay Ranch General Development Plan (GDP) was adopted on October 28, 1993, with the concept to create a complete and balanced community clustered into villages with conveniently located housing, shops, work places, schools, parks, civic facilities, and open spaces. The Otay Ranch GDP/Subregional Plan is an integrated policy document that combines the requirements of the City of Chula Vista and the County of San Diego (City of Chula Vista and County of San Diego 1993).

The entire Village Four site as identified in the Otay Ranch GDP is composed of approximately 528 acres and was intended to be a lower-density village compared to surrounding villages due to its scenic location near Rock Mountain and limited area, being bound by the Otay River Valley and Wolf Canyon. Village Four was designed to contain a maximum of 350 single family residential units, with a buildout population of approximately ~~956~~1,141. Because of the lower density of Village Four and its relatively small area, it is likely that Village Four would use the services of Villages Seven and Eight, relying on them for retail and other services.

4.3 PROJECT OBJECTIVES

Following are the objectives of the proposed project:

1. Establish a pedestrian-oriented village designed to complement and support the neighboring Village Eight West land uses; reduce reliance on the automobile; and promote multimodal transportation, including walking and the use of bicycles, buses, and regional transit.
2. Promote synergistic uses between Village Four and Village Eight West and the University/Regional Technology Park to balance employment, retail, and educational activities, as well as services, housing, and public facilities.
3. Implement the goals, objectives, and policies of the Chula Vista General Plan; the Multiple Species Conservation Program (MSCP) Subarea Plan; the Otay Ranch General Development Plan; the Otay Ranch Phase 1 and Phase 2 Resource Management Plan; the Otay Ranch Facility Implementation Plan; the Otay Ranch Village Phasing Plan; and the Otay Ranch Service/Revenue Plan.
4. Implement the City of Chula Vista's Growth Management Ordinance to ensure that public facilities are provided in a timely manner and financed by the parties creating the demand for, and benefiting from, the improvements.
5. Foster development patterns that promote orderly growth and prevent urban sprawl.
6. Develop, maintain, and enhance a sense of community identity that complements Village Eight West.
7. Accentuate the relationship of the land use plan with its natural setting and the physical character of the region, and promote effective management of natural resources by concentrating development into less sensitive areas while preserving large contiguous open space areas with sensitive resources.
8. Establish multi-use trail linkages to the Chula Vista Greenbelt, consistent with the Greenbelt Master Plan and Otay Valley Regional Park Concept Plan.
9. Add to the creation of a unique Otay Ranch image and identity that differentiates Otay Ranch from other communities.
10. Establish a land use and facility plan that ensures the viability of the SPA Plan area in consideration of existing and anticipated economic conditions.
11. Provide a wide variety of housing options, including affordable housing, to City residents, future students, and faculty of the planned 4-year university and employees of the Regional Technology Park, Village Eight West, and Village Nine Town Center.



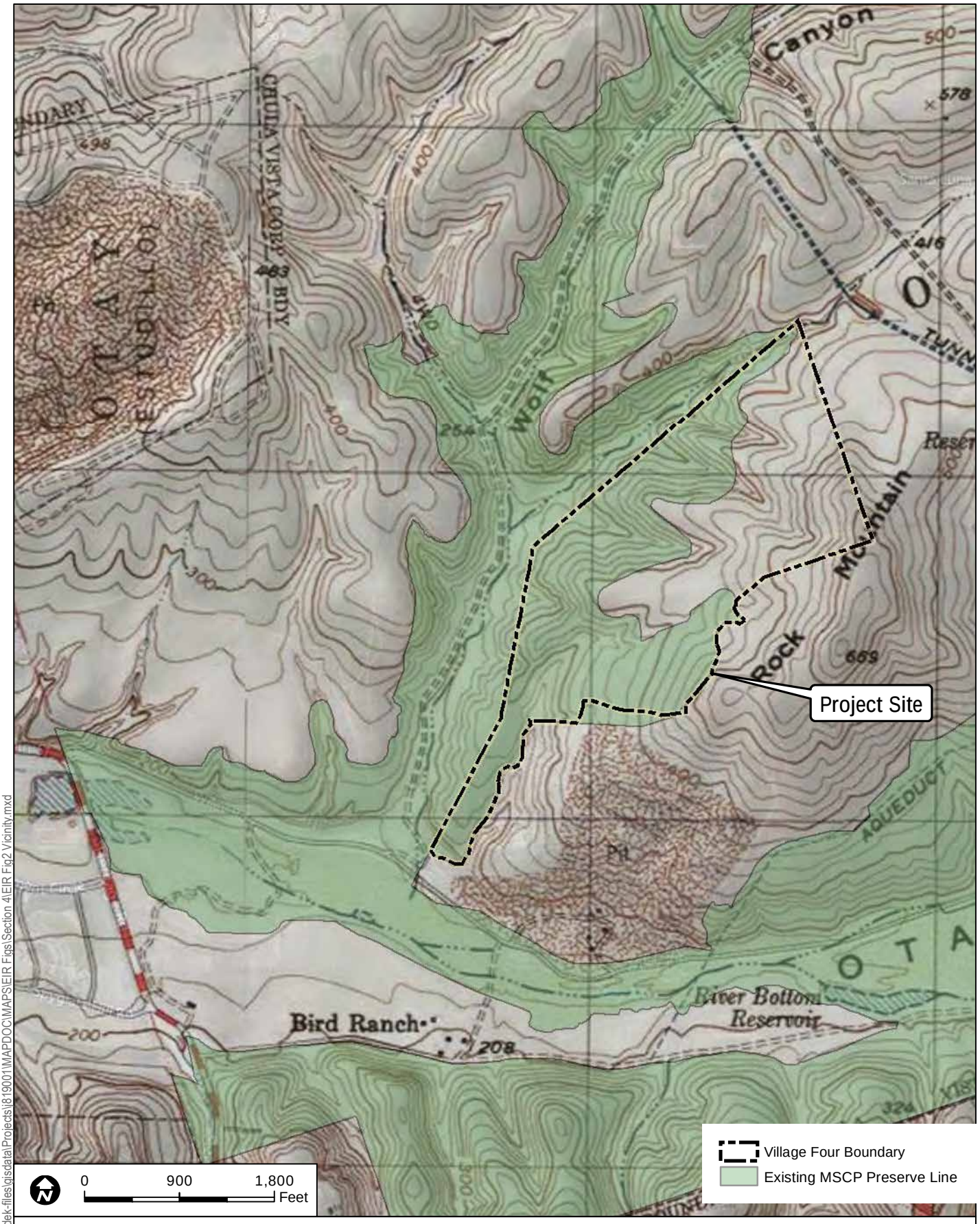
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FIGURE 4-1
Regional Map

Otay Ranch Village Four SPA Plan Environmental Impact Report

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SOURCE: BING MAPPING SERVICE, ATLANTIS GROUP 2016

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FIGURE 4-2
Vicinity Map

Otay Ranch Village Four SPA Plan Environmental Impact Report

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4.4 PROJECT DESCRIPTION

4.4.1 Land Uses

The proposed project is primarily a residential project with associated infrastructure and open space areas. The proposed land uses are summarized in Table 4-1 and shown in Figure 4-3, Project Site Plan.

Table 4-1
Village Four Sectional Planning Area Plan Land Use Summary

Land Use	Planning Area	Units	Gross Acres	Target Density
Residential				
Single-Family Residential – 3-6 du/ac				
SF	R-1	73	15.18	4.81
Multi-Family (Medium-High) Residential – 11-18 du/ac				
MF	R-2a	110	7.91	13.91
MF	R-2b	40	4.24	9.43
Multi-Family (High) Residential – 18-27 du/ac				
MF	R-3	127	7.16	17.74
	Residential Totals	*350*	*34.49*	*10.15*
Community Purpose Facility (CPF)				
CPF-1	CPF	–	1.21	-
CPF-2	CPF	–	0.87	-
	CPF Sub-Total	**-**	***2.08***	**-**
Open Space (OS)				
OS-1	OS	–	0.59	-
OS-2	OS	–	3.03	-
OS-3	OS	-	3.08	-
OS-4	OS	-	1.57	-
OS-5	OS	-	0.59	-
OS-6	OS	-	3.11	-
OS-8	OS	-	1.35	-
OS-9	OS	-	6.87	-
	Total Private Open Space	-	***20.19***	-
Open Space Preserve (OSP)				
OSP-7	Preserve	-	1.37	-
OSP-10	Preserve	-	6.67	-
OSP-11	Preserve	-	44.27	-
OSP-12	Preserve	-	44.89	-
	Total Preserve Open Space	**-**	***97.20***	**-**
	Open Space Sub-Total	**-**	***117.39***	**-**

Table 4-1
Village Four Sectional Planning Area Plan Land Use Summary

Land Use	Planning Area	Units	Gross Acres	Target Density
Open Space (OS)				
Circulation				
Main Street	Circulation	-	10.82	-
Internal Streets	Circulation	-	1.24	-
	Circulation Sub-Total	**-**	**12.06**	**-**
	Totals	**350**	**166.02**	**-**

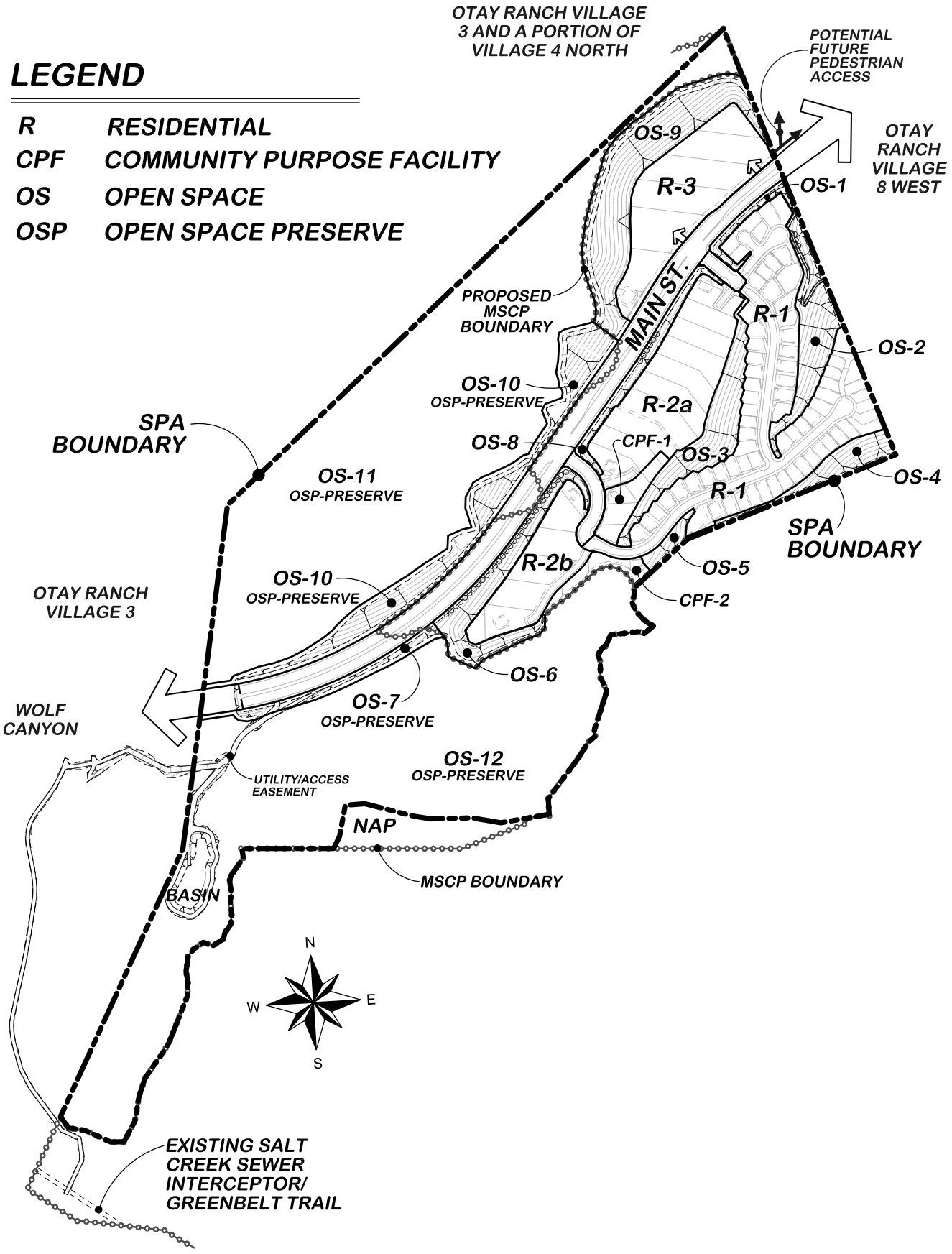
MSCP = Multiple Species Conservation Program
* The exact amount of community purpose facility for the project and on the north side of Main Street will be calculated in conjunction with the processing of Site Plan approval for the High Density Residential (R-3).

4.4.1.1 Residential

As shown in Table 4-1, the proposed project would introduce 73 single-family low- to medium-density residential dwelling units on 15.18 acres, 150 multi-family medium- to high-density residential dwelling units on 12.15 acres, and 127 multi-family high-density residential dwelling units on 7.16 acres, for a total of 350 units on approximately 34.49 acres of the project site. The overall density of the low- to medium-density residential units would range from 3 to 6 dwelling units per acre, medium- to high-density would range from 11 to 18 dwelling units per acre, and high-density would range from 18 to 27 dwelling units per acre. The overall target density for the residential portion of the proposed project is 10.15 dwelling units per acre.

The Village Four Residential District was created to achieve the residential goals and policies of the Otay Ranch GDP. Three basic residential unit types are anticipated in the Village Four SPA: single-family, small-lot single-family/duplexes/townhomes, and attached multi-family units. One single-family Planning Area (R-1) is provided for traditional single-family home development. Planning Areas R-2a and R-2b are provided for duplexes/townhomes and other similar products that allow a variety of housing types. The R-3 Planning Area is anticipated to provide traditional multi-family products such as stacked flats and grouped parking.

The proposed project's affordable housing unit obligation is based on the Village Four SPA entitlement authorization of 350 units within the village. The affordable units required for the proposed project are 17.5 low-income and 17.5 moderate-income affordable units.



SOURCE: Atlantis Group 2017

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FIGURE 4-3
Project Site Plan

Otay Ranch Village Four SPA Plan Environmental Impact Report

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4.4.1.2 Community Purpose Facility

Approximately 2.08 acres within the proposed project site would be dedicated to a community purpose facility (CPF). The CPF areas are provided in the western portion of Planning Area R-2a and eastern portion of Planning Area R-2b.

As shown in Table 4-1 above, CPF-1 would be a 1.21-acre site located on the east side of Street 'A" and the south side of Street 'C' within Planning Area R-2a and is designed to accommodate future development, as shown on Figure 4-4, Community Purpose Facility 1 – Conceptual Site Plan

CPF-2 would be a 0.87-acre site located on the west side of Street 'A' in Planning Area R-2b. CPF-2 is planned for private recreation uses, and provides an overlook of a portion of Wolf Canyon and the MSCP, as shown on Figure 4-5, Community Purpose Facility 2 – Conceptual Site Plan. This private recreation area will comply with the MSCP Adjacency Guidelines, Preserve Edge requirements, and the Fire Protection Plan.

4.4.1.3 Open Space

Approximately 117.39 acres of the project site would be designated as open space. Approximately 20.19 of those acres would be for fuel modification areas, perimeter slopes, and passive recreation, and approximately 97.20 acres would be dedicated to the MSCP Preserve, as shown in Figure 4-3.

Open Space Preserve

Approximately 97.20 acres of Open Space Preserve (Parcels OSP-7, OSP-10, OSP-11, and OSP-12) are available on-site for conveyance obligation; however, 80.29 acres of on-site Preserve are obligated as conveyance land to satisfy the Quarry Reclamation plan requirements. Therefore, only 16.91-acres are available for on-site conveyance into the MSCP Preserve with the Village Four SPA and Tentative Map/Final Map. The remaining conveyance obligation acreage (approximately 51.99-acres) will be provided off-site in Village 14, in accordance with the RMP requirements concurrent with recordation of the Final Map. An additional 9.98-acres of open space is provided as perimeter slope (a portion of lot OS-6 and all of lot OS-9) and consists of the Preserve Edge. The actual location of perimeter slopes, internal slopes, and the Preserve Edge is shown on the tentative map which is being concurrently processed and will be provided on Final Map(s). The open space Preserve includes all land designated as OSP (lots OSP-7 and OSP-10 through OSP-12), which would be dedicated to the Preserve Owner Management (POM) comprised of the City of Chula Vista and the County of San Diego. Land use and design of these areas is regulated by the MSCP Subarea Plan, the RMP, and as discussed the SPA Plan. These areas are intended to remain unimproved with any uses highly restricted. Vegetation would consist of native plants that already occur on-site. Only under limited circumstances may certain

amenities and facilities, as determined by the City to be compatible with the goals and objectives of the City's MSCP Subarea Plan and Otay Ranch RMP, be permitted within the preserve. Any proposed amenities or facilities within the Preserve shall be subject to the prior review and approval of the Director of Development Services.

Other Open Space

Approximately 20.19 acres of open space within the proposed project site would consist of fuel modification areas, slopes, and passive recreation areas. The landscape plan is shown in Figure 4-6. A total of 9.98 acres of perimeter slopes would occur at the edges of development within the project site. Perimeter slopes refer to the slopes that occur at the edges of development within the SPA (a portion of lots OS-6 and all of lot OS-9). The portions of these slopes that are located within 100-feet of the MSCP Preserve are part of the Preserve Edge (Appendix B2) and shall be subject to the requirements of Appendix B2 - The Village Four Preserve Edge Plan. The intent of the Preserve Edge is to create a buffer zone between proposed development and the Otay Ranch Preserve, thereby protecting the Preserve from human activity and non-native species. This area also includes dedicated right-of-way for a future access road to Otay Valley Regional Park. No structures would be permitted within perimeter slopes with the exception of walls and fences. Trails are permitted within perimeter slope areas, but are subject to the requirements outlined within the SPA Plan.

A total of 10.20 acres of interior slopes would occur at the edge of roadways and between planning areas within the project site. These lots include OS-1 through OS-5, OS-8, and a portion of OS-6. Regardless of zone, all interior slopes are subject to the facilities, landscaping, paving and surfaces, and lighting requirements outlined within the SPA Plan. Trails, benches, signage, walls, and fences would be permitted within the interior slope areas.

Park Requirements

According to the Otay Ranch GDP and the Quimby Act, the proposed project is obligated to provide approximately 2.8 94 acres of parkland (using the Otay Ranch GDP population generation rates of 2.61 persons per multi-family household and 3.52 persons per single family household). In Village Four, park obligation will be addressed through the provision of two pocket parks overlooking Wolf Canyon, on the north side of Main Street and the payment of the Park In-Lieu fee. The overlooks provide residents and visitors the opportunity to picnic and enjoy the view Wolf Canyon. The overlooks include benches, shade structures, and trees and comprise approximately 12,600 square feet or 0.29 acres of the SPA obligation. In addition, each Each dwelling unit will pay the Park In-Lieu fee per CVMC Chapter 17.10 Parklands and Public Facilities, Section 17.10.120, Geographical distribution on of in-lieu fees for land dedication. These contributions will cover the Village SPA park obligation.



SOURCE: Atlantis Group 2017

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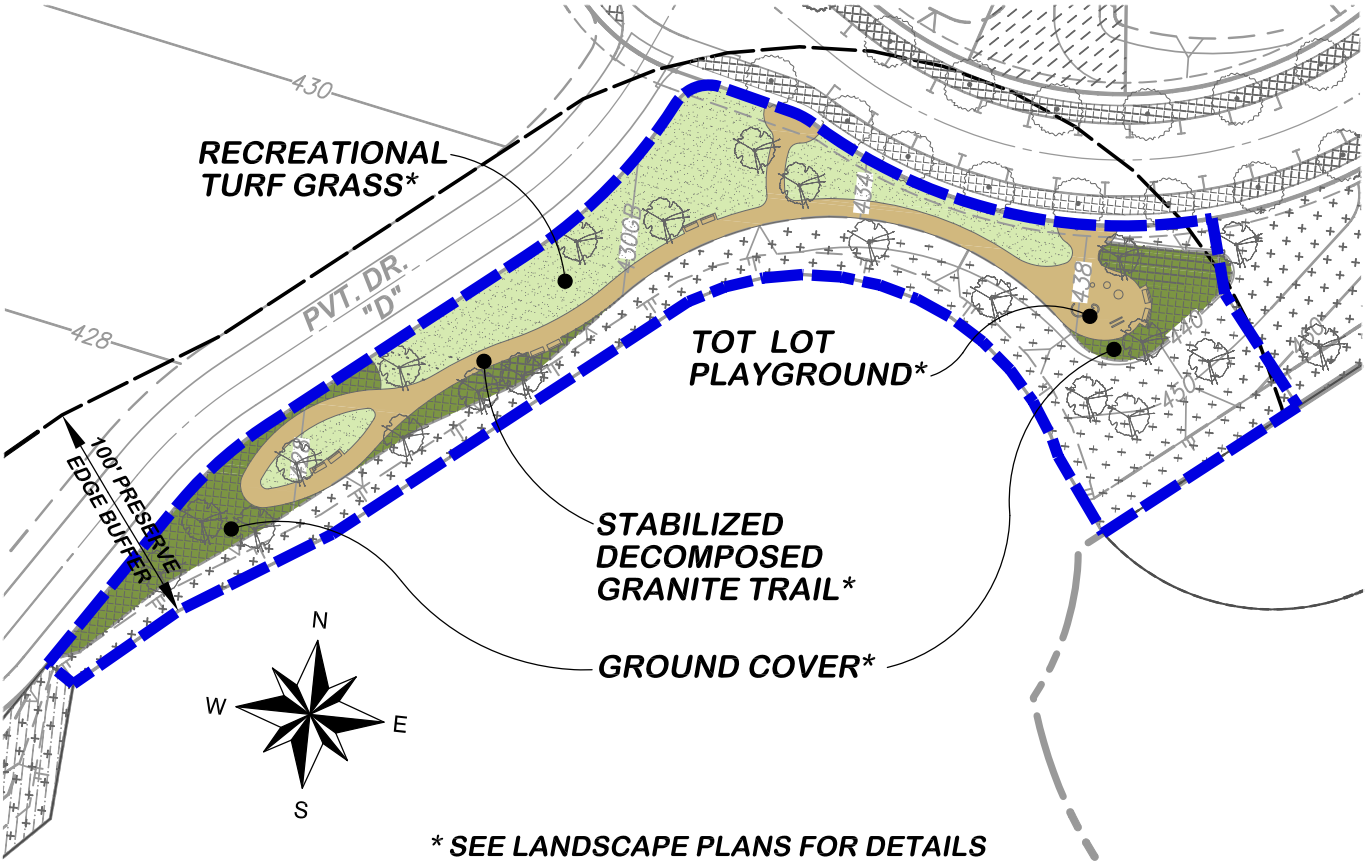
FIGURE 4-4

Community Purpose Facility 1 – Conceptual Site Plan

Otay Ranch Village Four SPA Plan Environmental Impact Report

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SOURCE: Atlantis Group 2017

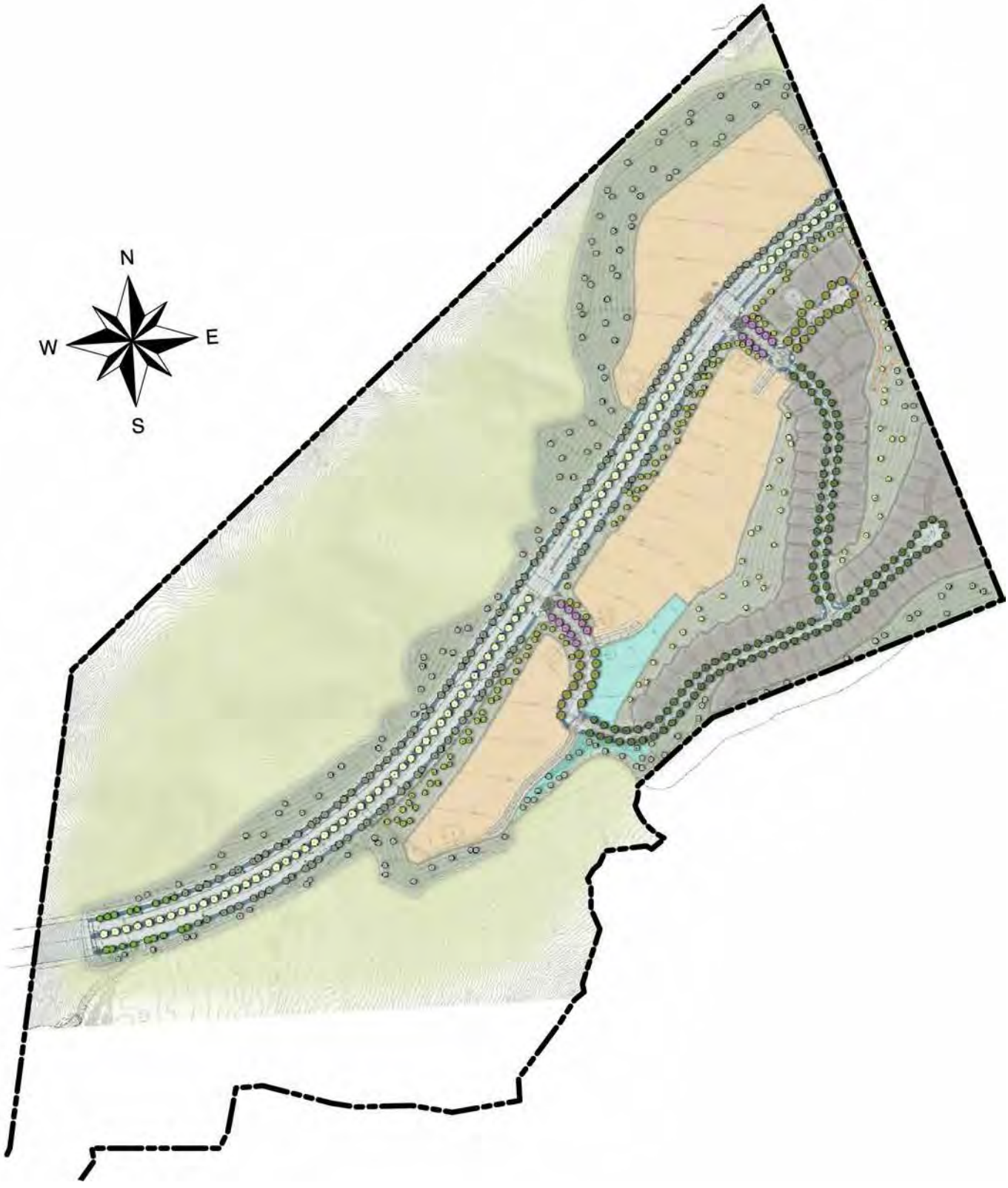
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FIGURE 4-5

Community Purpose Facility 2 – Conceptual Site Plan

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SOURCE: Atlantis Group 2017

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FIGURE 4-6
Landscape Plan

Otay Ranch Village Four SPA Plan Environmental Impact Report

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4.4.2 Access and Circulation Network

4.4.2.1 Site Access

Regional access to the project site is from State Route (SR) 125, which runs north/south and is located approximately 1 mile east of the project site. Additional north/south access is provided from Interstate (I) 805, approximately 3 miles west of the project site, and I-5, located approximately 6 miles west of the project site. SR-54 and SR-905 provide regional east/west circulation, approximately 5.5 miles north and 3.25 miles south, respectively, of the project site.

East/west access is provided by Olympic Parkway, 1 mile north of the project site, connecting to I-805 to the west and SR-125 to the east. North/south access would be provided by an extension of Heritage Road along the western portion of Village Two, and by an extension of La Media Road along the eastern edge of the project site. La Media Road is a north-south Arterial which crosses portions of Village Eight West. It will be extended from its existing terminus just north of the Village Eight West and become Otay Valley Road within the Town Center. Otay Valley Road will extend south and then curve to the east, providing a future connection to Village Eight East and a future Otay Valley Road interchange at SR-125. The primary entry point into Village Four would be from La Media Road.

In compliance with the Otay Ranch GDP requirements for a Non-Renewable Energy Conservation Plan, the proposed project incorporates transportation design features that encourage energy conservation. On a regional level, the proposed project is designed to accommodate bus rapid transit and rapid bus service. In addition, the project proposes a mix of residential densities to complement the mixed-use environment of the abutting Village Eight West community, and would provide a walkable and bikeable community that promotes pedestrian activity.

4.4.2.2 Internal Circulation

The Village Four circulation system provides a system of roadway and trail corridors to support both vehicular and non-vehicular modes of transportation to serve the community. This system includes the extension of existing and planned roads, trails, and transit from adjacent villages as well as internal systems to serve the SPA.

The Village Four street pattern organizes traffic into a hierarchy of travel ways, arranged according to anticipated volumes and modes of travel. This organization is consistent with the roadway classifications established by the Otay Ranch GDP. In Village Four, roadways respond to the landform of Rock Mountain and Wolf Canyon. The southern portions of the Village do not support a grid pattern of streets; however, the central and northern portions allow for modified grid pattern that promotes walkability and supports urban development in the Village Eight

West, Town Center. The street pattern in the southern areas is a suburban street pattern, provides a transition to the natural open space areas atop Rock Mountain, and reflects the topography of this portion of the site.

As shown in Table 4-1, approximately 12.06 acres of the project site would be used for roadway and circulation right-of-way, which includes an approximately 2-mile eastern extension of Main Street to provide primary circulation through the project site, as shown in Figure 4-7. In addition to the extension of Main Street, four internal village streets (Streets "A," "B," "C," and "D") are proposed. Pedestrian and bicycle circulation is shown in Figures 4-8 and 4-9, respectively.

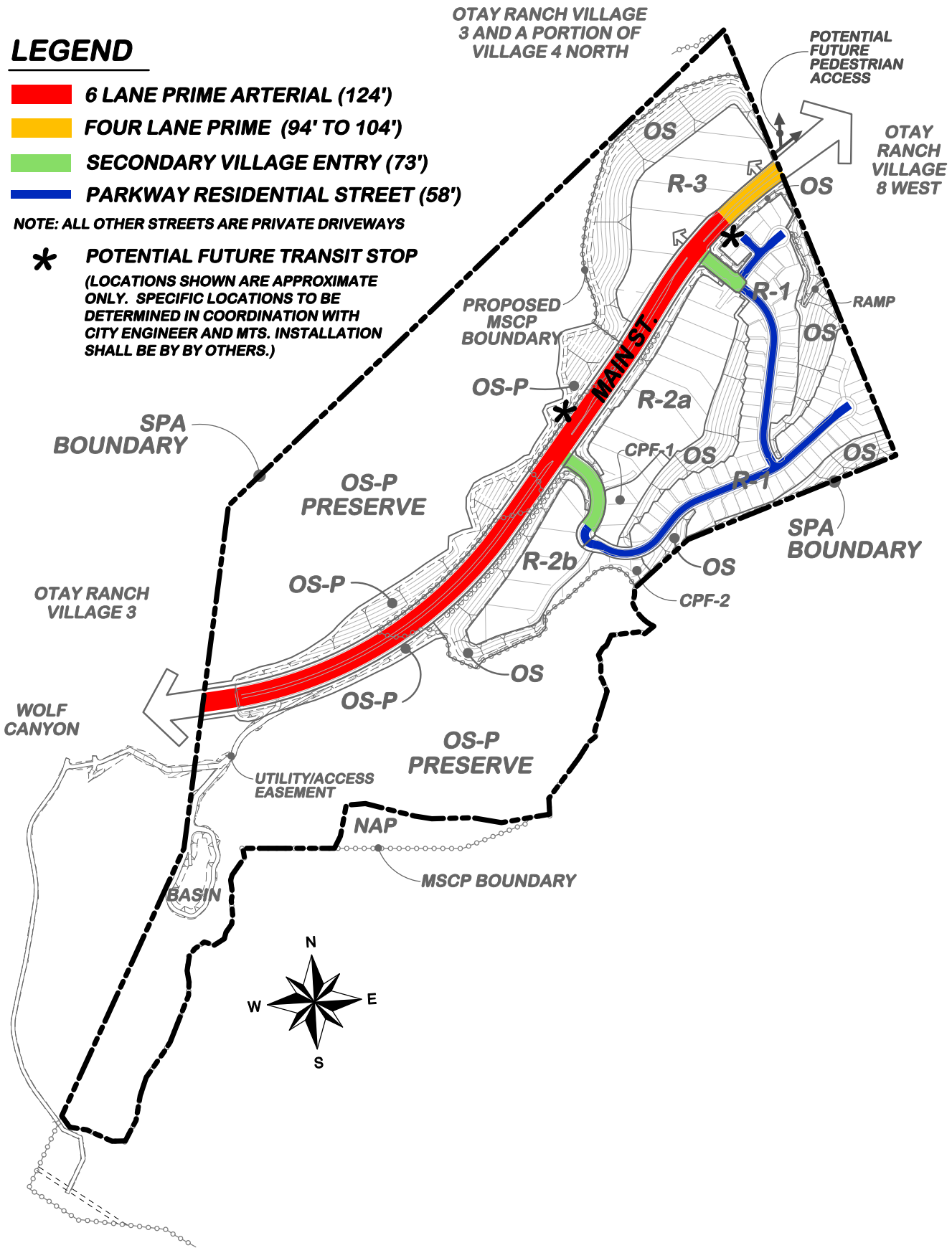
Main Street

Main Street is proposed as an east/west six-lane arterial roadway that would serve as the primary connection to the surrounding existing and planned regional circulation network, as shown in Figure 4-10. Main Street would be approximately 124 feet wide (right-of-way) and approximately 100 feet wide spanning from curb-to-curb. Main Street would include a raised median, three travel lanes in each direction, Class II bicycle lanes in each direction, and a buffered 5-foot-wide pedestrian walkway on each side of the roadway. Direct pedestrian links would extend through the proposed project site into Village Eight West, and future connections would be provided to Village Three via Main Street. Class II bicycle facilities are planned on Main Street. The Main Street Bridge is not considered part of this project and would be constructed by others or the City of Chula Vista. Main Street will be extended east to provide a future connection into/through Village Eight West to the interchange at SR-125 and westerly into/through Village Three.

Village Internal Roadways

The balance of the roadway system for Village Four is made up of Parkway Residential Streets. These streets provide direct access to single-family homes in the southern portion of the SPA Area. The street alignments are shown on the Tentative Map and subject to final engineering during the processing of the Final Maps for Village Four. Additional private streets and lanes will be provided for the multi-family planning areas (R-2a, R-2b~~a~~, and R-3), as part of the site plan review for the multi-family neighborhoods. The design of these street sections, as shown on Figure 4-11, will be determined by the site plan and shall be subject to design review.

The Secondary Village Entry streets are public streets that provide access to the residential neighborhoods south of Main Street. Streets 'B' and 'C' provide egress and ingress from the southern residential area. Street 'B' provides a connection to the multi-family neighborhood on the north side of Main Street. Driveways along residential street shall be located a minimum of twenty-five-feet (2~~3~~5') from any street intersection unless otherwise approved by the City Engineer. The residential street pattern is designed to provide access into the neighborhoods and promote walkability.



SOURCE: Atlantis Group 2017

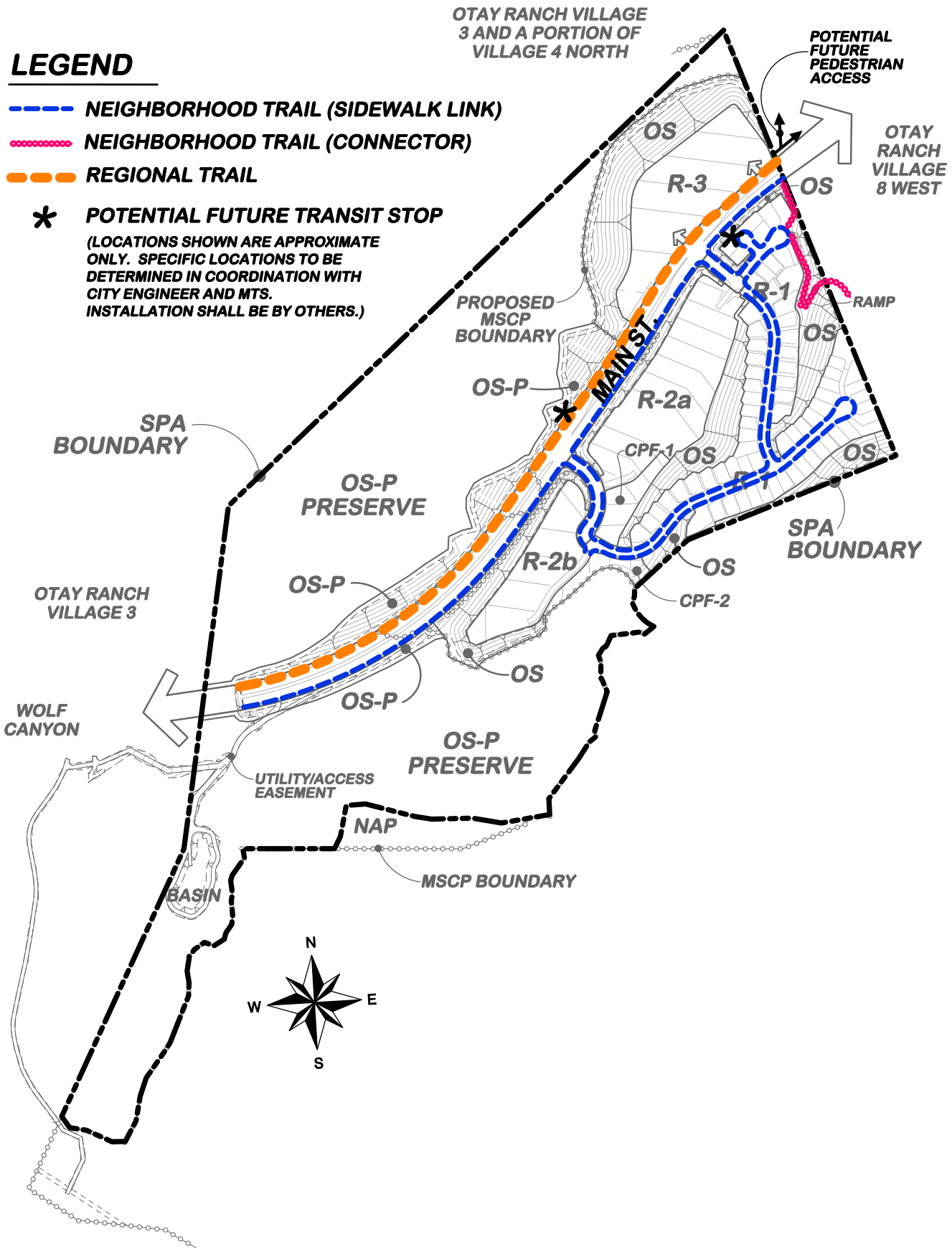
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FIGURE 4-7
Circulation Plan

Otay Ranch Village Four SPA Plan Environmental Impact Report

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SOURCE: Atlantis Group 2017

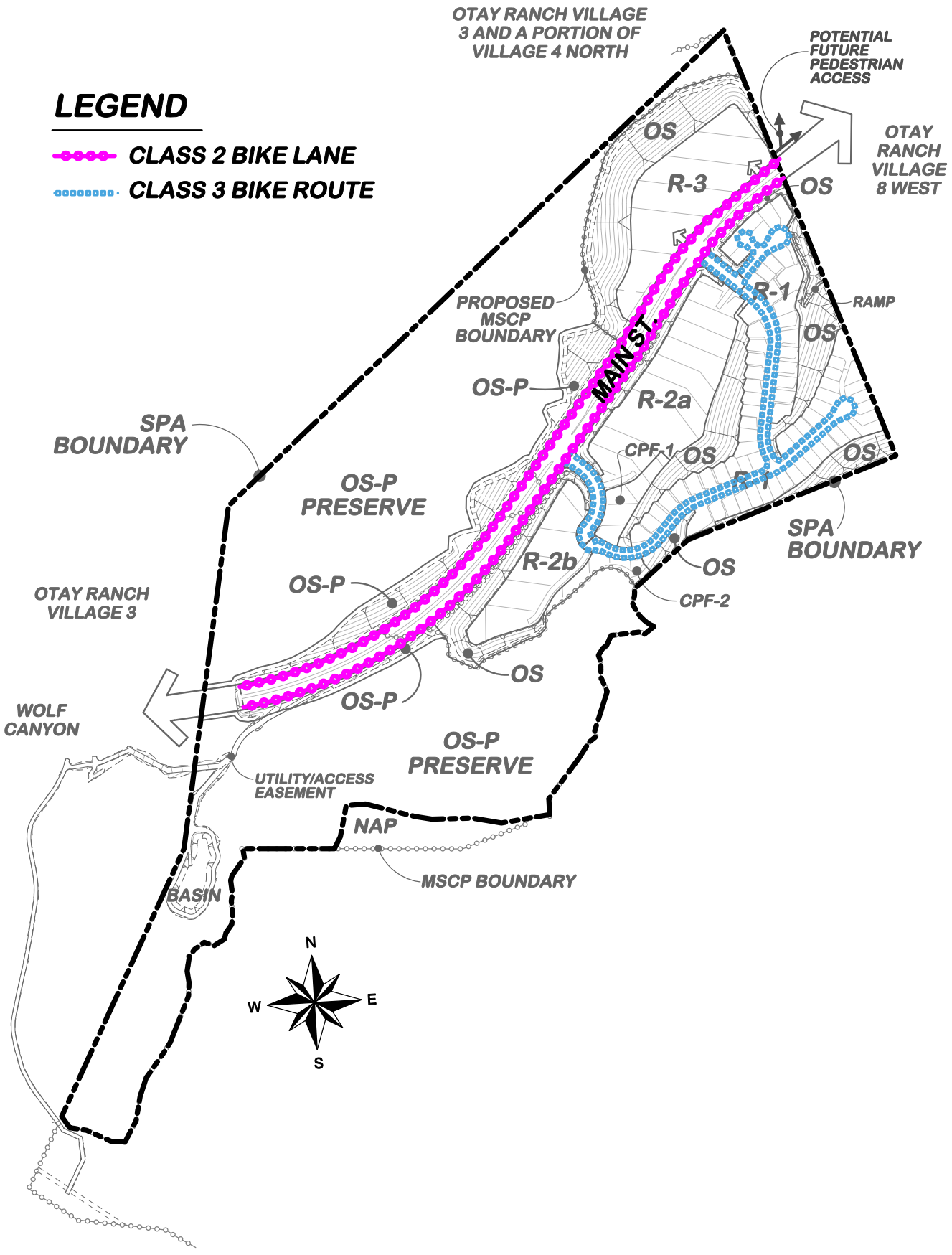
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FIGURE 4-8
Pedestrian Circulation Plan

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SOURCE: Atlantis Group 2017

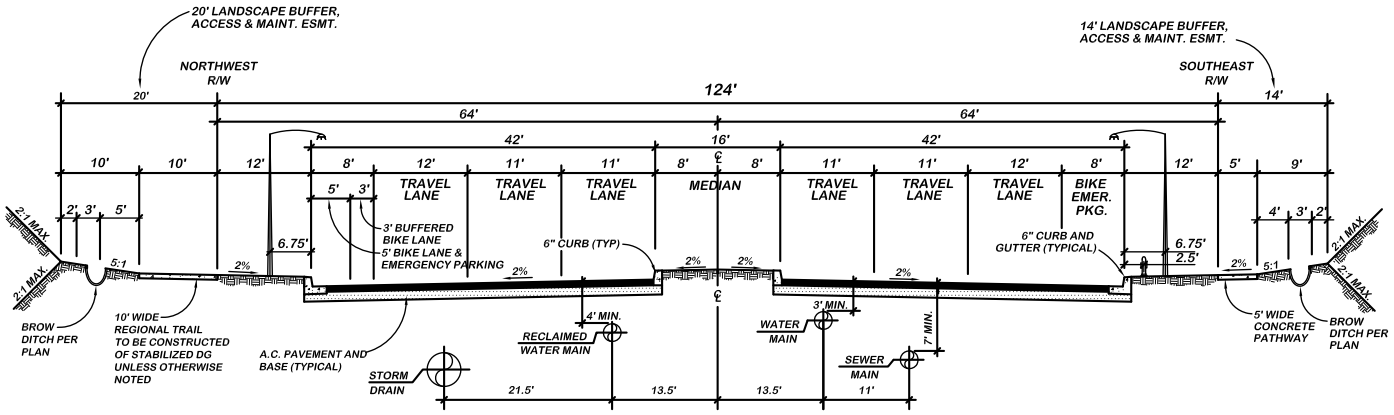
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FIGURE 4-9
Bicycle Circulation Plan

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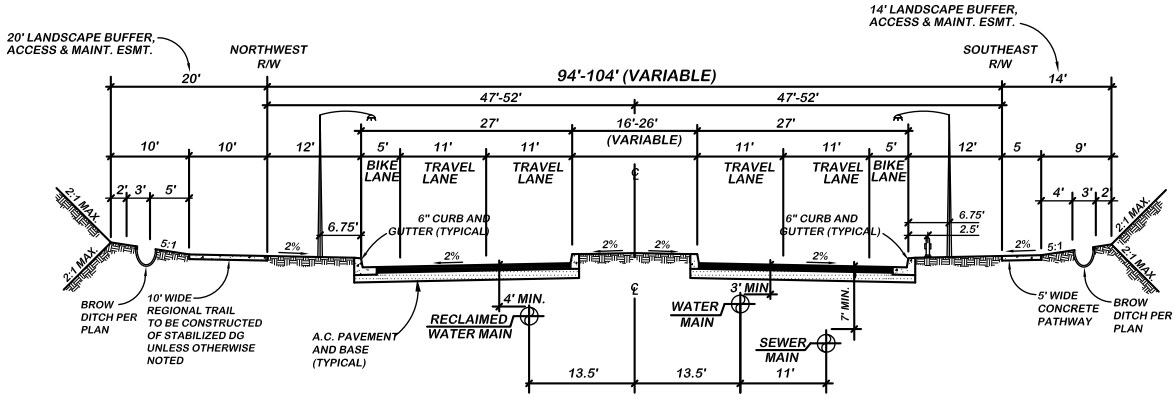
NOTES:

1. UTILITY LOCATIONS ARE TYPICAL UNLESS OTHERWISE SHOWN ON PLANS.
2. CENTERLINE STRIPING IS REQUIRED UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
3. 5:1 SLOPE MAY BE USED IN 12' PARKWAY & PVT. LANDSCAPE EASEMENT.

SIX LANE PRIME ARTERIAL

MAIN STREET

NOT TO SCALE



NOTES:

1. UTILITY LOCATIONS ARE TYPICAL UNLESS OTHERWISE SHOWN ON PLANS.
2. CENTERLINE STRIPING IS REQUIRED UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
3. 5:1 SLOPE MAY BE USED IN 12' PARKWAY & PVT. LANDSCAPE EASEMENT.

4 LANE PRIME ARTERIAL

MAIN STREET TRANSITION EAST OF STREET "B" TO PROPERTY LINE

NOT TO SCALE

SOURCE: Atlantis Group 2017

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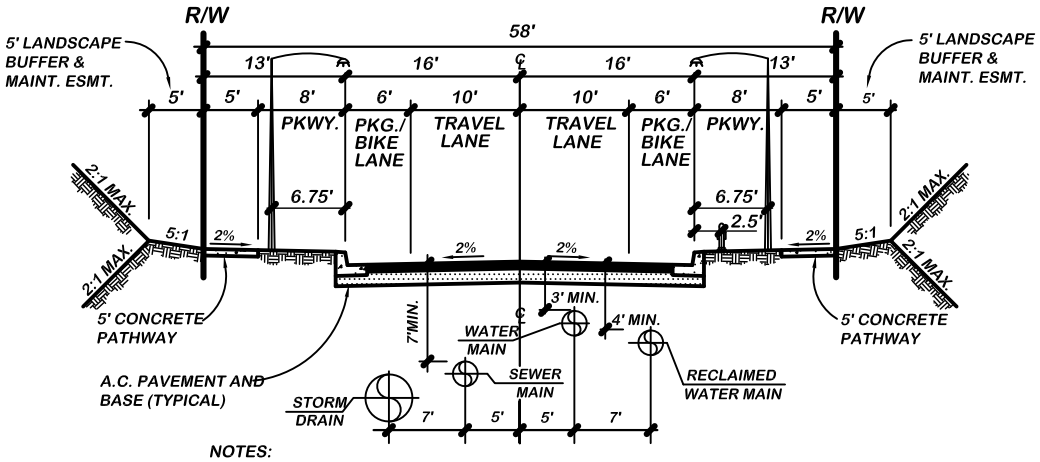
FIGURE 4-10

Main Street - Typical Street Sections

Otay Ranch Village Four SPA Plan Environmental Impact Report

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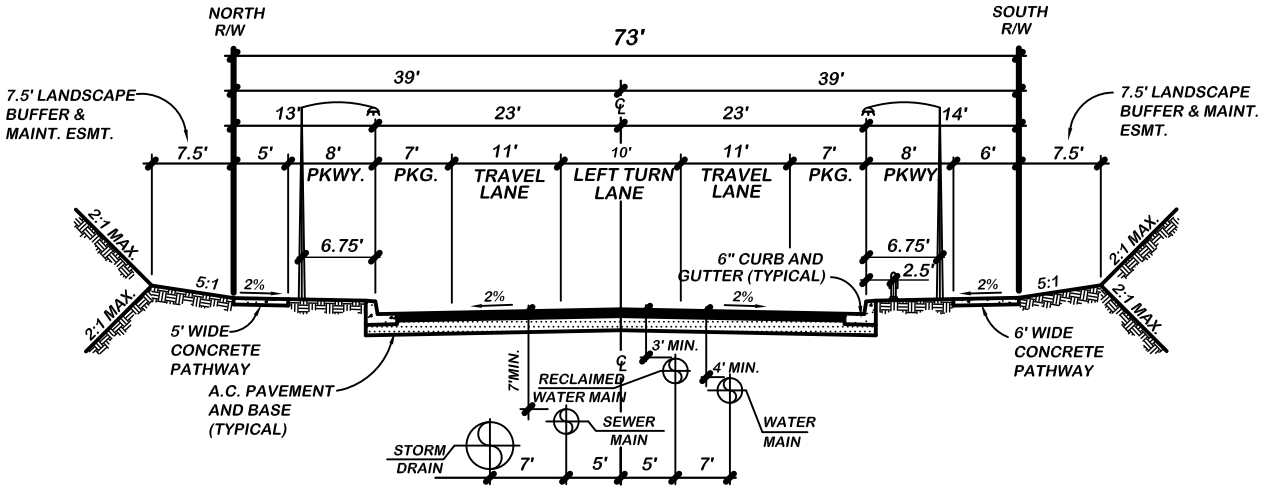
NOTES:

1. UTILITY LOCATIONS ARE TYPICAL UNLESS OTHERWISE SHOWN ON PLANS.
2. CENTERLINE STRIPING IS REQUIRED UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
3. 5:1 SLOPE MAY BE USED IN 8' PARKWAY & PVT. LANDSCAPE EASEMENT.
4. FENCES SHALL BE INSTALLED AS REQUIRED PER CVMC SECTION 15.04.120.

PARKWAY RESIDENTIAL

PUBLIC STREET "A", PORTION OF PUBLIC STREET "B" (SE OF PUBLIC STREET "D"), PUBLIC STREET "D", PUBLIC STREET "E"

NOT TO SCALE



NOTES:

1. UTILITY LOCATIONS ARE TYPICAL UNLESS OTHERWISE SHOWN ON PLANS.
2. CENTERLINE STRIPING IS REQUIRED UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
3. 5:1 SLOPE MAY BE USED IN 8' PARKWAY & PVT. LANDSCAPE EASEMENT.

SECONDARY VILLAGE ENTRY

PORTION OF PUBLIC STREET 'C' (NW OF PUBLIC STREET "A"), PORTION OF PUBLIC STREET 'B' (NW OF PUBLIC STREET 'D')

NOT TO SCALE

SOURCE: Atlantis Group 2017

DUDEK

FIGURE 4-11

Residential Streets - Typical Street Sections

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Parkway residential streets are public streets that occur in the R-1 neighborhood. The alignment of these streets ('A', 'B', 'D', and 'E') are shown on the Tentative Map for each area. The parkway residential street pattern is designed to maximize connectivity within individual neighborhoods and promote walkability. Cul-de-sacs are designed to provide pedestrian connections between dead-end streets and adjacent planning areas or open space trails as appropriate to site conditions.

4.4.3 Public Services and Utilities

Water Service

Water service to the proposed project would be served by the Otay Water District. A water system(s) would be installed in accordance with the standards of the Otay Water District, and would be maintained and operated by the Otay Water District. The proposed water system and recycled water system are shown in Figures 4-12 and 4-13, respectively.

Sewer Service

Sewer service for the proposed project would be provided by and connected to City sewers. The proposed project sewer would extend approximately 0.5 mile southwest from Main Street. All utilities would be underground, and easements would be provided as necessary. The City operates and maintains its own sanitary sewer collection system that connects to the City of San Diego's Metropolitan Sewer System. The proposed sewer collection system is shown in Figure 4-14.

Drainage and Stormwater Facilities

The approximately 166-acre site is generally located on the northern flank of a ridgeline that slopes to the northwest toward Wolf Canyon, which eventually flows south toward Otay River Drainage. Site elevations within the site range from approximately 150 feet above mean sea level at the storm drain outlet and sewer tie-in at the southwestern corner of the site, to approximately 610 feet above mean sea level in the southeastern corner. The project site lies within the watershed of the Otay River, a westerly flowing stream that drains an area of approximately 145 square miles.

The proposed storm drain system and layout, shown in Figure 4-15, would be designed to address peak flows and to integrate water quality features needed to comply with the City's Standard Urban Stormwater Mitigation Plan requirements for water quality. The proposed storm drain system would be designed to prevent the co-mingling of treated flows with untreated runoff.

A water quality basin with accommodating storm drain lines and an off-site sewer main would be constructed south of Main Street on the southwest portion of the site. The proposed storm drain would extend approximately 0.5 mile southwest from Main Street.

Dry Utilities

Dry utilities would be extended underground throughout the project site, primarily within streets and other public easements. Telephone, cable television, and internet service would be provided by companies such as Cox Communications, Time Warner, and AT&T. Gas and electric services would be provided by San Diego Gas and Electric.

Schools

Five elementary schools in the Chula Vista Elementary School District serve Otay Ranch residents: Heritage Elementary, McMillin Elementary, Hedenkamp Elementary, Veterans Elementary, and Wolf Canyon Elementary. The closest elementary school to the project site is Wolf Canyon Elementary, approximately 0.6 mile east of the project site.

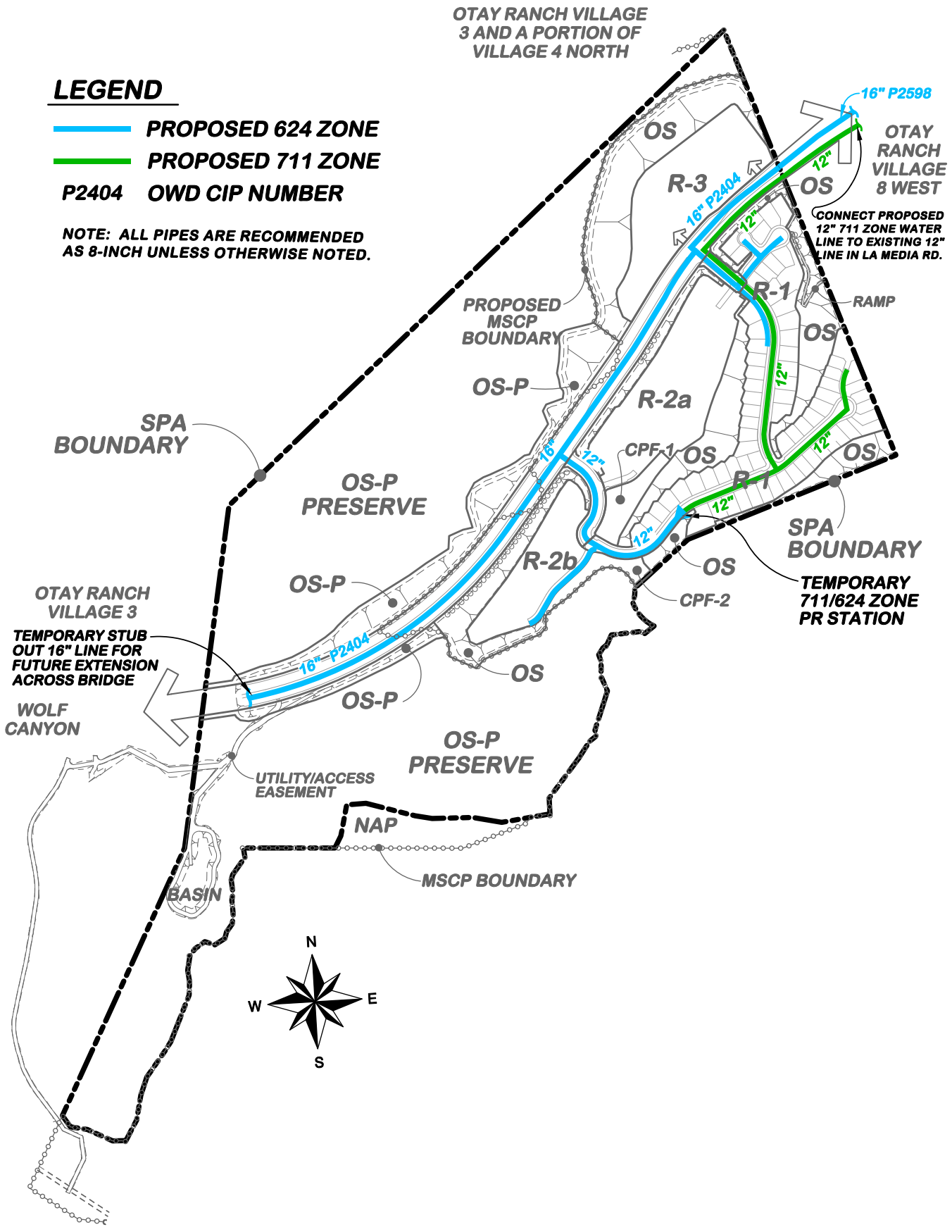
Middle school and high school requirements would be met by the existing schools within the Sweetwater Union High School District. The schools that serve Otay Ranch residents, including the project site, are Rancho del Rey Middle School, Otay Ranch High School, and Olympian High. In addition to public schools, two private schools are located near the project site: High Tech High School and Mater Dei High School. Otay Ranch High School, Olympian High School, and Mater Dei High School are all less than 1 mile from the project site. Additionally, Southwestern College is located 2.3 miles north of the project site.

Police and Fire Services

The Chula Vista Police Department currently provides police services within the City. Development of the project site would increase demand for police services. To meet Growth Management Ordinance service thresholds, additional personnel and facilities may be required at buildout of the project.

The Chula Vista Fire Department would provide fire service for the project. Fire Station Number 7 is the closest fire station to the project site, located adjacent to the Village Two core at 1640 Santa Venetia Street. Additional fire equipment, staff, and facilities required to serve the increased population as a result of the proposed project is identified in the Public Facilities Financing Plan for the proposed project.

American Medical Response provides emergency medical services on a contract basis within the City. There are five American Medical Response South County paramedic units: two are located in Chula Vista, two are in National City, and one is in Imperial Beach. The proposed project would be served through this contract arrangement by the City of Chula Vista.



SOURCE: Atlantis Group 2017

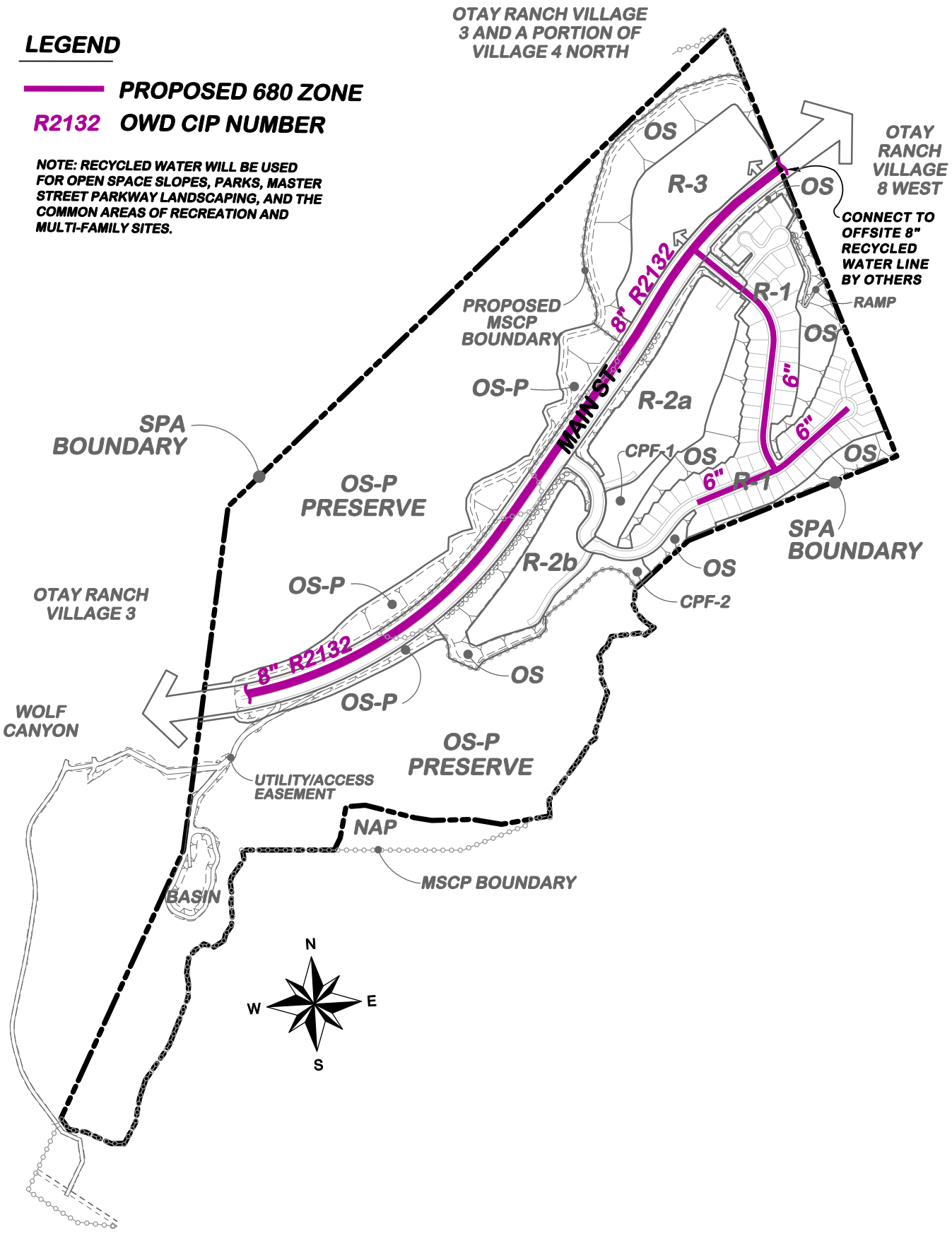
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FIGURE 4-12
Proposed Water System

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SOURCE: Atlantis Group 2017

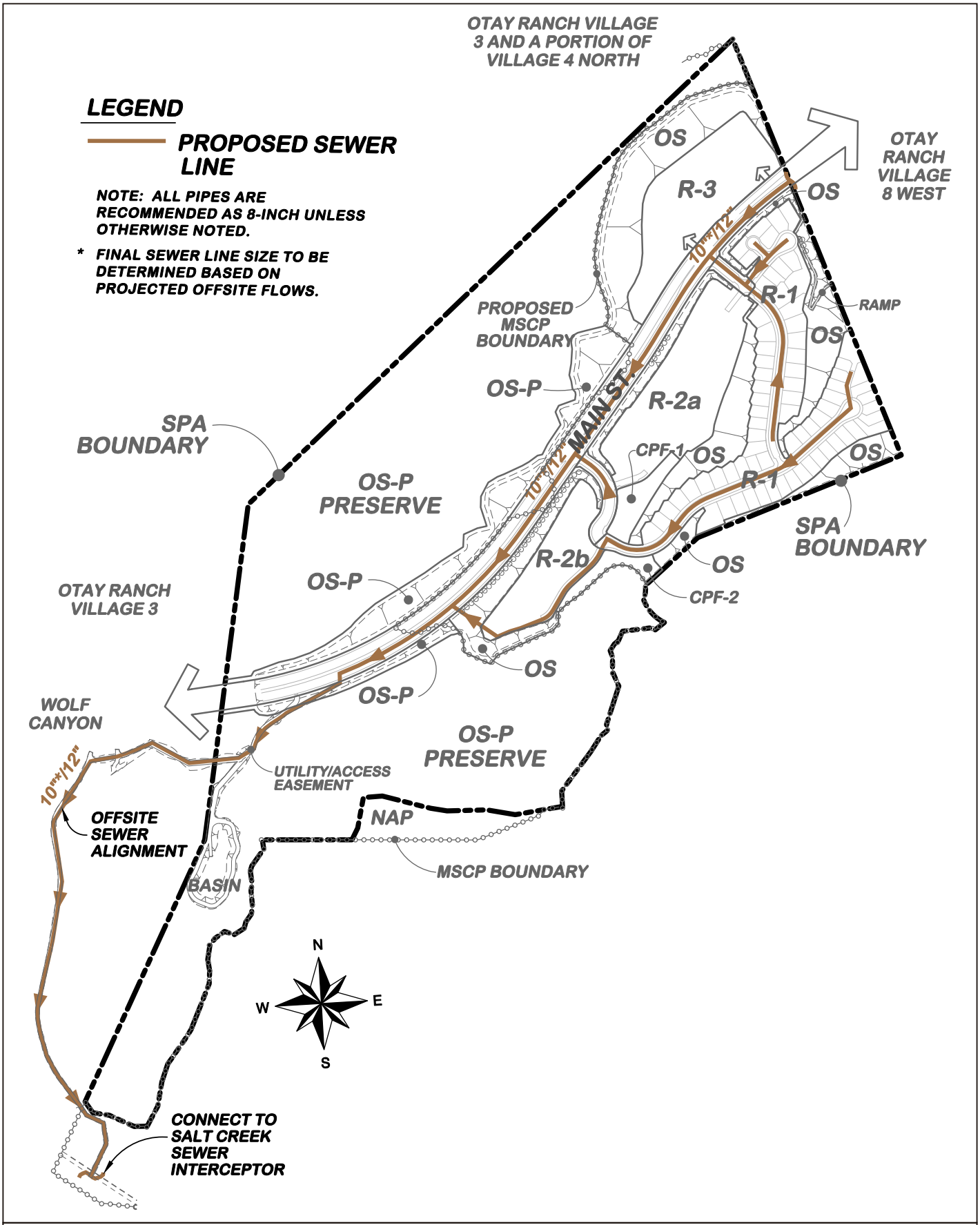
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FIGURE 4-13
Proposed Water System

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SOURCE: Atlantis Group 2017

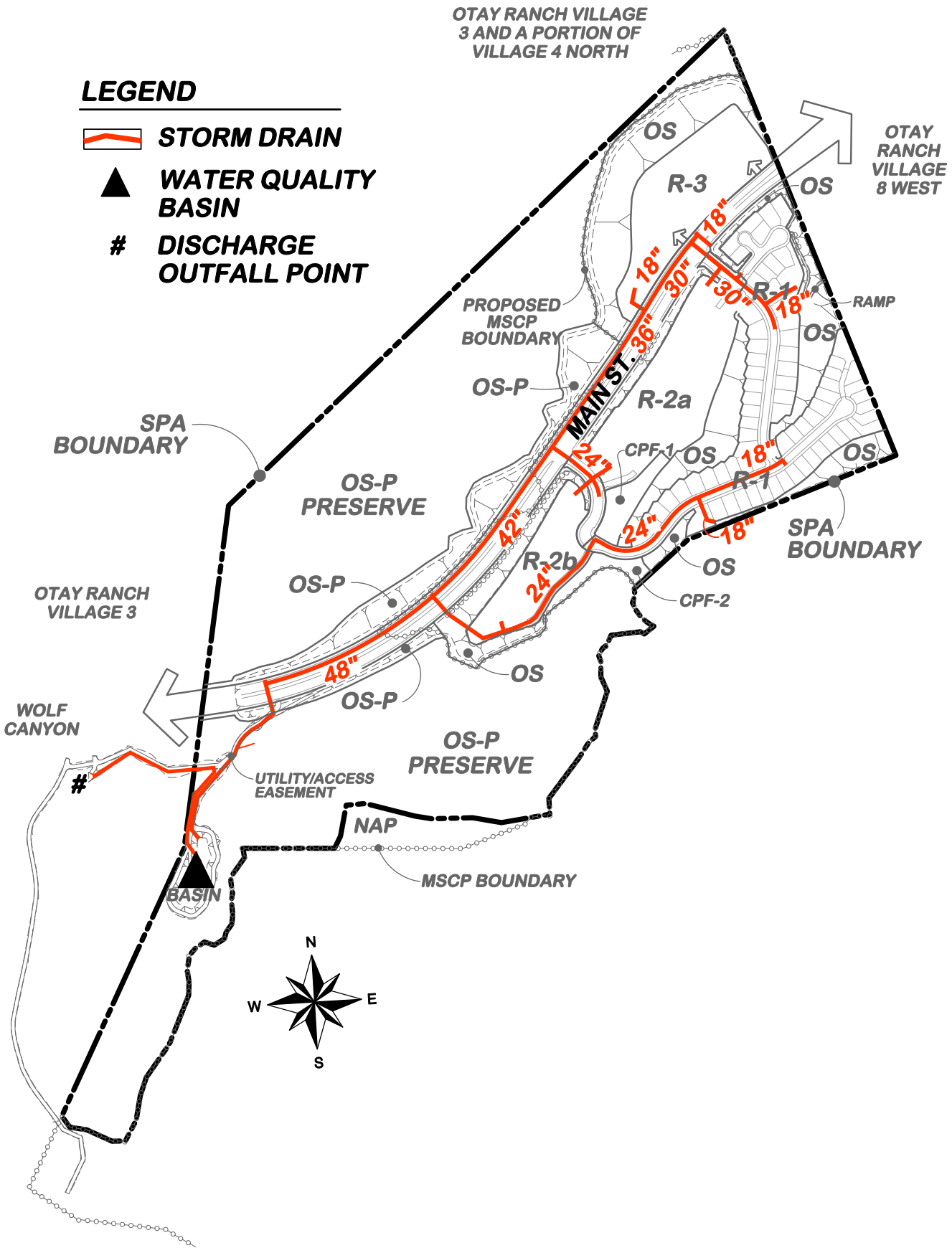
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FIGURE 4-14
Proposed Sewer System

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SOURCE: Atlantis Group 2017

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FIGURE 4-15
Proposed Storm Drain System

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4.4.4 Boundary Adjustment

A MSCP Boundary Line Adjustment is necessary to match the approved alignments for Main Street on the adjacent developments. When originally envisioned with the adoption of the Otay Ranch GDP/Subregional Plan, Main Street (also known as Otay Valley Road) served as the major east/west roadway connecting Village Three with Village Eight. As each village SPA has been adopted, major roadways have been designed to meet the City's roadway standards. Consistent with that approach, the applicant processing the Village Three SPA and map was required to prepare a grading and alignment study for the portions of Main Street between Villages Three and Eight, which included Village Four. Based on that study, the western point of Main Street, within Village Three, was established, and the eastern point of Main Street, within Village Eight West, was established. The intervening land is known as Village Four, and the alignment of Main Street within Village Four matches the alignment created and reviewed by the City during the processing of Village Three. The proposed alignment for the project reflects this new alignment shift to the north, and is the focus of the MSCP Boundary Line Adjustment. The give/take areas, which collectively compose the Boundary Line Adjustment Area, include the areas proposed to be given to the MSCP Preserve and those proposed to be removed from the Preserve. The MSCP Boundary Line Adjustment was approved by USFWS and CDFW on August 2, 2017 and by the City on August 4, 2017. Section 5.3 of this EIR provides a detailed description of the conditions of the "give" and "take" areas separately. Where it is appropriate to discuss the give and take areas together, the area is referred to as the Boundary Line Adjustment Area.

4.4.5 Tentative Map

The Tentative Map would address subdivision of the project site, street standards, and infrastructure. The Tentative Map would also address provisions for underground encroachment (e.g., all underground utilities lines) into the right-of-way, off-site streets, and grading required to implement the subdivision. This includes the proposed sewer line that would travel along Main Street and continue south to connect with the Salt Creek Interceptor, as shown in Figure 4-16.

4.4.6 Conceptual Grading

Conceptual grading and cut-and-fill plans are shown in Figures 4-17 and 4-18, respectively. Grading for the proposed project would consist of cuts and fills of up to approximately 50 feet. Cut and fill slopes are planned to have maximum heights of approximately 90 feet, with a maximum slope inclination of 2:1 (horizontal to vertical). The proposed raw grading quantity for the project is approximately 1,204,800 cubic yards of cut and approximately 1,069,600 cubic yards of fill material.

4.4.7 Construction and Phasing

Construction of the proposed project is expected to commence in the third quarter of 2018 and would last approximately 2 years. Grading of the project site would commence in January 2018. Construction of infrastructure would occur over 1 month and would begin in October 2018 with building construction. The analysis contained herein is based on the following assumptions (duration of phases is approximate):

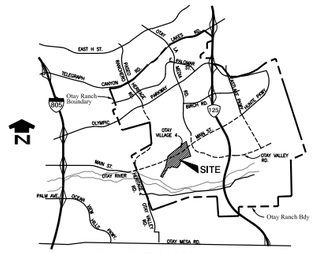
- **Grading:** 7 months (January 2018 – July 2018)
- **Infrastructure:** 1 month (August 2018)
- **Paving:** 3 months (October 2018 – December 2018)
- **Building construction:** 12 months (November 2018 – October 2019)
- **Application of architectural coatings:** 4 months (August 2019 – November 2019)

Grading of the project site would require export of approximately 260,534 cubic yards of soil and is expected to occur over 7 months; it is assumed that blasting and rock crushing would be required throughout the site during this phase (see Section 5.6, Air Quality, and Section 5.8, Noise for additional information). The soil export haul route is not known at this time, but may include, but are not limited to the following public roads: La Media Road, Birch Road, Olympic Parkway, and Heritage Road. For the purposes of analysis, an air quality model default of a 20-mile one way trip was used (see Section 5.6, Air Quality). Building construction would take approximately 12 months. Paving would take approximately 3 months, and architectural coatings would take approximately 4 months. Construction of the proposed project is estimated to take approximately 22 months.

4.5 DISCRETIONARY ACTIONS/APPROVALS

A discretionary action is an action taken by an agency that calls for the exercise of judgment in deciding whether to approve or how to carry out a project. The following discretionary actions are associated with the proposed project and would be considered by the City:

- Certification of a Final EIR and adoption of a Mitigation Monitoring and Reporting Program pursuant to CEQA
- Approval of amendments to the Otay Ranch General Development Plan. Amendments would include removal of the existing description of Village Four and revisions to reflect the proposed project as indicated in Appendix L
- Approval of the Otay Ranch Village Four Sectional Planning Area Plan
- Approval of the Tentative Map for Otay Ranch Village Four
- Boundary Adjustment



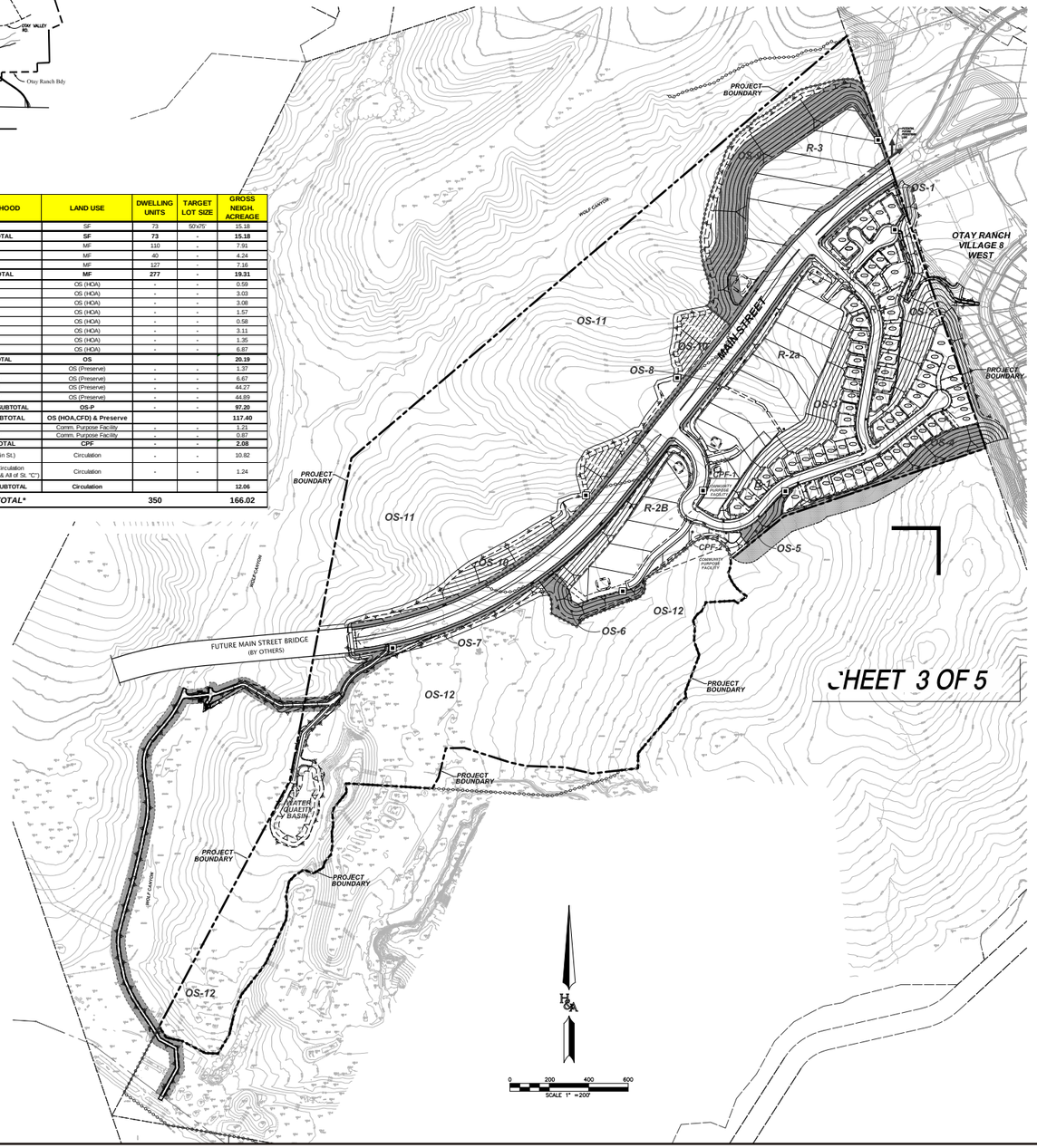
VICINITY MAP

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PROJECT SUMMARY TABLES

NEIGHBORHOOD R-1	
LOT #	LOT AREA
1	7,718
2	7,744
3	6,541
4	5,962
5	5,662
6	5,574
7	5,685
8	5,216
9	5,026
10	5,632
11	6,968
12	5,295
13	4,707
14	6,135
15	6,021
16	6,725
17	7,342
18	7,189
19	6,660
20	6,142
21	6,011
22	8,041
23	13,152
24	7,097
25	6,673
26	6,161
27	6,183
28	5,945
29	5,737
30	5,506
31	5,557
32	5,499
33	5,260
34	5,114
35	5,222
36	5,684
37	6,114
38	8,362
39	6,315
40	4,891
41	4,775
42	5,739
43	6,928
44	12,365
45	4,406
46	4,561
47	5,349
48	6,681
49	6,571
50	5,816
51	4,939
52	4,758
53	6,569
54	7,180
55	6,765
56	6,998
57	7,128
58	6,916
59	7,425
60	8,712
61	11,519
62	15,764
63	9,387
64	6,299
65	5,359
66	5,931
67	6,594
68	8,790
69	7,939
70	6,271
71	6,794
72	6,193
73	5,093
RES. SUBTOTAL SF	494,982
RES. SUBTOTAL AC	11.13
MAX	15,764
MIN	4,406
RES. AVG LOT SIZE	6,644
CIRCULATION SF	176,161
CIRCULATION AC	4.04
TOTAL SF	**661,143**
TOTAL AC	**15.18**

NEIGHBORHOOD	LAND USE	DWELLING UNITS	TARGET LOT SIZE	GROSS NEIGH. ACREAGE
R-1	SF	73	50'x75'	15.18
SF SUBTOTAL	**SF**	**73**	**-**	**15.18**
R-2A	MF	110	-	7.91
R-2B	MF	40	-	4.24
R-3*	MF	127	-	7.16
MF SUBTOTAL	**MF**	**277**	**-**	**19.31**
OS-1	OS (HOA)	-	-	0.59
OS-2	OS (HOA)	-	-	3.03
OS-3	OS (HOA)	-	-	3.08
OS-4	OS (HOA)	-	-	1.57
OS-5	OS (HOA)	-	-	0.58
OS-6	OS (HOA)	-	-	3.11
OS-8	OS (HOA)	-	-	1.35
OS-9	OS (HOA)	-	-	6.87
OS SUBTOTAL	**OS**			**20.19**
OS-7	OS (Preserve)	-	-	1.37
OS-10	OS (Preserve)	-	-	6.67
OS-11	OS (Preserve)	-	-	44.27
OS-12	OS (Preserve)	-	-	44.89
OS PRESERVE SUBTOTAL	**OS-P**			**97.20**
TOTAL OS SUBTOTAL	**OS (HOA,CFD) & Preserve**			**117.40**
CPF-1	Comm. Purpose Facility	-	-	1.21
CPF-2	Comm. Purpose Facility	-	-	0.87
CPF SUBTOTAL	**CPF**			**2.08**
External Streets (Main St.)	Circulation	-	-	10.82
Internal Backbone Circulation (Only Por. of St. "B" & All of St. "C")	Circulation	-	-	1.24
CIRCULATION SUBTOTAL	**Circulation**			**12.06**
OVERALL TOTAL*		**350**		**166.02**



SHEET 3 OF 5

CONDOMINIUM NOTE

THIS IS A MAP OF A CONDOMINIUM PROJECT AS DEFINED IN SECTION 4125 OF THE CIVIL CODE OF THE STATE OF CALIFORNIA AND IS FILED PURSUANT TO THE SUBDIVISION MAP ACT. THE PLANNING NEIGHBORHOOD INCLUDED WITHIN THE CONDOMINIUM PROJECTS DESIGNATION IS R-2A, R-2B and R-3, FOR A MAXIMUM NUMBER OF 277 DWELLING UNITS.

LOTTING NOTES

1. CONSECUTIVE NUMBERING OR LABELING OF NEIGHBORHOODS IS NOT INTENDED TO INDICATE ORDER OF DEVELOPMENT. THE TIMING OF REQUIRED INFRASTRUCTURE ELEMENTS (ST.S, SEWER, WATER, STORM DRAIN, PUBLIC OPEN SPACE, ETC.) WILL BE ESTABLISHED BY THE DEVELOPER WITH THE CONCURRENCE OF THE CITY ENGINEER.
2. DELINEATION OF NEIGHBORHOOD BOUNDARIES IS NOT INTENDED TO BE EXACT. FURTHER REFINEMENT WILL BE ESTABLISHED WITH THE FINAL MAPS.
3. OPEN SPACE LOTS AND HOMEOWNERS MAINTENANCE LOTS SHOWN ON THE TENTATIVE MAP MAY BE SUBDIVIDED INTO ADDITIONAL LOTS TO CORRESPOND WITH PHASING AND LOGICAL EXTENSION OF ELECTRIC AND IRRIGATION SYSTEMS.

WAIVER REQUEST

1. DESIGN WAIVER REQUEST FOR MAIN STREET FROM SIX-LANE PRIME ARTERIAL STANDARDS TO ALLOW FOR A REDUCED TRAVEL LANE WIDTH DOWN TO ELEVEN FEET AND REDUCED RIGHT-OF-WAY DOWN TO 124 FEET.
2. DESIGN WAIVER REQUEST TO ALLOW TYPICAL LOT DRAINAGE TO BE REDUCED FROM 5% AWAY FROM HOUSE (PER BLDG. CODE 1803) TO 2% AWAY FROM HOUSE AND ALLOW LOT DRAINAGE SWALE GRADE TO BE REDUCED FROM 2% TO 1%.
3. DESIGN WAIVER REQUEST FOR INTERSECTIONS THAT ARE WITHIN HORIZONTAL CURVES OR WITHIN 100-FOOT TANGENTS OF HORIZONTAL CURVES.
4. DESIGN WAIVER REQUEST FOR PARKWAY RESIDENTIAL STREET TO ALLOW STREET PARKING ON ONE SIDE.

PUBLIC UTILITIES

SEWER	CITY OF CHULA VISTA
WATER	OTAY WATER DISTRICT
STORM DRAIN	CITY OF CHULA VISTA
GAS AND ELECTRIC	SDG&E
POLICE & FIRE	CITY OF CHULA VISTA
SCHOOLS	CHULA VISTA ELEMENTARY SCHOOL DISTRICT SWEETWATER UNION HIGH SCHOOL DISTRICT

LEGAL DESCRIPTION

PARCEL A: APN 644-060-24

ALL THAT CERTAIN REAL PROPERTY SITUATED IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

THAT CERTAIN PARCEL OF LAND SHOWN AS "REMAINDER" PARCEL ON PARCEL MAP NO. 21021, IN THE CITY OF CHULA VISTA, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, DECEMBER 28, 2012.

EASEMENT & ENCUMBRANCE NOTES

SEE SHEET 5

LEGEND

PROJECT BOUNDARY
NEIGHBORHOOD BOUNDARY
LOT LINE
RIGHT OF WAY
CURB
EXISTING TOPO CONTOUR (300)
PROPOSED CONTOUR (480)
RESIDENTIAL LOT PAD ELEVATION (X 508.2)
HOMEOWNER'S MAINT. LOT (HOA)
NEIGHBORHOOD CALLOUT R-1
OPEN SPACE LOT CALLOUT OS-3
SLOPE (2:1 MAX.)
PERCENT OF GRADE 3.0%
ST. ELEVATION 428.0
SEWER MAIN (8"+) (343.4 @ 8")
SEWER INVERT ELEVATION
WATER MAIN (8"+) (W)
FIRE HYDRANT
RECLAIMED WATER MAIN (RW)
STORM DRAIN(18"+)
RETAINING WALL (2:1 RW)
PLANTABLE WALL SYSTEM (RETAINING WALL SYSTEM)
TOP OF WALL ELEVATION / FINISHED GRADE ELEVATION
BROW DITCH
ST. LIGHT
EASEMENT LINE
MSCP PRESERVE LIMIT
FUEL MOD LIMITS
OS LOT MAINTENANCE ACCESS POINTS
* UNLESS SHOWN OTHERWISE

GENERAL NOTES

1. GROSS PROJECT SITE AREA EXISTING: 166.02 ACRES
2. TOTAL NUMBER OF LOTS: 90
   - SINGLE-FAMILY RESIDENTIAL: 73 LOTS (LOT 1-73 W/IN NEIGHBORHOOD R-1)
   - MULTI-FAMILY RESIDENTIAL: 3 LOTS (LOTS R2A, R2B & R3)
   - MASTER HOA OPEN SPACE: 8 LOTS (OS 1-6 & 8)
   - OPEN SPACE PRESERVE: 4 LOTS (OS 7, 10, 11, 12)
   - COMMUNITY PURPOSE FACILITY: 2 LOTS (CPF-1 & CPF-2)
3. TOTAL NUMBER OF UNITS PROPOSED: 350 UNITS
   - SF RESIDENTIAL: 73 UNITS
   - MF RESIDENTIAL: 277 UNITS
4. MAXIMUM NUMBER UNITS ALLOWED 350
5. ASSESSOR'S PARCEL NUMBERS: 644-060-24
6. GENERAL PLAN DESIGNATION
   - EXISTING: LOW MEDIUM DENSITY RESIDENTIAL (LM), OPEN SPACE (OS), OPEN SPACE PRESERVE (OP) AND PARK (P), ALL PER OTAY RANCH GDP FOR VILLAGE 4.
   - PROPOSED: LOW MEDIUM DENSITY RESIDENTIAL(LM), MEDIUM HIGH DENSITY RESIDENTIAL (MH), HIGH DENSITY RESIDENTIAL (H), OPEN SPACE (OS) AND OPEN SPACE PRESERVE (OP)
7. ZONING: EXISTING: PLANNED COMMUNITY ZONE (PC)
   PROPOSED: SEE VILLAGE 4 SPA PC DISTRICT REGULATIONS
8. PRESENT LAND USE: VACANT
   PROPOSED LAND USE: SEE ABOVE LOT SUMMARY FOR PROPOSED LAND USES

GENERAL DESIGN NOTES

1. WATER SYSTEM TO BE INSTALLED IN ACCORDANCE WITH THE STANDARDS OF THE OTAY WATER DISTRICT AND SHALL BE MAINTAINED AND OPERATED BY THE DISTRICT.
2. SPECIFIC METHODS OF HANDLING STORM WATER ARE SUBJECT TO DETAILED APPROVAL BY THE DEVELOPMENT SERVICES DEPARTMENT AT THE TIME OF SUBMISSION OF IMPROVEMENT AND GRADING PLANS. DESIGN SHALL BE ACCOMPLISHED ON THE BASIS OF THE REQUIREMENTS OF THE SUBDIVISION MANUAL, DRAINAGE EASEMENTS SHALL BE PROVIDED AS REQUIRED BY THE CITY DEVELOPMENT SERVICES DEPARTMENT.
3. SANITARY SEWER TO BE PROVIDED AND CONNECTED TO CITY OF CHULA VISTA SEWERS. SEWER MAINS ARE 8" MINIMUM P.V.C. UNLESS SHOWN OTHERWISE.
4. EVIDENCE SHALL BE PROVIDED OF HAVING OBTAINED GRADING RIGHTS UPON ADJACENT PROPERTY WHERE REQUIRED DURING FINAL ENGINEERING.
5. STREET TREE DEPOSITS SHALL BE PAID IN ACCORDANCE WITH ORDINANCE NUMBER 1369 AND NO. 1687 OF THE CITY OF CHULA VISTA.
6. UTILITIES SHALL BE UNDERGROUND AND EASEMENTS PROVIDED AS NECESSARY.
7. SUBDIVIDER TO PROVIDE AND INSTALL APPROVED STREET LIGHT STANDARDS AND FIXTURES IN THE TYPE AND NUMBER APPROVED BY THE DEVELOPMENT SERVICES DEPARTMENT FOR PUBLIC RIGHT-OF-WAY.
8. SLOPE PLANTING SHALL BE IN ACCORDANCE WITH THE CITY OF CHULA VISTA LANDSCAPE MANUAL, AND/OR THE OTAY RANCH VILLAGE DESIGN PLAN.
9. GRADING SHALL BE CONSTRUCTED IN ACCORDANCE WITH TITLE 15 OF THE CITY OF CHULA VISTA MUNICIPAL CODE.
10. ALL WORK IN THE PUBLIC RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, THE SAN DIEGO AREA REGIONAL STANDARD DRAWINGS AND THE DESIGN AND CONSTRUCTION STANDARDS OF THE CITY OF CHULA VISTA.
11. FIRE HYDRANTS TO BE INSTALLED IN ACCORDANCE WITH THE CITY OF CHULA VISTA DESIGN STANDARDS FIRE HYDRANTS AS SHOWN ON THIS MAP SHALL BE USED AS A GUIDE ONLY.
12. GRADING AND MODEL HOMES MAY BE BUILT PRIOR TO FINAL MAP RECORDATION.
13. GRADING SHOWN HEREON IS PRELIMINARY AND SUBJECT TO MODIFICATION IN FINAL DESIGN SUBJECT TO SUBSTANTIAL CONFORMANCE APPROVAL BY THE CITY OF CHULA VISTA DEVELOPMENT SERVICES DEPARTMENT.
14. THIS PROJECT IS A MULTIPLE UNIT (NEIGHBORHOOD) SUBDIVISION. MULTIPLE FINAL MAPS MAY BE FILED IN ACCORDANCE WITH THE PROVISIONS OF ARTICLE 4 OF SECTION 66456.1 OF THE SUBDIVISION MAP ACT.
15. FINAL MAPS MAY BE RECORDED FOR THE PURPOSE OF SUBDIVIDING VILLAGES OR PORTIONS THEREOF INTO UNIMPROVED NEIGHBORHOODS WITH LEGAL ACCESS WITH THE INTENT OF TRANSFERRING TITLE TO MERCHANT BUILDERS.
16. STORM DRAIN AND SEWER SHOWN HEREON IS PRELIMINARY AND SUBJECT TO MODIFICATION IN FINAL DESIGN.
17. TEMPORARY AND PERMANENT STRUCTURAL BEST MANAGEMENT PRACTICES WILL BE INCORPORATED IN THE DESIGN AND IMPLEMENTATION OF THE DEVELOPMENT.
18. PRELIMINARY GEOTECHNICAL REPORT PREPARED BY: GEOCON, INC. DATED MARCH 25, 2015.
19. REFER TO THE "PRIORITY DEVELOPMENT PROJECT (PDP) STORM WATER QUALITY MANAGEMENT PLAN" DATED JULY 2016 PREPARED BY HUNSAKER & ASSOCIATES FOR COMPLIANCE WITH THE REGIONAL WATER QUALITY CONTROL BOARD JURISDICTIONAL PERMIT.
20. FENCING SHALL BE INSTALLED PER CITY OF CHULA VISTA MUNICIPAL CODE SECTION 15.04.120

SOURCE OF TOPOGRAPHY

TOPO FLOWN BY R.J. LUNG & ASSOCIATES ON 7-25-12.

BENCHMARK:

BRASS DISK MARKED "SD CITY ENGR." IN 3/4" IRON PIPE 1.5 MILES EAST OF INTERSECTION OF MAIN STREET & HERITAGE ROAD ON ROCK MOUNTAIN 100' EASTERLY OF PROMINENT 10' HIGH BOULDER & 1700' SOUTHERLY OF WATER STORAGE FACILITY. (PT # 1359 PER R.O.S. 14841) ELEVATION 628.319' (NAVD '88)

EARTHWORK/GRADING QUANTITIES

AMOUNT OF CUT: APPROXIMATELY 1,395,000 CUBIC YARDS.
AMOUNT OF FILL: APPROXIMATELY 1,135,000 CUBIC YARDS.

EARTHWORK NOTE:
1. EXCESS GRADING QUANTITIES TO BE EXPORTED TO AN APPROVED SITE.

OWNER/SUBDIVIDER

OTAY VALLEY QUARRY, LLC,
A DELAWARE LIMITED LIABILITY
6591 COLLINS DRIVE, SUITE E11
MOORPARK, CA 93021
(805) 278-7320

TITLE

PLANNING CONSULTANTS

ATLANTIS GROUP
2488 HISTORIC DECATUR ROAD,
SUITE 220
SAN DIEGO, CA 92106
(619) 523-1930

CIVIL ENGINEER

HUNSAKER & ASSOCIATES, SAN DIEGO, INC
9707 WAPLES ST.
SAN DIEGO, CA 92121
(858) 558-4500

No. 47945 Exp. 12/31/17 CIVIL

ALISA S. VIALPANDO R.C.E. 47945 DATE
MY REGISTRATION EXPIRES ON 12/31/17

SOURCE: Hunsaker & Associates 2017

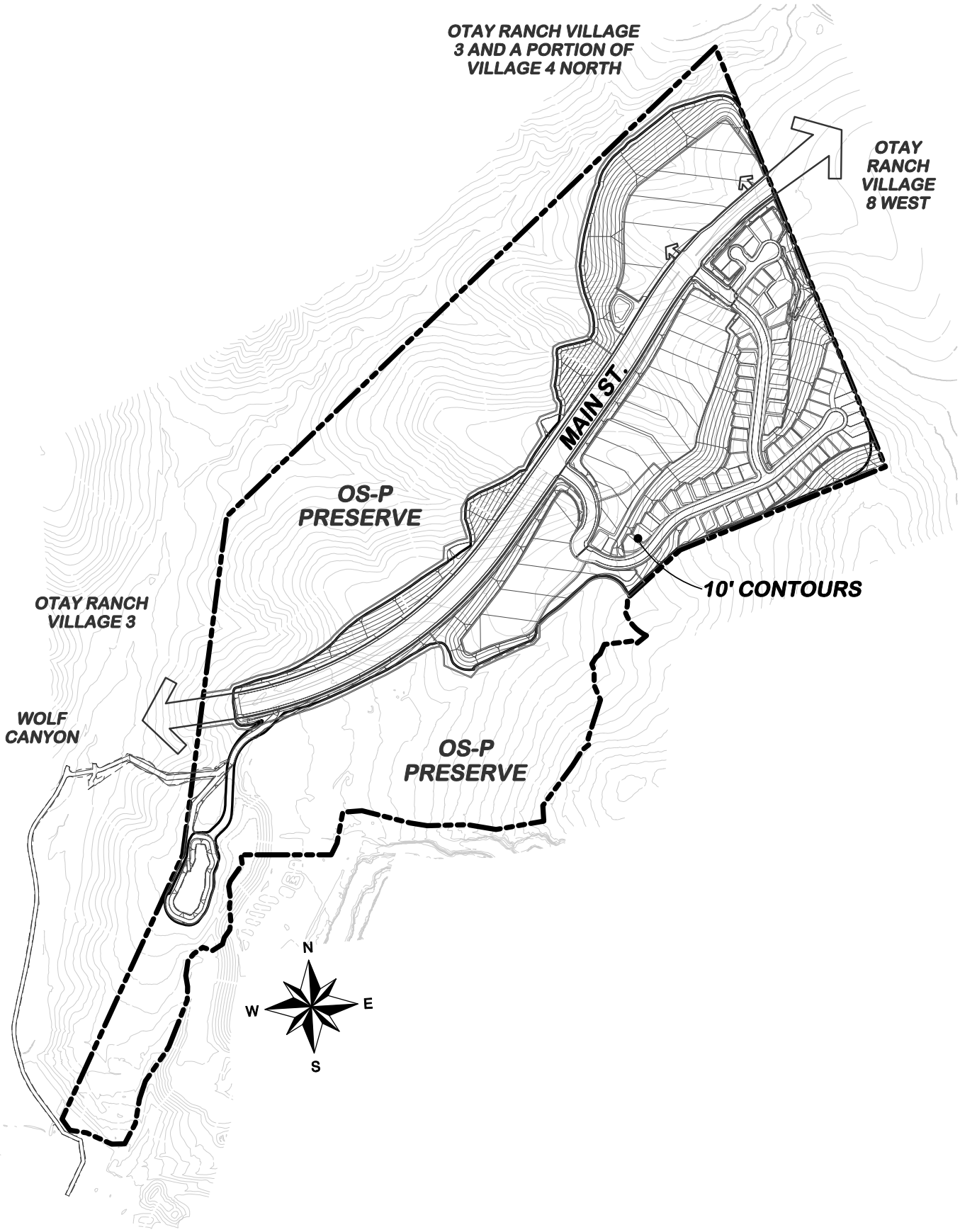
DUDEK

FIGURE 4-16
Tentative Map

Otay Ranch Village Four SPA Plan Environmental Impact Report

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SOURCE: Atlantis Group 2017

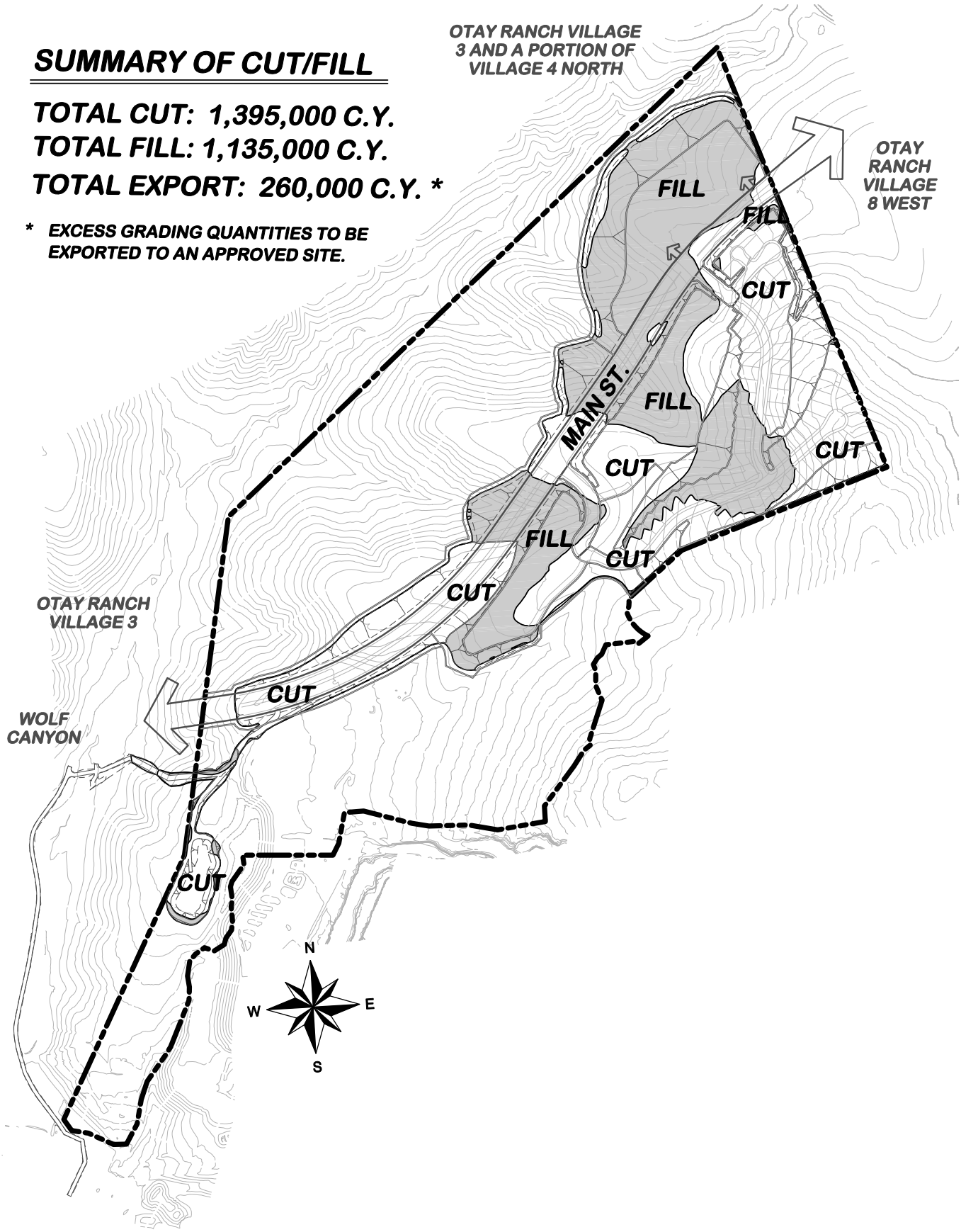
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FIGURE 4-17
Conceptual Grading Plan

Otay Ranch Village Four SPA Plan Environmental Impact Report

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SOURCE: Atlantis Group 2017

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FIGURE 4-18
Cut and Fill Map

Otay Ranch Village Four SPA Plan Environmental Impact Report

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CHAPTER 5
ENVIRONMENTAL IMPACT ANALYSIS

5.1 LAND USE, PLANNING, AND ZONING

This section provides an overview of the land uses within the proposed Village Four Sectional Planning Area (SPA) Plan (project) site and surrounding region, the regulatory framework, and an analysis of potential conflicts with existing land use plans that would result from implementation of the proposed project.

According to CEQA, a proposed project's land use effects fall into two main categories: (1) conflicts with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect; and (2) physically dividing an established community. This section of the EIR addresses potential impacts to land use resulting from the proposed project. Other environmental issues associated with land use decisions include aesthetics, noise, and resource conservation. These issues are separately addressed in their respective sections of this EIR.

5.1.1 Existing Conditions

5.1.1.1 Regulatory Framework

Regional Level

Regional Comprehensive Plan

The San Diego Association of Governments (SANDAG) is a council of governments that serves as a forum and decision-making body for regional planning issues including population growth, transportation, and land use in San Diego County. SANDAG's Regional Comprehensive Plan (RCP) serves as the long-term planning framework for the San Diego region. It also provides a broad context within which local and regional land use decisions can be made with respect to anticipated regional growth, and its effect on housing, economics, transportation, environmental planning, and overall quality of life needs. The goals of the RCP are to establish a planning framework and implementation actions that increase the region's sustainability and encourage "smart growth" while preserving natural resources and limiting urban sprawl (SANDAG 2004).

To facilitate smart growth planning, SANDAG created a Smart Growth Concept Map that identifies areas of the region that are existing, planning, or potential smart growth areas. Within the project site, a portion of Village Eight East is identified as a planned Town Center and a portion of Village Ten as a potential Special Use Center. Village Three North and the Portion of Village Four are not identified as smart growth areas by SANDAG (SANDAG 2012). Basic RCP

smart growth principles applicable to the proposed project to strengthen land use and transportation integration are summarized as follows (SANDAG 2004):

- **Land Use and Urban Design.** Reduce land consumption by focusing future growth in the cities and in the appropriate unincorporated suburban communities and village centers through new development, redevelopment, and infill, emphasizing pedestrian-friendly design and mixed-use development.
- **Travel Choices.** Provide people with additional travel choices (walking, biking, rail, bus, and automobile).
- **Jobs/Housing Mix.** Locate housing near or within major employment areas and provide employment opportunities near major housing areas.
- **Housing Choices.** Provide, in each community, a variety of housing types for residents of all incomes.
- **Infrastructure, Capacity, and Location.** Provide adequate infrastructure in designated smart growth opportunity areas.
- **Environment.** Protect open space and habitat areas. When constructing residential, commercial, or industrial areas, or building transportation systems, provide environmentally sensitive development that conserves water and energy, protects water quality, promotes the use of alternative energy sources, protects sensitive plants and habitats, and restores natural open spaces through the use of native plants.

2050 Regional Transportation Plan/Sustainable Communities Strategy

SANDAG adopted the 2050 Regional Transportation Plan (RTP) in October 2011. The 2050 RTP provides a vision of the San Diego region's transportation system over the next 40 years. The document contains a robust transportation network, with a diversity of projects that will provide residents and visitors with a variety of travel choices (SANDAG 2011). As part of the 2050 RTP, SANDAG adopted the Sustainable Communities Strategy (SCS), which details how the region will reduce greenhouse gas (GHG) emissions to state-mandated levels as required by Senate Bill 375. The goal of the SCS is to establish a development plan for the region, which, after considering transportation measures and policies, will achieve, if feasible, the GHG reduction targets. The GHG reduction targets to be achieved through the adoption of SANDAG's SCS are a 7% reduction in emissions per capita by 2020 and a 13% reduction by 2035. The 2050 RTP and SCS seek to guide the San Diego region toward a more sustainable future by integrating land use, housing, and transportation planning to create communities that are more sustainable, walkable, transit-oriented, and compact (SANDAG 2011). On October 9, 2015, SANDAG adopted "San Diego Forward" a Regional Plan that merged its RCP with the 2050 RTP/SCS (Regional Plan). The Regional Plan now serves as the blueprint for how the San Diego region

will grow and how SANDAG will invest in transportation infrastructure to provide more choices, strengthen the economy, promote a healthy environment, and support thriving communities. The Regional Plan sets forth the following six general objectives: Habitat and Open Space Preservation, Regional Economic Prosperity, Environmental Stewardship, Providing Mobility Choices, Partnerships/Collaboration with neighboring entities and creating Healthy and Complete Communities (SANDAG 2015).

At the core of the Regional Plan is an SCS that charts a course toward lowering GHG emissions and includes the following five building blocks (SANDAG 2015):

- A land use pattern that accommodates our region's future employment and housing needs, and protects sensitive habitats, cultural resources, and resource areas.
- A transportation network of public transit, Managed Lanes and highways, local streets, bikeways, and walkways built and maintained with reasonably expected funding.
- Managing demands on our transportation system (also known as Transportation Demand Management, or TDM) in ways that reduce or eliminate traffic congestion during peak periods of demand.
- Managing our transportation system (also known as Transportation System Management, or TSM) through measures that maximize the overall efficiency of the transportation network.
- Innovative pricing policies and other measures designed to reduce the number of miles people travel in their vehicles, as well as traffic congestion during peak periods of demand.

The Regional Plan includes the following set of principles that will guide the development of the region's future transportation network (SANDAG 2015):

- The SANDAG investment plan will be built with financial resources that are reasonably expected to be available between now and 2050.
- A more efficient transportation network will be achieved through two key strategies: effectively managing the overall system (TSM) and effectively managing demands on the system (TDM) with innovative technologies be integrated into both. The result will be maximized efficiency in the transportation network, which ultimately can lower greenhouse gas emissions.
- Managing parts of the network, such as adding Managed Lanes and transit only lanes on freeways, which encourage people to carpool and use public transit to bypass bottlenecks.
- The road toward a more sustainable San Diego region should include vehicles that use cleaner, alternative sources of energy with SANDAG playing an important role in promoting this transition.

Local Level

City of Chula Vista General Plan

The City of Chula Vista General Plan was updated by the City of Chula Vista (City) on December 13, 2005, and most recently amended in 2015. The General Plan provides a long-term strategy to address planning issues for the growth and development of the City, and is composed of the following six elements: land use and transportation, economic development, public facilities and services, growth management, environmental, and housing (City of Chula Vista 2005). The existing General Plan designations for the project site are shown in Figure 5.1-1. The proposed project is located in the Otay Ranch subarea of the General Plan. Otay Ranch is identified as a master planned community in the Chula Vista General Plan (City of Chula Vista 2005).

Land Use and Transportation Element

The Land Use and Transportation Element establishes the land use categories, roadway classifications, and generalized land use patterns for City development, and focuses on themes that (1) support strong community character and image, (2) support strong and safe neighborhoods, and (3) improve mobility. This element establishes plans and policies to identify the general distribution of housing, businesses, industry, open space (including parks), education facilities, and public buildings. Standards for population density and building intensity in each land use classification are also provided (City of Chula Vista 2005).

Economic Development Element

The Economic Development Element establishes policies to ensure the long-term vitality of the local economy and to help develop, guide, and encourage appropriate employment and business ownership in Chula Vista. It promotes a sustainable local economy to benefit present and future generations without detrimentally affecting resources. Employment land, or land designated for commercial, industrial and other non-residential, or open space use, is concentrated in three principal areas: the tideland area, the Montgomery area, and the Otay Ranch area (City of Chula Vista 2005).



CITY OF CHULA VISTA

Existing General Plan Land Use

LEGEND

RESIDENTIAL
- RESIDENTIAL LOW MEDIUM
- RESIDENTIAL MEDIUM
- RESIDENTIAL MEDIUM HIGH

COMMERCIAL
- RETAIL
- MXC MIXED USE COMMERCIAL

SPECIAL PLANNING AREA
- MUR MIXED USE RESIDENTIAL
- TC TOWN CENTER
- EUC EASTERN URBAN CENTER
- UNIVERSITY
- REGIONAL TECHNOLOGY PARK (RTP)

INDUSTRIAL
- RESEARCH & LIMITED INDUSTRIAL

OPEN SPACE, PARKS & PUBLIC / QUASI-PUBLIC
- OPEN SPACE
- PARKS & RECREATION
- PUBLIC & QUASI PUBLIC
- ACTIVE RECREATION
- OPEN SPACE PRESERVE

CIRCULATION SYSTEM
- SR - 125 (TOLL ROAD)
- EXPRESS WAY (7 or 8 LANE)
- PRIME ARTERIAL STREET (6 LANE)
- MAJOR STREET (6 LANE)
- TOWN CENTER ARTERIAL
- MAJOR STREET (4 LANES)
- ACCESS TO ACTIVE RECREATION
- PROPOSED PROJECT BOUNDARY

SOURCE: City of Chula Vista 2014

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FIGURE 5.1-1
Adopted Chula Vista General Plan Land Use Designations

Otay Ranch Village Four SPA Plan Environmental Impact Report

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Public Facilities and Services Element

The Public Facilities and Services Element establishes the plan to provide and maintain infrastructure and public services for future growth, without diminishing services to existing development within the City. The overall goal of this element is to provide and maintain public facilities and services within Chula Vista through abundant public infrastructure and community services that support and enhance the well-being of the City and its residents (City of Chula Vista 2005).

Growth Management Element

The purpose of the Growth Management Element is to guide future development in the City based on the principles that (1) rapid population growth and development have the potential to cause a variety of problems and impact the well-being of a city and its residents, and (2) impacts can be mitigated by balancing competing demands for growth and development through the adoption of comprehensive objectives and policies. This element serves as the assurance that the vision described within the General Plan is achieved without sacrificing the quality of life enjoyed in the community, and establishes a framework for directing new development, redevelopment, and community enhancement, and provides the guidance to realize the vision for the City (City of Chula Vista 2005).

Environmental Element

The Environmental Element establishes the policy framework for improving sustainability through the City's stewardship of natural and cultural resources, promotion of environmental health, and protection of persons and property from environmental hazards and noise. Sustainable development is identified as a means of balancing current growth and economic progress with protection of future resources (City of Chula Vista 2005).

Housing Element

The Housing Element details a 5-year strategy for enhancement and preservation of the City character, identifies strategies for expanding housing opportunities for the various economic segments of the City, and provides policy guidance for local decision-making related to housing. The focus of this element is to (1) maintain and enhance the quality of housing and residential neighborhoods in the City, (2) support housing opportunities to meet the City's diverse needs, and (3) fund and implement services that provide vital community resources for lower-income residents. Inclusionary policies of this element require 10% affordable ("inclusionary") housing, including 5% low-income and 5% moderate-income units, for projects consisting of 50 or more dwelling units (City of Chula Vista 2005).

City of Chula Vista Multiple Species Conservation Program Subarea Plan

The Multiple Species Conservation Program (MSCP) is a subregional plan under the California Natural Community Conservation Planning Act (Fish and Game Code Sections 2800–2835). The MSCP covers an area encompassing 12 jurisdictions and 582,243 acres. The MSCP addresses the potential impacts of urban growth, loss of natural habitat, and species endangerment, and creates a plan to mitigate for the potential loss of covered species and their habitat due to the direct, indirect, and cumulative impacts of future development of both public and private lands within the MSCP area. The MSCP Subregional Plan is a comprehensive, long-term habitat conservation plan that addresses the needs of multiple sensitive plant and animal species and the preservation of natural vegetation communities in southern San Diego County. The MSCP Subregional Plan is implemented through local subarea plans prepared by participating jurisdictions (City of Chula Vista 2003a). The City of Chula Vista MSCP Subarea Plan was approved in 2003, and it provides for conservation of covered species and their associated habitats by establishing a Preserve of interconnected conservation lands. The combination of the MSCP Subregional Plan and subarea plans, including the City's MSCP Subarea Plan, serves as a Multiple-Species Habitat Conservation Plan pursuant to Section 10(a)(1)(B) of the federal Endangered Species Act and as Natural Community Conservation Plan (NCCP) and associated permit under the Natural Community Conservation Planning Act. The MSCP Subregional Plan is being implemented in phases as participating jurisdictions and special districts submit their subarea plans for approval to the U.S. Fish and Wildlife service (USFWS) and the California Department of Fish and Wildlife (CDFW). Upon approval, USFWS and CDFW authorize the take of listed species and other species of concern, subject to the terms of the MSCP Subarea Plan and the MSCP Subregional Plan. Conservation and management responsibilities and implementation guarantees for each subarea plan are set forth in implementing agreements between the entity responsible for each subarea plan and USFWS and CDFW (City of Chula Vista 2003a).

The City's MSCP Subarea Plan was approved in 2003, the City's Implementation Agreement with USFWS and CDFW was entered into in February 2003. The City's MSCP Subarea Plan was prepared pursuant to a general outline developed by USFWS and CDFW to meet the requirements of the Natural Community Conservation Planning Act. The City's MSCP Subarea Plan is consistent with the MSCP Subregional Plan and contributes to its implementation. In addition, the City's MSCP Subarea Plan is a stand-alone document for purposes of implementing portions of the MSCP Preserve (City of Chula Vista 2003a).

The City's Preserve was developed by the City, in cooperation with USFWS and CDFW, property owners, developers, and environmental groups. The majority of the City's Preserve consists of hard-line areas designated for 100% conservation, and these areas are either already in public ownership or will be dedicated into the Preserve as part of the City's development

approval process for covered projects. Preserve boundaries for covered projects were established on a project-by-project basis after evaluation of habitat and species data and/or surveys conducted as part of project entitlement processing, evaluation by USFWS and CDFW, and consideration of how such mitigation could best contribute to the overall MSCP Subregional Plan (City of Chula Vista 2003a).

For development projects located within Otay Ranch, the City's MSCP Subarea Plan relies on the Preserve design and policies contained in the Otay Ranch Resource Management Plan (RMP) as the framework for conservation and management of biological resources within the Otay Ranch Preserve (City of Chula Vista 2003a; City of Chula Vista and County of San Diego 1993a, 1996). Otay Ranch, including the proposed project, is considered a covered project under the MSCP Subarea Plan. This means that the areas proposed to be preserved (100% conservation areas) either are already in public ownership or will be dedicated to the Otay Ranch Preserve as part of the development approval process for covered projects. As it pertains to development in Otay Ranch, lands will be conveyed to the Otay Ranch Preserve in accordance with the RMP.

In addition, the City's MSCP Subarea Plan allows for infrastructure within the Preserve to support planned development, subject to specific conditions.

Otay Ranch General Development Plan

The Otay Ranch General Development Plan (GDP) was approved jointly by the City of Chula Vista and County of San Diego in 1993 for the future development of Otay Ranch. The Otay Ranch GDP was amended in December 2005 as part of the City's General Plan Update, and most recently was amended in May 2015. The Otay Ranch GDP establishes land use plans, design guidelines, objectives, policies, and implementation measures that apply to all portions of Otay Ranch while supporting a balance of housing, shops, workplaces, schools, parks, civic facilities, and open spaces. The majority of development is intended to be clustered in villages, with conveniently located "core" features and well-defined edges such as the Chula Vista greenbelt, open spaces, and wildlife corridors. The goals of the Otay Ranch GDP are to (1) create a well-integrated, balanced land use; (2) reduce reliance on the automobile and promotion of alternative modes of transportation; and (3) diversify the economic base within Otay Ranch. The Otay Ranch GDP designates Village Four as low medium density residential, open space Preserve, and parks and recreation, as shown in Figure 5.1-2 (City of Chula Vista and County of San Diego 1993b).

Otay Ranch Resource Management Plan

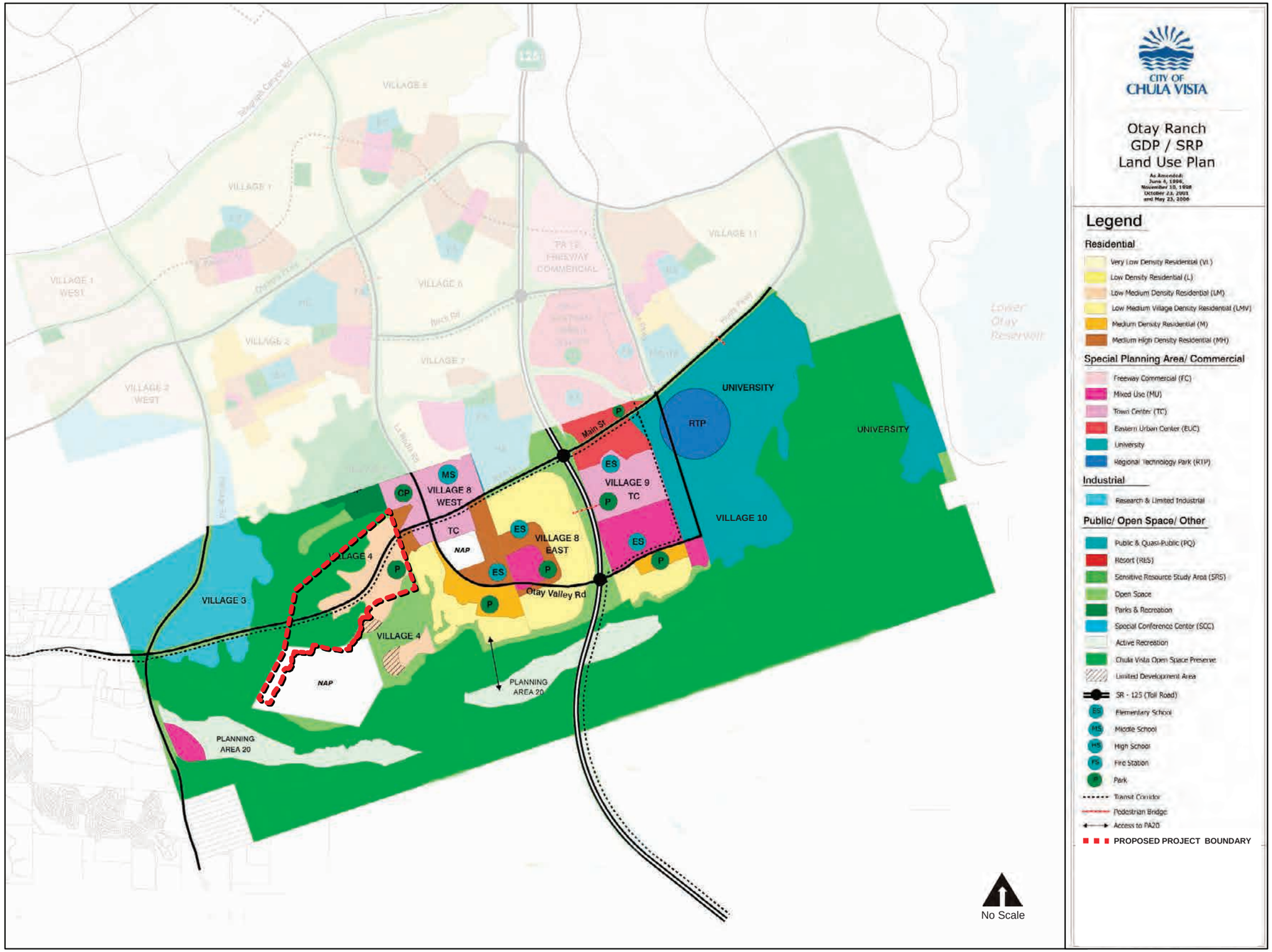
The Otay Ranch RMP was adopted in 1993 with the approval of the Otay Ranch GDP to establish a permanent Preserve within Otay Ranch. The RMP is composed of two separate

documents, the Phase 1 RMP and Phase 2 RMP (adopted in 1996 and revised in 2002). The Phase 1 RMP identifies Preserve areas within Otay Ranch, and contains policies regarding species and habitat conservation and long-term management of the Preserve. The Phase 2 RMP includes Ranch-wide studies that were conducted pursuant to the Phase 1 RMP and provides additional detail on conveyance, management, and funding (City of Chula Vista and County of San Diego 1993a, 1996). The purpose of the Otay Ranch Preserve is to protect and enhance biological, paleontological, cultural, and scenic resources. Plan objectives include biological diversity and promotion of the survival and recovery of native species and habitats.

The RMP identifies an open space system of 11,375 acres to be dedicated within the Otay Ranch, targeting lands that include important resources such as vernal pools, coastal sage scrub habitat, coastal California gnatcatcher (*Polioptila californica californica*) populations, and potential wetlands restoration areas. The Otay Ranch Preserve also connects large areas of open space through a series of wildlife corridors and cover portions of Salt Creek Canyon to Otay Valley. The Preserve boundaries from the RMP have been incorporated into the adopted Otay Ranch GDP. The Preserve/development boundary of the Otay Ranch GDP is consistent with the objectives, policies, and criteria established in the RMP (City of Chula Vista and County of San Diego 1993a, 1993b, 1996).

The Phase 2 RMP adopted in 1996 and revised in 2002, identified implementation measures that included procedures for dedicating parcels of land to the Preserve and for determining the proportionate share for each village. The Phase 2 RMP also addresses preservation of steep slopes within Otay Ranch (City of Chula Vista and County of San Diego 1996).

Land identified by the RMP as part of the 11,375-acre Otay Ranch Preserve is required to be conveyed to the Preserve prior to the approval of Final Maps. The conveyance ratio (ratio of land to be dedicated per acre of development) is 1.188 acres dedicated for each developable acre that is Final Mapped. This ratio was established by the Phase 2 RMP. The Phase 2 RMP identified 9,574 developable acres in Otay Ranch, which are defined as the total amount of developable acreage minus common uses (local parks, schools, arterials, State Route (SR) 125, and lands designated as public use areas) and limited development areas. For the conveyance of the entire 11,375-acre Otay Ranch Preserve, the Phase 2 RMP calculated that 1.188 acres of Preserve land must be dedicated for each developable acre (11,375 acres of Preserve divided by 9,574 developable acres). The conveyance obligation is required to be met on a village-by-village basis (City of Chula Vista and County of San Diego 1996).



CITY OF CHULA VISTA

Otay Ranch GDP / SRP Land Use Plan

As Amended:
June 4, 1996
November 10, 1998
October 23, 2001
and May 23, 2006

Legend

Residential

- Very Low Density Residential (VL)
- Low Density Residential (L)
- Low Medium Density Residential (LM)
- Low Medium Village Density Residential (LMV)
- Medium Density Residential (M)
- Medium High Density Residential (MH)

Special Planning Area/ Commercial

- Freeway Commercial (FC)
- Mixed Use (MU)
- Town Center (TC)
- Eastern Urban Center (EUC)
- University
- Regional Technology Park (RTP)

Industrial

- Research & Limited Industrial

Public/ Open Space/ Other

- Public & Quasi-Public (PQ)
- Resort (RES)
- Sensitive Resource Study Area (SRS)
- Open Space
- Parks & Recreation
- Special Conference Center (SCC)
- Active Recreation
- Chula Vista Open Space Preserve
- Limited Development Area
- SR - 125 (Toll Road)
- Elementary School
- Middle School
- High School
- Fire Station
- Park
- Transit Corridor
- Pedestrian Bridge
- Access to PA20
- PROPOSED PROJECT BOUNDARY

SOURCE: City of Chula Vista 2014

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FIGURE 5.1-2
Adopted Otay Ranch General Development Plan Land Uses

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City of Chula Vista Municipal Code

Zoning Ordinance

Title 19 of the City of Chula Vista Municipal Code (CVMC) is the City's Zoning Code, which is intended to implement the City of Chula Vista General Plan. The Eastern Planning Area, which includes most of the project site, is zoned Planned Community (P-C), as defined in Chapter 19.48 of the CVMC. The purposes of the P-C zone are as follows:

- Provide for the orderly preplanning and long-term development of large tracts of land. These tracts may contain a variety of land uses, but are under unified ownership or development control, so that the entire tract will provide an environment of stable and desirable character.
- Give the developer reasonable assurance that sectional development plans in accordance with the approved general development plan will be acceptable to the City. Sectional development plans may include subdivision plans and/or planned unit development plans as provided in this title.
- Enable the City to adopt measures for the development of the surrounding area compatible with the planned community zone.

According to Section 19.48.020 of the Zoning Code, P-C zoning may be established on lands that are suitable and of sufficient size for planning and development in a manner consistent with the purpose of the zone. P-C zoning does not include any area of less than 50 acres of contiguous land. Section 19.48.025 establishes a requirement for Community-Purpose Facility (CPF) sites to be provided within the P-C zone at the rate of 1.39 acres per 1,000 persons.

Growth Management Ordinance

The purpose and intent of the City of Chula Vista Growth Management Ordinance (GMO) (CVMC Section 19.09) is to provide quality housing opportunities for all economic sections of the community; to balance the community with adequate commercial, industrial, recreational, and open space areas to support the residential areas of the City; to provide that public facilities, services, and improvements meeting City standards exist or become available concurrent with the need created by new development; to control the timing and location of development by tying the pace of development to the provision of public facilities and improvements to conform to the City's Threshold Standards; and to meet the goals and objectives of the Growth Management Program and other programs associated with quality of life. The GMO prohibits new development unless adequate public facilities are provided in advance of or concurrently with the demands created by new development.

The GMO created the Growth Management Oversight Commission (GMOC) and established "quality of life" threshold standards. These include police, fire, and emergency response times; anticipated demand for schools and evaluation of school funding; establishment of a library service ratio; a service ratio for neighborhood and community park land; water service availability; compliance with City engineering sewage flow and related standards (subdivision manual); compliance with City engineering stormwater drainage standards (subdivision manual); maintenance of acceptable City-wide traffic flows; and air quality and pollution overview and evaluation to foster air quality improvement pursuant to relevant regional and local air quality improvement strategies. The GMO also requires public facilities finance plans (PFFPs), air quality improvement plans, and water conservation plans for every SPA Plan, or, if a SPA Plan is not required, for every tentative map (TM) application. The PFFP provides a complete description of all public facilities included within the boundaries of the plan as defined by the development services director, including phasing and financing of infrastructure. The plan must contain an analysis of the individual and cumulative impacts of the proposed development on the community as it relates to the Growth Management Program, the specific facility master plans, and the threshold standards. Proposed development must also prepare a fiscal impact report and provide funding for periods when City expenditures for the development would exceed projected revenues.

Park Land Dedication Ordinance

Chapter 17.10 of the CVMC establishes requirements for parklands and public facilities, including regulations for the dedication of land and development of improvements for park and recreational purposes (Section 17.10.010); determination of park and recreational requirements (Section 17.10.020); calculation of area to be dedicated (Section 17.10.040); specifications for park improvements (Section 17.10.050); criteria for area to be dedicated (Section 17.10.060); procedures for in-lieu fees for land dedication and/or park development improvements (Section 17.10.070); and other regulations regarding park development and collection and distribution of fees.

Tentative Map

Title 18 of the CVMC requires the adoption of a TM for division and development of land into five or more parcels. A TM is made for the purpose of showing the design of a project, including the locations and layouts of streets and parcels. Under CVMC Section 18.04.050, provisions shall be made in a TM to assure adequate access, light, air, and privacy on all parcels of property, regardless of the land use. CVMC Section 18.05.060 provides for necessary land for community facilities, including schools, parks, open space, playgrounds, and other required public facilities. The TM must be reviewed by the Director of Public Works to ensure compliance with regulations applicable to public and private utilities, streets, and respective rights-of-way and easements. The TM also must be reviewed by the Development Services Director with regard to the number, size, and configuration of lots to be created, and the alignment and width of streets

and easements. TMs may be adopted at the time of project approval and shall expire in 36 months in accordance with the Subdivision Map Act, although extensions may be requested.

Parks and Recreation Master Plan

The City of Chula Vista Parks and Recreation Master Plan (PRMP) was adopted in 2002 and a Draft Update was completed in 2010. The PRMP is the blueprint for the City's park system through the year 2030. The PRMP identifies existing park and recreation facilities and provides guidance for future park sites, including locations for specific types of additional recreational facilities. The PRMP envisions a comprehensive and interrelated package of community and neighborhood parks and presents each park within the context of the whole park system to ensure that it provides a balance of recreational opportunities. The PRMP states that the year 2030 Citywide park system will contain community, neighborhood, mini, urban, and special-purpose parks and recreation facility and community center sites (City of Chula Vista 2010). The PRMP identifies a 70-acre community park to be developed in Village Four (the park is not part of the proposed project).

The PRMP includes a set of goals and policies for the City's parks and recreation aspirations. Each goal is accompanied by a set of specific policies, rationales, and action plans, as appropriate. The goals are as follows (City of Chula Vista 2010):

- Create a comprehensive parks and recreation system that meets the needs of the general public of Chula Vista by effectively distributing park types and their associated recreation facilities and programs.
- Establish allocation of existing and future public parkland resources that balance public priorities and needs with quality of parks and facilities.
- Provide a program for implementation.

Draft Parks and Recreation Master Plan Update

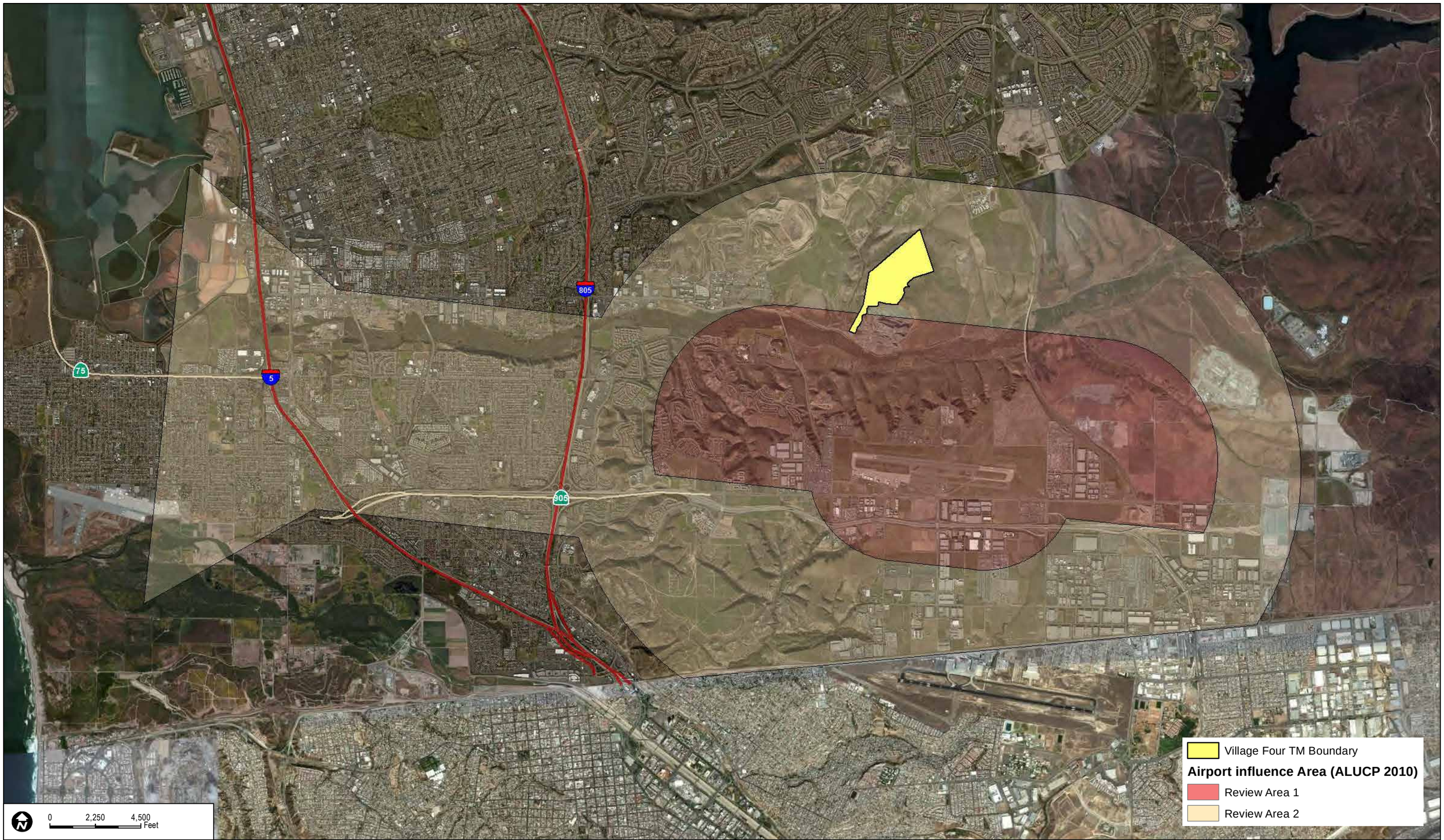
The City completed a draft update to the Parks and Recreation Master Plan in December 2017. The draft update was released for public comment in January 2018. The Draft Parks and Recreation Master Plan Update represents a comprehensive and interrelated package of Regional, Community, Neighborhood, Mini, Special Purpose, and Urban Parks giving residents the opportunity for a complete recreational experience and a desirable addition to the environment and the health of the community (City of Chula Vista 2017).

Greenbelt Master Plan

The City of Chula Vista Greenbelt Master Plan provides guidance and continuity for the planning of open space and construction and maintenance of Greenbelt Trails (City of Chula Vista 2003b). There are two general types of trails: multi-use and rural. Multi-use trails are designed for a variety of users, such as bicyclists, equestrians, pedestrians, joggers, and other non-motorized activities. According to the Greenbelt Master Plan, even a single-track pedestrian-only trail would be considered multi-use since it could accommodate hikers, backpackers, runners, bird-watchers, and others. Minimum standards for trails are set forth in the City Landscape Manual and the Greenbelt Master Plan (City of Chula Vista 2003b). A multi-use trail may also be improved with a variety of trail surfaces, with concrete and asphalt surfacing to accommodate the broadest range of users in an urban setting. A paved multi-use trail would be 10 feet wide with 2-foot-wide natural shoulders. However, variation in the minimum standards may be allowed, based on consideration of the number and types of trail users and environmental constraints. Other minimum standards include Greenbelt Trail signs. Standards including fencing and signage shall be determined based on environmental and other constraints and are subject to review and approval of the Development Services Director.

Airport Land Use Compatibility Plan–Brown Field

The San Diego County Regional Airport Authority, designated as the Airport Land Use Commission for all public airports in the County of San Diego, adopted the Brown Field Airport Land Use Compatibility Plan (ALUCP) in September 1981 (last updated in December 2010). The ALUCP assists in achieving compatible land use development in the area surrounding Brown Field airport located in Otay Mesa on Heritage Road, east of Interstate (I) 805. Brown Field is a general aviation airport accommodating both propeller- and jet-powered aircraft and serves as a port of entry for private aircraft coming into the United States from Mexico. Brown Field is also heavily used by military and law enforcement agencies and is classified as a "reliever airport" by the Federal Aviation Administration (SDCRAA 2010). The ALUCP designates the airport influence area and contains projected noise contours, flight activity zones, a land use compatibility matrix, and plan recommendations for areas surrounding Brown Field. The airport influence area is delineated by using the projected 60-decibel (dB) community noise equivalency level (CNEL) contour and is generally the area in which current and future airport-related noise, overflight, safety, and/or airspace protection factors may affect land uses or necessitate restrictions on uses. The airport influence area is divided into Review Area 1 and Review Area 2.



SOURCE: Aerial-Bing Maps

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FIGURE 5.1-3

Brown Field Airport Influence Area

Otay Ranch Village Four SPA Plan Environmental Impact Report

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The composition of each area is determined as follows (SDCRAA 2010):

- Review Area 1 consists of locations where noise or safety concerns may necessitate limitations on the types of land use actions. Specifically, Review Area 1 encompasses locations exposed to aircraft noise levels of 60 dB CNEL or greater together with all of the safety zones identified in the ALUCP.
- Review Area 2 consists of locations beyond Review Area 1 but within the airspace protection and/or overflight notification areas. Limits on the heights of structures, particularly in areas of high terrain, are the only restrictions on land uses within Review Area 2.

As depicted in Figure 5.1-3, Brown Field Airport Influence Area, a small portion of the most southern portion of the project site is within Review Area 1 of the Brown Field Airport Influence Area. The portion of the project site within Review Area 1 is designated as Safety Zone 6– Traffic Pattern Zone under the Brown Field Airport Compatibility Policy Map: Safety; however, it is not exposed to aircraft noise levels of 60 dB CNEL or greater.

The Traffic Pattern Zone has a low relative risk level and both residential and non-residential development is compatible in this zone. A majority of the project site is within the FAA Height Notification Boundary and the southern portion of the project site is subject to height restrictions ranging from 676.3 feet above mean sea level to 876.3 feet above mean sea level. In addition, a majority of the project site is within the Airport Overflight Notification Area, which requires notification for all new residential development in this area (SDCRAA 2010).

Otay Valley Regional Park Concept Plan

The Otay Valley Regional Park (OVRP) Concept Plan was adopted in July 1997 as the result of a multi-jurisdictional planning effort including the cities of San Diego and Chula Vista and the County of San Diego (County of San Diego et al. 1997). The planning area for the OVRP Concept Plan is located in the southern portion of the County of San Diego, 4 miles north of the United States/Mexico international border. The planning area spans approximately 11 miles from the southeastern edge of the salt ponds in the OVRP to the land surrounding the Lower and Upper Otay Lakes. A majority of the land within the plan is privately owned. The plan does not change existing zoning, land use plans or add new development regulations, nor does it preclude private development. Rather, it provides the multiple jurisdictions with policies and direction regarding land acquisition and development of the plan. The intent of the plan is to continue to provide south bay residents and visitors with a variety of active and passive recreation opportunities, protect environmentally sensitive areas, protect cultural and scenic resources and encourage compatible agricultural uses in the park (County of San Diego et al. 1997).

5.1.1.2 On-Site Conditions

The project site is generally located near the southern boundary of the City of Chula Vista, east of I-805, west of SR-125, and north of SR-905. Village Four is located on the east side of Wolf Canyon, straddling the future extension of Main Street from La Media Road to the north to Heritage Road to the southwest. Village Four is surrounded by Village Three to the west, Villages Two and Four to the north, Village Eight West to the east, and rock quarry to the south. Village Four currently consists of vacant, undeveloped land. Regional access to the project would be provided primarily by La Media Road. The site is currently vacant and undeveloped with no public access.

5.1.1.3 Surrounding Land Uses

The project site is surrounded by other Otay Ranch villages and a variety of land uses and natural features. Village Four is surrounded by Village Three to the west, Village Two and a portion of Village Four under a different SPA Plan to the north, Village Eight West to the east, and the Vulcan Materials mining operations to the south.

5.1.2 Thresholds of Significance

Would the proposed project:

A. Physically divide an established community?

B. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

C. Conflict with any applicable habitat conservation plan or natural community conservation plan?

5.1.3 Impacts

A. Physically divide an established community.

Development of the project site would not physically divide an established community. Instead, the project would segment of Main Street, which is ultimately planned as an important east/west linkage throughout the Otay Ranch area, improving connectivity between existing and planned villages. Impacts would be less than significant.

B. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

City of Chula Vista General Plan

The Land Use and Transportation Element establishes the land use categories, roadway classifications, and generalized land use patterns for City development, while focusing on themes that (1) support strong community character and image, (2) support strong and safe neighborhoods, and (3) improve mobility. This element establishes plans and policies to identify the general distribution of housing, businesses, industry, open space (including parks), education facilities, and public buildings. Standards for population density and building intensity in each land use classification are also provided. Land use objectives outlined in the City of Chula Vista General Plan include the following (City of Chula Vista 2005):

- **Objective LUT 1:** Provide a balance of residential and non-residential development throughout the City that achieves a vibrant development pattern, enhances the character of the City, and meets the present and future needs of all residents and businesses.
- **Objective LUT 2:** Limit locations for the highest development intensities and densities, and the tallest building forms, to key urban activity centers that are also well-served by transit.
- **Objective LUT 3:** Direct the urban design and form of new development and redevelopment in a manner that blends with and enhances Chula Vista's character and qualities, both physical and social.
- **Objective LUT 4:** Establish policies, standards, and procedures to minimize blighting influences and maintain the integrity of stable residential neighborhoods.
- **Objective LUT 5:** Designate opportunities for mixed use areas with higher density housing that is near shopping, jobs, and transit in appropriate locations throughout the city.
- **Objective LUT 6:** Ensure adjacent land uses are compatible with one another.
- **Objective LUT 7:** Appropriate transitions should be provided between land uses.
- **Objective LUT 13:** Preserve scenic resources in Chula Vista, maintain the City's open space network, and promote beautification of the City.
- **Objective LUT 72:** Develop comprehensive, well-integrated, and balanced land uses within villages and town centers that are compatible with the surroundings.
- **Objective LUT 75:** Preserve and protect Otay Ranch's significant natural resources and open space lands with environmentally sensitive development.

- **Objective LUT 80:** Protect the natural features of the Otay Ranch Preserve located in Wolf Canyon.
- **Objective LUT 81:** Develop a higher density, mixed use, transit-oriented town center positioned on the intersection of Main Street and La Media Road, surrounded by lower intensity residential use and a large community park, that preserves Rock Mountain as an important landform and visual resource.

The proposed project would be consistent with the vision of planned development of Village Four within the General Plan as residential development in support of the Town Center in nearby Village Eight West. The General Plan specifically envisions single-family residential throughout Village Four, but the proposed project's inclusion of higher density multi-family along Main Street would better support future transit use on contemplated for this roadway, while also requiring less developed area than solely providing the same amount of single family homes. Additionally, Village Four is planned to not include any commercial land uses. With development in mind for support commercial uses in Village Eight West, the project would include bicycle and pedestrian connections to Village Eight West, in addition to providing densities to support mass transit. Overall, the project would reduce dependence on the automobile. Approximately 117.22 acres of the project site would be designated as open space. Approximately 19.73 of those acres would be for fuel modification areas, perimeter slopes, and passive recreation, and approximately 97.49 acres would be dedicated to the MSCP Preserve. The proposed project would be consistent with the objectives and policies of the General Plan, and more specifically, the vision of this portion of Village Four.

Otay Ranch GDP

The Otay Ranch GDP contains several land use goals and policies, as listed below, followed by consistency analysis (City of Chula Vista and County of San Diego 1993b):

- **Goal:** Develop comprehensive, well-integrated, and balanced land uses that are compatible with the surroundings.
- **Objective:** Provide a well-integrated land use pattern which promotes both housing and employment opportunities, while enhancing the unique environmental and visual qualities of the Otay Ranch.
- **Objective:** Provide a wide range of residential housing opportunities, from rural and estate homes to high density multi-family projects and affordable housing. Provide a balanced and diverse residential land use pattern for the Otay Valley Parcel which promotes a blend of multi-family and single-family housing styles and densities, integrated and compatible with other land uses in the area.

- **Objective:** Provide development patterns complementary to the adopted plans and existing development of the adjacent communities.

The land use plan for Village Four supports these Otay Ranch GDP goals and objectives by providing a diverse range of housing opportunities. The project adheres to the Otay Ranch GDP specific directives for Villages Four that creates residential neighborhoods that offer a variety of housing styles and densities. The organization of the land uses within Village Four meets the objectives of integration and compatibility of land uses within villages and with adjacent communities. The project supports the objective of enhancing the unique environmental and visual qualities of Otay Ranch by generally conforming to the natural topography of the site and maintains views toward open space and distant mountains.

- **Goal:** Environmentally sensitive development should preserve and protect significant resources and large open space areas.
- **Objective:** Provide land use arrangements which preserve significant natural resource areas, significant landforms and sensitive habitat.

These goals and objectives (City of Chula Vista and County of San Diego 1993b) would be met through preservation of open space areas in the northerly and westerly portions of project site, as well as limiting development in area designated for such uses. The development adjacent to the MSCP Preserve consists of compatible uses with appropriate design, landscaping, drainage, and other development standards sensitive to the environment. Furthermore, as part of the development process, the project would contribute substantial land dedications for protection of the adjacent environmentally sensitive land in the MSCP Preserve.

- **Goal:** Reduce reliance on the automobile and promote alternative modes of transportation.
- **Objective:** Develop villages and town centers which integrate residential and commercial uses with a mobility system that accommodates alternative modes of transportation, including pedestrian, bicycle, low-speed/neighborhood electric vehicle, bus, rapid transit, and other modes of transportation.
- **Objective:** Develop residential land uses which encourage the use of alternative modes of transportation through the provision of bus and rapid transit right-of-way, and the inclusion of a bicycle and pedestrian network.
- **Objective:** Commercial uses should be sized to meet the needs of the immediate and adjacent villages and town centers. Village and Town Center commercial land uses preempt large regional commercial opportunities within villages and town centers and relegate them to the EUC or freeway commercial areas.

- **Objective:** Develop the Eastern Urban Center to promote alternative modes of transportation. Specifically, through the provision of light rail right-of-way and the incorporation of multi-model access from residential neighborhoods and villages (City of Chula Vista and County of San Diego 1993b).

Land uses within the project site are designed to provide for the daily needs of the residents through its proximity to uses such as mixed use, community purpose facility, park, and school uses that are located in Village Eight West, abutting the eastern boundary of site. The adjacency to a mix of land uses minimizes the need for automobile travel coupled with the pedestrian-oriented design. The project also provides for future dedicated transit lanes along Main Street.

- **Goal:** Promote village and town center land uses which offer a sense of place to residents, and promotes social interaction
- **Objective:** Organize Otay Ranch into villages and town centers, each having its own identity and sense of place.
- **Objective:** The design of the Otay Ranch should promote variety and diversity at the village or town center scale, while providing a sense of continuity through the use of unifying design elements.
- **Objective:** Promote a diverse range of activities and services to encourage a mixture of day/night and weekday/weekend uses.
- **Goal:** Promote synergistic uses between the Villages and Town Centers of the Otay Ranch to provide a balance of activities, services, and facilities.
- **Objective:** Develop individual villages and town centers to complement surrounding villages/town centers.
- **Objective:** Select villages/town centers to provide activities and uses which draw from surrounding villages/town centers. Uses serving more than one village, such as a cinema complex, should be located in a village core or town center that has convenient access to adjacent villages/town centers.

The project meets these goals and objectives (City of Chula Vista and County of San Diego 1993b) through proximity to an intensified village core in Village Eight West. Land uses within the Village Eight West core include mixed-use commercial and high-density residential, community purpose facilities, schools, and parks. The design guidelines for villages control the quality and appearance of buildings and landscaping would foster the overall community identity and establish it as a recognizable place. The residents of Villages Four and Eight West would become a single community that allows people to live, work, shop, and play together. The villages would incorporate community-wide design elements such as signage and landscaping to connect it with the other villages of Otay Ranch.

- **Goal:** Organize land uses based upon a village/town center concept to produce a cohesive, pedestrian friendly community, encourage non-vehicular trips, and foster interaction amongst residents (City of Chula Vista and County of San Diego 1993b).

The project site and the abutting villages would be connected by an extensive sidewalk and bikeway system. These pedestrian and bicycle routes reinforce a pedestrian-friendly concept and promote the use of alternative modes of transportation. By reducing the need for an automobile, people would have opportunities to interact with their neighbors and other residents of the village as they walk or ride to their destinations.

Growth Management Ordinance

The purpose and intent of the City of Chula Vista GMO (CVMC Section 19.09) is to provide quality housing opportunities for all economic sections of the community; to balance the community with adequate commercial, industrial, recreational, and open space areas to support the residential areas of the City; to provide that public facilities, services, and improvements meeting City standards exist or become available concurrent with the need created by new development; to control the timing and location of development by tying the pace of development to the provision of public facilities and improvements to conform to the City's Threshold Standards; and to meet the goals and objectives of the Growth Management Program and other programs associated with quality of life. The GMO prohibits new development unless adequate public facilities are provided in advance of or concurrently with the demands created by new development. The City's GMO requires the provision of a PFFP, air quality implementation plan, and water conservation plan for every SPA Plan to ensure that existing public services or financing for new public facilities would be provided for new development, that adequate water supply would be available to serve the development, and that the project would meet air quality standards. As discussed in Section 5.8, Public Services, the payment of Public Facilities Development Impact Fees (PFDIFs) would ensure the proposed project would not significantly impact public service facilities.

Parkland Dedication Ordinance

Chapter 17.10 of the CVMC establishes requirements for parklands and public facilities, including regulations for the dedication of land and development of improvements for park and recreational purposes (Section 17.10.010); determination of park and recreational requirements (Section 17.10.020); calculation of area to be dedicated (Section 17.10.040); specifications for park improvements (Section 17.10.050); criteria for area to be dedicated (Section 17.10.060); procedures for in-lieu fees for land dedication and/or park development improvements (Section 17.10.070); and other regulations regarding park development and collection and distribution of fees. The Parkland Dedication Ordinance requires the dedication of 3 acres of parkland per 1,000 residents. Park obligation would be met through ~~the provision of two pocket parks overlooking~~

~~Wolf Canyon, on the north side of Main Street, providing excess Preserve Open Space in Village 14, and with~~ the payment of an In-Lieu fee.

Parks and Recreation Master Plan

The City of Chula Vista PRMP was adopted in 2002 and a Draft Update was completed in 2010. The PRMP is the blueprint for the City's park system through the year 2030. The PRMP identifies existing park and recreation facilities and provides guidance for future park sites, including locations for specific types of additional recreational facilities. The PRMP envisions a comprehensive and interrelated package of community and neighborhood parks and presents each park within the context of the whole park system to ensure that it provides a balance of recreational opportunities. The PRMP states that the year 2030 citywide park system will contain community, neighborhood, mini, urban, and special-purpose parks and recreation facility and community center sites. The City of Chula Vista PRMP includes a set of goals and policies for the City's parks and recreation aspirations. These goals and policies are as follows (City of Chula Vista 2010):

- **Goal #1:** Fulfilling the Comprehensive Park System Need
    - **Policy 1.1:** The City will continue to require new development to comply with Parklands and Public Facilities Ordinances, established pursuant to the Quimby Act, requiring a level of service standard of a minimum ratio of three acres of public parkland per 1,000 population so that new development will meet the demands created by these projects.
- **Goal #2:** Priorities for Allocation of Resources
    - **Policy 2.2:** Proposed public parks with major development projects will include a plan and/or proposal for the park site during the earliest residential development phase practical and in accordance with applicable public facilities financing plan for the development project.
- **Goal #3:** Implementation Program
    - **Policy 3.3:** The City will require that all public parks be developed in accordance with applicable legal requirements and the City's Public Park Facilities Guidelines Manual.

The proposed project is consistent with the goals and policies through its fulfillment of park obligations.

Draft Parks and Recreation Master Plan Update

The City completed a draft update to the Parks and Recreation Master Plan in December 2017. The draft update was released for public comment in January 2018. The Draft Parks and

Recreation Master Plan Update contains applicable goals and policies as follows (City of Chula Vista 2017):

- **Goal #1:** Fulfilling the Comprehensive Park System Need
    - **Policy 1.1:** Continue to require new development to comply with the Parklands and Public Facilities Ordinances, Chapter 17.10 of the Chula Vista Municipal Code (CVMC17.10), requiring a level of service standard of a minimum ratio of three acres of public parkland per 1,000 population so that new development will meet the demands created by these projects.
- **Goal #2:** Priorities for Allocation of Resources
    - **Policy 2.2:** Utilize Table 4-3, "Recreation Facilities in Public Parks" [of the PRMP] as the goal for the distribution of recreational facilities in public parks.
- **Goal #3:** Implementation Program
    - **Policy 3.2:** Require that all public parks be developed in accordance with the goals and policies contained in the Master Plan.

The proposed project is consistent with the goals and policies through its fulfillment of park obligations.

Otay Valley Regional Park Concept Plan

The OVRP Concept Plan was adopted in July 1997 as the result of a multi-jurisdictional planning effort including the Cities of San Diego and Chula Vista and the County of San Diego (County of San Diego et al. 1997). The OVRP planning area is located in the southern portion of the County of San Diego, 4 miles north of the United States/Mexico International Border. The planning area spans approximately 11 miles from the southeastern edge of the salt ponds in the Otay River Valley to the land surrounding the Lower and Upper Otay Lakes. A majority of the land within the OVRP is privately owned. The OVRP Concept Plan does not change existing zoning, land use plans or add new development regulations, nor does it preclude private development. The OVRP Concept Plan provides multiple jurisdictions with policies and direction regarding land acquisition and development of the OVRP.

These policies include the following (County of San Diego et al. 1997):

- **Policy:** Site and develop Park features and facilities, consistent with the requirements and guidelines of the MSCP and all federal, state, and local policies.

- **Policy:** In the OVRP portion of Otay Ranch Preserve, site and develop Park features and facilities within the Open Space/Core Preserve Area consistent with the requirements and guidelines of the MSCP and RMP.
- **Policy:** Encourage recreational uses as buffers between the Open Space/Core Preserve Area and new private development.

The proposed project would be consistent with the policies regarding the creation of the Otay Ranch Preserve. Approximately 97.49 acres of Preserve open space would be available on the project site; however, 80.29 acres of on-site Preserve was obligated with the approval of the Quarry Reclamation Plan. Therefore, 17.20 acres would be conveyed into the MSCP Preserve within the proposed project boundaries and Tentative Map/Final Map, and the remaining conveyance obligation acreage (51.25 acres) would be provided off site in Village 14, in accordance with Otay Ranch Resource Management Plan requirements, prior to Final Map recordation.

Greenbelt Master Plan

The City of Chula Vista Greenbelt Master Plan provides guidance and continuity for the planning of open space and construction and maintenance of Greenbelt Trails (City of Chula Vista 2003b). There are two general types of trails: multi-use and rural. Multi-use trails are designed for a variety of users, such as bicyclists, equestrians, pedestrians, joggers, and other non-motorized activities. According to the Greenbelt Master Plan, even a single-track pedestrian-only trail would be considered multi-use since it could accommodate hikers, backpackers, runners, bird-watchers, and others. Minimum standards for trails are set forth in the City Landscape Manual and the Greenbelt Master Plan. A multi-use trail may also be improved with a variety of trail surfaces, with concrete and asphalt surfacing to accommodate the broadest range of users in an urban setting. A paved multi-use trail would be 10 feet wide with 2-foot-wide natural shoulders. However, variation in the minimum standards may be allowed, based on consideration of the number and types of trail users and environmental constraints. Other minimum standards include Greenbelt Trail signs. Standards including fencing and signage shall be determined based on environmental and other constraints and are subject to review and approval of the Development Services Director. The City of Chula Vista Greenbelt Master Plan provides goals and policies, trail design standards, and implementation tools.

These goals include the following (City of Chula Vista 2003b):

- **Goal 1.0:** To establish a comprehensive and coordinated greenbelt system that visually reinforces the natural character of the community and integrates unique historic and cultural resources, open space areas, creeks, and trails.

- **Goal 2.0:** To provide connected open space areas surrounding Chula Vista to enhance the natural beauty and to preserve native biological and cultural resources as well as sensitive habitats.
- **Goal 3.0:** To establish a greenbelt that ensures public access within the greenbelt through an active and passive recreation park system with trails connecting each segment.

The proposed project would contribute to the Otay Ranch Village Greenway as identified in the Greenbelt Master Plan to connect the open spaces within the Otay Ranch. The project includes pedestrian improvements that would ultimately connect into the Greenbelt Trail.

Airport Land Use Compatibility Plan–Brown Field

The San Diego County Regional Airport Authority, designated as the Airport Land Use Commission for all public airports in the County of San Diego, adopted the Brown Field ALUCP in September 1981 and it was last updated in December 2010. The ALUCP assists in achieving compatible land use development in the area surrounding Brown Field airport located in Otay Mesa on Heritage Road, east of I-805. The airport is a general aviation airport accommodating both propeller- and jet-powered aircraft and serves as a port of entry for private aircraft coming into the United States from Mexico. Brown Field is also heavily used by military and law enforcement agencies and is classified as a "reliever airport" by the Federal Aviation Administration (SDCRAA 2010). The ALUCP designates the airport influence area and contains projected noise contours, flight activity zones, a land use compatibility matrix and plan recommendations for areas surrounding the Brown Field airport. A portion of the project site is located in Review Area 1, but not land uses are proposed in this area. All proposed land uses would be located outside of safety and noise zones for Brown Field Airport.

As demonstrated above, the proposed project is consistent with the applicable plans, policies, and regulations related to land use. Impacts would be less than significant.

C. Conflict with any applicable habitat conservation plan or natural community conservation plan.

Refer to Section 5.3, Biological Resources, for a detailed discussion regarding consistency with applicable habitat conservation plans, including the Otay Ranch Resource Management Plan and the MSCP Subarea Plan. The proposed project design is consistent with the MSCP Subarea Plan and the Otay Ranch RMP through specific adherence to conditions of coverage and mitigation/conveyance requirements for Covered Projects as defined in the Chula Vista MSCP Subarea Plan, Section 7.6, and the Otay Ranch RMP. Impacts would be less than significant.

5.1.4 Level of Significance Prior to Mitigation

Impacts to land use would be less than significant.

5.1.5 Mitigation Measures

No mitigation measures are required.

5.1.6 Level of Significance After Mitigation

As impacts to land use would be less than significant, no mitigation measures are required.

5.2 LANDFORM ALTERATION/AESTHETICS

This section describes relevant regulations, policies, and guidelines governing views and aesthetic considerations relevant to the proposed Otay Ranch Village Four Sectional Planning Area (SPA) Plan Project (project). As applicable, provisions of view ordinances, design guidelines, and general plan and scenic highway plans are summarized. Views of the site from representative public vantage points such as from scenic roads and regional trails are analyzed. On-site and nearby off-site scenic resources are also identified. The impact analysis determines whether the proposed project would significantly impact a scenic vista or visual feature or preclude the ability of the public to view a significant visual feature. In addition, the analysis addresses the introduction of new sources of lighting into the proposed project site.

5.2.1 Existing Conditions

5.2.1.1 Regulatory Framework

State

California Scenic Highway Program

The California Scenic Highway Program was created in 1963 with the intent "to protect and enhance the natural scenic beauty of California highways and adjacent corridors, through special conservation treatment." The state laws that govern the Scenic Highway Program are Sections 260 through 263 of the Streets and Highways Code. A highway may be designated scenic based on the natural landscape visible by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the views of the highway. The Scenic Highway Program includes both officially designated scenic highways and highways that are eligible for designation. It is the responsibility of local jurisdictions to apply for scenic highway approval, which requires the adoption of a Corridor Protection Program (Caltrans 2011). In addition, once a scenic highway is designated, the local jurisdiction is responsible for regulating development within the scenic highway corridor. There is no designated or eligible state Scenic Highway within the project site.

Regional

County of San Diego Light Pollution Code

The County of San Diego (County) Code of Regulatory Ordinances Section 59.101 through 59.115 (Light Pollution Code) was adopted for the purposes of minimizing light pollution for the public enjoyment of the dark sky environment and to protect astronomical research at the Palomar and Mount Laguna observatories. The Light Pollution Code contains restrictions regarding the type of outdoor light fixtures that may operate on private property and designates all lands into one of two

zones (Zone A or Zone B). Zone A has more stringent lighting regulations than Zone B and includes all areas within a 15-mile radius of the Palomar or Mount Laguna observatory. Zone B includes all other lands located outside of the 15-mile radius. The proposed project is located within Zone B, and although a portion of Village Four is located outside of County land use jurisdiction, the Otay Ranch General Development Plan (GDP) requires compliance with the County Light Pollution Code (City of Chula Vista and County of San Diego 1993a).

Local

City of Chula Vista Design Manual

The City of Chula Vista's Design Manual (City of Chula Vista 2011) provides a set of guidelines in conjunction with development standards to assist the City of Chula Vista (City) in achieving a high quality of aesthetic and functional design. Consistent with the City's Design Manual, the proposed project includes a Village Design Guide that models the site, building and landscape design within Village Four to ensure that the quality of the adopted urban design and architectural concepts established for the overall Otay Ranch community are maintained. The Village Design Guide identifies an architectural and landscape theme for Village Four and delineates that identity through streetscape and landscape design, signage programs, and architectural and lighting guidelines (Atlantis Group 2017). The Village Design Guide implements and conforms to the City's Design Manual.

City of Chula Vista General Plan

The City of Chula Vista General Plan contains objectives and policies to preserve and enhance aesthetic resources. Specifically, the Land Use and Transportation Element includes policies that strive to continue to protect the open space network and design policies for features such as view, entryways, gateways, streetscapes, buildings, parks and plazas. The General Plan identifies valued scenic vistas and open space throughout the City (City of Chula Vista 2005). Resources in the project vicinity include the Otay River Valley and the Chula Vista Greenbelt, which is the backbone of the City's open space and park system and consists of a 28-mile open space system encircling the City.

Gateways

The General Plan identifies entryways and gateways that offer opportunities to improve the City's appearance and establish a community image through special design treatments such as signage, landscape, and architectural design enhancements. The City designates both Primary and Secondary Gateways. Primary Gateways are from freeways and should appear visually inviting, provide adequate direction to places of interest, and have high quality design features. Primary Gateways within or near the project site include State Route (SR) 125 at Otay Lakes

Road, Olympic Parkway, and Birch Road. Also, General Plan Figure 5-6 calls for a Primary Gateway at SR-125 and Main Street/Hunte Parkway, east of SR-125, which leads to the University site and Eastern Urban Center. There are no Secondary Gateways within or near the project site (City of Chula Vista 2005).

City-Designated Scenic Roadways

The City has designated several Scenic Roadways that pass through or are adjacent to the project site. These roadways are designated for their views of natural features and roadway characteristics, including enhanced landscaping, adjoining natural slopes, or special design features (City of Chula Vista 2005). Existing and City-designated Scenic Roadways in the project area include the following:

- Olympic Parkway
- Rock Mountain Road from Heritage Road to SR-125 (designated, not yet constructed)
- Heritage Road from Telegraph Canyon Road to the City's southerly boundary (designated, not yet constructed)
- La Media Road from Otay Lakes Road to Main Street (designated, not yet constructed)

City of Chula Vista Municipal Code

The City of Chula Vista regulates signage through the City's Municipal Code, Chapter 19.60, Signs. Among other things, the purpose of the Sign Ordinance is "to balance the public interests in community aesthetics against the signage needs of establishments and persons who wish to express information or a message by displaying a sign" (Municipal Code, Chapter 19.60). In addition, the Sign Ordinance is intended to improve the visual environment for residents and visitors of the City, and protect prominent viewsheds. There are specific standards for "sensitive" zones, such as agricultural, residential estates, and other residential zones (Municipal Code, Chapter 19.60).

Light and glare are regulated by Chapter 17.28 and Section 19.66.100 of the City's Municipal Code, respectively. Chapter 17.28, Unnecessary Lights, is intended to prevent lighting from creating a nuisance by regulating the use of lighting in and around residential areas. Although lighting can be used to improve the aesthetics of a residential property, this chapter ensures that such lighting is properly controlled and doesn't create a nuisance. The ordinance recognizes that lighting is widely used in commercial or industrial zones for the purpose of advertising and security and that such lighting is essential to the conduct of many commercial or industrial enterprises. The ordinance requires light shielding on commercial and industrial lighting near residences; prohibits residential lighting that spills over to adjacent properties during nighttime

hours; and requires multi-family residential, commercial, and industrial developments to submit lighting plans to the City. Lighting from any use that is unshielded or so directed as to focus the beams directly upon adjacent residential property is prohibited at all times.

Section 19.66.100, Glare, prohibits direct or sky-reflected glare from floodlights and high-temperature processes that produce glare that is visible at the points of measurement as specified in Section 19.66.060, Locations where determinations are to be made. In any district except the Industrial zone, the point of measurement is at the lot line of the establishment or use. Within the Industrial zone it is 500 feet from the establishment or use or at any point within an adjacent zone other than an Industrial zone.

City of Chula Vista Greenbelt Master Plan

The City of Chula Vista Greenbelt System is composed of natural and park-like elements, and functions as a collection of open space segments or areas around the City that are linked by existing and proposed trails. The primary purpose of the Greenbelt Master Plan is to establish goals and policies, trail design standards and implementation tools to guide the acquisition and creation of trails connecting the greenbelt system. Design standards are also established to maintain a consistent architectural character in greenbelt facilities and elements. Chapter 3 of the Greenbelt Master Plan contains goals and policies that provide general direction regarding the establishment, maintenance and monitoring of the overall greenbelt system program. More specific regulations including design standards for multi-use and rural trails, design principles for facilities located within natural resource areas and detailed design examples of signage, informational kiosks, trail sign posts and staging areas, are discussed in Chapter 4 of the Greenbelt Master Plan (City of Chula Vista 2003a).

Otay Ranch General Development Plan

According to the Otay Ranch GDP, the major Otay Ranch visual elements include the Otay Lakes, which are built reservoirs; canyons; and steep mountain peaks (City of Chula Vista and County of San Diego 1993a). Otay Mountain, Jamul Mountain, and San Miguel Mountain are prominent peaks visible from the Otay Ranch area, but are located outside of the proposed project boundaries.

Otay Ranch GDP policies mirror the aesthetic policies of the General Plan and require that activities should flow out from buildings onto public spaces to create vitality and excitement along the street front. In addition, Otay Ranch GDP policies encourage the incorporation of public art into individual buildings or building clusters (City of Chula Vista and County of San Diego 1993a).

The Otay Ranch GDP includes objectives to retain the natural character of landforms in Otay Ranch and the Otay River Valley, preserve steep slopes, relate development to topography and natural features, and preserve views of major physical features. The Otay Ranch GDP includes design standards addressing architectural massing, grading, landscaping, and retaining walls to minimize adverse visual effects. The Otay Ranch GDP also includes a goal to preserve dark skies to allow for continued astronomical research and exploration to be carried out at the county's two observatories (City of Chula Vista and County of San Diego 1993a). Policies supporting this goal require compliance with the City lighting standards and outdoor lighting fixtures to be shielded to avoid spillage of light onto adjacent properties.

The Otay Ranch GDP requires that a Village Design Plan be prepared for each village at the Sectional Planning Area (SPA) level of planning (City of Chula Vista and County of San Diego 1993a). The Village Design Guide acts as a template for project planning and development by defining intended character and design elements of the village. It provides guidance for developers and designers in creating the village and it will be used by the City of Chula Vista to evaluate the village design. The proposed project's Design Guide models the design of sites, buildings, and landscapes within the village to ensure that the quality of the adopted urban design and architectural concepts established for the overall Otay Ranch community are maintained. The Design Guide identifies an architectural and landscape theme for Village Four and delineates that identity through streetscape and landscape design, signage programs, and architectural and lighting guidelines. The Design Guide also identifies the village core design concepts that will implement Otay Ranch's planned pedestrian orientation (Atlantis Group 2017).

The Otay Resource Management Plan Phase 1 and 2

The Otay Ranch RMP, which was adopted concurrent with the Otay Ranch GDP, identifies prominent landforms and steep slopes within the Otay Ranch. These include the Jamul Mountains, portions of the San Ysidro Mountains, the Otay River Valley, and other associated ridges and drainages. The RMP establishes a ranch-wide standard that requires preservation of at least 83% of all natural slopes with gradients of 25% or greater throughout the Otay Ranch (County of San Diego and City of Chula Vista 1993b).

As part of the Otay Ranch GDP Program EIR, a Ranch-wide steep slope analysis was completed using then available U.S. Geological Survey topography. The results of the original steep slope analysis (circa 1989) concluded that Otay Ranch contained 7,651 acres of land with gradients of 25% or greater, of which 6,350 acres (83% of 7,651 acres) shall be preserved, and not more than 1,301 acres could be impacted for the entire Otay Ranch (County of San Diego and City of Chula Vista 1993).

As an implementing action of the Otay Ranch GDP and RMP, a steep slope allocation table was provided as part of the Phase 2 RMP. The Phase 2 RMP requires that the Ranch-wide preservation standard must be reviewed and monitored as additional Otay Ranch villages are processed to ensure that the 83% ranch-wide goal of steep slope preservation is maintained. The Phase 2 RMP further allows some flexibility on steep slope allocated for each village provided that each SPA Plan demonstrate that the project's actual impacts to steep slopes will not preclude subsequent entitlements from achieving the ranch-wide 83% preservation standard (City of Chula Vista and County of San Diego 1996).

A subsequent Ranch-wide analysis was performed in 2012 to verify current conditions and the accuracy of the steep slope assumptions contained in the Otay Ranch GDP Program EIR. Based on the updated modeling results, Otay Ranch contains 9,821 acres of land with gradients of 25% or greater. The difference between the current steep slope acreages and the original calculations is attributed to advancements in computer aided data collection and processing, and the availability of detailed topographic data (County of San Diego and City of Chula Vista 1993).

To date, development entitlements approved within Otay Ranch have impacted approximately 255 acres of natural steep slopes within the Otay Valley Parcel; therefore, 9,566 acres of steep slopes remain in Otay Ranch.

Otay Valley Regional Park Design Standards and Guidelines

In addition to the establishment of design standards for publicly owned facilities in Otay Valley Regional Park (OVRP), guiding principles for adjacent private development that interfaces with the park are also incorporated into the OVRP design standards and guidelines document. Guiding principles are provided in Section 5 of the planning document and are intended to maintain a consistent architectural style and synergy between park development and neighboring land uses, as well as to ensure consideration of the park's natural character in future development plans. Goals and policies applicable to aesthetics and landform alteration include the enhancement of public access to the park through attractive, safe, and controlled access points and gateways, the provision of compatible edge treatment and buffering adjacent to the park to enhance the visual experience for park users, and minimization of natural landform alteration (County of San Diego Department of Parks and Recreation 2005).

5.2.1.2 Visual Resources Components

The characterization of existing visual resources and available scenic vistas on the project site and the surrounding areas form the basis of this aesthetics and views analysis. Aesthetics refers to visual qualities within a given field of view and may include such considerations as size, shape, color, texture, and general composition, as well as the relationships between these elements.

Aesthetic features often consist of unique or prominent natural or man-made attributes or several small features that, when viewed together, create a whole that is visually interesting or appealing. Views refer to visual access to aesthetic features. Viewsheds, or the extent of a given view, are typically defined by landscape elements and building locations. Existing views may be partially obstructed or entirely blocked by modification of the environment. Conversely, modifications to the natural or man-made landscape of an area may create or enhance view opportunities.

Light impacts are typically associated with the use of artificial light during the evening and nighttime hours. Artificial light may be generated from point sources and from indirect sources of reflected light. Uses such as residences, hospitals, and hotels are considered light sensitive since they are typically occupied by persons who have expectations for privacy during evening hours and who are subject to disturbance by bright light sources. Wildlife habitat areas may also be considered light sensitive if the introduction of light sources would compromise the quality and function of a habitat area.

Glare is primarily a daytime occurrence caused by the reflection of sunlight or artificial light by highly polished surfaces such as window glass or reflective materials and, to a lesser degree, from broad expanses of light-colored surfaces. Daytime glare generation is common in urban areas and is typically associated with mid- to high-rise buildings with exterior façades largely or entirely composed of highly reflective glass or mirror-like material from which the sun can reflect at a low angle in the periods following sunrise and prior to sunset. Glare can also be produced during evening and nighttime hours by the reflection of artificial light sources such as automobile headlights. Glare generation is typically related to either moving vehicles or sun angles, although glare resulting from reflected sunlight can occur regularly at certain times of the year. Glare-sensitive uses generally include residences and transportation corridors.

5.2.1.3 Existing Aesthetic Character

Village Four

Currently, the project site consists of vacant and undeveloped land with a number of dirt roads traversing the site. Land uses within the project site are designated in both the City of Chula Vista General Plan and the Otay Ranch GDP. Within the General Plan, the project site is designated as Residential Low Medium, Parks and Recreation, and Open Space Preserve (City of Chula Vista 2005). Within the Otay Ranch GDP, the project site is designated as Low Medium Density Residential, Parks and Recreation, and Chula Vista Open Space Preserve (City of Chula Vista and County of San Diego 1993a). Zoning within the project site is designated by the City of Chula Vista Zoning Map, which specifies the zoning for the entire Otay Ranch as Planned Community (PC) zoned, as defined in Chapter 19.48 of the Chula Vista Municipal Code. The entire project site as identified in the Otay Ranch GDP is composed of approximately 528 acres and is intended to be a lower-density village compared to surrounding

villages due to its scenic location near Rock Mountain and limited area, being bound by the Otay River Valley and Wolf Canyon (City of Chula Vista and County of San Diego 1993a). Historically, the project site has been used for ranching, grazing, dry farming, and truck farming activities (City of Chula Vista 2014).

Light and Glare

Two astronomical observatories are located within 50 miles of the project site: Mount Laguna Observatory, located approximately 37 miles northeast of the project site and Palomar Mountain Observatory, located approximately 50 miles north of the project site. Both of these observatories use large telescopes and conduct astronomical and other related research. These observatories are located in the unincorporated County of San Diego (City of Chula Vista 2014). Light pollution within a 15-mile radius of these observatories is strictly controlled through implementation of the County of San Diego's Light Pollution Code (Title 5, Division 9), which includes less restrictive measures for areas outside the 15-mile radius. The project site is outside the jurisdiction of the County of San Diego; however, the Chula Vista Unnecessary Lights Ordinance outlines restrictions and limitations on the use of lighting in or near the residential zones to prevent lighting from creating a nuisance to residents. These lighting restrictions also benefit the observatories (Chula Vista Municipal Code, Chapter 17.28, Unnecessary Lights).

Currently, the project site and the areas adjacent to the project site are undeveloped and not lit at night. Additionally, these areas do not contain expanses of material that would result in glare. The City, including the Otay Ranch area, is urbanized and currently generates substantial night lighting. The buildings in the surrounding area include windows and other glass or metal expanses that can result in localized glare.

Viewers

Viewer exposure varies depending on several factors including the angle of view (i.e., normal, inferior, or superior viewing angles); view distance (foreground, middle ground, and background); relationship to sun angle (backlighting versus front or side lighting); the extent of visibility (i.e., whether views are panoramic or limited by vegetation, topography, or other land uses); and viewer screening conditions (e.g., whether the project facilities will be skylined on ridgelines, backscreened by topography and/or vegetation, or screened by structures or vegetation in the foreground). Viewer exposure also considers the duration of view based on viewer activity (e.g., travel route, residential, recreation) and often relates to speed of travel (pedestrian, vehicular, or stationary).

The project site is located on the north side of Rock Mountain, south of Wolf Canyon, and north of the Otay River Valley. The site and Rock Mountain slope into Wolf Canyon from south to north and provides view opportunities across Wolf Canyon to the north. Village Eight West is

located to the east, University Villages (portions of Village Three North and Village Four) is located to the west, and the Otay Valley Quarry is located to the south. The project site is immediately visible from the south end of La Media Road looking west, and surrounding dirt trails. Upon development of Village Eight West and the University Villages, residences adjacent to the project site would have direct and indirect views of the proposed project site.

Key View Point Locations

The location of key view points (KVP or key view) were selected as representative vantage points within the project site. The locations of the two KVPs are depicted within Figure 5.2-1, Viewpoint Locations Map. As there are no visual sensitive receptors immediately surrounding the project site, KVP locations were chosen internally along the proposed Main Street extension in order to clearly display the visual effects of the proposed project. 3-D simulations include existing site photographs as background images and true-scale 3-D models for the proposed development rendered onto the existing photographs. The photos were taken during a site survey from KVPs that were determined by Dudek. A brief discussion regarding the general location and existing view orientation associated with each KVP is provided below.

Key View Point 1 (Existing View)

The existing view of KVP 1 is depicted in Figure 5.2-2. The foreground and middleground of this KVP represent undeveloped land covered in bright green grasses, mustard weed, and dark green scattered shrubs. The foreground slopes slightly downward before elevating up a small hill to meet the middleground where the topography then plateaus. A narrow, meandering dirt trail is visible in the foreground and middle ground of this view. There are no existing structures or prominent focal points that act as the background in this KVP, only distant, low lying hill tops are visible in the background, which meet the clear sky.***Key View Point 2 (Existing View)***

The existing view of KVP 2 is depicted in Figure 5.2-3. Similar to KVP 1, the foreground and middleground represent undeveloped land covered in bright green, tall grasses and mustard weed. The foreground, running into the middle ground is primarily flat, with a small hill to the right side of this view. Similar to the vegetation in the foreground, this hill is covered with grasses, mustard weed, and scattered dark green shrubs. A narrow dirt trail is visible in the right side foreground of this KVP, and atop the hill in the middleground. The faint outlines of dark, low lying mountain ranges are afforded in the background of this KVP, which meet the clear blue sky. There are no existing structures or prominent focal points in this KVP.

5.2.2 Thresholds of Significance

Impacts regarding aesthetics and landform alteration would be significant if the project would:

A. Have a substantial adverse effect on a scenic vista?

B. Substantially damage scenic resources, including, but not limited to, tress, rock outcroppings, and historic buildings within a state scenic highway?

C. Substantially degrade the existing visual character or quality of the site and its surroundings?

D. Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?

E. Alter areas of sensitive landforms?

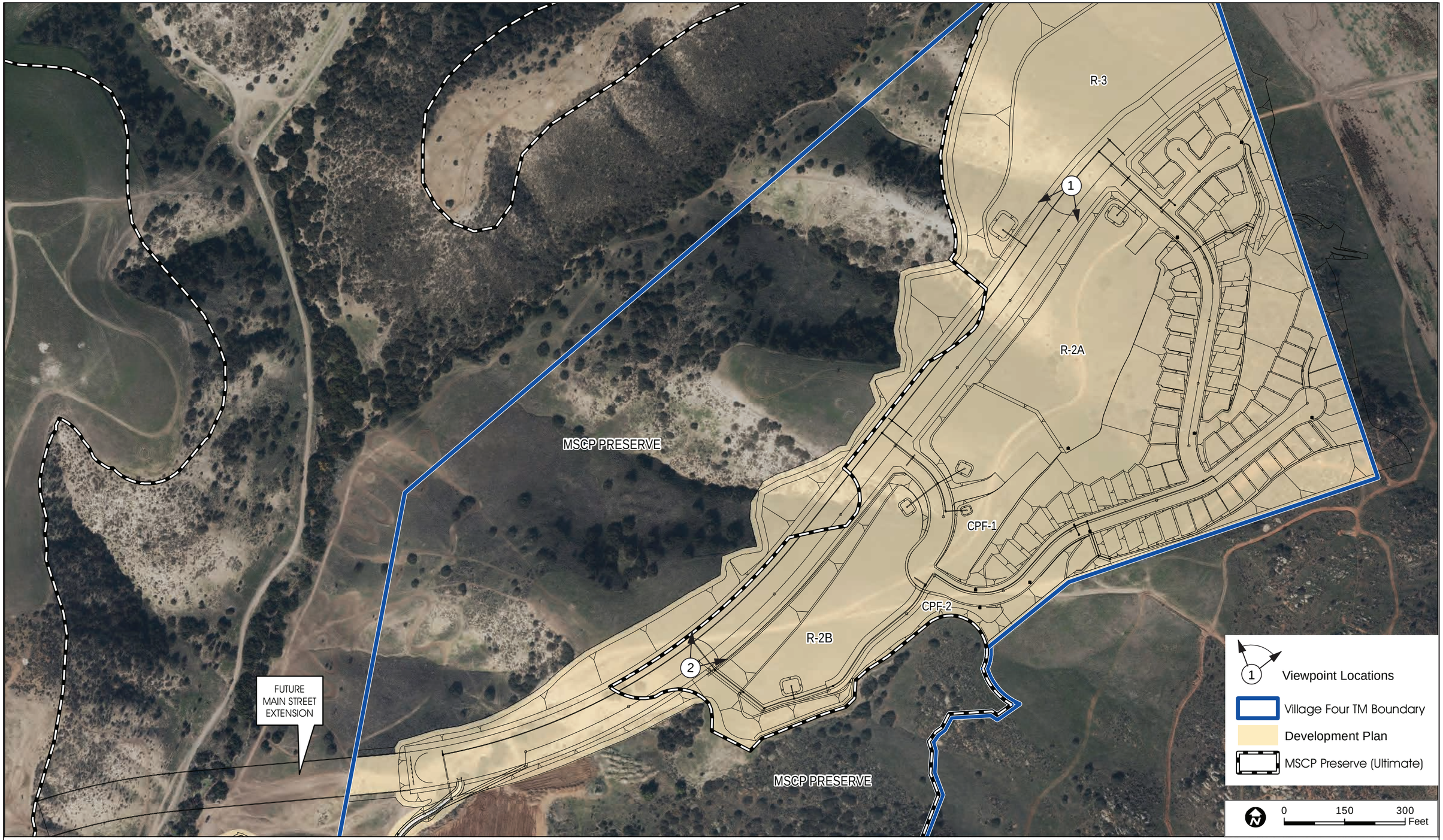
F. Grade steep slopes that may be visible from future development and roadways that negatively detract from aesthetic character of the site or surrounding area?

G. Be inconsistent with General Plan, GDP or other objectives and policies regarding visual character thereby resulting in a significant physical impact?

5.2.3 Impacts

A. Have a substantial adverse effect on a scenic vista.

Scenic views and open space contribute positively to a city's image and foster community pride, which are important factors that attract people to live in or visit an area. The City has valued scenic vistas and open space that include the Otay River and Sweetwater River Valleys; Upper and Lower Otay Lakes; Sweetwater Reservoir; San Miguel/Mother Miguel Mountains; and the San Diego Bay. These open space areas make up the majority of the City's Greenbelt, the backbone of the City's open space and park system, which consists of a 28-mile open space system encircling the City. The Greenbelt includes Multiple Species Conservation Program (MSCP) Preserve lands, general open space, and existing and future trails, and connects several of the City's existing and future public parks (City of Chula Vista 2005).



SOURCE: AERIAL-SANGIS IMAGERY 2014; SITE PLAN-HUNSAKER & ASSOCIATES 2017

DUDEK

FIGURE 5.2-1
Viewpoint Locations Map

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Key View 1: Existing view



Key View 1: Post-project view, looking southwest on Main Street

DUDEK

FIGURE 5.2-2
Village Four–Key View 1

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Key View 2: Existing view



Key View 2: Post-project view, looking northeast on Main Street

DUDEK

FIGURE 5.2-3
Village Four–Key View 2

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The proposed project is located on the north side of Rock Mountain, south of Wolf Canyon, and north of the Otay River Valley. The project site and Rock Mountain slope into Wolf Canyon from south to north and provides view opportunities across Wolf Canyon to the north. Perimeter slopes are the dominant landscapes visible from Wolf Canyon. Distinct landscape designs have been developed for the project perimeters facing Wolf Canyon and Main Street. Design concepts and primary plant species outlined within Chapter 2 of the Village Four SPA Plan would create slopes complementary to the overall Otay Ranch theme (Atlantis Group 2017). These design concepts and plant palettes are consistent with the Village Four Preserve Edge Plan (Appendix B2), and Otay Valley Regional Park Private Development Guidelines, and are subject to requirements of the Village Four Fire Protection Plan (Appendix F) and City of Chula Vista Landscape Manual (City of Chula Vista 1994). Although the project site is surrounded by prominent features such as Rock Mountain, Wolf Canyon, and the Otay River Valley, the proposed project would be developed in conformance with the Otay Ranch GDP and SPA, and would not result in an adverse effect on any scenic vistas identified within the City's General Plan. Therefore, impacts would be **less than significant**.

B. Substantially damage scenic resources, including, but not limited to, tress, rock outcroppings, and historic buildings within a state scenic highway.

According to the Caltrans Scenic Highway Mapping System for San Diego County (Caltrans 2011), there are no officially designated scenic highways that pass by the project site. The following are the closest designated scenic highways:

- A 2-mile portion of the SR-125 from SR-94 to SR-8 near La Mesa, located approximately 10.7 miles north of the project site.
- SR-75, Silver Strand Highway, between Imperial Beach and Coronado, located approximately 8.7 miles west of the project site.

As outlined in Section 5.2.1.1, above, the City of Chula Vista has designated several Scenic Roadways that pass through or are adjacent to the project site. These roadways are designated for their views of natural features and roadway characteristics, including enhanced landscaping, adjoining natural slopes, or special design features (City of Chula Vista 2005). The following are existing and City-designated Scenic Roadways in the project area:

- Olympic Parkway
- Rock Mountain Road from Heritage Road to SR-125 (designated, not yet constructed)
- Heritage Road from Telegraph Canyon Road to the City's southerly boundary (designated, not yet constructed)
- La Media Road from Otay Lakes Road to Main Street (designated, not yet constructed)

Although development of the proposed project would alter the existing visual character of the project site and the surrounding area, implementation of the proposed project would not result in physical impacts to Rock Mountain, or the Otay River Valley. Development of the project site would be consistent with the City of Chula Vista General Plan Land Use Diagram. The Otay Ranch GDP and Design Plan, the City of Chula Vista Subdivision Manual (City of Chula Vista 2012), and the SPA Plan for Village Four (Atlantis Group 2017) contain guidelines concerning grading techniques and landscaping that are sensitive to the existing environment. Additionally, the proposed project would be designed to retain open space and Preserve areas and locate lower density residential uses and open space buffers adjacent to the Preserve and the Otay River Valley to maintain the scenic value of these areas. Furthermore, there are no designated or eligible state scenic highways located within the viewshed of the proposed project. Implementation of the proposed project would not substantially damage scenic resources, and impacts would be **less than significant**.

C. Substantially degrade the existing visual character or quality of the site and its surroundings.

Construction Impacts

The presence of heavy equipment and machinery would be visible from some surrounding off-site areas; however, impacts to existing visual character resulting from construction activities would not be considered substantial due to the relatively short-term nature of construction. Therefore, the focus of this analysis pertains to the long-term permanent physical changes anticipated to occur as a result of implementation of the proposed project.

Operational Impacts

The proposed project is bounded by the Otay River Valley and Wolf Canyon and the associated slopes and drainage courses of these canyons. Additionally, Rock Mountain is considered a dominant landform within the project site (City of Chula Vista 2013). Although the proposed project would be similar in character to the surrounding Otay Ranch residential Villages, the project may result in substantial adverse effects on the existing visual character of the project site and surroundings.

The Otay Ranch GDP includes specific Village Four policies protecting landform. Project compliance with these GDP policies are outlined within the SPA plan, and GDP policies protecting landform are outlined below:

- In order to preserve the integrity of the landform, only low density residential may be placed along the south facing slopes of Rock Mountain.

- Lots designated "LM" (4.2 dwelling units/acre), adjacent to Wolf Canyon, should average 10,000 square feet, with clustering permitted to provide flexibility in grading, minimize landform alteration and promote a sensitive development design. Building type is limited to detached single-family dwellings.
- Landform grading guidelines for the edges of Wolf Canyon, Rock Mountain, and the open space scenic corridor along Main Street shall be developed as part of the Village Design Plan at the SPA level. These specific guidelines shall be consistent with the definitions and standards established in the Overall Ranch Design Plan.

As previously described, the Otay Ranch GDP requires that a Village Design Plan be prepared for each village at the SPA level of planning. The Village Design Guide acts as a template for project planning and development by defining intended character and design elements of the village. It provides guidance for developers and designers in creating the village and it will be used by the City to evaluate the village design. The Village Four Design Guide models the design of sites, buildings, and landscapes within the village to ensure that the quality of the adopted urban design and architectural concepts established for the overall Otay Ranch community are maintained. The Design Guide identifies an architectural and landscape theme for the project site and delineates that identity through streetscape and landscape design, signage programs, and architectural and lighting guidelines.

Old California architectural styles provide the inspiration for the Village Four Design Guide. Old California architecture is represented in Spanish, Spanish Eclectic, and Mission styles. The defining design features of Old California architecture are particularly applicable to the pedestrian-oriented design of the public, active use areas within Village. Design elements may include awnings, trellises, and street trees to define and highlight the created spaces. Architecture in the village core will allow for variety, but maintain a strong basis in Old California-inspired architecture.

The landscape concept proposes to integrate the project site with the overall Otay Ranch design theme to create a distinct internal village design theme. The Otay Ranch design theme is addressed by extending established arterial streetscape designs and perimeter slope landscape designs into the project landscape plan. Within the village, the landscape theme is an assembly of California's architectural history. The use of traditional California trees such as California fan palms, coral trees, pears, evergreen elm, and jacaranda would provide the key linkage between the neighborhoods. Ornate shrubs, groundcovers and vines such as bougainvillea, lavender, rosemary, and other vibrant plant materials would accentuate important destinations. The plant palette is a collection of water efficient material that connects the diversity in Old California-inspired architectural styles.

The Old California-inspired design theme would be created through a comprehensive landscape plan that addresses the design of outdoor spaces, features, furnishings, and the use of a wide variety of trees, shrubs, and groundcovers. The landscape concept is illustrated in the Landscape Concept Plan, Exhibit 2.1 within Chapter 2 of the Village Four SPA Plan (Atlantis Group 2017).

The circulation system includes sidewalks separated from the roadway by parkways, tree-lined walkways, pedestrian-scaled lighting, and other amenities. The pedestrian circulation system incorporates connections to the City's regional trail system and a trail connection between neighborhoods south of Main Street.

The proposed project includes an on-site Community Purpose Facility (CPF). Since Village Four is limited to residential land uses and the area is divided by Main Street, which is designated as a six-lane arterial roadway, CPF areas are provided on both sides of Main Street. The CPF areas are designed to provide passive recreational opportunities for village residents. Further, the CPF areas have been located on the edge of the Preserve thereby allowing residents the opportunity to enjoy the environs of Wolf Canyon. Private facilities would be designed in conformance with the City Parks Master Plan, Design Manual, and Landscape Manual. Community purpose facilities are defined in Chula Vista Municipal Code 19.48 PC – Planned Community Zone. The project site includes two CPF sites, which are privately owned and maintained recreation facilities located to provide recreational amenities in proximity to neighborhoods in the village (Atlantis Group 2017). The facilities create focal points in the village and are connected through the village pedestrian circulation system. Each facility would be designed to complement the surrounding neighborhood and amenities would be tailored to the specific needs of the neighborhood. The CPF areas are within the 100-foot Preserve edge and are subject to the Preserve Edge Plan.

Although the proposed project would be consistent with applicable Otay Ranch GDP policies, the Village Four SPA plan and the Village Four Design Guide, the project site is currently undeveloped, and implementation of the proposed project would substantially change the topography of the site due to site grading, and the introduction of new landscaping, architectural design, density, and scale of buildings than what currently exists. Changes to the existing KVPs described above in Section 5.2.1.3 are as follows:

Key View Point 1 – Post-project view, looking southwest on Main Street

As seen within the post-project view of Figure 5.2-2, the existing foreground and middleground have been graded and fully developed. The focal point of this KVP is Main Street, which includes 3 lanes in each direction, as well as a bike lane, a landscaped median, and landscaped shoulders which separate the road from a pedestrian walkway. Medium-high density residential development is visible on either side of Main Street through proposed trees and landscaping.

Residential development is set-back from the roadway by the pedestrian walkway and landscaping consisting of low-profile shrubs and grasses. The proposed residential development is two-stories, with neutral colored tan facades and clay color roofing. Only a small portion of the existing middleground is visible in this KVP at the end of the visibility point of Main Street and the horizon line. Proposed residences and landscaping block views of the horizon to the right and left of this KVP. Impacts to background views from this KVP are not considered substantial, as there are no existing, prominent background views. As development would completely occupy the foreground and majority of the middleground in this KVP, the project would result in adverse impacts due to the substantial change from existing to proposed views.

Key View Point 2 – Post-project view, looking northeast on Main Street

As seen within the post-project view of Figure 5.2-3, the existing foreground and middleground have been graded and fully developed. Similar to KVP 1, the focal point of KVP 2 is Main Street looking northeast, which includes 3 lanes in each direction, as well as a bike lane, a landscaped median, and landscaped shoulders which separate the road from a pedestrian sidewalk. A neutral colored retaining wall runs adjacent to the sidewalk to the right of Main Street, which is introduced to structure and support the landscaping and grading up to an elevated building pad. Due to the elevated building pads, the proposed medium-high density residential development is a prominent feature on the right side of this KVP in the foreground and middleground at the skyline. The proposed residential development is two-stories, with neutral colored tan facades and grayish-brown roofing. To the left side of Main Street in this KVP, a low-profile wooden fence line runs adjacent to the sidewalk on either side. Proposed development and landscaping would block the existing horizon line, and only a very slight portion of distant, faint mountain ridgelines would be afforded in the background on the left side of this KVP. As proposed development would completely occupy the foreground and middleground in this KVP, the project would result in adverse impacts due to the substantial change from existing to proposed views.

The proposed project would represent a high visual change from the provided KVPs. Although the proposed project would be consistent with applicable Otay Ranch GDP policies, the Village Four SPA plan and the Village Four Design Guide; due to the permanent change from an undeveloped state to developed, impacts to visual character would be **significant and unavoidable**.

D. Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.

The project site is currently undeveloped and there are no existing sources of on-site lighting. As outlined in the Village Four SPA Design Guide (Atlantis Group 2017), the village lighting design concept focuses on the quality of light along specific corridors and areas. Light standards

would have a distinctive character to relate to the corridors they serve. Lighting along pedestrian corridors would be more human in scale, closer spaced, and lower than is typically found on an urban street. Light standards would be manufactured of high-quality materials that are visually pleasing. The base, pole, and light fixture would be attractive and suitable to the design theme of the village. The project objectives for exterior lighting are as follows:

- Contribute to the safe and efficient use of all public and private areas in the village.
- Increase the perception of personal and property safety.
- Complement and reinforce the architectural and landscape character of all public and private spaces.
- Contribute to the ease of way finding through the village.
- Meet all applicable public and environmental standards, including energy conservation.
- Provide a consistent quality of lighting throughout the village.
- Avoid adverse impacts such an excessive glare and light spill.
- Reinforce the identity of each component of the village, including private and public space improvements.
- Sensitively design lighting along the MSCP Preserve that minimizes light spillage into the Preserve to the greatest extent practicable by directing light away from Preserve areas through the placement and shielding of light fixtures.
- Special accent lighting may be proposed within the CPF sites and private open space. Special accent lighting may include architectural, pathway and/or lighting on signage. All special accent lighting proposed within the 100-foot Preserve Edge must be shielded and directed away from the Preserve to minimize/avoid light spillage into Preserve areas. Detailed lighting plans will be provided at the improvement/site plan level.

Additionally, the Village Four SPA Design Guide outlines lighting regulations specific to different project site land uses including, residential entry street lighting, parkway residential street lighting, lighting within 100-foot Preserve edge, parking lot lighting, street furnishing lighting, and natural surveillance/security lighting. Furthermore, the SPA Plan includes design guidelines and requirements that would limit glare received by on- and off-site viewers in the area (Atlantis Group 2017). Lighting as a result of the proposed project would not affect the Mount Laguna Observatory, or the Palomar Mountain Observatory, as Mount Laguna Observatory is located approximately 37 miles northeast of the project site and Palomar Mountain Observatory is located approximately 50 miles north of the project site.

Although current conditions of the project site are undeveloped and thus un-lit at night, the surrounding area of the City, including the Otay Ranch area, is urbanized and currently generates substantial night lighting. Due to the presence of ambient nighttime lighting in the project area from existing development, surrounding villages, automobile headlights, and street lights, and upon implementation of lighting standards included in the SPA plans, lighting associated with the proposed project is not expected to substantially alter day or nighttime views in the project area. Impacts related to lighting and glare is determined to be **less than significant**.

E. Alter areas of sensitive landforms.

As previously described, the project site is located on the north side of Rock Mountain, south of Wolf Canyon, and north of the Otay River Valley. The natural sloping landform provides the opportunity to tier the site and provide home sites with views into Wolf Canyon. On the north side of the village, the topography slopes from south to north from Main Street to into Wolf Canyon. The Otay Valley Quarry is located beyond the village to the south and the OVRP is located south of the Otay Valley Quarry. The site design of the village follows the undulating landform of the canyon. Building sites have been created in terraces and streets are located within the topography to adhere to City horizontal and vertical curve standards.

The Otay Ranch GDP and RMP establish a Ranch-wide standard for landform modification that 83% of steep slopes (slopes with gradients of 25% or greater) shall be preserved within the Otay Ranch. Based on current data collection and updated modeling results, Otay Ranch contains 9,821 acres of land with gradients of 25% or greater. Applying the GDP/RMP requirement for 83% Ranch-wide steep slope preservation equates to 1,670 acres of steep slopes Ranch-wide that could be impacted.

It is anticipated that if all slopes within the remaining villages to be developed are impacted, approximately 1,680 acres of Otay Ranch's steep slopes will be encroached upon. This is slightly more than the 1,670 acres of preservation required by the Otay Ranch GDP and RMP. However, the estimates assume that 100% of steep slopes within the remaining villages will be developed. It also assumes that Villages Fifteen and Seventeen, which have been purchased by the Wildlife Agencies for conservation purposes, will be developed in the future. If acreages for Villages Fifteen and Seventeen were subtracted (560 acres), Otay Ranch would be well under the 83% requirement.

Implementation of the Village Four Land Plan would impact approximately 17.2 acres of steep slopes.

All slopes within Village Four would be maintained to improve the appearance of the community, ensure the long-term stability of man-made slopes, and allow for the continued

viability of landscaping as specified by the project's grading permits. Slopes would be maintained by various entities as follows:

1. Private lots – Private Property Owner.
2. Publicly owned lands with slopes exceeding 10 feet in height – HOA, landscape maintenance district, or a landscape maintenance community facilities district.
3. Publicly owned lands with slopes 10 feet in height or less – City of Chula Vista Community Facilities District.

To minimize grading and create an aesthetically pleasing landform, the Design Guide for the proposed project strives to create elevation change within the property that strive for a balance of cut and fill grading; use grade changes to optimize views and a sense of spaciousness, use grade changes between different land uses where separation and buffering is desired, use landform grading techniques, where appropriate, in slopes more than 25 feet in height; use varied-height trees, shrubs, and groundcovers to undulate the surface of slopes; minimize surface runoff and erosion potential by planting slopes with low water consumptive and drought tolerant plants; and, use state-of-the-art erosion control, irrigation, and water management practices to protect slopes (Atlantis Group 2017).

Implementation of the project in compliance with the General Plan and Otay Ranch GDP would ensure that development would not alter the surrounding sensitive landforms of Rock Mountain, Wolf Canyon, or the Otay River Valley. Project impacts on steep slopes would be consistent with the GDP Ranch-wide standard and would comply with preservation requirements. Therefore, impacts are determine to be **less than significant**.

F. Grade steep slopes that may be visible from future development and roadways that negatively detract from aesthetic character of the site or surrounding area.

As described above in Threshold E, the site design of the project follows the undulating landform of the canyon. Building sites have been created in terraces and streets are located within the topography to adhere to City horizontal and vertical curve standards. Perimeter slopes are the dominant landscapes visible from Wolf Canyon. Distinct landscape designs have been developed for the project perimeters facing Wolf Canyon and Main Street.

Plantable retaining wall systems are planned at interior to the project site and along Main Street. The plantable wall system offers a fully plantable face that softens the visual impact of large retaining structures. Plantable retaining walls would transform grade transitions into a vegetated "steepened slope" instead of a concrete scar across a hillside. Plantable walls are proposed consistent with OVRP Design Standards & Guidelines, specifically Section 5.3.2 (County of San Diego Department of Parks and Recreation 2005). Vegetation covering the face

of the retaining walls would create seamless transitions between natural areas, landscaped slopes, and plantable retaining walls. The 100-foot Brush Management Zone occurs at the northern, southern, and western edge of the project site. Manufactured slopes, a portion of a private recreation facility (CPF), a residential street, and residential lots are proposed within this zone. Consistent with the Chula Vista MSCP Subarea Plan (City of Chula Vista 2003b) and Preserve Edge Plan (Appendix B2), a 100-foot brush management zone and Preserve edge would also be provided, outside of the Preserve. Native plants (non-irrigated) would be used on manufactured slopes within half of the Preserve edge area. However, consistent with the Chula Vista MSCP, the first 50 feet of the Brush Management Zone would be irrigated and planted with native compatible plant species (City of Chula Vista 2003b). Temporary irrigation may be used outside the first 50-feet of the Brush Management Zone during the plant establishment period, subject to approval of the Development Services Director. The plant palette provided within the proposed project's SPA plan is subject to the requirements of the Chula Vista MSCP Subarea Plan, Preserve Edge Plan (Appendix B2), the Village Four Fire Protection Plan (Appendix F), and the approval of the Chula Vista Development Services Director. The manufactured perimeter slopes adjacent to Wolf Canyon would not result in substantial impacts through implementation of the following techniques:

- Perimeter slopes follow the existing topography, blending the site into natural topography and preserving natural drainages between the project site and Wolf Canyon.
- Landscape buffers are planted with native plant materials, consistent with the Village Four Fire Protection Plan and Preserve Edge Plan.
- Retaining walls are planted and irrigated to avoid large expanses of blank walls and blending the retaining walls into the natural setting, making them virtually undetectable with full landscape cover. Wherever possible plantable retaining walls are split into two sections, providing opportunities to screen the walls with native landscaping in front of the wall and reduce single wall heights.
- Non-residential fencing at the perimeter is typically post and rail, permitting views to and from the park.
- Residential fencing at the perimeter is typically, 2 feet of block with 4 feet of view fencing, permitting views to and from the park.
- Lighting at the perimeter must be directed away from Wolf Canyon by placing light fixtures in appropriate locations and shielding lamps.
- Public access from Village Four to the regional park is provided along an attractive and controlled rural trail connection.

Implementation of the Village Four SPA Plan and the Village Four Fire Protection Plan, as well as compliance with the Chula Vista MSCP Subarea Plan, Preserve Edge Plan, General Plan, and Otay Ranch GDP, would ensure that grading of slopes and development of roadways would not negatively detract from the aesthetic character of the site or surrounding area. Impacts would be **less than significant**.

H. Be inconsistent with General Plan, GDP or other objectives and policies regarding visual character thereby resulting in a significant physical impact.

City of Chula Vista General Plan

The General Plan contains objectives and policies to preserve and enhance scenic resources and landforms. Objectives and policies include the continued environmental protection of open space, and design policies for features such as views, entryways, gateways, streetscapes, buildings, parks, and plazas (City of Chula Vista 2005). The proposed project would be consistent with the General Plan objectives and policies because the Village Four Design Guide (Atlantis Group 2017) and P-C District Regulations (City of Chula Vista 2005) establish development standards and design guidelines for the project. The P-C District Regulations established a design review process for the villages that, in combination with the Village Four Design Guide, would ensure new residential neighborhoods are compatible with surrounding neighborhoods. Additionally, implementation of an overall landscape master plan and street cross-section details that provide for well-designed landscape and specialized themes would be incorporated.

Otay Ranch General Development Plan

Consistent with the Otay Ranch GDP, a Village Design Guide was prepared for the project site as part of the Village Four SPA Plan (Atlantis Group 2017). The Design Guide acts as a template for the design of sites, buildings, and landscapes within the village to ensure that the quality of the adopted urban design and architectural concepts established for the overall Otay Ranch community are maintained. The Design Guide identifies an architectural and landscape theme for the project site and delineates that identity through streetscape and landscape design, signage programs, and architectural and lighting guidelines. The Design Guide also identifies the village core design concepts that will implement Otay Ranch's planned pedestrian orientation (Atlantis Group 2017). Manufactured slope heights and forms would be in conformance with City ordinances and policies.

Multiple Species Conservation Program

Consistent with the Chula Vista MSCP Subarea Plan (City of Chula Vista 2003b) and Preserve Edge Plan (Appendix B2), a 100-foot Brush Management Zone and Preserve Edge would also be provided outside of the Preserve as part of the proposed project. Native plants (non-irrigated) would be used on manufactured slopes within half of the Preserve Edge area.

However, consistent with the Chula Vista MSCP, the first 50 feet of the Brush Management Zone would be irrigated and planted with native compatible plant species. The plant palette proposed for the project is subject to the requirements of the Chula Vista MSCP Subarea Plan (City of Chula Vista 2003b).

To sensitively design lighting along the MSCP Preserve that minimizes light spillage into the Preserve to the greatest extent practicable, the project proposes to direct light away from Preserve areas through the placement and shielding of light fixtures. Furthermore, in compliance with the MSCP, site planning for multi-family neighborhoods adjacent to the Preserve would be subject to MSCP adjacency guidelines.

City of Chula Vista Design Manual

Consistent with the City's Design Manual (City of Chula Vista 2011), the proposed project includes a Village Design Guide that models the site, building and landscape design within the villages to ensure that the quality of the adopted urban design and architectural concepts established for the overall Otay Ranch community are maintained. The Village Design Guide identifies a theme for the villages and delineate the identity of each village through streetscape and landscape design, architecture, signage programs and lighting guidelines. The Village Design Guide implements and conforms to the City's Design Manual.

City of Chula Vista Municipal Code

The City of Chula Vista regulates signage through Chapter 19.60, Signs, of the City's Municipal Code. Consistent with Chapter 19.60 of the City's Municipal Code, the proposed project's Design Guide identifies an architectural and landscape theme for Village Four and delineates that identity through streetscape and landscape design, signage programs, and architectural and lighting guidelines. All signage within areas adjacent to the MSCP would be provided and would meet the requirements of the City.

Light and glare are regulated by Chapter 17.28 and Section 19.66.100 of the City's Municipal Code, respectively. As described under Threshold D, the village lighting design concept focuses on the quality of light along specific corridors and areas. Light standards would have a distinctive character to relate to the corridors they serve. Lighting along pedestrian corridors would be more human in scale, closer spaced, and lower than is typically found on an urban street. Light standards would be manufactured of high-quality materials that are visually pleasing. The base, pole, and light fixture would be attractive and suitable to the design theme of the village. The objectives for exterior lighting are outlined within the SPA Plan (Atlantis Group 2017). Additionally, the project Design Guide outlines lighting regulations specific to different project site land uses, including residential entry street lighting, parkway residential street lighting, lighting within 100-foot Preserve edge, parking lot lighting, street furnishing lighting,

and natural surveillance/security lighting. Furthermore, the SPA Plan includes design guidelines and requirements that would limit glare received by on- and off-site viewers in the area (Atlantis Group 2017). Lighting as a result of the proposed project would not affect the Mount Laguna Observatory, or the Palomar Mountain Observatory, as Mount Laguna Observatory is located approximately 37 miles northeast of the project site and Palomar Mountain Observatory is located approximately 50 miles north of the project site.

City of Chula Vista Greenbelt Master Plan

Regional trails proposed as a part of the project would provide off-street pedestrian and bicycle connections throughout Chula Vista. Chula Vista Regional Trail is located on the north side of Main Street and is adjacent to the roadway within the landscape buffer. The regional trail would be 10 feet wide to accommodate pedestrians and bicycles, and may be decomposed granite or concrete. All trails and trail signage would conform to the Greenbelt Master Plan (City of Chula Vista 2003a).

The Otay Resource Management Plan

In accordance with the Otay Ranch Resource Management Plan (RMP), the development of each Otay Ranch Village requires an open space (OP) contribution to the Otay Ranch Preserve (City of Chula Vista and County of San Diego 1996). The project proposes approximately 68.45 gross acres in accordance with the required 1.88 acres of open space conveyance per acres of development. The proposed project includes a landscape plan that incorporates a specific plant palette for areas adjacent to open space Preserve.

Related to slopes, as outlined in Thresholds E and F, the proposed project would comply with all regulations regarding slopes, with implementation of landform grading techniques, and perimeter slope design.

Otay Valley Regional Park Design Standards and Guidelines

As previously described, plantable retaining wall systems are planned at interior of the project site and along Main Street. The plantable wall system offers a fully plantable face that softens the visual impact of large retaining structures. Plantable retaining walls transform grade transitions into a vegetated “steepened slope” instead of a concrete scar across a hillside. The proposed project would comply with OVRP Design Standards & Guidelines, Section 5.3.2 (County of San Diego Department of Parks and Recreation 2005), by incorporating plantable walls consistent with these guidelines. Vegetation covering the face of the retaining walls would create seamless transitions between natural areas, landscaped slopes, and plantable retaining walls.

Implementation of the proposed project would be in compliance with the General Plan, Otay Ranch GDP, and all applicable plans and regulations related to landform alteration and aesthetics. For the reasons stated above, impacts would be **less than significant**.

5.2.4 Level of Significance Prior to Mitigation

Impacts to scenic vistas, scenic resources, light and glare, sensitive landforms, grading of steep slopes, and consistency with applicable plans and policies would be less than significant. Due to the permanent change from an undeveloped state to developed, impacts to visual character would be considered **significant and unavoidable**.

5.2.5 Mitigation Measures

There are no feasible mitigation measures proposed that could reduce impacts related to visual character to below a level of significance.

5.2.6 Level of Significance After Mitigation

As impacts to scenic vistas, scenic resources, light and glare, sensitive landforms, grading of steep slopes, and consistency with applicable plans and policies would be less than significant, no mitigation measures are required.

Development of the proposed project would result in a substantially change to the topography of the site due to site grading and the introduction of new landscaping, architectural design, density, and scale of buildings than what currently exists. Due to the permanent change from an undeveloped state to developed, and no proposed mitigation measures that would substantially reduce impacts; impacts to visual character would be considered **significant and unavoidable**.

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5.3 BIOLOGICAL RESOURCES

This section describes the existing biological resources within the proposed Otay Ranch Village Four Sectional Planning Area (SPA) Plan Project (project) site, analyzes the potential environmental effects of the proposed project, and recommends mitigation measures to reduce or avoid significant effects. Findings are based on the Biological Technical Report for the Otay Ranch Village Four Project, City of Chula Vista, California, prepared by Dudek in September 2017. The report is included as Appendix B1 of this Environmental Impact Report (EIR). Additionally, both the Biological Technical Report and this section include information from the Preserve Edge Plan prepared by Atlantis Group in August 2017, which is included as Appendix B2 to this EIR.

5.3.1 Existing Conditions

5.3.1.1 Regulatory Setting

Federal Level

Federal Endangered Species Act

The federal Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 et seq.), provides for listing of endangered and threatened species of plants and animals and designation of critical habitat for listed animal species. The ESA also prohibits all persons subject to U.S. jurisdiction from "taking" endangered species, which includes any harm or harassment. Section 7 of the ESA requires that federal agencies, prior to project approval, consult the U.S. Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS) to ensure adequate protection of listed species that may be affected by the project.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703 et seq.) is a federal statute that implements treaties with several countries on the conservation and protection of migratory birds. The list of bird species covered by the MBTA is extensive and is detailed in 50 CFR 10.13. The regulatory definition of "migratory bird" is broad and includes any mutation or hybrid of a listed species, including any part, egg, or nest of such a bird (50 CFR 10.12). Migratory birds are not necessarily federally listed endangered or threatened birds under the ESA. The MBTA, which is enforced by USFWS, makes it unlawful "by any means or in any manner, to pursue, hunt, take, capture, [or] kill" any migratory bird or attempt such actions, except as permitted by regulation. The applicable regulations prohibit the take, possession, import, export, transport, sale, purchase, barter, or offering of these activities, except under a valid permit or as permitted in the implementing regulations (50 CFR 21.11).

Clean Water Act

The federal Water Pollution Control Act Amendments of 1972 (Clean Water Act; 33 U.S.C. 1251 et seq.), as amended by the Water Quality Act of 1987 (PL 1000-4), is the major federal legislation governing water quality. The purpose of the Clean Water Act is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Discharges into waters of the United States are regulated under Section 404. Waters of the United States include (1) all navigable waters (including all waters subject to the ebb and flow of tides); (2) all interstate waters and wetlands; (3) all other waters, such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, or natural ponds; (4) all impoundments of waters mentioned above; (5) all tributaries to waters mentioned above; (6) the territorial seas; and (7) all wetlands adjacent to waters mentioned above. In California, the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs) are responsible for implementing the Clean Water Act. Important applicable sections of the Clean Water Act are discussed below:

- **Section 303** requires states to develop water quality standards for inland surface and ocean waters and submit to the EPA for approval. Under Section 303(d), the state is required to list waters that do not meet water quality standards and to develop action plans, called total maximum daily loads, to improve water quality.
- **Section 304** provides for water quality standards, criteria, and guidelines.
- **Section 401** requires an applicant for any federal permit that proposes an activity that may result in a discharge to waters of the United States to obtain certification from the state that the discharge would comply with other provisions of the Clean Water Act. Certification is provided by the respective RWQCB.
- **Section 402** establishes the National Pollutant Discharge Elimination System (NPDES), a permitting system for the discharge of any pollutant (except for dredge or fill material) into waters of the United States. The NPDES program is administered by the RWQCB. Conformance with Section 402 is typically addressed in conjunction with water quality certification under Section 401.
- **Section 404** provides for issuance of dredge/fill permits by the U.S. Army Corps of Engineers (ACOE). Permits typically include conditions to minimize impacts on water quality. Common conditions include (1) ACOE review and approval of sediment quality analysis before dredging, (2) a detailed pre- and post-construction monitoring plan that includes disposal site monitoring, and (3) required compensation for loss of waters of the United States.

U.S. Army Corps of Engineers

The ACOE has primary federal responsibility for administering regulations that concern waters and wetlands in the project site. In this regard, ACOE acts under two statutory authorities, the Rivers and Harbors Act (33 U.S.C., Sections 9 and 10), which governs specified activities in navigable waters, and the Clean Water Act (Section 404), which governs specified activities in waters of the United States, including wetlands and special aquatic sites. Wetlands and non-wetland waters, e.g., rivers, streams and natural ponds, are a subset of waters of the United States and receive protection under Section 404 of the Clean Water Act. The ACOE has primary federal responsibility for administering regulations that concern waters and wetlands in the project area under statutory authority of the Clean Water Act (Section 404). In addition, the regulations and policies of various federal agencies mandate that the filling of wetlands be avoided to the extent feasible. The ACOE requires obtaining a permit if a project proposes placing structures within navigable waters and/or alteration of waters of the United States.

State Level

California Endangered Species Act

Similar to the federal ESA, the California ESA of 1970 provides protection to species considered threatened or endangered by the State of California (California Fish and Game Code, Section 2050 et seq.). The California ESA recognizes the importance of threatened and endangered fish, wildlife, and plant species and their habitats, and prohibits the taking of any endangered, threatened, or rare plant and/or animal species unless specifically permitted for education or management purposes.

California Fish and Game Code

The California Fish and Game Code regulates the handling and management of the state's fish and wildlife. Most of the code is administered or enforced by the California Department of Fish and Wildlife (CDFW). One section of the code generally applies to public infrastructure projects such as the proposed project:

- **Section 1602** regulates activities that would divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. CDFW has jurisdiction over riparian habitats associated with watercourses. Jurisdictional waters are delineated by the outer edge of riparian vegetation or at the top of the bank of streams or lakes, whichever is wider. CDFW jurisdiction does not include tidal areas or isolated resources.

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Act of 1969, updated in 2012 (California Water Code, Section 13000 et seq.), provides for statewide coordination of water quality regulations. The act established the California SWRCB as the statewide authority, and nine separate RWQCBs were developed to oversee water quality on a day-to-day basis.

Local Level

City of Chula Vista Multiple Species Conservation Program Subarea Plan

The Multiple Species Conservation Program (MSCP) Subarea Plan is implemented through individual Subarea Plans adopted by each jurisdiction receiving Take authorization for covered species. The Chula Vista MSCP Subarea Plan was approved by the City of Chula Vista (City) in May 2003 and received Take authorization in January 2005. The Subarea Plan provides for conservation of upland habitats and species through Preserve design, regulation of impacts and uses, and management of the Preserve. The proposed project is considered a "Covered Project" under the Chula Vista MSCP Subarea Plan. "Covered Projects" are projects in which hardline Preserve boundaries have been established pursuant to the approved Chula Vista Subarea Plan, and where conservation measures consistent with the MSCP have been specified as conditions of approval. The 100% Conservation Areas are either already in public ownership or would be dedicated to the Preserve as part of the development approval process for Covered Projects. Any portions of Covered Projects that are located within 100% Conservation Areas must be consistent with conditions allowing specific land uses within the Preserve as outlined in Section 6.0 of the Subarea Plan and are subject to the narrow endemic Species Policy (avoidance and minimization) and the Wetlands Protection Program (City of Chula Vista 2003).

Narrow Endemic Species Protection

The following specific provisions are applicable to the project site.

Development Areas within Covered Projects. Covered Projects provide protection of narrow endemic species through consideration of narrow endemic species in the Preserve design for those projects. Take of Covered Species, including narrow endemic species, for development areas within Covered Projects would be extended at the time of development approval. There are no limitations on impacts to narrow endemic species within the development areas of Covered Projects (City of Chula Vista 2003).

100% Conservation Areas within Covered Projects. Projects located within the 100% Conservation Areas of Covered Projects (i.e., within the Preserve) are limited to uses described in Sections 6.1, 6.2, and 6.3 of the Subarea Plan (City of Chula Vista 2003). Impacts to covered

narrow endemic species from planned and future facilities located within the 100% Conservation Areas of Covered Projects would be avoided to the maximum extent practicable. Where impacts are demonstrated to be unavoidable, impacts would be limited to 5% of the total narrow endemic species population within the project area. Unavoidable impacts to narrow endemics are subject to the equivalency findings, limitations and provisions of Section 5.2.3.6, Equivalency Findings, of the Subarea Plan (City of Chula Vista 2003).

Wetlands Protection

As part of the CEQA review, development projects that contain wetlands would be required to demonstrate that impacts to wetlands have been avoided to the greatest extent practicable and, where impacts are nonetheless proposed, that such impacts have been minimized. For unavoidable impacts to wetlands within the Development Area, the mitigation ratio would be in accordance with the wetlands mitigation ratios identified in the Subarea Plan. The wetlands mitigation ratios provide a standard for each habitat type but may be adjusted depending on the functions and values of both the impacted wetlands, as well as the wetlands mitigation proposed by the project. The City may also consider the wetland habitat type(s) being impacted and used for mitigation in establishing whether these standards have been met (City of Chula Vista 2003).

Otay Ranch General Development Plan

The Otay Ranch General Development Plan (GDP) was approved jointly by the City of Chula Vista and County of San Diego in 1993 for the future development of Otay Ranch. The Otay Ranch GDP was amended in December 2005 as part of the City's General Plan Update and most recently was amended in February 2013. The Otay Ranch GDP establishes land use plans, design guidelines, objectives, policies, and implementation measures that apply to all portions of Otay Ranch while supporting a balance of housing, shops, workplaces, schools, parks, civic facilities, and open spaces. The majority of development is intended to be clustered in villages, with conveniently located "core" features and well-defined edges such as the Chula Vista greenbelt, open spaces, and wildlife corridors. The goals of the Otay Ranch GDP are to (1) create a well-integrated, balanced land use; (2) reduce reliance on the automobile and promotion of alternative modes of transportation; and (3) diversify the economic base within Otay Ranch (City of Chula Vista and County of San Diego 1993).

Otay Ranch Resource Management Plan

The Otay Ranch Resource Management Plan (RMP) was adopted in 1993 with the approval of the Otay Ranch General Development Plan to establish a permanent Preserve within Otay Ranch. The RMP is composed of two separate documents, the Phase 1 RMP and Phase 2 RMP (adopted in 1996 and revised in 2002). The Phase 1 RMP identifies Preserve areas within Otay Ranch, and contains policies regarding species and habitat conservation and long-term management of the

Preserve. The Phase 2 RMP includes ranch-wide studies that were conducted pursuant to the Phase 1 RMP and provides additional detail on conveyance, management and funding (City of Chula Vista and County of San Diego 1993, 2002). The purpose of the Otay Ranch Preserve is to protect and enhance biological, paleontological, cultural, and scenic resources. Plan objectives include biological diversity and promotion of the survival and recovery of native species and habitats. The RMP identifies an open space system of 11,375 acres to be dedicated within the Otay Ranch, targeting lands that include important resources such as vernal pools, coastal sage scrub habitat, coastal California gnatcatcher populations, and potential wetlands restoration areas. The Otay Ranch Preserve would also connect large areas of open space through a series of wildlife corridors, and cover portions of Salt Creek Canyon to Otay Valley. The Preserve boundaries from the RMP have been incorporated into the adopted Otay Ranch GDP. The Preserve/development boundary of the Otay Ranch GDP is consistent with the objectives, policies, and criteria established in the RMP (City of Chula Vista and County of San Diego 1993, 2002).

The Phase 2 Resource Management Plan (Phase 2 RMP or RMP 2), adopted in 1996 and revised in 2002, identified implementation measures that included procedures for dedicating parcels of land to the resource Preserve and for determining the proportionate share for each village.

Land identified by the RMP as part of the 11,375-acre Otay Ranch Preserve is required to be conveyed to the Preserve prior to the approval of final maps. The conveyance ratio (ratio of land to be dedicated per acre of development) is 1.188 acres dedicated for each developable acre that is final mapped. This ratio was established by the RMP 2. The RMP 2 identified 9,574 "developable acres" in Otay Ranch, which are defined as the total amount of developable acreage minus "common uses" (local parks, schools arterials, SR-125 and lands designated as a public use area) and "Limited Development Areas." In order for the conveyance of the entire 11,375-acre Otay Ranch Preserve, the RMP 2 calculated that 1.188 acres of Preserve land must be dedicated for each developable acre (11,375 acres of Preserve divided by 9,574 developable acres). The conveyance obligation is required to be met on a village-by village basis (City of Chula Vista and County of San Diego 2002).

Chula Vista MSCP Subarea Plan

The MSCP Subregional Plan is implemented through individual Subarea Plans adopted by each jurisdiction receiving take authorization for Covered Species. The Chula Vista MSCP Subarea Plan was approved by the City in May 2003 and received Take authorization in January 2005. The Subarea Plan provides for conservation of upland habitats and species through Preserve design, regulation of impacts and uses, and management of the Preserve. The proposed project is considered a "Covered Project" under the Chula Vista MSCP Subarea Plan. The 100% Conservation Areas are either already in public ownership or will be dedicated to the Preserve as part of the development approval process for Covered Projects. Any portions of Covered Projects

that are located within 100% Conservation Areas must be consistent with conditions allowing specific land uses within the Preserve, as outlined in Chapter 6.0 of the Subarea Plan, and are subject to the narrow endemic species policy (avoidance and minimization) and the Wetlands Protection Program (City of Chula Vista 2003).

5.3.1.2 Existing Biological Resources

Vegetation Communities

Vegetation communities and land covers mapped within the project site, which, as defined for the purposes of biological resources assessment, encompasses all of Village Four, the Boundary Line Adjustment Area, and off-site areas, include the following: coastal sage scrub, disturbed coastal sage scrub, non-native grassland, desert saltbush scrub, maritime succulent scrub, cismontane alkali marsh, tamarisk scrub, mulefat scrub, disturbed habitat and developed (Figure 5.3-1; Table 5.3-1). The total acreage reflected in Table 5.3-1 includes 55.51 acres of Preserve lands within the site boundary that would not be affected by the proposed project. Although these Preserve lands have been previously mapped, they were not included in the 2015 vegetation update and are, therefore, excluded from the individual vegetation community acreages. These Preserve areas are shown as "NOT MAPPED" in Table 5.3-1 and Figure 5.3-1.

Table 5.3-1
Vegetation Communities and Land Cover Within the Project Site
(Quarry Boundary, Village Three, and Village Four)

Vegetation Type	Acres
Otay Quarry Boundary – Off Site	
Coastal Sage Scrub	0.24
Desert Saltbush Scrub	<0.01
Developed	0.19
Disturbed Habitat	0.05
Non-Native Grassland	1.47
Subtotal	*1.96*
Village Three – Off Site	
Developed	<0.01
Disturbed Coastal Sage Scrub	0.~~01~~04
Disturbed Habitat	0.77
Non-Native Grassland	0.~~70~~74
Unvegetated Channel	0.~~01~~02
Subtotal	*1.~~50~~58*
Village Four – Development and Preserve	
Cismontane Alkali Marsh	0.17
Coastal Sage Scrub	28.26
Desert Saltbush Scrub	0.04

Table 5.3-1
Vegetation Communities and Land Cover Within the Project Site
(Quarry Boundary, Village Three, and Village Four)

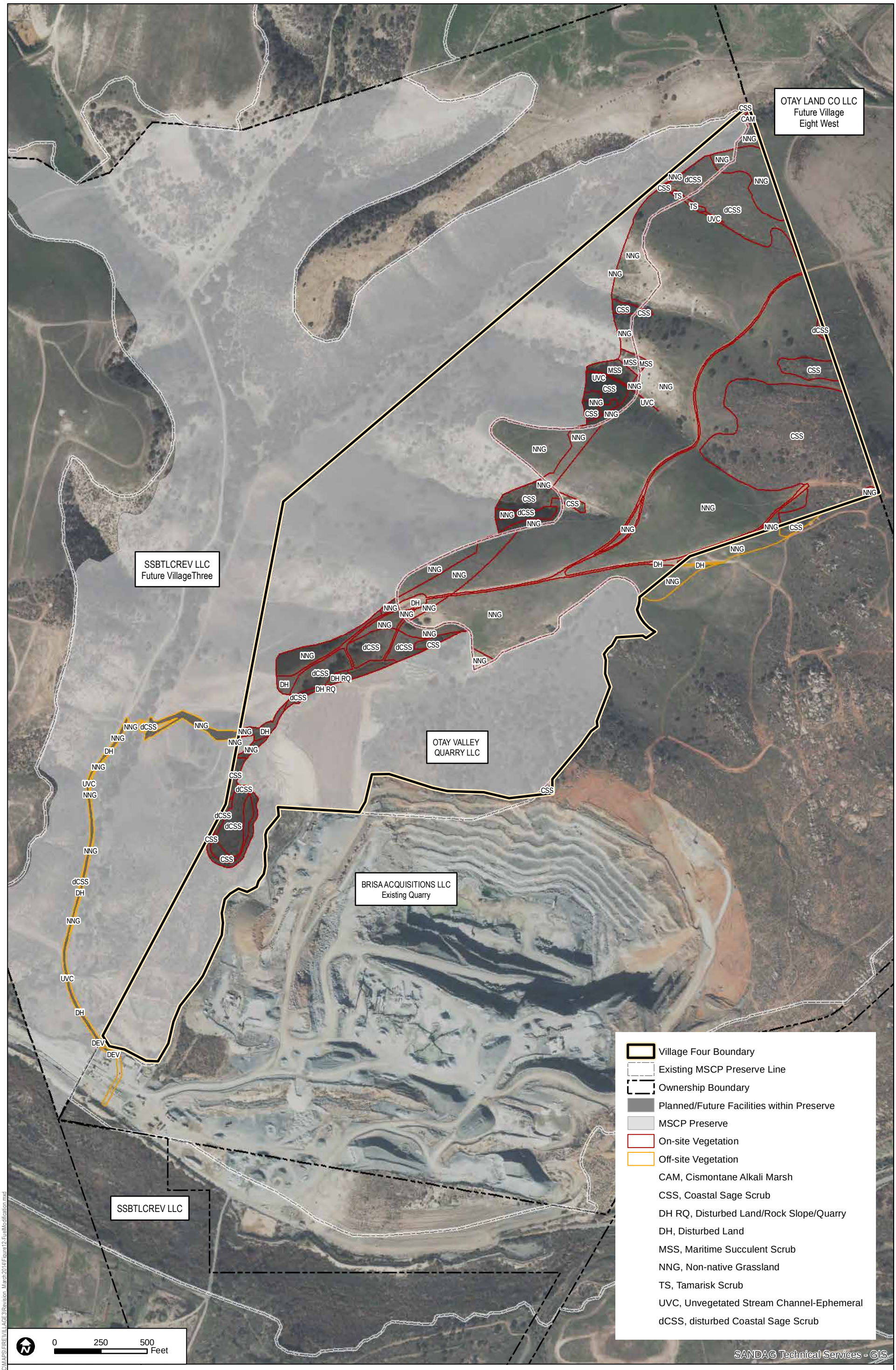
Vegetation Type	Acres
Disturbed Coastal Sage Scrub	8.47
Disturbed Habitat	3.66
Disturbed Habitat – Rock Quarry	2.86
Maritime Succulent Scrub	2.22
Non-Native Grassland	64.68
Tamarisk Scrub	0.12
Unvegetated Channel	0.04
NOT MAPPED[1]	55.51
Subtotal	*166.02*
Total	**169.4756**

Source: Appendix B1
[1] Areas that are not mapped include portions of the Preserve that are not affected by the proposed project.

Coastal Sage Scrub

Coastal sage scrub is a native plant community composed of a variety of soft, low, aromatic shrubs. This vegetation community is characteristically dominated by drought-deciduous species, such as California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), and sages (*Salvia* spp.), with scattered evergreen shrubs, including lemonade sumac (*Rhus integrifolia*), laurel sumac (*Malosma laurina*), and toyon (*Heteromeles arbutifolia*). It typically develops on south-facing slopes and other xeric situations (Appendix B1).

Coastal sage scrub occurs within Village Four and the Quarry (Figure 5.3-1). Coastal sage scrub is generally dominated by lemonade sumac that occurs as a mosaic with non-native grassland. Other coastal sage scrub species present include California sagebrush and California buckwheat, however, these species occur in lower densities and there is overall lower species richness within this subtype of coastal sage scrub. This subtype of coastal sage scrub occurs on clay soils and so would also be expected to include a number of special-status plant species such as Otay tarplant and variegated dudleya (*Dudleya variegata*) as discussed below. In addition, the open grassland patches in between the shrubs also could provide foraging opportunities for raptors (Appendix B1).



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SOURCE:SANDAG IMAGERY

FIGURE 5.3-1

Vegetation Map - Village Four Development

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Disturbed Coastal Sage Scrub

Disturbed coastal sage scrub is similar in species composition to coastal sage scrub but has higher cover (20%–50%) of bare ground or non-native shrubs, forbs and grasses. Disturbed coastal sage scrub intergrades with annual grassland and disturbed habitat depending on the abundance of annual grasses or non-native forbs. Disturbed coastal sage scrub occurs within Village Four and the off-site portions of Village Three (Figure 5.3-1) (Appendix B1).

The disturbed coastal sage scrub community was identified in small patches throughout the project site and off-site portions of Village Three. Disturbed coastal sage scrub primarily occurs adjacent to coastal sage scrub and to non-native grassland. Floral species found in this area are characteristic of the coastal sage scrub community, but also include several non-native grasses: ripgut grass (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), foxtail chess (*Bromus madritensis* ssp. *rubens*), and slender wild oat (*Avena barbata*) (Appendix B1).

Desert Saltbush Scrub

Desert saltbush scrub occurs on poorly drained soils with high alkalinity or salinity, often on slightly higher ground surrounding playas. Desert saltbush scrub is typically comprised of low, microphyllous shrubs, with occasional succulent shrubs. This community is dominated by *Atriplex* species with open grassland patches in between the shrubs (Appendix B1). Desert saltbush scrub represents the smallest community on site (<1 acre) and occurs along the southern boundary between Village Four and the Quarry (Figure 5.3-1).

Maritime Succulent Scrub

The maritime succulent scrub community is found on thin, rocky or sandy soils, often on steep slopes, where there is a small amount of summer rainfall. It integrates with coastal sage scrub on better-developed soils away from the immediate coast. Maritime succulent scrub is a low, open (25% to 75% cover), scrub-dominated plant community consisting of drought-deciduous shrubs and succulents (Appendix B1).

On site, maritime succulent scrub occurs exclusively within Village Four (Figure 5.3-1) and is dominated by San Diego County viguiera (*Bahiopsis laciniata*), California buckwheat, coast cholla (*Cylindropuntia prolifera*), San Diego barrel cactus (*Ferocactus viridescens*), California box-thorn (*Lycium californicum*), California bush sunflower (*Encelia californica*), purple needlegrass (*Stipa pulchra*) and chalk dudleya (*Dudleya pulverulenta*) (Appendix B1).

Non-Native Grassland

Where the native vegetation has been disturbed frequently or intensively by grazing, fire, agriculture, or other activities, the native community usually is incapable of recovering. These

areas are characterized by weedy, introduced annuals, primarily grasses, include slender wild oat, bromes (*Bromus* spp.), and mustards (*Brassica* and *Hirschfeldia* spp.). The non-native grassland within Village Four, Village Three, and the Quarry was formerly agriculture land but has recovered to non-native grassland. The non-native grassland community occupies the largest acreage within the project site (Figure 5.3-1). It is dominated by non-native grass species and includes slender wild oat and a lower cover of forbs (Appendix B1).

Cismontane Alkali Marsh

According to Holland (1986), cismontane alkali marsh typically occurs in areas that are wet or inundated throughout most to all of the year. Dominant species include rushes (*Juncus* spp.), saltgrass (*Distichlis spicata*), sedges (*Carex* spp.), yerba mansa (*Anemopsis californica*), and alkali heath (*Frankenia grandifolia*). This community occurs in lake beds and floodplains below 1,000 feet above mean sea level and is characterized by higher levels of salts than are found in the freshwater marsh community. It differs from coastal saltmarsh primarily in that it is not subject to tidal inundation. Cismontane alkali marsh supports many of the same wildlife species found in coastal and valley freshwater marsh.

There is cismontane alkali marsh along the northeastern corner of Village Four (Figure 5.3-1). This patch of cismontane alkali marsh is dominated by spiny rush (*Juncus acutus*) and bulrush (*Schoenoplectus* spp.) and is considered riparian habitat under the jurisdiction of the CDFW, and wetlands under the jurisdiction of the ACOE, and RWQCB (Appendix B1). In addition, cismontane alkali marsh is considered to be a wetland as defined in the Chula Vista MSCP Subarea Plan.

Tamarisk Scrub

Tamarisk scrub is a non-native riparian community dominated by stands of tamarisk usually supplanting native vegetation following a major disturbance. This habitat is usually found in sandy or gravelly braided washes or intermittent streams. Common species include narrowleaf willow (*Salix exigua*), big saltbush (*Atriplex lentiformis*), salt grass (*Distichilis spicata*), tamarisk (*Tamarix* sp.), and arrowweed (*Pluchea sericea*). Other species commonly associated with this community include Bermuda grass (*Cynodon dactylon*), mulefat (*Baccharis salicifolia*), and San Diego marsh-elder (*Iva hayesiana*) (Appendix B1).

Tamarisk scrub occurs in one relatively small patch within the project site (Figure 5.3-1). Although the tamarisk scrub in Village Four is associated with an unvegetated stream channel, the area lacks enough hydrophytic vegetation to be considered jurisdictional under ACOE, or RWQCB but would be considered riparian habitat under the jurisdiction of CDFW (Appendix B1). In addition, tamarisk scrub is considered to be a City wetland as defined in the Chula Vista MSCP Subarea Plan.

Unvegetated Channel

Non-vegetated channel is the sandy, gravelly, or rocky fringe of waterways or flood channels that is unvegetated on a relatively permanent basis. Vegetation may be present but is usually less than 10% total cover and grows on the outer edge of the channel.

Two unvegetated channels are located along the northern slopes of Village Four and one unvegetated channel crosses an existing dirt road three times within Village Three. These unvegetated channels are considered waters of the United States under the jurisdiction of the ACOE, and waters of the State of California under the jurisdiction of the RWQCB and CDFW. In addition, unvegetated channels are under City jurisdiction as defined in the Chula Vista MSCP Subarea Plan.

Disturbed Habitat/Disturbed Habitat – Rock Quarry

For the purposes of this analysis, disturbed land includes all dirt roads, graded areas, and other places that lack vegetation. In general, these areas have been subjected to mechanical perturbations that have greatly limited the growth of any vegetation. Within the project site, disturbed habitat is associated with dirt roads (Figure 5.3-1). In addition, portions of the steep slope associated with the adjacent rock quarry have been mapped as disturbed habitat-rock quarry.

Developed

Developed land refers to land with buildings, structures, homes, parking lots, paved roads, and maintained areas. Developed areas do not support native vegetation. The developed lands on site occur at the very southern tip of the project site and are either parking lots or paved roads associated with Village Three and the Quarry.

Jurisdictional Waters and Wetlands

This section describes the jurisdictional features located within the project site, and Figure 5.3-2 shows where these areas are located. The jurisdictional delineation did not cover areas outside the Village Four boundary; however, jurisdictional resource mapping for the sewer/storm drain alignment within Village Three was obtained from the Biological Technical Report for the Otay Ranch University Villages Project (Dudek 2014). All waters and wetlands described in this section are Chula Vista MSCP Subarea Plan wetlands.

Village Four

Village Four contains 0.32 acre of jurisdictional resources in the Development Area and the Preserve. There are two types of jurisdictional features totaling 0.12 acre within the Development Area and two features total 0.20 acre within the Preserve. Acreages for jurisdictional resources are summarized in Table 5.3-2 and represented in Figure 5.3-2.

Table 5.3-2
Jurisdictional Wetlands and Waters on Village Four

Wetlands Vegetation Community	Jurisdiction	Acres
Development Area		
Tamarisk scrub	CDFW-only	0.12
Unvegetated channel	ACOE/RWQCB/CDFW	≤0.01
	Subtotal – Development Area	*0.12*
Preserve		
Cismontane alkali marsh	ACOE/RWQCB/CDFW	0.17
Unvegetated channel	ACOE/RWQCB/CDFW	0.03
	Subtotal – Preserve*	*0.20*
	Total Jurisdictional Area*	**0.32**

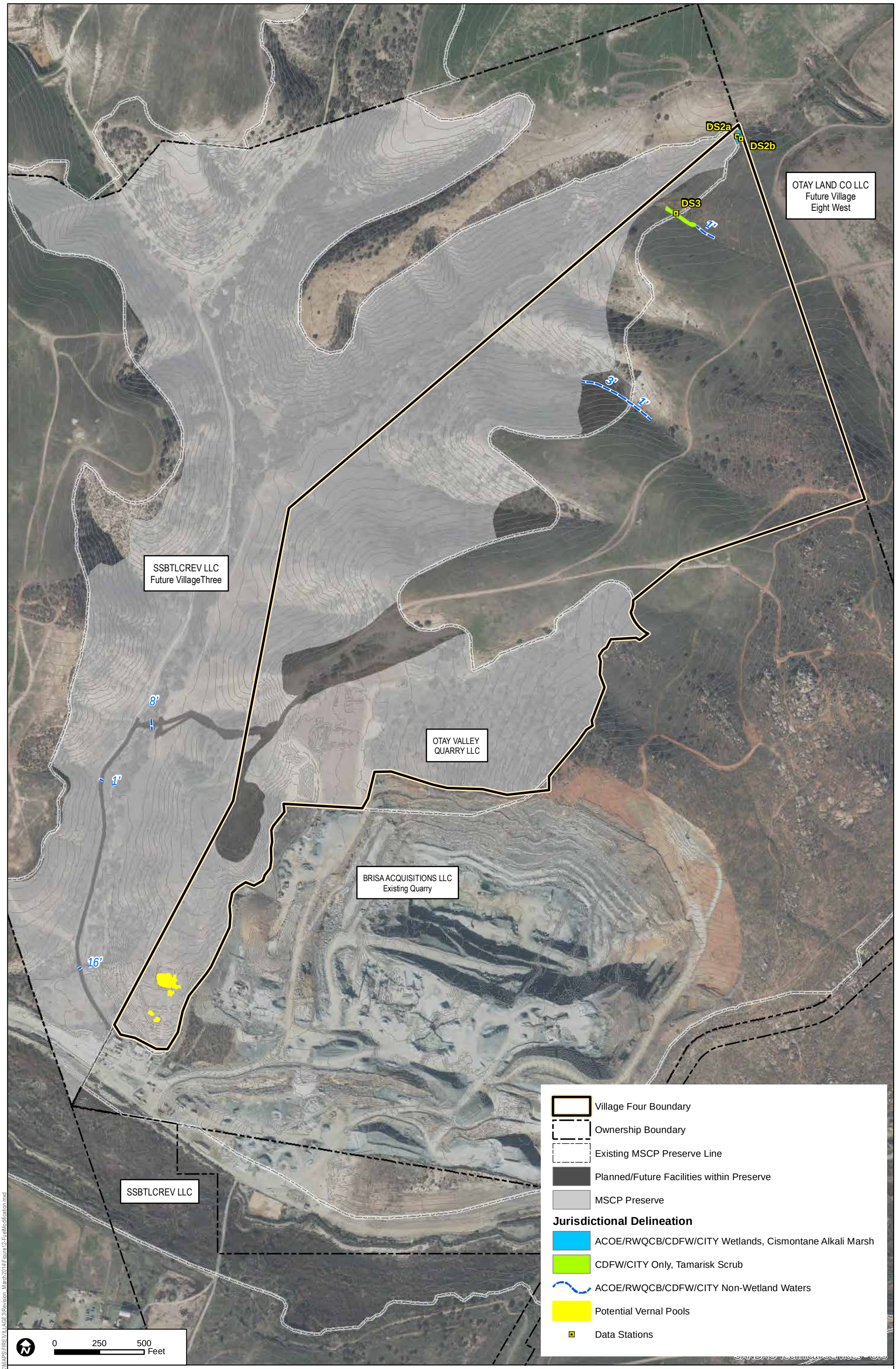
Source: Appendix B1
* Totals may not sum due to rounding.

Two unvegetated channels are located along the northern slopes of the project site that flow toward the northwest, outside of the Development Area, into Wolf Canyon then eventually into the Otay River. The Otay River flows into the Pacific Ocean, a navigable water of the United States. These drainages do not contain hydrophytic vegetation or hydric soils; however, they do exhibit evidence of hydrology and a clear bed and bank. These drainages are mapped on Figure 5.3-2 as line features. These unvegetated drainages are considered waters of the U.S. under the jurisdiction of the ACOE and waters of the state under the jurisdiction of the RWQCB and CDFW. Associated with one of the unvegetated channels, there is approximately 0.12 acre of CDFW jurisdictional tamarisk scrub within the Village Four Development Area. In addition, 0.17 acre of ACOE, RWQCB, and CDFW jurisdictional cismontane alkali marsh is located within the Preserve. Data Stations were taken within the cismontane alkali marsh and tamarisk scrub (Figure 5.3-2); the results are summarized in Table 5.3-3.

Table 5.3-3
Data Station Point Summary

Data Station	ACOE Wetland Determination Field Indicators			Determination, Vegetation Community	Jurisdiction
	Vegetation	*Hydric Soils*	*Hydrology*		
2a	✓	✓	✓	Wetland/Riparian Habitat, Cismontane Alkali Marsh	ACOE//RWQCB/CDFW
2b	None	None	None	None, Non-Native Grassland	None
3	None	✓	✓	Riparian Habitat, Tamarisk Scrub	CDFW only

Source: Appendix B1



SOURCE:SANDAG IMAGERY

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FIGURE 5.3-2

Wetland Delineation Map - Village Four Development

Otay Ranch Village Four SPA Plan Environmental Impact Report

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Other jurisdictional resources occurring within the project site are potential vernal pools (Figure 5.3-2). Vernal pools are considered a type of wetland and they are protected by state and federal laws. During focused surveys for Quino checkerspot butterfly in February 2015, multiple potential vernal pools were recorded within an area mapped as coastal sage scrub in the most southern area of the Preserve. The potential vernal pools within the Preserve are circular-shaped depressions that support ponded water following storm events, as observed during field surveys. These pools could potentially support hydrophytic vegetation, including woolly-marbles (*Psilocarphus brevissimus*) as well as wildlife species that are endemic to vernal pools such as vernal pool branchiopods and western spadefoot toads (*Spea hammondii*). No vernal pools were observed within the Development Area due to the severely damaged topography as the result of long-term agricultural practices, therefore no significant mima mound topography remains within the Development Area. Since the potential pools are contained within the Preserve approximately 200 feet away from the closest impact area, and are not hydrologically connected to any jurisdictional waters of the United States they were not surveyed for special-status species and will not be further addressed (Appendix B1).

Off-Site Areas

The jurisdictional delineation conducted in 2015 did not cover off-site areas due to access restrictions. However, jurisdictional resource mapping for the sewer/storm drain alignment within Village Three was obtained from the Biological Technical Report for the Otay Ranch University Villages Project (Dudek 2014). There is a total of 0.02 acre of jurisdictional non-wetlands waters within Village Three. Acreages for off-site jurisdictional resources are summarized in Table 5.3-4 and represented in Figure 5.3-2.

Table 5.3-4
Off-Site Jurisdictional Wetlands and Waters within Village Three

Wetlands Vegetation Community	Jurisdiction	Acres
Village Three		
Unvegetated channel	ACOE/RWQCB/CDFW Non-Wetlands Waters	0.02
	Total Jurisdictional Area	**0.02**

Source: Appendix B1

The existing dirt road within Village Three contains one culvert that conveys flows from a side tributary to the main channel within Wolf Canyon and another culvert which directs flow from the main channel under the southern portion of the dirt road. The tributary to Wolf Canyon and the main channel in Wolf Canyon flow into the Otay River. The Otay River flows into the Pacific Ocean, a navigable water of the United States. These drainages do not contain hydrophytic vegetation or hydric soils; however, they do exhibit evidence of hydrology and a clear bed and bank (Appendix B1). These drainages are mapped on Figure 5.3-2 as line features. These unvegetated drainages are considered waters of the U.S. under the jurisdiction of the

ACOE and waters of the state under the jurisdiction of the RWQCB and a streambed under the jurisdiction of CDFW, and under City jurisdiction.

Botany – Plant Diversity

A total of 148 species of plants were observed within the project site during the 2009 and 2015 surveys conducted by Dudek (Appendix B1). Forty-three families are represented on site, with nearly half of species coming from the Asteraceae, Poaceae and Fabaceae families. Species composition includes 97 (66%) native species and 51 (34%) non-native species occurring on site.

Zoology – Wildlife Diversity

Historic information and recent surveys are the basis for the description of wildlife on the project site. Wildlife expected to occur throughout the project site are discussed below. A cumulative list of wildlife species observed or detected on site is included in Appendix B1.

Birds

A total of 52 species of birds were observed within the Village Four project site or immediately off site during the surveys conducted by Dudek from 2008 to 2015. Some of the species observed are coastal California gnatcatcher, rufous-crowned sparrow (*Aimophila ruficeps*), California quail (*Callipepla californica*), Anna's hummingbird (*Calypte anna*), California scrub-jay (*Aphelocoma californica*), California towhee (*Pipilo crissalis*), house finch (*Haemorphous mexicanus*), red-tailed hawk (*Buteo jamaicensis*), and northern mockingbird (*Mimus polyglottos*) (Appendix B1).

Reptiles and Amphibians

Seven species of reptiles were observed within the project site during the Dudek surveys: western fence lizard (*Sceloporus occidentalis*), common side-blotched lizard (*Uta stansburiana*), western skink (*Plestidon skiltonianus*), striped racer (*Coluber lateralis*), gopher snake (*Pituophis melanoleucus*), western rattlesnake (*Crotalus oreganus*), and southern alligator lizard (*Elgaria multicarinatus*). Based on the habitat present and Dudek biologist's knowledge of the area, it is presumed that several other reptile and amphibian species occur on the project site. Some of these include coastal whiptail (*Aspidoscelis tigris*), red-diamond rattlesnake (*Crotalus ruber*), Blainville's horned lizard (*Phrynosoma blainvillii*), and western toad (*Bufo boreas*) (Appendix B1).

Mammals

Seven species of mammals were detected within the Village Four project site by direct observation or sign: San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), brush rabbit (*Sylvilagus bachmani*), desert wood rat (*Neotoma lepida*), Botta's pocket gopher (*Thomomys bottae*), California ground squirrel, coyote (*Canis latrans*), and mule deer (*Odocoileus*

hemionus). Other mammal species that likely use the site include Dulzura kangaroo rat (*Dipodomys simulans*) and common raccoon (*Procyon lotor*) (Appendix B1).

Invertebrates

Twenty-six species of invertebrates, the majority of which were butterflies, were identified within the Development Area or in the Preserve by direct observation. Common species on site include Behr's metalmark (*Apodemia mormo virgulti*), common California ringlet (*Coenonympha tullia*), Pacific Sara orangetip (*Anthocharis sara sara*), and checkered white (*Pontia protodice*). Invertebrate diversity is expected to be moderately high, especially in the naturally vegetated portions of the project site (Appendix B1).

Sensitive Biological Resources

The following resources are discussed in this section: (1) plant and wildlife species present in the project vicinity that are given special recognition by federal, state, or local agencies and organizations; (2) habitat types recognized by local and regional agencies as sensitive; (3) habitat areas that are unique, are of relatively limited distribution, or are of particular value to wildlife; (4) wildlife corridors and habitat linkages.

Special-Status Plant Species

Sensitive plant surveys were conducted to determine the presence or absence of plant species that are considered endangered, rare, or threatened under CEQA Guidelines Section 15380 (14 CCR 15000 et seq.). Tables F-1 and F-2 in Appendix B1 provides a cumulative list of special-status plant species that have potential to occur on the project site based on the literature search. Table F-1 describes the special-status plants that have been observed or have moderate or high potential to occur; Table F-2 describes special-status plants that have low potential or are not expected to occur in the project site. The potential to occur is based on known occurrences in the region, elevation ranges, and the general habitat requirements.

Focused surveys within the project site were conducted according to the methods described in Section 5.3.2 and in Appendix B1. One federally and state-listed plant species was detected within the Development Area: Otay tarplant (federally threatened and state endangered, MSCP Covered, narrow endemic, California Rare Plant Rank (CRPR) 1B.1). Nine other species considered sensitive by various agencies also occur within the project site: singlewhorl burrobrush (*Ambrosia monogyra*), variegated liveforever (*Dudleya variegata*) (MSCP Covered, narrow endemic), San Diego barrel cactus (*Ferocactus viridescens*) (MSCP Covered), small-flowered morning glory (*Convolvulus simulans*), Palmer's grapplinghook (*Harpagonella palmeri*), mesa spikemoss (*Selaginella cinerascens*), small-flowered microseris (*Microseris douglasii ssp. platycarpha*), California box-thorn (*Lycium californicum*), and San

Diego County viguiera (*Viguiera lacinata*). Additional populations within the Preserve outside of the survey area and outside of the proposed project impacts were derived from previous surveys for the Quarry and Village Three with the exception of Otay tarplant which was surveyed for in 2017. Table 5.3-5 provides the populations of special-status plant species observed within the project site with the exception of California box-thorn, San Diego County viguiera, small-flowered microseris and Mesa spikemoss. Due to their low rare plant rank, and in the case of San Diego County viguiera common observations within the project site, locations and populations for this species were not recorded. The data for species locations is represented in Figure 5.3-3.

The species locations were generally mapped by hand and/or with a portable GPS unit by point records where the occurrence is of a single individual and as polygons for a population. During the 2017 surveys focused on Otay tarplant, the number of individuals of Otay tarplant was recorded for each polygon that was circumscribed by GPS in the field. The number of individuals within a polygon for a population of special-status plants was visually estimated. For many areas, estimation of number of individuals involved estimating an average density within the mapped polygon. Species with a CRPR 3 and 4 (i.e. California box-thorn, San Diego County viguiera, small-flowered microseris and Mesa spikemoss) were recorded but not mapped due to low ranking. CRPR 3 and 4 species typically exhibit relatively widespread distribution and at the current time have not reached a level of threat, nor have numbers or populations declined to a point that would cause these taxa to be considered "rare." CRPR 4 is defined by the California Native Plant Society (CNPS) as "Plants of Limited Distribution – A Watch List." Therefore, for purposes of determining CEQA significance, only plants ranked as CRPR 1 or 2 are considered "rare" or "endangered" (Table 5.3-5). The number of individuals within the Development Area includes the population prior to the approved Boundary Line Adjustment. The population numbers for those individuals within the proposed Planned and Future Facilities are included within the Preserve total since those impacts were anticipated by the MSCP and are inside the existing MSCP preserve. A union of polygons was calculated to include all polygons within the Boundary Line Adjustment and Planned and Future Facilities. This provides the total estimation of areas occupied by Otay tarplant. The acreage of that union of polygons, summed for the Take and Planned and Future facilities, is 0.63 acre.

Table 5.3-5
Special-Status Plant Populations within the Project Site and Preserve Prior to Approved Boundary Line Adjustment

Plant Species	Status (Federal/State/ CNPS/MSCP)	Population			
		Village Four Development	*Village Four Preserve*	*Off-Site Areas*	**Total**
Singlewhorl burrobrush (*Ambrosia monogyra*)	None/None/2B.2/None	—	—	2	**2**
Small-flowered morning-glory (*Convolvulus simulans*)	None/None/4.2/None	58	—	—	**58**
Otay tarplant (*Deinandra conjugens*)	FT/CE/1B.1/Covered, NE	14,674	37,671	0	**52,345**
Variegated dudleya (*Dudleya variegata*)	None/None/1B.2/ Covered, NE	175	—	—	**175**
San Diego barrel cactus (*Ferocactus viridescens*)	None/None/2B.1/ Covered	183	309	—	**492**
Palmer's grapplinghook (*Harpaganella palmeri*)	None/None/4.2/None	—	381	—	**381**
California box-thorn (*Lycium californicum*)	None/None/4.2/None	Not mapped due to low ranking and prevalence within the project area.			
Small-flowered microseris (*Microseris douglasii* ssp. *platycarpha*)	None/None/4.2/None	Not mapped due to low ranking and prevalence within the project area.			
Ashy spikemoss (*Selaginella cinerascens*)	None/None/4.1/None	Not mapped due to low ranking and prevalence within the project area.			
San Diego County viguiera (*Bahiopsis (=Viguiera) laciniata*)	None/None/4.2/None	Not mapped due to low ranking and prevalence within the project area.			

Source: Appendix B1

Status Legend

Federal

FT: Federally listed as threatened.

State

CE: State listed as endangered.

CRPR: California Rare Plant Rank (previously known as the CNPS List)

1B: Plants rare, threatened, or endangered in California and elsewhere

2B: Plants rare, threatened, or endangered in California, but more common elsewhere

4: Plants of limited distribution – a watch list

Threat Rank

.1 – Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)

.2 – Fairly threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat)

MSCP: Chula Vista MSCP Subarea Plan Covered Species

California Box-Thorn (*Lycium californicum*), CRPR 4.2

California box-thorn is a perennial shrub that blooms December through August and grows in coastal bluff scrub and coastal scrub (CNPS 2016). This species was observed during 2015 surveys in areas where San Diego barrel cactus was abundant; however, due to the species low rare plant rank, exact locations and populations for this species were not recorded.

Otay Tarplant (*Deinandra conjugens*), Federally Threatened, State Endangered, CRPR 1B.1, MSCP Covered, Narrow Endemic

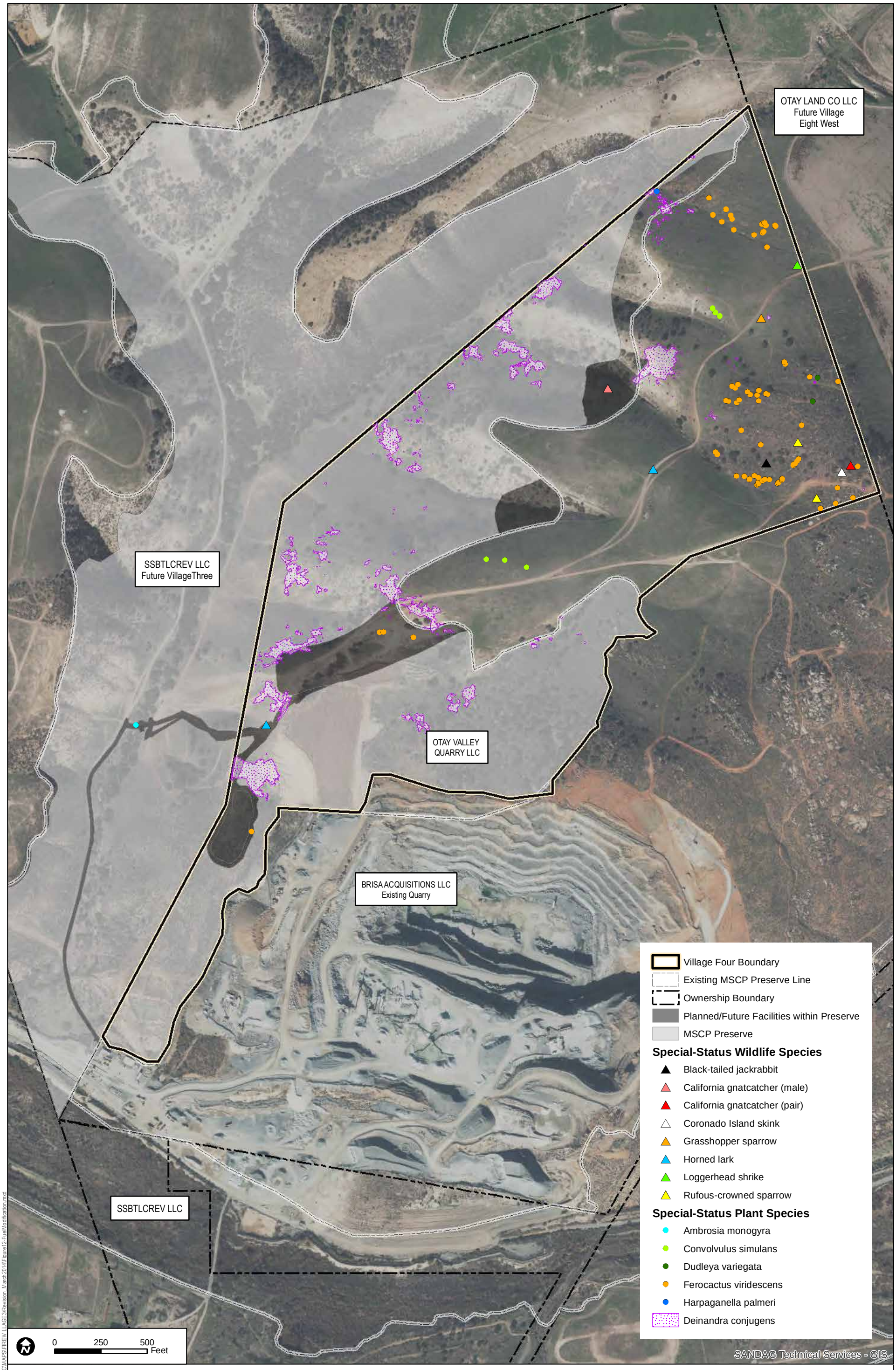
Otay tarplant is an annual herb that blooms May through June and grows in coastal scrub and valley and foothill grassland with clay soils (CNPS 2016). Otay tarplant was mapped within the Village Four project site during the 2015 surveys. It is located abundantly throughout the Village Four project site, with 37,671 individuals within the Preserve (includes 3,082 individuals in the Planned and Future Facilities), and 14,674 individuals within the Development Area, which totals to 52,345 individuals. The Development Area total does not include the 402 individuals located within the take area. A total population of 264 Otay tarplants will be given as a part of the approved Boundary Line Adjustment. However, 227 of those individuals will be impacted by the Planned Facilities; therefore, the net total of individuals given to the Preserve is 37.

Palmer's Grapplinghook (*Harpagonella palmeri*), CRPR 4.2

Palmer's grapplinghook is an annual herb that blooms March through May and grows in chaparral, coastal scrub, and valley and foothill grassland (CNPS 2016). During the 2015 surveys, approximately 381 Palmer's grapplinghook individuals were recorded within the southern portion of the Preserve. Of this 381, there are 100 Palmer's grapplinghook individuals within the Take area that will be included as part of the Village Four Development Area (Appendix B1).

San Diego Barrel Cactus (*Ferocactus viridescens*), CRPR 2B.1, MSCP Covered

San Diego barrel cactus is a perennial stem succulent that blooms May through June and grows in chaparral, coastal scrub, valley and foothill grassland, and vernal pools (CNPS 2016). During the 2015 surveys 183 San Diego barrel cactus individuals were mapped within the Development Area, 13 individuals within the Planned and Future Facilities, and 296 individuals were mapped within the Preserve. This species is located throughout the project site along hillsides and totals to 492 individuals (Appendix B1).



SOURCE:SANDAG IMAGERY

DUDEK

FIGURE 5.3-3

Special-Status Species Map - Village Four Development

Otay Ranch Village Four SPA Plan Environmental Impact Report

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San Diego County Viguiera (*Bahiopsis Viguiera) laciniata*), CRPR 4.2

San Diego County viguiera is a perennial shrub that blooms February through August and grows in chaparral and coastal scrub (CNPS 2016). San Diego County viguiera occurs as a common shrub in some of the coastal sage scrub on site as well as throughout other vegetation communities. This species was observed abundantly throughout the project site during the 2015 surveys, 2,187 individuals were mapped with the Preserve and Planned and Future Facilities; however due to the species low rare plant rank, exact locations and populations for this species were not recorded.

Small-Flowered Morning Glory (*Convolvulus simulans*), CRPR 4.2

Small-flowered morning glory is an annual herb that blooms March through July and grows in openings in chaparral, coastal scrub, and valley and foothill grassland. The species is also associated with clay, serpentinite seeps (CNPS 2016). Approximately 58 individuals were mapped during the 2015 survey efforts, 28 in the Development Area and 30 individuals within the Give area as part of the Planned and Future Facilities. All individuals were recorded within non-native grassland.

Small-Flowered microseris (*Microseris douglasii* ssp. *platycarpha*), CRPR 4.2

Small-flowered microseris is an annual herb that blooms March through May and grows in cismontane woodland, valley and foothill grassland, and vernal pools. The species is associated with clay soils (CNPS 2016). Within the Village Four project site, this species was recorded during the 2015 surveys just above the vernal pools within the Preserve.

Singlewhorl burrobrush (*Ambrosia monogyra*), CRPR 2B.2

Singlewhorl burrobrush is a perennial shrub that blooms August through November and grows in chaparral and Sonoran Desert scrub. The species is associated with sandy soils (CNPS 2016). This species was recorded during the 2010 surveys in the off-site area of the Village Three Preserve (Dudek 2014), this area is part of Village Four project site Planned Facilities.

Variegated Dudleya (*Dudleya variegata*), CRPR 1B.2, MSCP Covered, Narrow Endemic

Variegated dudleya is a perennial herb that blooms April through June and grows in chaparral, cismontane woodland, coastal scrub, valley and foothill grassland with clay soils, and vernal pools (CNPS 2016). Approximately 175 individuals of variegated dudleya were recorded during the 2015 surveys within two areas of coastal sage scrub in the eastern portion of the Village Four Development Area.

Ashy Spikemoss (*Selaginella cinerascens*), CRPR 4.1

Ashy spikemoss is a perennial rhizomatous herb that grows in chaparral and coastal scrub, (CNPS 2016). This species was observed throughout the project site during the 2015 surveys, however due to the species low rare plant rank, locations and populations for this species were not recorded. Additionally, ashy spikemoss grows as a continuous mat, which makes it difficult to know exact numbers.

Special-Status Wildlife Species

Tables G-1 and G-2 in Appendix B1 provides a cumulative list of special-status wildlife species that have potential to occur in the project site based on the literature search. Table G-1 describes the special-status wildlife species that have been observed or have moderate or high potential to occur; Table G-2 describes special-status wildlife species that have low potential or are not expected to occur in the project site. The potential to occur is based on known occurrences in the region, life history, and the general habitat requirements.

Focused surveys of the project site were conducted according to the methods presented in Section 5.3.2 and Appendix B1. Focused surveys for burrowing owl and Quino checkerspot butterfly were conducted within the Village Four boundary and within a small off-site area within the Quarry boundary, whereas focused surveys for California gnatcatcher and the general wildlife survey were only conducted within the Village Four boundary. Special-status wildlife species observed include southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), horned lark (*Eremophila alpestris actia*), coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*), California gnatcatcher (*Polioptila californica*), black-tailed jackrabbit (*Lepus californicus*), San Diego desert woodrat (*Neotoma lepida intermedia*) loggerhead shrike (*Lanius ludovicianus*), and Coronado Island skink (*Plestiodon skiltonianus interparietalis*).

A description of special-status wildlife species observed or detected during surveys is included below. Federally listed and state fully protected species are listed first.

Coastal California Gnatcatcher (*Polioptila californica californica*); Federally Threatened, State Species of Special Concern, MSCP Covered Species

Coastal California gnatcatcher is distributed from eastern Orange and southwestern Riverside Counties south through the coastal foothills of San Diego County and along the coast at Palos Verdes Peninsula. It occurs in low numbers in the San Gabriel and San Bernardino Mountains of Los Angeles and San Bernardino Counties (Zeiner et al. 1990a). Coastal California gnatcatcher is considered an obligate resident of coastal scrub habitat in arid washes, on mesas, and on slopes of coastal hills, and habitat areas dominated by California buckwheat, coastal sagebrush, and prickly pear patches are especially preferred (Zeiner et al. 1990a). Coastal California gnatcatcher

is an insectivorous species that forages by gleaning. Appendix B1 includes the focused survey Coastal California gnatcatcher reports from 2009 and 2015.

Occurrence in Project Site

Two California gnatcatcher pairs and one individual male were observed in the project site during focused surveys. One pair was observed in the Development Area (Figure 5.3-3), one pair and one male were observed in the Village Four Preserve. The individual male was observed within the Planned Facilities area of the Village Four Preserve, while the pair was observed within the non-impacted are of the Village Four Preserve.

There are 92.23 acres of potentially suitable habitat including coastal sage scrub and disturbed coastal sage scrub in the project site: 14.93 acres are located within the Village Four Development Area (includes Take area), 77.30 acres within the Village Four Preserve (includes Give areas, and areas impacted by the Planned and Future Facilities), and 0.25 acre in the off-site areas.

Coronado Island Skink (*Plestiodon skiltonianus interparietalis*); State Species of Special Concern

The range of the Coronado skink subspecies is from inland Southern California, south through the north Pacific coast region of northern Baja California, from sea level to approximately 8,300 feet above mean sea level (Nafis 2015). This reptile typically prefers grassland, woodlands, pine forests, and chaparral, especially in open sunny areas near the edges of creeks, rivers, and clearings. It prefers rocky areas near streams with abundant vegetation, but it is also found in areas away from water (Nafis 2015).

Occurrence in Project Site

Coronado Island skink was observed on the project site. One occurrence was mapped within the Village Four Development Area (Figure 5.3-3). There are 166.41 acres of potentially suitable habitat including all vegetation communities (except for developed and disturbed habitat-rock quarry) in the project site: 65.28 acres are located within the Village Four Development Area (includes Take area), 97.88 acres within the Village Four Preserve (includes Give areas, and areas impacted by the Planned and Future Facilities), and 3.25 acres in the off-site areas.

Cooper's Hawk (*Accipiter cooperii*), State Watch List; MSCP Covered Species

Cooper's hawk inhabits live oak, riparian deciduous, and other forest habitats near water. Nesting and foraging usually occur near open water or riparian vegetation. Nests are built in dense stands with moderate crown depths, usually in second-growth conifer or deciduous riparian areas. Nests in deciduous trees are typically located in crotches 20 to 50 feet above the ground; in conifers, nests are in horizontal branches or the main crotch. Cooper's hawks use

patchy woodlands and edges with snags for perching and hunting small birds, small mammals, reptiles, and amphibians (Zeiner et al. 1990a). Cooper's hawks are diurnally active and year-round residents. Breeding occurs from March through August, with peak activity in May through July. Males defend an area about 330 feet around potential nest sites (Zeiner et al. 1990a).

Occurrence on Project Site

Cooper's hawk was observed in the project site, but was not mapped. There is suitable foraging habitat throughout the project site, but nesting habitat does not readily occur in the project site. This species likely nests in the riparian woodland habitat in the Otay River, located immediately south of the project site.

There are 166.41 acres of potentially suitable foraging habitat including all vegetation communities (except for developed and disturbed habitat-rock quarry) in the project site: 65.28 acres is located within the Village Four Development Area (includes Take area), 97.88 acres within the Village Four Preserve (includes Give areas, and areas impacted by the Planned and Future Facilities), and 3.25 acres in the off-site areas. There are 0.12 acre of potentially suitable nesting habitat located within the Village Four Development Area. There is no habitat located within the Village Four Preserve, or in the off-site areas (Appendix B1).

Southern California Rufous-Crowned Sparrow (*Aimophila ruficeps canescens*); State Watch List, MSCP Covered Species

Southern California rufous-crowned sparrow inhabits mixed chaparral and coastal sage scrub. In California, its range extends southward from Mendocino and Tehama counties; this species is most numerous in the western part of this range (Zeiner et al. 1990a). Southern California rufous-crowned sparrows breed and forage on dry grass and/or forbs on hillsides with scattered shrubs and rock outcrops. Nests are usually made on the ground, at the base of grass tussock or shrubs. It is a year-round resident and diurnally active, eating mostly insects and spiders during the breeding season and seeds, grass, and forb shoots throughout the year. It breeds from mid-March to mid-June with a peak in May. In Southern California coastal sage scrub, the average sized territory is approximately 2 acres (Zeiner et al. 1990a).

Occurrence on Project Site

Southern California rufous-crowned sparrow was observed on the project site. There are two observations in the Village Four Development Area (Figure 5.3-3) and one observation in the Village Four Preserve.

There are 161.59 acres of potentially suitable habitat including, coastal sage scrub (including disturbed), desert saltbush scrub, maritime succulent scrub, non-native grassland and 55.51 acres

of "not mapped" Preserve lands on the project site: 64.08 acres are located within the Village Four Development Area (includes Take area), 95.10 acres within the Village Four Preserve (includes Give areas, and areas impacted by the Planned and Future Facilities), and 2.41 acres in the off-site areas (Appendix B1).

Grasshopper Sparrow (*Ammodramus savannarum*); State Species of Special Concern

The grasshopper sparrow is a neotropical migrant that breeds throughout the eastern two-thirds of the United States, except for the extreme southeast (Vickery 1996). In California, birds observed during the winter in breeding areas may be residents or winter migrants (Unitt 2008). Its breeding range in California includes Humboldt, Del Norte, Mendocino, Trinity, and Tehama Counties in the north; areas west of the Cascade and Sierra Nevada ranges; and south to San Diego County (Unitt 2008). The grasshopper sparrow uses dense, dry, or well-drained grassland, especially native grassland with a mix of grasses and forbs for foraging and nesting, and requires fairly continuous native grassland areas with occasional taller grasses, forbs, or shrubs for song perches (Garrett and Dunn 1981; Unitt 2008). Grasshopper sparrows feed primarily on insects in the summer and grass and forb seeds in winter (Vickery 1996). Grasshopper sparrows breed from early April to mid-July, with a peak in May and June. Clutch size is four to five eggs that incubate in 11 to 12 days (Harrison 1978).

Occurrence in Project Site

There is one observation of grasshopper sparrow within the Village Four Development Area (Figure 5.3-3). There are 122.35 acres of potentially suitable habitat including, non-native grassland and 55.51 acres of "not mapped" Preserve lands in the project site: 48.88 acres are located within the Village Four Development Area (includes Take area), 71.31 acres within the Village Four Preserve (includes Give areas, and areas impacted by the Planned and Future Facilities), and 2.16 acres in the off-site areas.

Coastal Cactus Wren (*Campylorhynchus brunneicapillus sandiegensis*); USFWS Birds of Conservation Concern, State Species of Special Concern, MSCP Covered Species

Coastal cactus wren is a locally common resident in the Mojave and Colorado Deserts, from Mexico to Inyo and Kern Counties. The coastal subspecies is found in arid parts of Southern California's westward-draining slopes. The coastal cactus wren occurs in desert succulent shrub, Joshua tree, and desert wash habitats. It forages for insects, spiders, other small invertebrates, cactus fruits, other fruits, nectar, and seeds. The coastal cactus wren breeds from March to June, commonly with two broods per season and four to five eggs per clutch (Zeiner et al. 1990a).

Occurrence on Project Site

A single coastal cactus wren individual was recorded within the Village Four Preserve (outside the give and take areas) and in northern portions of Wolf Canyon outside of the Village Four boundary. While there is no cactus scrub mapped out as a separate vegetation community, cactus scrub patches occur within the maritime succulent scrub and portions of the Preserve Areas that are not mapped. There are 57.73 acres of potentially suitable habitat including, maritime succulent scrub (2.22 acres) and 55.51 acres of "not mapped" Preserve lands on the project site: 0.27 acre is located within the Village Four Development Area (includes Take area) and 57.46 acres is within the Village Four Preserve (includes Give areas, and areas impacted by the Planned and Future Facilities).

California Horned Lark (*Eremophila alpestris actia*); State Watch List

California horned lark inhabits grasslands and other open habitats with low, sparse vegetation, such as open desert scrub and alpine dwarf-shrub habitat. It is occasionally found in coniferous or chaparral habitats. California horned larks nest in depressions on the ground and feed on insects, snails, and spiders during breeding season, adding grass and forb seeds in other seasons. California horned larks are yearlong residents in lowland areas throughout California, except the northern coastal area. The Eastern Sierras also provide habitat in summer, with most birds in these montane habitats moving down slope in the winter. Winter migrants from out of state may join flocks in the southeastern deserts. Horned larks breed from March through July, with peak activity in May (Zeiner et al. 1990b).

Occurrence in Project Site

California horned lark was observed on the project site. There were four observations in the Village Four Development Area (Figure 5.3-3) and three observations in the Village Four Preserve.

There are 122.39 acres of potentially suitable habitat including, desert saltbush scrub, non-native grassland, and 55.51 acres of "not mapped" Preserve lands in the project site: 48.88 acres are located within the Village Four Development Area (includes Take area), 71.35 acres within the Village Four Preserve (includes Give areas, and areas impacted by the Planned and Future Facilities), and 2.16 acres in the off-site areas.

Loggerhead Shrike (*Lanius ludovicianus*); USFWS Birds of Conservation Concern, State Species of Special Concern

The loggerhead shrike is widespread throughout the United States, Mexico, and portions of Canada (Humple 2008). While shrikes are widespread at the lower elevations in California, the largest breeding populations are located in portions of the Central Valley, the Coast Ranges, and the southeastern deserts (Humple 2008). Preferred habitats for the loggerhead shrike are open areas that include scattered shrubs, trees, posts, fences, utility lines, or other structures that

provide hunting perches with views of open ground, as well as nearby spiny vegetation or man-made structures that provide a location to impale prey items for storage or manipulation, such as the top of chain-link fences or barbed wire (Humple 2008). For nesting, the height of shrubs and presence of canopy cover are most important (Yosef 1996). Loggerhead shrikes prey mainly on arthropods (primarily grasshoppers, crickets, beetles, and caterpillars); they also take reptiles, amphibians, fish, small birds, and rodents (Humple 2008). In California, they lay four to eight eggs from March into May (Yosef 1996).

Occurrence in Project Site

There is one observation of loggerhead shrike in the Village Four Development Area (Figure 5.3-3). There are 161.70 acres of potentially suitable habitat including, coastal sage scrub (including disturbed), desert saltbush scrub, maritime succulent scrub, non-native grassland, tamarisk scrub, and 55.51 acres of "not mapped" Preserve lands on the project site: 64.19 acres is located within the Village Four Development Area (includes Take area), 95.10 acres is within the Village Four Preserve (includes Give areas, and areas impacted by the Planned and Future Facilities), and 2.41 acres is in the off-site areas.

San Diego Black-Tailed Jackrabbit (*Lepus californicus bennettii*); State Species of Special Concern

San Diego black-tailed jackrabbit is found in coastal scrub and chaparral areas in the San Diego, Riverside, San Bernardino, and Los Angeles Counties (Zeiner et al. 1990b). The San Diego black-tailed jackrabbit is herbivorous, grazes on grasses and forbs, and uses shrubs for cover (Zeiner et al. 1990b). San Diego black-tailed jackrabbit breeds throughout the year, and young are born beneath vegetation (Zeiner et al. 1990b). A litter of three to four offspring is produced four times throughout the year, depending on environmental conditions (Zeiner et al. 1990b).

Occurrence in Project Site

San Diego black-tailed jackrabbit was observed in the project site. One observation was recorded in the Village Four Development Area; however, this species likely uses much of the project site (Figure 5.3-3).

There are 166.24 acres of potentially suitable habitat including coastal sage scrub (including disturbed), desert saltbush scrub, maritime succulent scrub, non-native grassland, tamarisk scrub, unvegetated channel, disturbed habitat and 55.51 acres of "not mapped" Preserve lands in the project site: 65.28 acres is located within the Village Four Development Area (includes Take area), 97.71 acres is within the Village Four Preserve (includes Give areas, and areas impacted by the Planned and Future Facilities), and 3.25 acres is in the off-site areas.

San Diego Desert Woodrat (*Neotoma lepida intermedia*); State Species of Special Concern

San Diego desert woodrat is found in coastal Southern California into Baja California, Mexico (Reid 2006). Marginal eastern records for the San Diego desert woodrat in the United States include San Luis Obispo, San Fernando in Los Angeles County, the San Bernardino Mountains and Redlands in San Bernardino County, and Julian in San Diego County (Hall 1981). Desert woodrats are found in a variety of shrub and desert habitats and are primarily associated with rock outcroppings, boulders, cacti, or areas of dense undergrowth.

Occurrence in Project Site

San Diego desert woodrat sign was observed in the project site, but its location was not mapped. There are 94.86 acres of potentially suitable habitat including coastal sage scrub (including disturbed), desert saltbush scrub, maritime succulent scrub, tamarisk scrub, and 55.51 acres of "not mapped" Preserve lands in the project site: 15.31 acres is located within the Village Four Development Area (includes Take area), 79.30 acres is within the Village Four Preserve (includes Give areas and areas impacted by the Planned and Future Facilities), and 0.25 acres is in the off-site areas.

Mule Deer (*Odocoileus hemionus*); MSCP Covered Species

Mule deer is a common species with a widespread distribution throughout the western United States and Canada and south into mainland and Baja California, Mexico (Hall 1981). It occurs throughout most of California, except in deserts and intensively farmed areas without cover (Zeiner et al. 1990b). Throughout its range, mule deer uses coniferous and deciduous forests, riparian habitats, desert shrub, coastal scrub, chaparral, and grasslands with shrubs. It is often associated with successional vegetation, especially near agricultural lands (NatureServe 2015). It uses forested cover for protection from the elements and open areas for feeding (Wilson and Ruff 1999). Mule deer fawn in a variety of habitats that have available water and abundant forage, including moderately dense shrubs and forests, dense herbaceous stands, and higher-elevation riparian and mountain shrub vegetation.

Occurrence in Project Site

Direct mule deer observations as well as detection of mule deer sign (scat and tracks) were observed in the project site, but the locations were not mapped. It is expected that this species utilizes the entire project site, however off-road activities within the proposed Development Area likely limit use to Preserve areas. There are 166.41 acres of potentially suitable habitat including all vegetation communities (except for developed and disturbed habitat-rock quarry) in the project site: 65.28 acres is located within the Village Four Development Area, 97.88 acres within

the Village Four Preserve (includes Give areas, and areas impacted by the Planned and Future Facilities), and 3.25 acres in the off-site areas.

Special-Status Species for Which Surveys Were Negative

Quino Checkerspot Butterfly. Based on habitat and host plants observed in the project site, Quino checkerspot butterfly has a high potential to occur within the project site. However, no Quino checkerspot were observed during the 2015 Quino checkerspot focused survey on the project site either within the Development Area or within the portion of the Preserve surveyed (see Appendix B1). Based on the review of the USFWS website reporting observations of Quino checkerspot and based on the observation of other co-occurring butterfly species, the conditions and timing were appropriate for the survey. USFWS and CNDDB records include occurrences approximately 0.5 mile from the western boundary of the project site along the Otay River in the Otay Valley south of Lower Otay Reservoir (CDFW 2016; USFWS 2016). During the 2015 Quino checkerspot butterfly focused survey (Appendix B1), the location and size of host plants was recorded. Patches or individuals of the host plant dot-seed plantain (*Plantago erecta*) were recorded in the Village Four Development Area and Preserve. The narrow southwestern portion of the Village Four Preserve supports the majority of the dot-seed plantain mapped during the 2015 survey (see Appendix B1). The take area within the boundary adjustment area is described in the focused survey report as highly disturbed and dominated by non-native grassland that includes mustard and thistle species. The portions of the off-site development within Village Three were not surveyed due to lack of site access from the land owner and the generally unsuitable condition of the habitat with much of the area mapped as grassland affected by off-road activity and dominance of weedy species. The alignment proposed within Wolf Canyon is almost entirely within an existing roadway with very minor impacts to vegetation currently proposed.

Burrowing Owl. Based on habitat and occurrence data, there is a moderate potential for burrowing owl to occur within the project site in both the Development Area and Preserve and portions of the off-site areas. There are two CNDDB occurrences (presumed extant) from 2003 approximately 0.5 mile and 1 mile to the east of the Village Four project site (CDFW 2016). Although there is suitable habitat within the project site in both the Development Area and Preserve and portions of the off-site areas, no burrowing owls were detected during focused surveys for this species conducted on Village Four Development Area and portions of the Preserve in 2015.

Special-Status Wildlife Species with Potential to Occur

Other special-status wildlife species that have moderate or high potential to occur are described in Table G-1 in Appendix B1. Other special-status bird species that may occur within the Village Four Development Area (excludes Preserve) include raptors utilizing the site for foraging and some scrub and grassland bird species. These potentially occurring special-status bird species

include golden eagle (*Aquila chrysaetos*), Bell's sage sparrow (*Amphispiza belli belli*), burrowing owl (*Athene cunicularia*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucruus*), and American peregrine falcon (*Falco peregrinus anatum*).

Several special-status reptile that may occur within the Village Four Development Area include silvery legless lizard (*Anniella pulchra pulchra*), orange-throated whiptail (*Aspidoscelis hyperythra*), San Diegan tiger whiptail (*Aspidoscelis tigris stejnegeri*), red diamondback rattlesnake (*Crotalus ruber*), San Diego ring-necked snake (*Diadophis punctatus similis*), Blainville's horned lizard (*Phrynosoma blainvillii*), Coronado Island skink (*Plestiodon skiltonianus interparietalis*), and coast patch-nosed snake (*Salvadora hexalepis virgultea*). An amphibian, the western spadefoot (*Spea hammondi*), also has a moderate potential to occur in the Village Four Development Area.

Special-status mammals that may occur within the Village Four Development Area include pallid bat (*Antrozous pallidus*), Dulzura pocket mouse (*Chaetodipus californicus femoralis*), northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), Mexican long-tongued bat (*Choeronycteris mexicana*), Townsend's big-eared bat (*Corynorhinus townsendii*), western mastiff bat (*Eumops perotis californicus*), western red bat (*Lasiurus blossevillii*), western yellow bat (*Lasiurus xanthinus*), pocketed free-tailed bat (*Nyctinomops femorosaccus*), big free-tailed bat (*Nyctinomops macrotis*), cougar (*Puma concolor*), and American badger (*Taxidea taxus*).

One special-status invertebrates may occur within the Village Four Development Area: Quino checkerspot butterfly.

Sensitive Vegetation Communities

Sensitive habitats are those that are considered rare within the region, support special-status plant and/or wildlife species, or are important to provide connections for wildlife movement. The City defines sensitive biological resources as those that contain natural vegetation, identified as Tier I, II, or III in Table 5-3 of the Chula Vista MSCP Subarea Plan (City of Chula Vista 2003) and/or wetlands. Habitat types found on the project site that are considered sensitive include cismontane alkali marsh (including disturbed), coastal sage scrub (including disturbed), maritime succulent scrub (including disturbed), non-native grassland, mixed riparian, and tamarisk scrub (Table 5.3-1; Figure 5.3-1).

Cismontane Alkali Marsh

Cismontane alkali marsh is considered a sensitive vegetation community by the Chula Vista MSCP Subarea Plan because it supports species that are covered under the plan and because of its function as a wetland community under the Subarea Plan (City of Chula Vista 2003). Cismontane alkali marsh often supports rare plant species and contributes to nutrient retention and transformation of water. Due to its wetland function, this habitat type is considered a wetland/riparian habitat under the jurisdiction of ACOE, RWQCB, and/or CDFW.

Coastal Sage Scrub

Coastal sage scrub (and disturbed coastal sage scrub) is considered a sensitive vegetation community by the Chula Vista MSCP Subarea Plan because it supports species that are covered under the plan (City of Chula Vista 2003). In addition, it may support the federally listed threatened coastal California gnatcatcher and federally listed endangered Quino checkerspot butterfly. Many other federal, state, or regionally recognized sensitive plant and wildlife species may occur in coastal sage scrub. Oberbauer et al. (2008) estimated the historical loss of coastal sage scrub in San Diego County at approximately 72%. The primary cause for this loss has been agriculture, grazing, and, more recently, urban development.

Maritime Succulent Scrub

Maritime succulent scrub (including areas mapped as disturbed maritime succulent scrub) is considered a sensitive vegetation community by the Chula Vista MSCP Subarea Plan because it supports species that are covered under the plan, such as coastal cactus wren (City of Chula Vista 2003).

Non-Native Grassland

Non-native grassland is generally considered sensitive by the Chula Vista MSCP Subarea Plan because it supports species that are covered under the plan (City of Chula Vista 2003). The sensitivity of this community is based on its function as foraging habitat for several wildlife species, including raptors, as well as its function as resident habitat for special-status species, such as loggerhead shrike, horned lark, and burrowing owl.

Tamarisk Scrub

Tamarisk scrub is considered a sensitive vegetation community by the Chula Vista MSCP Subarea Plan because it supports species that are covered under the plan and because of its function as a wetland community under the Subarea Plan (City of Chula Vista 2003). In addition, this vegetation community is regulated by CDFW as riparian habitat.

Jurisdictional Resources

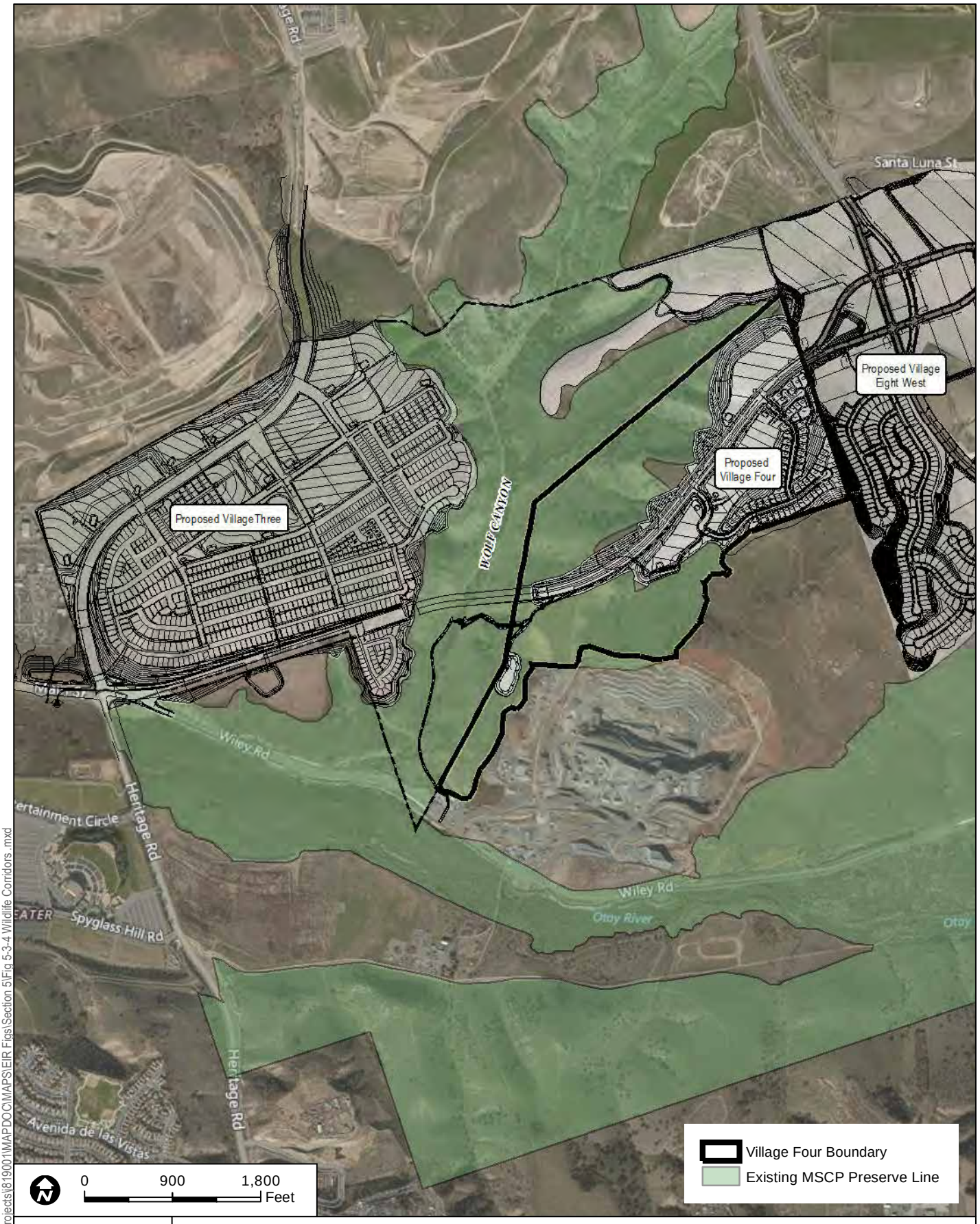
Several open ephemeral drainages occur throughout the Development Area and the Preserve. These drainages are considered waters of the United States and waters of the State of California under jurisdiction of the ACOE, RWQCB, and CDFW and are regulated by the City under the Chula Vista MSCP Subarea Plan Wetlands Protection Program (City of Chula Vista 2003). Several of the drainages flow into the Otay River either directly, through Wolf Canyon, or via groundwater or sheet flow.

Wildlife Corridors and Habitat Linkages

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the immigration and emigration of animals. Wildlife corridors contribute to population viability in several ways: (1) they allow the continual exchange of genes between populations, which helps maintain genetic diversity; (2) they provide access to adjacent habitat areas, representing additional territory for foraging and mating; (3) they allow for a greater carrying capacity of wildlife populations by including "live-in" habitat; and (4) they provide routes for recolonization of habitat lands following local population extinctions or habitat recovery from ecological catastrophes (e.g., fires) (Appendix B1).

Habitat linkages are patches of native habitat that function to join two substantially larger patches of habitat. They serve as connections between distinct habitat patches and help reduce the adverse effects of habitat fragmentation. Although individual animals may not move through a habitat linkage, the linkage does represent a potential route for gene flow and long-term dispersal. Habitat linkages may serve both as habitat and as avenues of gene flow for small animals, such as reptiles and amphibians. Habitat linkages may be represented by continuous patches of habitat or by nearby habitat "islands" that function as "stepping-stones" for dispersal.

The Otay River provides a major wildlife corridor for not only the Otay Ranch but for the entire South Bay region. As such, the Preserve areas of Otay Ranch make a major contribution to that regional wildlife movement. The Village Four Preserve is adjacent to the Otay Ranch Preserve areas around Wolf Canyon, which connects to the Otay River (Figure 5.3-4). The Village Four Preserve contains upland habitat that provides ecotonal contributions to the surrounding Otay Ranch Preserve areas. Coastal California gnatcatchers and other upland species use this Preserve area as live-in habitat but are also provided a conduit for movement within the Otay River Valley south of the project site, which is composed of a mosaic of riparian and upland biological resources. While the existing extension of Main Street (Wiley Road) bisects the upland habitat to the north, separating it from habitat within the Otay River, at current use levels, the road does not preclude wildlife movement (including by bird and mammal species) between the upland and riparian areas.



Document Path: Z:\Projects\819001\MAPDOC\MAPS\EIR Figs\Section 5\Fig 5-3-4 Wildlife Corridors .mxd

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AERIAL SOURCE: BING MAPPING SERVICE

FIGURE 5.3-4

Wildlife Corridors

Otay Ranch Village Four SPA Plan Environmental Impact Report

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The wildlife corridor study prepared by Ogden (1992) concluded that Wolf Canyon, located between the Development Areas of Village Three North and Village Four, functions as a local corridor for mammal species, including mule deer, and as a regional connection for coastal California gnatcatchers and coastal cactus wrens located in Wolf Canyon. Currently, Wolf Canyon does not link two or more patches of habitat, which, by definition, is required of a corridor. According to the Ogden study, for Wolf Canyon to function even as an avian connection, one or two of the low passes that connect Poggi Canyon with Wolf Canyon would have required revegetation. Because of the lack of connection between Poggi and Wolf Canyons due to recent development, Wolf Canyon does not function as a habitat linkage or wildlife corridor. However, as the focused surveys for coastal California gnatcatcher have documented, Wolf Canyon provides live-in habitat for coastal sage scrub species and ecotonal function due to the drainage located in the bottom of the canyon. Movement of wildlife within the Preserve located adjacent to Wolf Canyon connects to the south to the regional Preserve corridor in the Otay River Valley.

There is undeveloped land to the west (Wolf Canyon), to the east continuing past SR-125, and to the north for approximately 0.3 mile until the residential development. Since it is undeveloped, Village Four currently allows general wildlife movement across the entire site including the Development Area. However, habitat that provides more substantial shelter for wildlife is within the Preserve areas on the western and northwestern slopes, which connect to Wolf Canyon.

5.3.2 Methodology

Literature Review

Sensitive biological resources present or potentially present on the project site were identified through a literature search using the following sources: USFWS 2016, CDFW 2016, and CNPS's Inventory of Rare and Endangered Plants (CNPS 2016). Consultant-generated data sources include information from previous surveys conducted by Dudek in support of the Otay Valley Quarry Reclamation Plan Amendment Environmental Impact Report (Quarry project) (City of Chula Vista 2011), updated focused surveys are shown in Table 5.3-6. Resource mapping for the off- site sewer/storm drain alignment was obtained from the Biological Technical Report for the Otay Ranch University Villages Project (Dudek 2014).

Field Reconnaissance

Surveys for the proposed project site were initiated in 2008 in conjunction with the Quarry project located south of Village Four. All previous surveys conducted within the Village Four Development Area, the Boundary Line Adjustment Area, and Preserve areas associated with Planned and Future Facilities (i.e., Village Four Survey Area) were updated in 2014/2015 by Dudek to include current mapping of biological resources and special-status species. In addition, focused surveys for quino checkerspot butterfly were conducted. Surveys within the Preserve

areas of Village Four, outside of the Boundary Line Adjustment Area and planned and future facilities, were not updated in 2014/2015. Surveys for Otay tarplant (*Deinandra conjugens*), a narrow endemic plant species, were conducted in 2017 for all parts of the project area including the development area, preserve area, Planned and Future facilities (on-site and off-site). Thus all project areas associated with Otay tarplant were surveyed in the same year under good rainfall conditions. A summary of surveys that have been conducted on the project site is provided in Table 5.3-6. Surveys were conducted on foot and in accordance with focused survey guidelines where applicable. Focused surveys were not conducted for the off-site areas within Wolf Canyon (except for the 2017 Otay tarplant survey) and the Quarry. Instead, existing data from the University Villages Project (Dudek 2014) and Otay Valley Quarry Reclamation Plan Amendment Environmental Impact Report (Quarry project) (City of Chula Vista 2011) was utilized to determine impacts for the off-site portion located within Village Three. Detailed information regarding surveys is found in Appendix B1.

Table 5.3-6
Schedule of Surveys for Village Four Project Site

Date	Hours	Personnel*	Village Four Project Survey Area	Conditions
Quino Checkerspot Butterfly Habitat Assessment and Protocol Surveys				
February through May 2015	varied	EB, PCS, JDP, CJF, PML, MP	Village Four Survey Area	Varied (see focused survey report)
Burrowing Owl Habitat Assessment and Survey				
7/29/09	0900–1600	SF, CEO		70–85°F, 40%–0% cc, 1–8 mph winds
4/14/2015	0540–1040	MP	Pass 1– North Village Four Survey Area	56–72°F, 0% cc, 0–2 mph winds
4/15/2015	0530–1030	MP	Pass 1– South Village Four Survey Area`	56–67°F, 0% cc, 0 mph winds
5/6/2015	0600–1000	KMS	Pass 2– North Village Four Survey Area	60–74°F, 100% cc, 0–1 mph winds
5/7/2015	0605–1000	KMS	Pass 2– South Village Four Survey Area	56–64°F,85–10 0% cc, 3–10 mph winds
5/28/2015	0605–1025	KMS	Pass 3– North Village Four Survey Area	60–65°F,100% cc, 1–5 mph winds
5/29/2015	0605–0950	KMS	Pass 3– South Village Four Survey Area	58–70°F, 100–10% cc, 0–3 mph winds
6/25/2015	0545–1045	MP	Pass 4– North Village Four Survey Area	62–75°F, clear, 0–3 mph winds
6/26/2015	0600–1000	MP	Pass 4– South Village Four Survey Area	60–72°F, 0–10% cc, 0–2 mph winds
California Gnatcatcher Surveys				
7/10/09	0605–1145	AMH	Entire Project Site	67–78°F; 95%–0% cc; 0–3 mph winds
7/17/09	0740–1200	JDP	Entire Project Site	68–85°F; 70%–5% cc; 0–10 mph winds

Table 5.3-6
Schedule of Surveys for Village Four Project Site

Date	Hours	Personnel*	Village Four Project Survey Area	Conditions
7/17/09	0745–1200	TWP	Entire Project Site	68–81°F; 70%–5% cc; 0–10 mph winds
7/24/09	0800–1130	TWP	Entire Project Site	70–80°F; 100%–5% cc; 0–2 mph winds
7/28/09	0815–1150	PML	Entire Project Site	74–81°F; 0% cc; 0–5 mph winds
7/24/09	0710–1230	JDP	Entire Project Site	70–80°F; 100%–5% cc; 0–2 mph winds
7/31/09	0830–1200	TWP	Entire Project Site	70–80°F; 45%–0% cc; 1–6 mph winds
7/31/09	0800–1215	JDP	Entire Project Site	70–80°F; 60%–0% cc; 1–6 mph winds
8/7/09	0645–1315	JDP	Entire Project Site	70–76°F; 90%–10% cc; 0–8 mph winds
4/17/2015	0615–1015	JDP	Pass 1 – Village Four Survey Area	55–78°F, 0% cc, 0–4 mph winds
4/28/2015	0600–1000	JDP	Pass 2 – Village Four Survey Area	60–84°F, 0% cc, 1–4 mph winds
5/6/2015	0900–1200	JDP	Pass 3 – Village Four Survey Area	67–69°F, 100% cc, 0–3 mph winds
General Wildlife Survey				
7/16/15	0930–1230	JDP	Entire Project Site	76–79 F, 0% cc, 2–6 mph winds
Vegetation Mapping				
9/16/2008	0800–1600	ACT, KCD	Entire Project Site	75°F, clear, 2–4 mph winds
9/23/2008	0800–1400	ACT, KCD	Entire Project Site	65°F, clear, 0–4 mph winds
April 2014	0800–1300	ACT	Entire Project Site	Not recorded, 80% cc, 0–2 mph winds
2/20/15	0900–1000	PCS	Preserve Area and Otay Quarry	67–82°F, 100–70% cc, 1–5 mph winds
Jurisdictional Delineation				
3/27/2008	0900–1700	JMH	Entire Project Site and Otay Quarry	Not recorded
4/8/2008	0900–1300	JMH	Entire Project Site and Otay Quarry	Not recorded
4/9/2008	0900–1200	JMH	Entire Project Site and Otay Quarry	Not recorded
12/19/2014	0820–1400	EW, EB	Village Four Survey Area	52–65°F, 0–40% cc, 0–3 mph winds
Rare Plant Survey				
July and August 2009	0800–1800	ACT, JMH, PCS, CEO	Entire Project Site	Not recorded
3/16/2015	0900–1600	KCD, EB	Pass 1– South Village Four Survey Area	72–82°F, 80–30% cc, 1–5 mph winds
3/30/2015	0900–1420	KCD, EB	Pass 1– North Village Four Survey Area	60–79°F, 60–0% cc, 0–1 mph winds
4/21/2015	0820–1620	CJF, EB	Pass 2– South Village Four Survey Area	65°F, 35% cc, 3 mph winds
4/23/2015	0900–1620	CJF, EB	Pass 2– North Village Four Survey Area	62–60°F, 100% cc, 0–2 mph winds
Otay Tarplant and Project Area Verification Survey				
5/22/2017	0800-1300	ACT	Compensation areas and reference population	Not recorded

Table 5.3-6
Schedule of Surveys for Village Four Project Site

Date	Hours	Personnel*	Village Four Project Survey Area	Conditions
5/22/2017	0700-1700	ME, JS, KMS, SC, SV, KL, SB	Development, Planned and Future Facilities, Preserve	Not recorded
5/23/2017	0700-1730	KCD, MO, JW, KMS, JS, RD	Development, Planned and Future Facilities, Preserve	Not recorded
5/30/2017	0800-1000	MO	Off-site areas, project area verification survey	Not recorded

Source: Appendix B1

*** Personnel Key:**

ACT Andy Thomson
AMH Anita M. Hayworth, Ph.D.
CEO Chris Oesch
CJF Callie Ford
JDP Jeff Priest
SC Shana Carey
JW Janice Wondoleck
EB Erin Bergman
EW Emily Wier
JMH J. Mike Howard
KCD Katie Dayton
KMS Kevin Shaw
JS Jeremy Sison
SB Shannon Baer
KL Katie Laybourn
SV Sienna Joshi
ME Megan Enright
MO Monique O'Conner
RD Randy Deodat
MP Marshall Paymard
PCS Patricia Schuyler
PML Paul Lemons
SF Stuarrt Fraiser
TWP Tricia Wotipka-Priest

Resource Mapping

Vegetation mapping included identifying all plant communities present and mapping them in the field directly onto a 100-scale (1 inch = 100 feet) color aerial photograph (Bing 2014; Digital Globe 2008; Google Earth 2015). Following completion of the fieldwork, all vegetation polygons were transferred to a topographic base and digitized using ArcGIS and a geographic information system (GIS) coverage was created. Once in ArcGIS, the acreage of each vegetation community and land cover present within the project site was determined. Based on the length of time since surveys were previously conducted on the property, the Village Four Development Area was visited in 2014 to revise the vegetation mapping and/or confirm the site conditions. Portions of the Otay Quarry and Village Four Preserve areas were mapped in 2015. Both Village Four and the Otay Quarry were reviewed in May 2017 to verify that onsite conditions had not changed. Resource mapping for the sewer/storm drain alignment within Village Three was obtained from the Biological Technical Report for the Otay Ranch University Villages Project (Dudek 2014).

Plant community classifications used in this report follow Oberbauer et al. (2008), with modifications to accommodate the lack of conformity of the observed communities to those of Oberbauer et al. Because of past and current land uses, portions of native plant communities within the Village Four project site are in a disturbed state. As such, visual estimations of vegetative cover were used to distinguish vegetation communities, based on Oberbauer et al. (2008). Areas that supported less than 20% native shrubs are mapped as non-native grasslands (if dominated by non-native grasses), or disturbed land (if dominated by non-native herbs or lacking vegetation). Native shrub communities are mapped based on constituent species (as described

per community below). Where shrub cover is between 20% and 50%, and the remaining portion is dominated by non-native grasses or forbs, the community is designated as disturbed. Native grasslands are mapped where native grass species occupy at least 10% of the total cover.

Flora

All plant species encountered during the field surveys were identified and recorded. For those species that could not be identified immediately, samples suitably sized for identification were brought into the laboratory for further investigation. Latin and common names for plant species with a California Rare Plant Rank (CRPR; formerly CNPS List) follow the *California Native Plant Society Online Inventory of Rare, Threatened, and Endangered Plants of California* (CNPS 2016). For plant species without a CRPR, Latin names follow the *Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California* (Jepson Flora Project 2016), and common names follow the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service Plants Database (USDA 2016). The list of plant species observed on site is presented in Appendix B1.

Fauna

Wildlife species detected during field surveys by sight, calls, tracks, scat, or other signs were recorded. Wildlife surveys were conducted as summarized in Table 5.3-6. Binoculars (8 mm x 32 mm or 10 mm x 50 mm power) were used to identify observed animals. In addition to species actually observed, expected wildlife use of the project site was determined by known habitat preferences of local species and knowledge of their range and relative distributions in the area. A list of animal species observed or detected on site is presented in Appendix B1.

Latin and common names of animals follow Crother (2012) for reptiles and amphibians, American Ornithologists' Union (AOU) (2016) for birds, Wilson and Reeder (2005) for mammals, and North American Butterfly Association (NABA) (2001) or San Diego Natural History Museum (2002) for butterflies.

Jurisdictional Aquatic Resources

Features that convey or hold water are regulated by multiple agencies. Federal, state, and local agencies have different definitions and terminology for these types of features. Hereinafter in this document, water-dependent resources regulated by the ACOE, RWQCB, CDFW, and City will be collectively referred to as jurisdictional aquatic resources. A jurisdictional delineation for the proposed project site, excluding off-site areas, was conducted in March and April 2008 by Dudek biologist Mike Howard. To reflect current site conditions associated with planned development and the Boundary Line Adjustment Area, the delineation was updated in December 2014 by Dudek biologists Emily Weir and Erin Bergman. Ms. Wier and Ms. Bergman delineated the extent of jurisdictional aquatic resources within the Village Four Survey Area as previously

defined This delineation did not cover off-site areas. Based on previous surveys, off-site areas associated with the Quarry were determined to not contain jurisdictional resources. Jurisdictional boundaries were mapped in the field using a Trimble GeoXT GPS with submeter accuracy. The delineation defined areas under the jurisdiction of the CDFW, pursuant to Sections 1600–1603 of the California Fish and Game Code; the U.S. Army Corps of Engineers (ACOE), pursuant to Section 404 of the federal Clean Water Act; and the Regional Water Quality Control Board (RWQCB), pursuant to Clean Water Act Section 401 and the Porter-Cologne Act. Jurisdictional resource mapping for the sewer/storm drain alignment within Village Three was obtained from the Biological Technical Report for the Otay Ranch University Villages Project (Dudek 2014).

The methodology used for each jurisdiction or regulating agency (ACOE, CDFW, and RWQCB) is described as follows. The ACOE wetlands delineation was performed in accordance with the 1987 *U.S. Army Corps of Engineers Wetlands Delineation Manual* (ACOE 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid West Supplement) (ACOE 2008a), *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual* (ACOE 2008b) and guidance provided by the ACOE and Environmental Protection Agency (EPA) on the geographic extent of jurisdiction based on the U.S. Supreme Court's interpretation of the Clean Water Act (ACOE and EPA 2008). The ACOE and RWQCB jurisdictional areas, pursuant to the federal Clean Water Act, include all areas supporting the three wetlands criteria described in the ACOE manual: hydric soils, hydrology, and hydrophytic vegetation. Jurisdiction of the RWQCB is coincident with the ACOE in accordance with the federal Clean Water Act, except in cases where a resource is determined to be isolated from navigable waters of the United States and where the RWQCB may take jurisdiction under the Porter-Cologne Act. The RWQCB may also take jurisdiction over surface waters lacking ACOE regulation, pursuant to the Porter-Cologne Act. These areas generally include areas with at least one of the three wetlands indicators but isolated from a tributary of navigable water through lack of evidence of surface water hydrology. A predominance of hydrophytic vegetation, where associated with a stream channel, was used to determine CDFW-regulated riparian areas. Streambeds under the jurisdiction of CDFW were delineated using the Cowardin method of waters classification (Cowardin et al. 1979), which defines waters boundaries by a single parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology).

To assist in the determination of jurisdictional areas within the project site, data were collected at five sampling points (Appendix B1). Hydrology, vegetation, and soils were assessed and sampling data were collected on approved ACOE forms. The site was evaluated for evidence of an ordinary high water mark, surface water, saturation, wetland vegetation, and nexus to a traditional navigable water. The extent of jurisdictional aquatic resources was determined by mapping the areas with similar vegetation and topography to sampled locations.

5.3.3 Thresholds of Significance

Would the proposed project:

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

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

C. Have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

D. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

E. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

F. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?

G. Be inconsistent with General Plan biological resource policies thereby resulting in a significant physical impact?

5.3.4 Impacts

A. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Wildlife Service.

Direct Impacts

Special-Status Plant Species

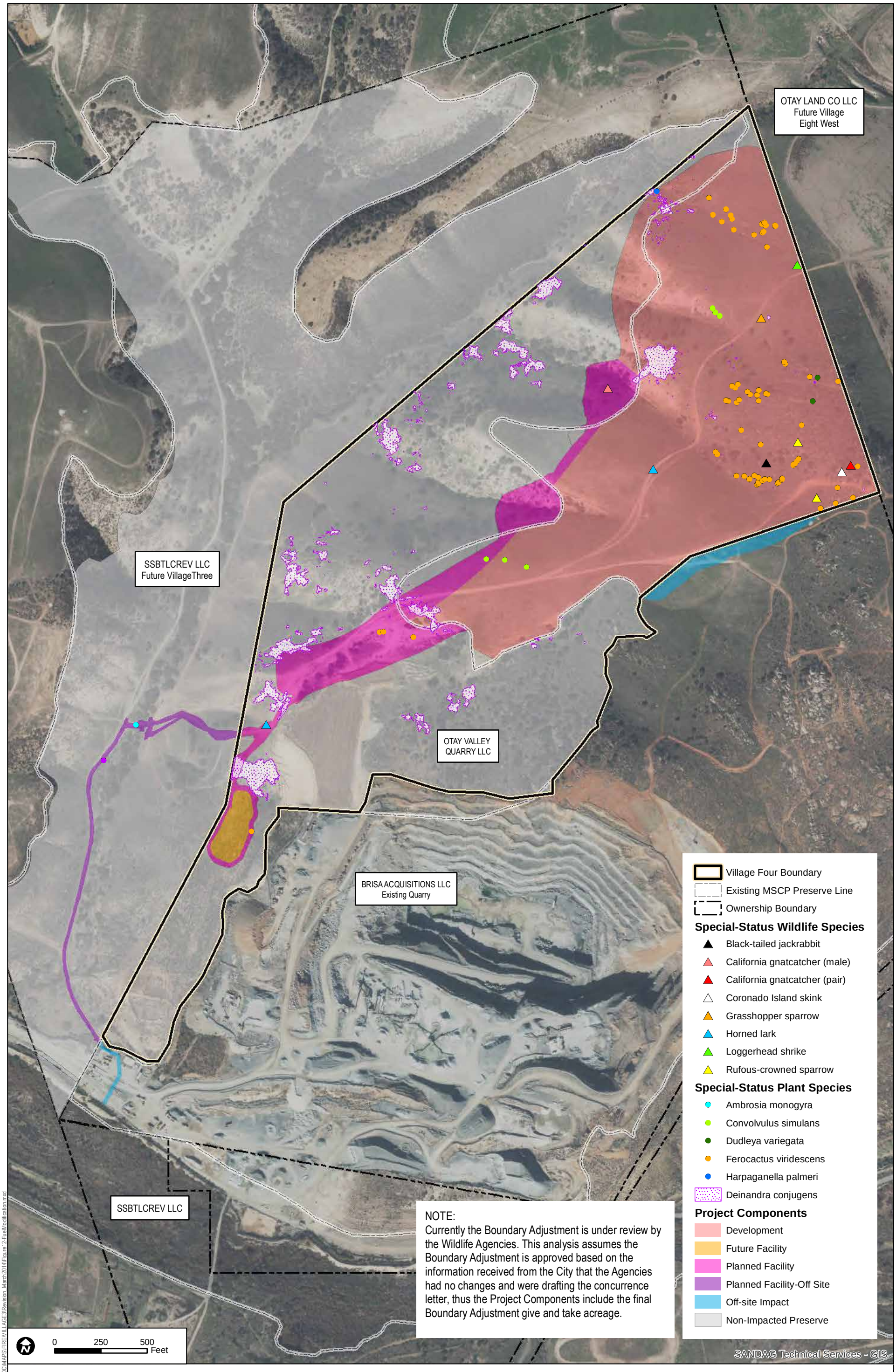
Implementation of the proposed project would result in the direct loss of sensitive plant species occurring within the Village Four Development Area, shown in Figure 5.3-3. The proposed project would also impact three special-status species located in the Village Four Preserve and within the

Village Three boundary, as part of planned and future facilities. The proposed project would not impact any special-status plant species located within off-site areas of the Otay Quarry that are associated with the construction of the planned facilities or fuel modification. Table 5.3-7 below summarizes impacts to special-status plant species located within the Village Four project site and is shown in Figure 5.3-5.

Table 5.3-7
Permanent Impacts to Special-Status Plant Species
within the Project Site and Off-Site Areas

Common Name (Scientific Name)	Status (Federal/State/ CRPR/Subarea Plan)	Impacts (estimated number of individuals)			
			Preserve		
		Development Area	*Future Facilities*	*Planned Facilities*	*Total Impacts*
Village Four					
California box-thorn (*Lycium californicum*)	None/None/4.2/None	—	—	—	Not mapped, occurs in areas where barrel cactus was abundant
Otay tarplant (*Deinandra conjugens*)	FT/SE/1B.1, MSCP Covered Narrow Endemic	14,812	—	3,309	18,121
Palmer's grapplinghook (*Harpagonella palmeri*)	None/None/4.2/None	100	—	—	100
San Diego barrel cactus (*Ferocactus viridescens*)	None/None/2.1/MSCP Covered	183	—	6	189
San Diego County viguiera (Viguiera laciniata)	None/None/4.2/None	—	—	—	Not mapped, occurs abundantly on-site
Small-flowered morning glory (*Convolvulus simulans*)	None/None/4.2/None	28	—	30	58
Ashy spikemoss (*Selaginella cinerascens*)	None/None/4.1/None	—	—	—	Not mapped, occurs abundantly on-site
Variegated dudleya (*Dudleya variegata*)	None/None/1B.2/MSCP Covered Narrow Endemic	175	—	—	175

Source: Appendix B1
Status Legend:
FT: Federally Threatened
SE: State Endangered
CRPR: California Rare Plant Rank (previously known as the CNPS List)
1B: Plants rare, threatened, or endangered in California and elsewhere
2B: Plants rare, threatened, or endangered in California, but more common elsewhere
4: Plants of limited distribution – a watch list
Threat Rank
.1 – Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
.2 – Fairly threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat)
MSCP: Chula Vista MSCP Subarea Plan Covered Species



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SOURCE:SANDAG IMAGERY

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FIGURE 5.3-5

Special-Status Species Impacts Map - Village Four and Off-site Areas

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Under the Subarea Plan, significant direct impacts to "covered" sensitive plant species include the following species: Otay tarplant, variegated dudleya, and San Diego barrel cactus. Otay tarplant and variegated dudleya are identified in the Subarea Plan as Narrow Endemic Species. Significant impacts to non-covered species include singlewhorl burrobrush. Impacts to both covered and non-covered species would be reduced to less-than-significant levels with implementation of mitigation measure (MM) BIO-1 through MM-BIO-8.

Impacts would occur to the following non-covered, California Rare Plant Rank (CRPR; formerly CNPS List) species: California box-thorn, Palmer's grapplinghook, San Diego viguiera, small-flowered morning glory, ashy spikemoss and southwestern spiny rush. However, these impacts are not considered significant, because, as CRPR 4.2/4.1 species, they are relatively common in this portion of the County as well as the Village Four project site and therefore are not considered significantly rare for the proposed loss to be significant. The project's contribution to the Otay Ranch RMP Preserve would mitigate impacts to all special-status species by providing suitable habitat in a configuration that preserves genetic exchange and species viability (MM-BIO-1). Thus, through implementation of MM-BIO-1, the Otay Preserve would contain enough individuals and suitable habitat such that impacts would be considered less than significant.

Special-Status Wildlife Species

Implementation of the proposed project would result in the direct loss of habitat for the following special-status wildlife species: southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), horned lark (*Eremophila alpestris actia*), coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*), California gnatcatcher (*Polioptila californica*), black-tailed jackrabbit (*Lepus californicus*), San Diego desert woodrat (*Neotoma lepida intermedia*) loggerhead shrike (*Lanius ludovicianus*), and Coronado Island skink (*Plestiodon skiltonianus interparietalis)*. Impacts are not expected to special-status wildlife species in the off-site areas of Village Three and the Otay Quarry. Impacts to these species would be considered a potentially significant impact. Table 5.3-8 below summarizes the impacts to wildlife within Village Four, and is shown in Figure 5.3-5.

Table 5.3-8
Permanent Impacts to Special-Status Wildlife Species within the Project Site

Common Name (Scientific Name)	Status	Impacts (estimated number of individuals)			
		Development Area	*Preserve*		*Total Impacts*
			Future Facilities	*Planned Facilities*	
Village Four					
Black-tailed jackrabbit (*Lepus californicus bennettii*)	None/SSC/None	1	—	—	**1**

Table 5.3-8
Permanent Impacts to Special-Status Wildlife Species within the Project Site

Common Name (Scientific Name)	Status	Impacts (estimated number of individuals)			
		Development Area	*Preserve*		*Total Impacts*
			Future Facilities	*Planned Facilities*	
California gnatcatcher (*Polioptila californica californica*)	FT/SSC/MSCP Covered	2 (1 pair)	—	1 (1 male)	3 (1 pair, 1 male)
Coronado island skink (*Plestiodon skiltonianus interparietalis*)	None/SSC/None	1	—	—	**1**
Grasshopper sparrow (*Ammodramus savannarum*)	None/SSC/None	1	—	—	**1**
California Horned Lark (*Eremophila alpestris actia*)	None/WL/None	4	—	3	**7**
Loggerhead shrike (*Lanius ludovicianus*)	None/SSC/None	1	—	—	**1**
Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)	None/WL/MSCP Covered	2	—	—	**2**
Coastal cactus wren (Campylorhynchus brunneicapillus sandiegensis)	BCC/SSC/MSCP Covered	0.27 acres of maritime succulent scrub	—	0.45 acres of maritime succulent scrub	0.72 acres of maritime succulent scrub

Source: Appendix B1
Status Legend:
FT: Federally Threatened
SSC: California Species of Special Concern
WL: CDFW Watch List
MSCP**:** Chula Vista MSCP Subarea Plan Covered Species

Impacts to sensitive wildlife species listed as having a moderate to high potential to occur within the project site would be considered potentially significant. However, through implementation of MM-BIO-1, the proposed project would contribute to the Otay Ranch RMP Preserve, which would mitigate impacts to these special-status species by providing suitable habitat in a configuration that preserves genetic exchange and species viability. Thus, direct impacts to non-covered sensitive wildlife species (white-tailed kite, Coronado island skink, grasshopper sparrow, California horned lark, loggerhead shrike, San Diego black-tailed jackrabbit and San Diego desert woodrat) with the exception of Quino checkerspot butterfly, would be reduced to a less-than-significant level by virtue of the biological mitigation measures provided in the Otay Ranch RMP (City of Chula Vista and County of San Diego 2002).

Because avian species are mobile, avian species recorded would not necessarily be directly impacted; however, the suitable habitat associated with the five covered sensitive bird species: coastal California gnatcatcher, Cooper's hawk, southern California rufous-crowed sparrow, coastal cactus wren, and northern harrier would be directly impacted by project implementation. However, habitat for the remaining pairs and individuals found within the Preserve would be conserved through implementation of MM-BIO-1, reducing the impact to less than significant. For California gnatcatcher, the male is evaluated as being impacted (although it might not be directly lost) due to the location of the occupied area as well as the impact configuration (Main Street). For the detention basin location, the pair likely uses the habitat however there is a large area of Preserve that is within the territory and, as noted above, avian species are mobile and will use a relatively large expanse of habitat, thus the location near the detention basin is not considered to be impacted however the habitat is considered to be occupied. For coastal cactus wren, the location is well outside of impact areas within the Preserve and within offsite areas of Wolf Canyon, however due to the limited amount of cactus, the maritime succulent scrub habitat that is impacted is considered to be suitable for the species. Specific to coastal cactus wren, MM-BIO-2 would ensure that impacts to 0.72 acres of maritime succulent scrub would be restored onsite and would result in the restoration of 1.24 acres of habitat within the Village Four Preserve that would also be suitable for occupation by coastal cactus wren.

Impacts to potential nesting covered species shall be mitigated through avoidance of clearing occupied habitat between February 15 and August 31 (avoidance of nesting season). The Migratory Bird Treaty Act (MBTA) prohibits the take of any migratory bird or any part, nest, or eggs of any such bird. Under the MBTA, "take" is defined as pursuing, hunting, shooting, capturing, collecting, killing, or attempting to commit any of these acts (16 U.S.C. 703 et seq.). Additionally, Executive Order 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds," requires that any project with federal involvement address impacts of federal actions on migratory birds with the purpose of promoting conservation of migratory bird populations (66 FR 3853–3856). The executive order requires federal agencies to work with the USFWS to develop a memorandum of understanding. The USFWS reviews actions that might affect these species. If any active nests or the young of nesting special-status bird species are impacted through direct grading, these impacts would be considered significant, based on the MBTA. However, with implementation of MM-BIO-9, impacts to active nests would be reduced to less than significant. In addition, with implementation of MM-BIO-10, the Subarea Plan requires nesting bird surveys up to 900 feet from the Development Area for northern harrier.

Neither burrowing owl individuals nor sign were detected during the focused surveys conducted within the project site. However, to ensure that no burrowing owls have migrated into the Development Area, a preconstruction survey would be conducted, in accordance with MM-BIO-11. If occupied burrows are detected, the County-approved biologist shall prepare a passive relocation mitigation plan subject to review and approval by the wildlife agencies and the

County, including any subsequent burrowing owl relocation plans to avoid impacts from construction-related activities. Thus, direct impacts to special-status wildlife species would be less than significant.

Surveys for Quino checkerspot butterfly within the project area were negative. Surveys for Planned and Future facilities within Village Three were not conducted due to lack of suitable habitat and site access. However, due to the minimal impact footprint and the lack of habitat, Quino checkerspot butterflies and nectar resources are not expected to occur. Regardless, per Section 5.2.8.1 of the City of Chula Vista's MSCP Subarea Plan, Quino habitat assessments and protocol surveys are required for off-site preserve areas where planned and future facilities are proposed. Avoidance and minimization of potential impacts to Quino checkerspot butterfly within the Preserve shall be demonstrated through the following measures: conducting a habitat assessment within the footprint of potential facilities, conducting an adult flight season survey in accordance with the most recent survey protocol adopted by USFWS, and avoidance of impacts to habitat for Quino checkerspot butterfly, if observed, to the maximum extent practicable (MM-BIO-12). According to the current survey protocol, the habitat assessment and adult flight season would need to be conducted during the spring prior to grading. If Quino checkerspot butterfly is observed, the property owner shall redesign or eliminate facilities which would impact habitat for the species such that impacts are minimized.

Indirect Impacts

Special-Status Plant Species

Most of the indirect impacts to vegetation communities noted above can also affect sensitive plants. Of particular sensitivity is the population of Otay tarplant in Wolf Canyon adjacent to the project site to the west. During construction of the project, indirect effects may include dust, which could disrupt plant vitality in the short term, as well as construction-related soil erosion and runoff. Long-term edge effects could include intrusions by humans and domestic pets and possible trampling of individual plants, invasion by exotic plant and wildlife species, exposure to urban pollutants, soil erosion, litter, fire, and hydrological changes (e.g., changes in surface and groundwater level and quality). Dust control would be implemented per the Air Quality Technical Report (Appendix E) to limit impacts of fugitive dust on sensitive habitat and species. Additionally, the proposed project's indirect impacts to special-status plants are considered potentially significant and are mitigated through MM-BIO-4, MM-BIO-5, MM-BIO-6, MM-BIO-16, and MM-BIO-17. Thus, indirect impacts to special-status plant species would be less than significant with mitigation incorporated.

Special-Status Wildlife Species

Short-term indirect impacts to special-status nesting bird species include construction noise impacts. Species potentially affected by such activities include, but are not limited to, coastal

California gnatcatcher, coastal cactus wren, Southern California rufous-crowned sparrow, and nesting raptors. While Quino checkerspot butterfly ~~was been~~has not been recorded on site in the recent survey, ~~but~~ it is known to be present nearby within the Salt Creek Preserve. Dust may result in indirect impacts to a number of special-status wildlife species. Indirect impacts to special-status bird species may occur if construction is conducted during the breeding season for coastal California gnatcatcher (February 15–August 15) and raptors (January 15–August 31). Long-term indirect impacts to special-status wildlife species would also occur as a result of the project. Impacts would consist of lighting, human activity in the Preserve, noise, and predation by domestic animals. Indirect impacts to special-status wildlife species are considered significant. However, the project would implement MM-BIO-16 and MM-BIO-17, as well as dust control measures that would be implemented per the Air Quality Technical Report to limit impacts of fugitive dust on sensitive habitat and species (Appendix E).

Indirect impacts to wildlife may also occur as a result of the passive recreational uses of the mini-park and trail located at the edges of development within the project site, including portions within 100 feet of the MSCP Preserve, which is intended to create a buffer zone between the proposed development and the Otay Ranch Preserve. Uses allowed within the 100-foot buffer adjacent to the Preserve include trails, benches, walls, and fences within perimeter slope areas. Preserve Edge Plans prepared for Village Four, would address and describe avoidance of indirect effects to special-status species that occur along the Preserve/development interface, per MM-BIO-16 and MM-BIO-17. Therefore, indirect impacts associated with special-status wildlife species would be considered less than significant.

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

Direct Impacts

On-Site Impacts

Implementation of the proposed project would result in permanent impacts to approximately 65.28 acres within the Village Four Development Area (Table 5.3-9). The proposed project also consists of permanent impacts from Planned and Future Facilities within the Preserve. Future Facilities would result in 1.23 acres of impacts. Planned Facilities would permanently impact a total of 12.19 acres on-site. Off-site impacts from the Planned Facilities are discussed below.

Sensitive vegetation communities to be permanently impacted within the Development Area and the Planned and Future Facilities include coastal sage scrub, disturbed coastal sage scrub, maritime succulent scrub, non-native grassland, tamarisk scrub, and unvegetated channel. Impacts to sensitive vegetation communities (as noted in Table 5.3-9) are considered significant

and would be reduced to a level below significance with the incorporation of MM-BIO-1, MM-BIO-2, MM-BIO-3, MM-BIO-4, MM-BIO-5, and MM-BIO-6.

A complete breakdown of vegetation impacts within the project site is presented in Table 5.3-9. Losses would occur as a result of grading and infrastructure installation. All temporary construction staging areas will be within the Development Area of Village Four. The Planned and Future Facilities are included to present the total impacts associated with project implementation and defined as the overall Development Area.

Figure 5.3-6 shows impacts to vegetation communities within the project site and associated facilities located within the Preserve.

Table 5.3-9
Impacts Associated with the Project Site

Vegetation Community/ Land Cover	Impacts		
	Development Area	*Future Facilities (Detention Basin) within the Preserve*	*Planned Facilities (Including On-Site Utility Access, and Main Street) within the Preserve*
Village Four			
Non-Sensitive Vegetation Communities/Land Covers			
Disturbed Habitat	1.08	—	1.26
Disturbed Habitat – Rock Quarry	—	—	0.15
Non-sensitive vegetation communities/land covers subtotal	*1.08*	—	*1.40*
Sensitive Vegetation Communities			
Coastal Sage Scrub	11.59	0.41	2.38
Disturbed Coastal Sage Scrub	3.34	0.82	2.75
Desert Saltbush Scrub	—	—	—
Maritime succulent scrub	0.27*	—	0.45
Non-native Grassland	48.88		5.40
Tamarisk Scrub	0.12	—	—
Unvegetated Channel	0.01	—	0.02
Sensitive vegetation communities subtotal	*64.20*	*1.23*	*11.00*
Total impacts for Village Four	**65.28**	**1.23**	**12.41**

Source: Appendix B1
Notes: Gross acreage is correct; columns may not precisely total due to rounding.
The total for this table only includes impacts to vegetation communities.
* This total includes 0.2 acre of take which will be restored.

Off-Site Impacts

The project also includes off-site areas that would be impacted with the construction of the Planned Facilities and the fuel modification zone. These off-site areas total 1.96 acres within the Otay Quarry and 1.48 acres within Village Three, and consist of four sensitive vegetation

communities including unvegetated channel, desert saltbush scrub, non-native grassland, and coastal sage scrub (including disturbed) (Table 5.3-10; Figure 5.3-6).

Table 5.3-10
Impacts Associated within Off-Site Areas

Vegetation Community/Land Cover	Total Impacts (Acres)
Otay Quarry	
Sensitive Vegetation Communities	
Coastal Sage Scrub	0.24
Non-Native Grassland	1.47
Desert Saltbush Scrub	<0.01
Sensitive vegetation communities subtotal	*1.71*
Non-Sensitive Vegetation Communities/Land Covers	
Disturbed Habitat	0.05
Developed	0.19
Non-sensitive vegetation communities/land covers subtotal	*0.24*
Total Impacts for Otay Quarry	**1.96**
Village Three	
Sensitive Vegetation Communities	
Disturbed Coastal Sage Scrub	0.04
Non-native Grassland	0.74
Unvegetated Channel	0.02
Sensitive vegetation communities subtotal	*0.80*
Non-Sensitive Vegetation Communities/Land Covers	
Developed	<0.01
Disturbed Habitat	0.77
Non-sensitive vegetation communities/land covers subtotal	*0.78*
Total Impacts for Village Three	**1.58**

Source: Appendix B1

The proposed project would require impacts to off-site areas within the Quarry and Village Three in order to construct Planned Facilities. The Planned Facility impacts to Village Three are entirely within Preserve lands and are subject to Facilities Siting Criteria. The off-site areas within the Quarry are outside of the Otay Ranch boundary, and are therefore subject to the City's Habitat Loss and Incidental Take (HLIT) Ordinance (Section 17.35, Habitat Loss and Incidental Take, of the Chula Vista Municipal Code). Impacts would be reduced to less than significant through MM-BIO-7.

Indirect Impacts

Indirect impacts to vegetation communities would primarily result from adverse edge effects. During construction of the project, edge effects may include dust, which could disrupt plant

vitality in the short term, as well as construction-related soil erosion and runoff. Long-term indirect impacts on vegetation communities would most likely occur as a result of trampling of vegetation by humans and domestic pets, invasion by exotic species, alteration of the natural fire regime, and exposure to urban pollutants (e.g., fertilizers, pesticides, herbicides, and other hazardous materials). Indirect impacts to vegetation communities are considered significant and are mitigated through MM-BIO-4, MM-BIO-5, MM-BIO-6, MM-BIO-16, and MM-BIO-17. Dust control would be implemented per the Air Quality Technical Report (Appendix E) to limit impacts of fugitive dust on sensitive habitat and species (MM-BIO-6). Overall, indirect impacts would be reduced to less than significant.

C. Have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Direct Impacts

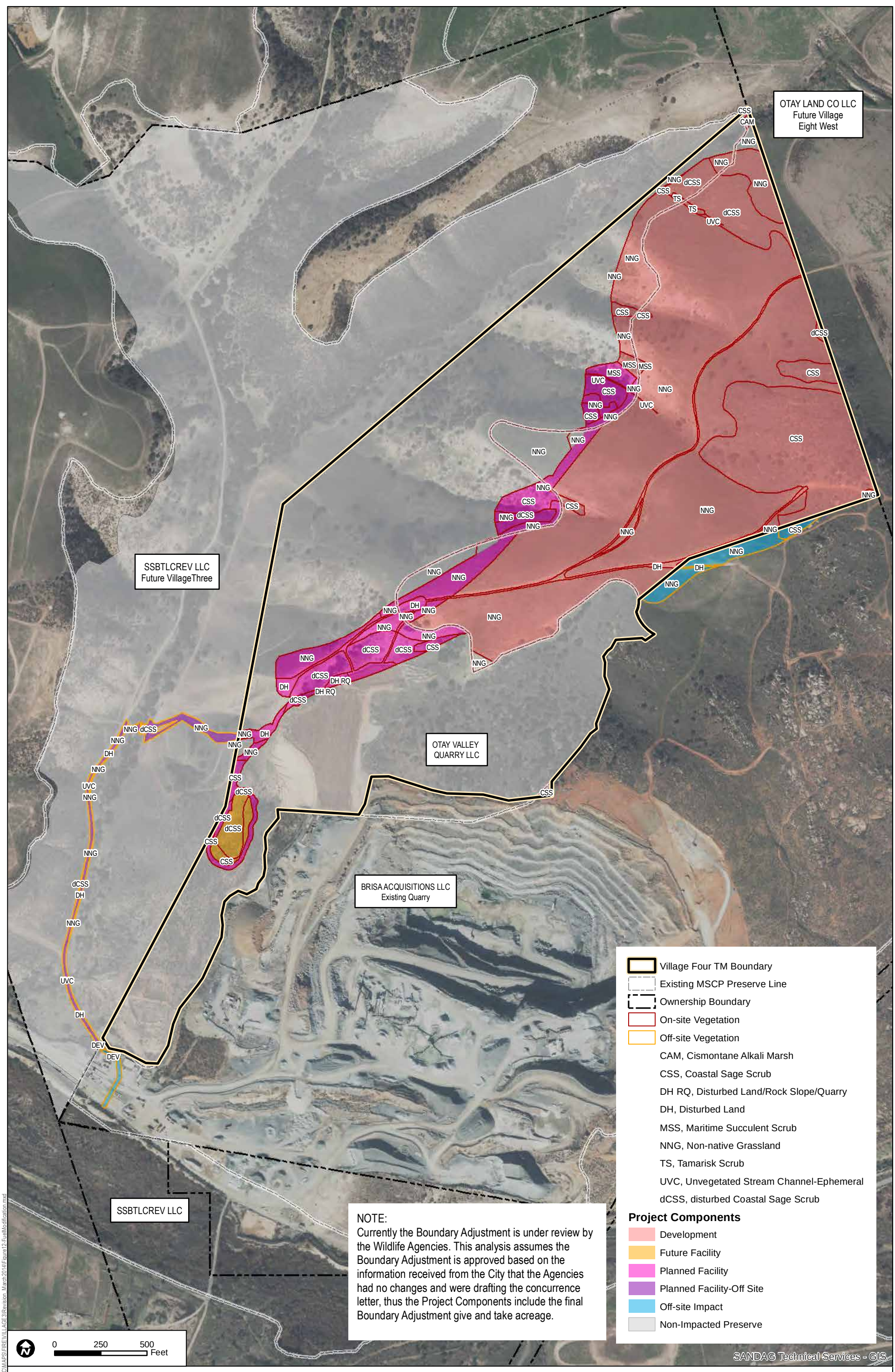
On-Site Impacts

Impacts to jurisdictional waters and wetlands would occur as a result of the project as shown on Figure 5.3-7 and summarized in Table 5.3-11. The proposed project would result in impacts to jurisdictional areas within the Village Four Development Area, as well as within the Village Four Preserve. Project impacts to jurisdictional waters and wetlands would be considered potentially significant, however through implementation of MM-BIO-4, MM-BIO-5, MM-BIO-6, MM-BIO-13, MM-BIO-14, and MM-BIO-15 these impacts would be considered less-than-significant.

Table 5.3-11
Impacts to Jurisdictional Wetlands and Waters within the Village Four Project Site

Wetlands Vegetation Community/Water Feature	Jurisdiction	Impact Type (Acres)		
		Development Area	*Planned Facilities within the Preserve*	*Total Impacts**
Village Four				
Tamarisk scrub	CDFW only	0.12	—	**0.12**
Unvegetated channel	ACOE/CDFW/RWQCB Non-Wetlands Waters	<0.01	0.02	**0.02~~02~~03**
Total jurisdictional impacts Village Four		**0.12**	**0.02**	**0.14**

Source: Appendix B1
* Totals may not sum due to rounding.



SOURCE:SANDAG IMAGERY

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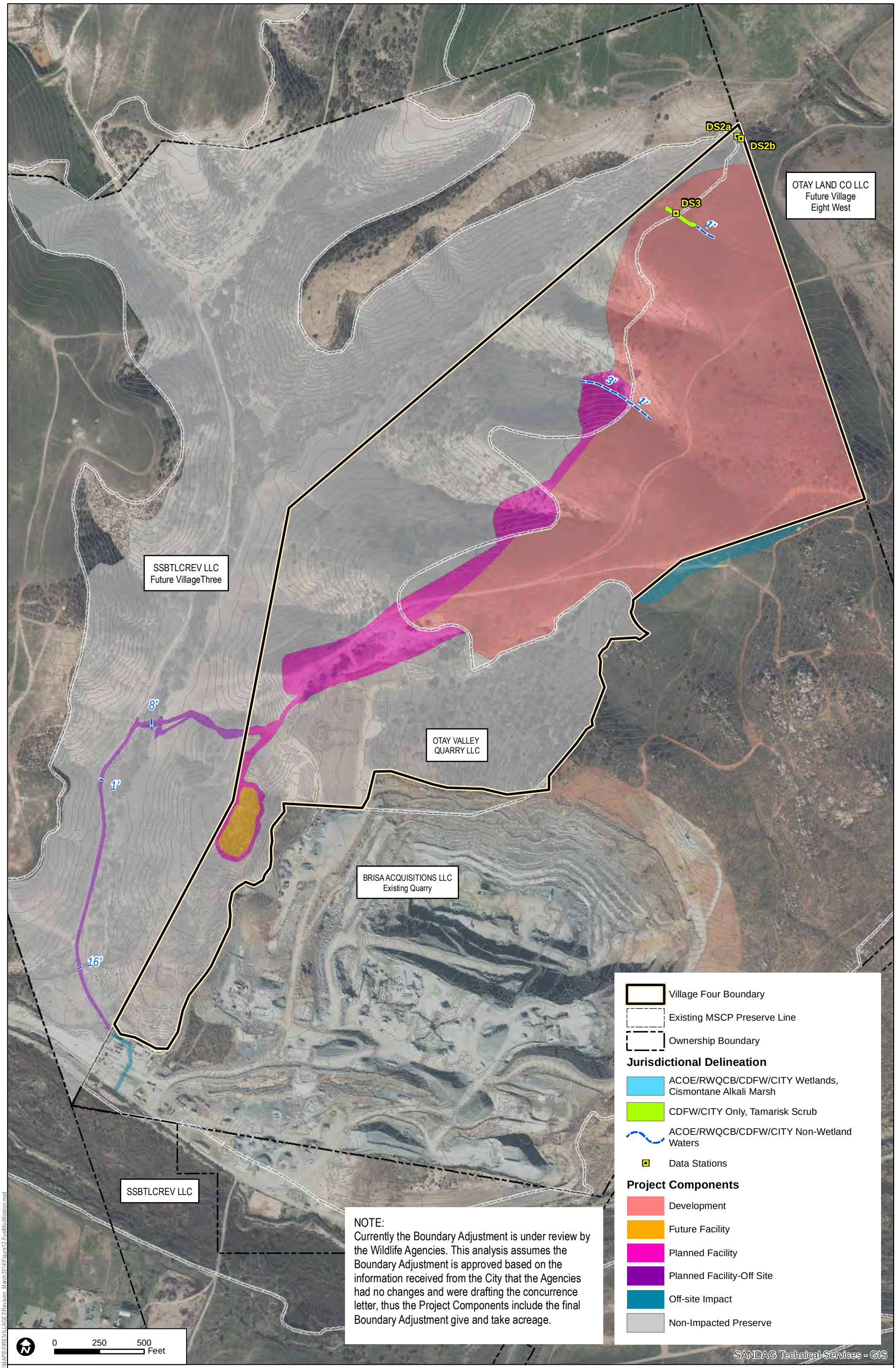
FIGURE 5.3-6

Vegetation Impacts Map - Village Four Development and Off-site Areas

Otay Ranch Village Four SPA Plan Environmental Impact Report

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FIGURE 5.3-7

Wetland Delineation Impacts Map - Village Four Development and Off-site Areas

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Section 5.2.4 of the Subarea Plan states that development projects are required to demonstrate that impacts to wetlands have been avoided or minimized to the greatest extent practicable. The major drainage within Wolf Canyon, is included in the Preserve; therefore, this drainage would not be subject to grading, would have protective measures required as described, and thus no direct or indirect impacts would occur. Impacts to ephemeral drainages and wetlands within the project site have been avoided and minimized to the extent feasible. Indirect impacts to wetlands and waters of the U.S. within the Preserve areas would be avoided as described below. Project drainage impacts would be minimized in compliance with the San Diego RWQCB Permit CAS0109266 by Order No. R9-2013-0001. Bioretention basins and on-site Low Impact Development measures are proposed to mitigate sediment and pollutants of concern associated with the proposed development in compliance with the current National Pollutant Discharge Elimination System (NPDES) permit. Infiltration structures with energy dissipaters are proposed to reduce flows to non-erosive velocities at the Otay River outfall to avoid direct impacts from development runoff. The Preserve Edge Plan (Appendix B2) provides the description of and analysis for the storm drains, drainage outfalls, and drainage basins that are proposed within the project site (MM-BIO-16 and MM-BIO-17). Overall, direct impacts to on-site jurisdictional resources would be reduced to a level below significance with the incorporation of mitigation.

Off-Site Impacts

Off-site facilities (i.e., outside of the Village Four Development Area boundary) could impact a total of 0.~~01~~ 02 acre of non-wetland waters/streambed under ACOE, RWQCB, and CDFW jurisdiction from Planned Facilities within Village Three. Impacts to jurisdictional resources associated within Village Three are described in Table 5.3-12 below and shown on Figure 5.3-7.

Table 5.3-12
Impacts to Jurisdictional Waters within the Off-Site Areas

Wetlands Vegetation Community/Water Feature	Jurisdiction	Impact Type (Acres)		
		Development Area	*Planned Facilities within the Preserve*	*Total Impacts*
Village Three				
Unvegetated channel	ACOE/RWQCB Non-Wetlands Waters, CDFW Streambed	—	0.02	0.02
Total jurisdictional impacts Village Three		**—**	**0.02**	**0.02**

Source: Appendix B1

The Planned Facility impacts to Village Three are entirely within Preserve Lands and are subject to Facilities Siting Criteria and would be reduced to a less-than-significant level with implementation of MM-BIO-4, MM-BIO-5, MM-BIO-6, MM-BIO-13, MM-BIO-14, and MM-BIO-15. Therefore, off-site impacts associated with federally protected wetlands would be considered less than significant.

Indirect Impacts

Indirect, adverse edge effects to jurisdictional waters and wetlands include potential runoff, sedimentation, erosion, exotics introduction, and habitat type conversion in the short and long term, particularly within the Wolf Canyon drainage. Indirect impacts to jurisdictional waters, without mitigation, are considered significant Incorporation of MM-BIO-4, MM-BIO-5, MM-BIO-6, and MM-BIO-15 would reduce potentially significant impacts to a level below significance.

Project drainage impacts would be minimized in compliance with the San Diego RWQCB Permit CAS0109266 by Order No. R9-2013-0001. Bioretention basins and on-site Low Impact Development measures are proposed to mitigate sediment and pollutants of concern associated with the proposed development in compliance with the current NPDES permit. Outlet structures designed with energy dissipaters are proposed to reduce flows to non-erosive velocities at the Otay River outfalls to avoid indirect impacts.

The Preserve Edge Plan (Appendix B2) provides the description of and analysis for the storm drains, drainage outfalls, and drainage basins that are proposed within the project site, as included in MM-BIO-16 and MM-BIO-17.

D. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

In the western portion of Otay Ranch (west of Lower Otay Lake), significant areas of wildlife habitat occur in the Otay River Valley, Wolf Canyon, Poggi Canyon, and Salt Creek Canyon (Ogden 1992). Wolf Canyon, and the Otay River Valley are within the boundaries of the Preserve areas of Village Four or within the Boundary Line Adjustment Area.

Direct Impacts

The Village Four Preserve is adjacent to Wolf Canyon, which connects to the Otay River. Wolf Canyon does not function as a regional habitat linkage or wildlife corridor, but is identified as a local corridor for focused mammal and bird species. The northern portion of Wolf Canyon functions as a corridor for coastal California gnatcatcher and coastal cactus wren. The proposed project includes a boundary adjustment that would add an additional 1.72 acres to the Preserve and therefore widening the Preserve within the tributary of Wolf Canyon. The Boundary Line Adjustment proposes to smooth edges of the Preserve in Wolf Canyon, which lessens edge effects by reducing the overall length of interface between development and the Preserve. Thus, the Boundary Line Adjustment would help maintain wildlife movement within Wolf Canyon and the connection with the Otay River Valley. The Village Four Preserve Edge Plan (Appendix B2) provides the required 100-foot buffer between the Preserve and the proposed development and is

not located within the Preserve. There are Planned Facilities proposed to be located within the Wolf Canyon and Village Four Preserve. Construction of the Planned Facilities will not preclude wildlife from using the area since the facilities would be placed underground within an existing roadway and there would be no barrier to movement by wildlife. The Future Facilities include the detention basin located within disturbed coastal sage scrub, in an area that has already been disturbed by off-road activity, and there is potential for wildlife to be attracted to water within the basin. The access roads are not expected to preclude wildlife from using the area, as wildlife will traverse the road. In addition, the road is not expected to receive much traffic because it is designed and limited to use as maintenance for the basins. Therefore, it is not expected that the development within Village Four and the Planned and Future Facilities located within the Preserve will interfere with the movement of wildlife species or impede the use of native wildlife nursery sites within Wolf Canyon. Main Street is located immediately adjacent to the proposed development, only a small portion occurs on the slope above Wolf Canyon, and will not preclude wildlife from using Wolf Canyon and the Otay River Valley to the south. Main Street will not impede a major regional linkage, and culverts will not be required within the Preserve. Connection of the mouth of Wolf Canyon to the Otay River Valley would be unaffected by the project since it is not located at that point.

The Otay River Valley is located immediately south and outside of the Development Area. The Otay River Valley provides regional wildlife movement and habitat connectivity functions for both mammal and bird species. The Otay River Valley would not be impacted through the implementation of the Planned Facilities located within the Quarry. Impacts would occur within existing developed areas adjacent to the Otay River Valley but the project would not adversely affect the habitat connectivity or wildlife movement functions of the Otay River Valley. Therefore, impacts associated with the movement of any native resident or migratory fish or wildlife species, would be considered less than significant.

Indirect Impacts

According to the wildlife corridor studies conducted by Ogden (1992), the project site does not support any existing wildlife corridors, but does serve as a local corridor for target mammal species. Potential indirect impacts to wildlife utilizing this local corridor are identified in above. Threshold A provides analysis of special-status wildlife, and both their use and movement within the Preserve and non-Preserve areas of Village Four and the off-site areas (Quarry and Village Three).

E. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Village Four is part of the Otay Ranch GDP and RMP. The Otay Ranch GDP and RMP were approved by the City in October of 1993 (City of Chula Vista and County of San Diego 1993, 2002).

The RMP is composed of two separate documents: Phase 1 RMP and Phase 2 RMP. The Phase 1 RMP identifies Preserve areas within Otay Ranch and contains policies regarding species and habitat conservation and long-term management of the Preserve. The Phase 2 RMP was approved by the City in 1996 and incorporated into the Chula Vista MSCP Subarea Plan when the Subarea Plan was approved in 2003 (City of Chula Vista 2003). This Phase 2 RMP includes ranch-wide studies that were conducted pursuant to the Phase 1 RMP and provides additional detail on conveyance, management, and funding. The Otay Ranch GDP identifies conceptual development, circulation, and open space plans. In addition to the Otay Ranch GDP and RMP for Otay Ranch, the municipalities of southern San Diego County collaborated in producing the MSCP Subregional Plan.

In a regional context, the Otay Ranch RMP Preserve provides CEQA mitigation for development of less sensitive areas within the areas proposed for development on Otay Ranch. Therefore, the project design is required to demonstrate conformance with the conservation goals and Preserve boundaries of the Otay Ranch GDP, RMP, and Chula Vista MSCP Subarea Plan. With conformance to the Otay Ranch GDP, RMP, and Chula Vista MSCP, the proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, and impacts would be considered less than significant.

F. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

Consistency with Chula Vista MSCP Subarea Plan and Otay Ranch RMP

The proposed project design is consistent with the MSCP Subarea Plan and the Otay Ranch RMP through specific adherence to conditions of coverage and mitigation/conveyance requirements for Covered Projects as defined in the Chula Vista MSCP Subarea Plan, Section 7.6 (City of Chula Vista 2003), and the Otay Ranch RMP (City of Chula Vista and County of San Diego 2002). The Planned and Future Facilities located within the Preserve were designed to minimize impacts to covered habitats and species by following the MSCP Siting Criteria described in Section 5.1.8.1 of Appendix B1.

The Otay Ranch RMP and the Otay Ranch Preserve were the primary basis for CEQA mitigation of biological impacts identified in the Otay Ranch GDP Program EIR (County of San Diego and City of Chula Vista 1993). The RMP includes conveyance procedures for dedicating parcels of land to the Otay Ranch Preserve. The conveyance ratio for all development is 1.188 acres for each acre of project site that does not include "common uses," which are identified as schools, parks, and arterial roadways. These common areas are excluded from the required mitigation/conveyance. The proposed project would have significant impacts related to biological resources unless the Otay

Ranch Preserve is assembled proportionally and concurrently with development in accordance with provisions of the City's MSCP Subarea Plan and Otay Ranch RMP.

Planned and Future Facilities Siting Criteria for Project Components Located within the Preserve

The development of the proposed project would be within the area designated for development under the Otay Ranch RMP and the MSCP Subarea Plan, with the exception of a limited number of facilities that will be located in designated Preserve areas. Chapter 6.0 of the City's MSCP Subarea Plan identifies permitted uses within the Preserve (City of Chula Vista 2003). The proposed project includes permanent impacts to the Preserve resulting from the following infrastructure uses: a detention basin, associated storm-drain and sewer lines, access roads for the detention basin, and a sewer lateral connecting to the Salt Creek Interceptor. In addition, the proposed project would impact areas within the Preserve associated with the Main Street construction. These uses are considered facilities within the Preserve as described in Section 6.3.3 of the Subarea Plan (City of Chula Vista 2003).

Section 6.3.3 of the Subarea Plan differentiates between "Planned Facilities" and "Future Facilities." Planned Facilities are major roads and infrastructure which were planned for development through existing plans and/or project approvals (i.e., General Plan and Otay Ranch GDP) and allowed to be constructed, operated, and maintained within the Preserve at the time of writing of the Subarea Plan. These Planned Facilities are identified in Table 6-1 of the Subarea Plan (City of Chula Vista 2003). Consistent with Table 6-1, associated ancillary sewer facilities for the Salt Creek Interceptor, including connections and maintenance access roads, are Planned Facilities.

Future Facilities are those facilities necessary to support planned development that were not identified at the time of the Subarea Plan but were anticipated to be required. Table 6-2 of the Subarea Plan identifies Future Facilities and Implementation Criteria. These facilities include detention facilities/basins, storm drain systems, and maintenance and operations roads (City of Chula Vista 2003).

Both Planned and Future Facilities located within the Preserve are subject to the Facilities Siting Criteria contained in Section 6.3.3.4 of the City's MSCP Subarea Plan (City of Chula Vista 2003). Compliance with the Facilities Siting Criteria ensures that the facilities located within the Preserve have been sited within the least environmentally sensitive areas and that impacts to the Preserve have been minimized to the maximum extent practical.

The following is a summary of the Facilities Siting Criteria (Section 6.3.3.4 and Table 6-1 of the Subarea Plan) as required for the project's Planned and Future Facilities (City of Chula Vista 2003):

1. Such facilities will be located in the least environmentally sensitive location feasible, and use existing roads, trails and other disturbed areas, including use of the active recreation areas in the Otay River Valley, as much as possible (except where such areas are occupied by the QCB [Quino checkerspot]). Facilities should be routed through developed or developing areas where possible. If no other routing is feasible, alignments should follow previously existing roads, easements, rights of way, and disturbed areas, minimizing habitat fragmentation.
2. Such facilities shall avoid, to the maximum extent practicable, impacts to Covered Species and Wetlands, and will be subject to the provisions, limits, and mitigation requirements for Narrow Endemic Species and Wetlands pursuant to Section 5.2.3 and 5.2.4 of the Subarea Plan.
3. Where roads cross the Preserve, they should provide for wildlife movement in areas that are graphically depicted on and listed in the MSCP Subregional Plan Generalized Core Biological Resource Areas and Linkages map as a core biological area or a regional linkage between core biological areas. All roads crossing the Preserve should be designed to result in the least impact feasible to Covered Species and Wetlands. Where possible at wildlife crossings, road bridges for vehicular traffic rather than tunnels for wildlife use will be employed. Culverts will only be used when they can achieve the wildlife crossing/movement goals for a specific location. To the extent feasible, crossings will be designed as follows: the substrate will be left in a natural condition or revegetated if soils engineering requirements force subsurface excavation and vegetated with native vegetation if possible; a line-of-sight to the other end will be provided; and if necessary, low-level illumination will be installed in the tunnel.
4. To minimize habitat disruption, habitat fragmentation, impediments to wildlife movement and impact to breeding areas, road and/or right-of-way width shall be narrowed from existing City design and engineering standards, to the maximum extent practicable. In addition, roads shall be located in lower quality habitat or disturbed areas to the maximum extent practicable.
5. Impacts to Covered Species and habitats within the Preserve resulting from construction of Future Facilities will be evaluated by the City during project review and permitting. The City may authorize Take for impacts to Covered Species and habitats resulting from construction of Future Facilities located outside the Preserve, pursuant to the Subarea Plan and consistent with the Facility Siting Criteria.
6. The City may authorize "Take" for impacts to Covered Species resulting from construction of Future Facilities located within the Preserve, subject to a limitation of 2 acres of impact for individual projects and a cumulative total of 50 acres for all Future Facilities. Wildlife Agency concurrence will be required for authorization of Take for any impacts to Covered

Species and habitat within the Preserve that exceed 2 acres that may result from construction of any individual Future Facility. Wildlife Agency concurrence will be required for authorization of Take for impacts to Covered Species and habitat within the Preserve that exceed 50 acres that may result from all Future Facilities combined.

7. Planned and Future Facilities must avoid impacts to covered Narrow Endemic Species and the QCB [Quino checkerspot] to the maximum extent practicable. When such impacts cannot be avoided, Planned and Future facilities located within the Preserve are subject to the provisions of Section 5.2.3.6 of the Subarea Plan. Impacts to QCB that will result from construction of Planned and Future Facilities within the Preserve are subject to the provisions of Section 5.2.8 of the Subarea Plan.

This section outlines the Planned Facilities and Future Facilities associated with the proposed project and how they adhere to the Facilities Siting Criteria. The facilities necessary to support the proposed project were sited in primarily disturbed, developed, and non-native grassland. In general, the process for designing and locating the Planned and Future Facilities followed an iterative process with the project civil engineer. The facilities were analyzed by overlaying potential Planned and Future Facility locations with biological resources, including vegetation communities, species locations, and jurisdictional aquatic resources. Adjustments were made to reduce impacts to sensitive resources to the greatest extent possible without compromising the integrity and purpose of each facility. In addition, facilities such as roads, sewer lines, and water lines were co-located to reduce impacts. In some cases there are impacts to sensitive resources; however, the effects of shifting facilities would have been more impactful.

Impact Summary for Planned and Future Facilities

The location of the detention basin along with sewer and storm drains and associated access roads is shown on Figure 5.3-8. An access road off of Main Street would extend south to the proposed basin location and sewer and storm lines would be co-located within the access road. An additional access road would be created to the west of the Main Street offshoot, downslope towards an existing dirt road within Wolf Canyon. Storm and sewer drains would also be co-located within the access road impact.

Vegetation Communities and Land Cover Types

Placement of the detention basin and associated facilities would result in 4.06 acres of permanent impacts. These planned and future facilities would result in impacts to coastal sage scrub, including disturbed, but the majority of impacts would be to non-native grassland, and disturbed or developed areas (Tables 5.3-13 and 5.3-14, Figure 5.3-9).[1] The majority of impacts associated

[1] Vegetation impacts within Village Three were quantified using mapping from the University Villages Project (Dudek 2014).

with Main Street include coastal sage scrub, including disturbed, and non-native grassland (Tables 5.3-13 and 5.3-14).

Table 5.3-13
Impacts to Vegetation Communities and Land Covers
Associated with Planned and Future Facilities by Ownership

Vegetation Type	Existing Acreage	Detention Basin and Facilities (Acres)	Main Street (Acres)
		Permanent Impacts	*Permanent Impacts*
Village Three – Off Site			
Disturbed Coastal Sage Scrub	0.04	0.04	0
Non-native Grassland	0.74	0.74	0
Unvegetated Channel	0.02	0.02	0
Disturbed Habitat	0.77	0.77	0
Developed	<0.01	<0.01	0
Subtotal	*1.58*	*1.58*	*0*
Village Four			
Coastal Sage Scrub	28.26	0.98	1.81
Disturbed Coastal Sage Scrub	8.47	1.14	2.43
Desert Saltbush Scrub	0.04	0	0
Maritime Succulent Scrub	2.22	0	0.45
Non-Native Grassland	64.68	2.43	2.97
Cismontane Alkali Marsh	0.17	0	0
Tamarisk Scrub	0.12	0	0
Unvegetated Channel	0.04	0	0.02
Disturbed Habitat	3.66	0.53	0.73
Disturbed Habitat – Rock Quarry	2.86	0.01	0.14
Not Mapped[1]	55.51	0	0
Subtotal	*166.02*	*5.08*	*8.55*
Total	**169.56**	**6.66**	**8.55**

Source: Appendix B1
[1] Areas that are not mapped include portions of the Preserve that are not affected by the proposed project.

Table 5.3-14
Summary of Impacts to Vegetation Communities and Land
Covers Associated with Planned and Future Facilities

Vegetation Type	Existing Acreage	Detention Basin and Facilities (Acres)	Main Street (Acres)
		Permanent Impacts	*Permanent Impacts*
Coastal Sage Scrub	28.26	0.98	1.81
Disturbed Coastal Sage Scrub	8.52	1.18	2.43
Desert Saltbush Scrub	0.04	0	0
Maritime Succulent Scrub	2.22	0	0.45

Table 5.3-14
Summary of Impacts to Vegetation Communities and Land Covers Associated with Planned and Future Facilities

Vegetation Type	Existing Acreage	Detention Basin and Facilities (Acres)	Main Street (Acres)
		Permanent Impacts	*Permanent Impacts*
Non-native Grassland	65.42	3.17	2.97
Cismontane Alkali Marsh	0.17	0	0
Tamarisk Scrub	0.12	0	0
Unvegetated Channel	0.06	0.02	0.02
Disturbed Habitat	4.43	1.30	0.73
Disturbed Habitat – Rock Quarry	2.86	0.01	0.14
Developed	<0.01	<0.01	0
Not Mapped[1]	55.51	0	0
Total	**169.56**	**6.66**	**8.55**

Source: Appendix B1
[1] Areas not mapped within Village Four include portions of the Preserve which are not affected by the proposed project.

Jurisdictional Aquatic Resources

Sewer and storm drain alignment and the access road necessary for the storm drain would result in permanent impacts to 0.02 acre of unvegetated channel (Table 5.3-15). Main Street would impact 0.02 acre of an unvegetated channel (Table 5.3-15).

Table 5.3-15
Impacts to Jurisdictional Aquatic Resources Associated with Planned and Future Facilities

Jurisdictional Aquatic Resource	Detention Basin and Facilities (Acres)	Main Street (Acres)
	Permanent Impacts	*Permanent Impacts*
Village Three – Off Site		
Unvegetated Channel	0.02	0
Subtotal	*0.02*	*0*
Village Four		
Cismontane Alkali Marsh	0	0
Tamarisk Scrub	0	0
Unvegetated Channel	0	0.02
Subtotal	*0*	*0.02*
Total	**0.02**	**0.02**

Source: Appendix B1

Special-Status Species

Several special-status plant species have been observed throughout the project site. Two covered species will be impacted as a part of the proposed project components: Otay tarplant, also a narrow endemic species, and San Diego barrel cactus (Table 5.3-16).

Table 5.3-16
Summary Impacts to Covered and Narrow Endemic Plant Species

Species	Detention Basin and Facilities	Main Street
	Permanent Impacts	*Permanent Impacts*
Village Three		
Otay tarplant (*Deinandra conjugens*)	0	0
Village Four		
Otay tarplant (*Deinandra conjugens*)	1,996	1,313
Otay tarplant Total	**1,996**	**1,313**
San Diego barrel cactus (*Ferocactus viridescens*)	**1**	**5**
San Diego Barrel Cactus Total	**1**	**5**

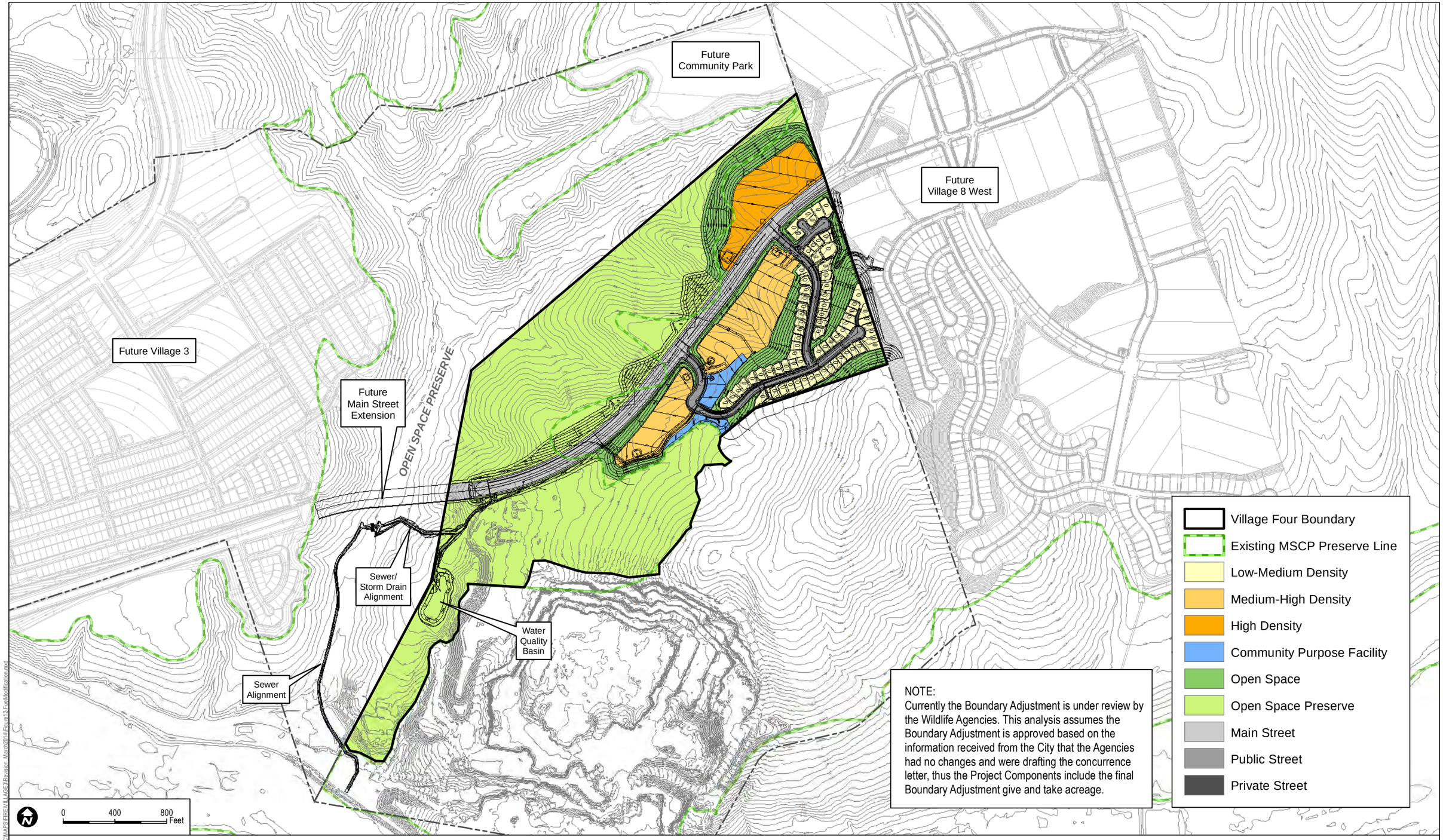
Source: Appendix B1

Several special-status wildlife species have also been observed throughout the project site. Habitat for two covered species, California gnatcatcher and coastal cactus wren, will be impacted by the construction of the proposed detention basin and Main Street (Table 5.3-17).

Table 5.3-17
Summary Impacts to Covered Wildlife Species

Species	Detention Basin and Facilities	Main Street
	Permanent Impact	*Permanent Impact*
Village Four		
California gnatcatcher	0	1 male
Coastal cactus wren	0	0
Vegetation Type	*Permanent Impact (acres)*	*Permanent Impact (acres)*
Coastal Sage Scrub	0.98	1.81
Disturbed Coastal Sage Scrub	1.18	2.43
Maritime succulent scrub	0	0.45
Total	**2.16**	**4.69**

Source: Appendix B1



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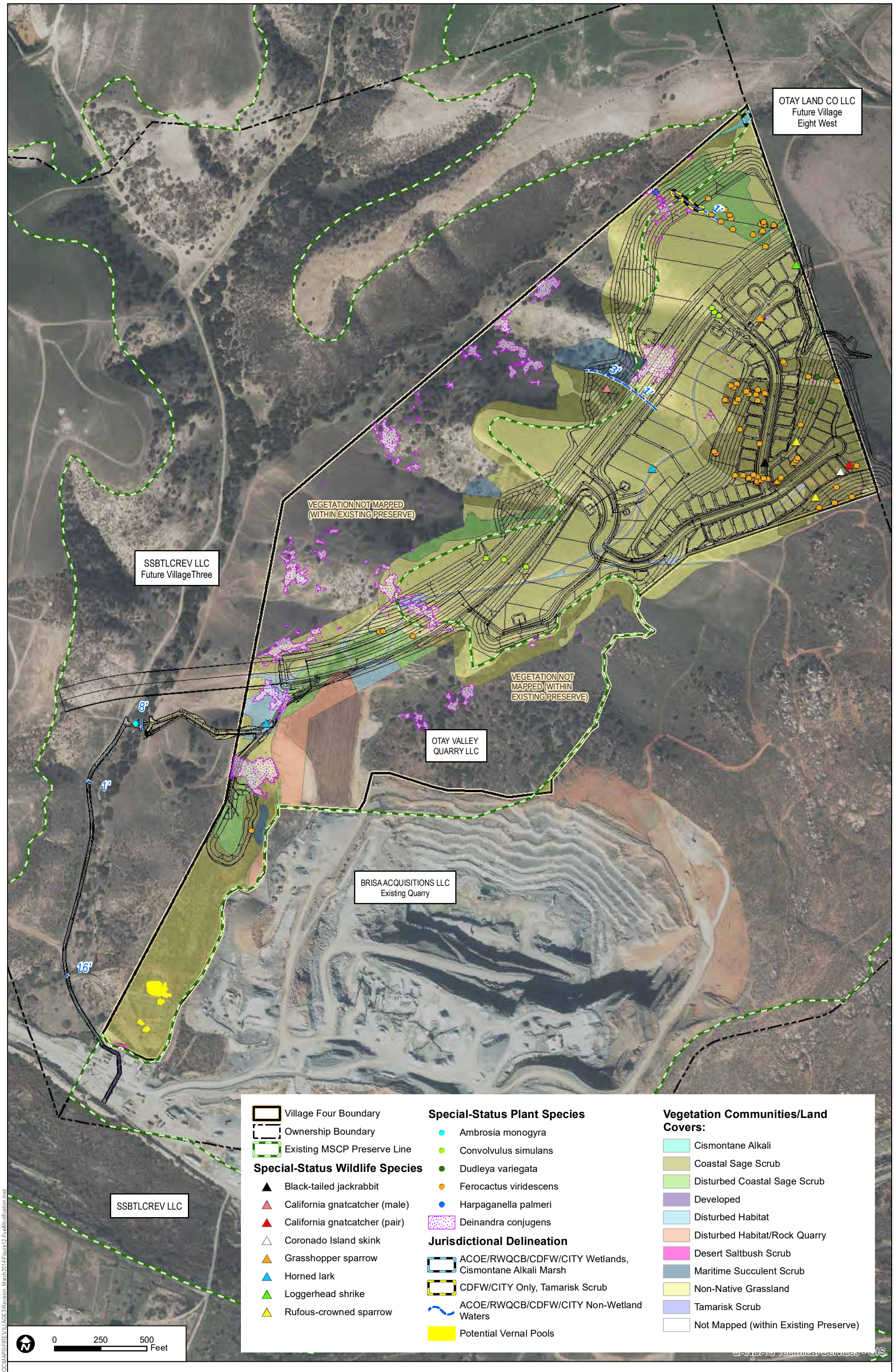
SOURCE: HUNSAKER & ASSOCIATE, MAY 2017

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FIGURE 5.3-8

Site Plan with Sewer/Storm Drain Alignment

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FIGURE 5.3-9

Site Plan with Sewer/Storm Drain Alignment Biological Resources Map

Otay Ranch Village Four SPA Plan Environmental Impact Report

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Detention Basin, Access Roads, and Associated Utilities – Planned and Future Facilities

The detention basin (Future Facility) is located south of development and adjacent to the Development Area/quarry boundary. The basin would be lined and planted with native vegetation which would likely consist of a custom seed mix or container plants of the following species: *Carex praegracilis*, *Carex spissa*, *Sporobolus airoides*, *Juncus acutus* ssp. *leopoldii*, *Leymus condensatus*, and *Leymus triticoides*. The detention basin would have an access road (Future Facility) extending off of Main Street. Storm drain (Future Facility) and sewer lines (Planned Facility) extending south from Village Four Development Area would be in line with the location of the detention basin access roads. To connect the basin with the Salt Creek Interceptor (Planned Facility) to the south of Wiley Road, storm drain and sewer lines would be placed within the footprint of an existing dirt access road (Planned Facility) located within Village Three. The utility easement within the existing dirt road would require a graded width of 18 feet and the existing dirt road would be replaced with a 12-foot all-weather access road. The new road from Main Street to the basin and the dirt road would require a graded width of 25 feet with a 12-foot utility access road constructed within that 25-foot easement. The detention basin, access road from Main Street, and the storm drain are considered Future Facilities while the Salt Creek Interceptor, sewer lines, and access road from the basin to the Salt Creek Interceptor are Planned Facilities. Because the extent of the access road from Main Street to the detention basin and utilities are the same, the impact is based on the Planned Facility (i.e., width necessary for sewer facilities). All facilities/utilities have been co-located within the planned easement of the access road to the Salt Creek Interceptor and the access road width is able to accommodate these additional facilities/utilities without resulting in additional impacts. Therefore, the only Future Facility not co-located with a Planned Facility is the detention basin. Table 5.3-18 provides a summary of these facilities as they relate to the Facilities Siting Criteria.

Table 5.3-18
Summary Facilities Siting Criteria – Detention Basin and Associated Facilities

Facilities Siting Criteria	Detention Basin, Access Roads, Storm Drain and Sewer Lines, Sewer Line Connection to Salt Creek Interceptor, and Storm Drain Outfall – Planned and Future Facilities (6.34 acres permanent impact)
Least environmentally sensitive location	The detention basin has been located within disturbed coastal sage scrub, in an area that has already been disturbed by off-road activity. Topography is such that moving the detention basin north into non-native grassland would not be feasible. The access road from the detention basin to the Salt Creek Interceptor is located almost exclusively within an existing dirt road. Impacts to vegetation located on either side of the existing dirt road have been reduced to the greatest extent feasible. The portion of the access road from the existing dirt road to the detention basin is primarily located within non-native grassland and in an area which is heavily degraded by off-road activity. Storm and sewer lines were co-located to reduce the need for two locations. Impacts to sensitive habitat will be mitigated through the implementation of Mitigation Measures as

Table 5.3-18
Summary Facilities Siting Criteria – Detention Basin and Associated Facilities

Facilities Siting Criteria	Detention Basin, Access Roads, Storm Drain and Sewer Lines, Sewer Line Connection to Salt Creek Interceptor, and Storm Drain Outfall – Planned and Future Facilities (6.34 acres permanent impact)
	outlined in the biological resources technical report. In addition, any manufactured slopes (within the Preserve) created in conjunction with Planned and Future Facilities will be replanted/landscape with native species consistent with the Draft Preserve Edge Plan (Atlantis Group 2017).
Avoid wetlands and covered species and address Narrow Endemic Species	The construction of the basin will not impact any jurisdictional aquatic resources, covered species, or narrow endemic species but construction of the basin's access road will result in impacts to narrow endemic plant species (Otay tarplant) and covered species (San Diego barrel cactus). Construction of the basin and access road will also impact coastal sage scrub likely utilized by a pair of gnatcatcher. The access roads, storm drain and sewer lines will impact 0.~~01~~ 02 acre of unvegetated channel. These facilities will also impact 1,996 of Otay tarplant and one occurrence of San Diego barrel cactus. Impacts to jurisdictional resources will be permitted by the resource agencies.
Provide for wildlife movement	Construction of the basin, and access roads with co-located facilities will not preclude wildlife from using the area since there is no barrier to movement by wildlife and there is a potential for wildlife to be attracted to water within the basins. The access roads are not expected to preclude wildlife from using the area, as wildlife will traverse the road. In addition, the road is not expected to receive much traffic because it is designed and limited to use as maintenance for the basins.
Road widths are narrowed and in lower quality habitat	The roads were designed to be as narrow as possible (15 and 25 feet) while still accommodating the co-location of sewer and storm drains.
Future facilities are limited to 2 acres or cumulative total of 50 acres	The detention basin is the only Future Facility that is not co-located with a Planned Facility. The proposed detention basin is 1.23 acres and is therefore under the 2 acre limit.
Avoid impacts to covered Narrow Endemic Species and QCB	Construction of the detention basin, the access road from Main Street to the detention basin and associated co-located facilities will impact locations of host plants for Quino checkerspot butterfly as well as populations of Otay tarplant. Construction of the basin will result in impacts to coastal sage scrub likely utilized by a pair of coastal California gnatcatchers. Due to lack of site access a focused survey for Quino checkerspot butterfly, and thus host plant mapping, was not conducted for the off-site areas. Due to the minimal impact footprint and the lack of habitat, Quino checkerspot butterflies and nectar resources are not expected to occur. Regardless, a habitat assessment and adult flight season survey will be conducted within the footprint of potential facilities during the spring season prior to grading. Avoidance of impacts to habitat for Quino checkerspot butterfly, if observed, to the maximum extent practicable (MM-BIO-12).

Source: Appendix B1

Main Street

Main Street, Sewer and Storm Drains – Planned and Future Facilities

Main Street would be located through the center of Village Four along the Preserve and Development Area boundary. Portions of the alignment are not within the Preserve and therefore not subject to the siting criteria. The Main Street sewer connection and storm drain

improvements have been co-located within the road right-of-way (ROW) to minimize and avoid additional impacts. Thus, the two 20-foot-wide easements that would have been required for these two facilities have been co-located within the road, resulting in a reduction of impacts to the MSCP Preserve. These facilities are all clustered within a single construction ROW to minimize habitat and sensitive species impact and habitat fragmentation. Table 5.3-19 provides a summary of these facilities as they relate to the siting criteria.

Table 5.3-19
Summary of Facilities Siting Criteria –Village Four Main Street and Associated Utilities

Facilities Siting Criteria	Main Street, Sewer Line, and Storm Drain – Planned Facilities (8.55 acres)
Least environmentally sensitive location	The street has been designed to be contained within the development footprint to the extent feasible and will limit impacts to the Preserve and habitat by reducing the amount of fill necessary to construct the road. Main Street will be located immediately adjacent to development and will not cause fragmentation of habitat. All facilities are located within a single ROW and include the Main Street alignment, the sewer and storm drain. Any manufactured slopes (within the Preserve) created in conjunction with Planned and Future Facilities will be replanted/landscape with native species consistent with the Draft Preserve Edge Plan (Atlantis Group 2017).
Avoid wetlands and covered species and address Narrow Endemic Species	A middle reach of an unvegetated stream channel (0.02 acre) will be impacted by the proposed alignment. The upper reaches of the channel is within the development footprint. All impacts to jurisdictional aquatic resources will be permitted by the resource agencies. A total of 5 San Diego barrel cactus and 1,313 individuals of Otay tarplant, of which 227 individuals are within the give area of the Boundary Line Adjustment, will be impacted by development of the road. Moving the alignment to avoid the Otay tarplant would have been infeasible since the current alignment needs to be matched.
Provide for wildlife movement	The road is located immediately adjacent to the proposed development and will not preclude wildlife from using Wolf Canyon and the Otay River Valley to the south. Main Street will not impede a major regional linkage and culverts will not be required within the Preserve. Because of their co-location within a minimal-width construction ROW, these linear facilities would not impede wildlife movement.
Road widths are narrowed and in lower quality habitat	The majority of impacts associated with Main Street are to non-native grassland and disturbed coastal sage scrub. The width of the road is set based on connections to Main Street within the adjacent Villages.
Impacts for future facilities will be evaluated by the City	N/A – All facilities/utilities have been co-located with the planned alignment of Main Street.
Future facilities are limited to 2 acres or cumulative total of 50 acres	N/A – All facilities/utilities have been co-located with the planned alignment of Main Street.
Avoid impacts to covered Narrow Endemic Species and QCB	Construction of Main Street, and associated facilities, will not impact any Quino checkerspot butterfly host plant locations and therefore no impacts to Quino checkerspot butterfly are anticipated. Additionally, surveys for Quino checkerspot were negative. Quino habitat assessments and protocol surveys are required for the off-site Preserve areas where Planned and Future facilities are proposed. Avoidance and minimization of potential impacts to Quino checkerspot butterfly within the Preserve shall be demonstrated through the following measures: conduct a habitat assessment within the footprint of potential facilities, conduct an adult flight season survey in accordance with the most recent survey protocol adopted by USFWS, and avoidance of impacts to habitat for Quino checkerspot butterfly, if observed, to the maximum extent practicable. Otay tarplant will be impacted by development of the road.

Source: Appendix B1

Equivalency Analysis for Planned and Future Facilities

Equivalency finding requirements are contained in Section 5.2.3.6 of the Subarea Plan. Per the MSCP Subarea Plan: "Impacts to covered Narrow Endemic Species from Planned and Future Facilities located within the 100% Conservation Areas of Covered Projects will be avoided to the maximum extent practicable. Where impacts are demonstrated to be unavoidable, impacts will be limited to 5% of the total Narrow Endemic Species population within the Project Area. Findings of equivalency will be made by the City for such Take Authorization for covered Narrow Endemic Species, pursuant to Section 5.2.3.6 of this Subarea Plan."

The proposed project Planned and Future Facilities would result in a net loss of Otay tarplant populations within the project area.

1. ***Definition of the project area.***

   The project area includes all of Village Four (preserve and development), Main Street, the detention facility and off-site areas. Planned and Future Facilities include the sewer and storm drains, associated access roads and the construction of Main Street.

2. ***A written description of the project.***

   The proposed Planned and Future Facilities would result in impacts as described in Appendix B1.

3. ***A written description of biological information available for the project site including the results of narrow endemic surveys.***

   Please refer to Appendix B1 for a written description of biological information available for the project site. One narrow endemic plant species were detected within the project area: the Otay tarplant (also listed as federally threatened and state endangered). Approximately 3,309 individuals of Otay tarplant will be impacted for the facilities including the number that is within the approved Boundary Line Adjustment that will be graded with the construction of Main Street. Approximately 6.3% of the project area population of Otay tarplant will be affected by the Planned and Future Facilities.

4. ***Written finding of infeasibility of total avoidance of narrow endemic species' population(s).***

   Given the road alignment and topography of the proposed project and facility design, a complete avoidance of Otay tarplant could not be accomplished. The location of Main Street has been previously determined with proposed projects to the east and west of Village Four relying on this connection. No additional Narrow Endemic Species will be affected by the approved Boundary Adjustment.

5. ***Quantification of impacts to narrow endemic species associated with the project including direct and indirect effects.***

   The proposed Future and Planned Facilities would remove approximately 3,309 Otay tarplant individuals from the Preserve. Because this impact is within a 100% conservation area, wildlife agency concurrence is required. The RMP includes an 80% ranch-wide preservation of Otay tarplant. Approximately 34,224 of Otay tarplant individuals will remain within the preserve boundaries not including those Otay tarplant included in the Planned and Future Facilities. The loss of 3,309 individuals represents approximately 6.3% of the population within the project area. A compensation plan, focused on on-site compensation within the Village Four Preserve, has been developed to address unavoidable impacts to Otay tarplant.

   During construction of the project, indirect effects to Otay tarplant may include dust, which could disrupt plant vitality in the short term, as well as construction-related soil erosion and runoff. Long-term edge effects could include intrusions by humans and domestic pets and possible trampling of individual plants, invasion by exotic plant and wildlife species, exposure to urban pollutants, soil erosion, litter, fire, and hydrological changes (e.g., changes in surface and groundwater level and quality). Mitigation measures to reduce the effects of indirect impacts will be addressed within the biological resources technical report for the proposed project.

6. ***A written description of project design features that reduce indirect effects such as edge treatments, landscaping, elevation differences; minimization; and/or compensation through restoration or enhancement.***

   The SPA Plans for each village include a Preserve Edge Plan, as required by the Otay Ranch RMP. The Preserve Edge is a 100-foot buffer between the Preserve and development and is not located within the Preserve. These plans detail the uses allowed within the 100-foot Preserve edge, provide a list of plant species that are appropriate adjacent to the Preserve, and overlap with the proposed 100-foot fuel modification zone. The Preserve Edge Plan (Atlantis Group January 2017) addresses drainage, toxic substances, lighting, noise, fuel modification, fencing, and invasive species, as required by Section 7.5.2 of the Chula Vista MSCP Subarea Plan.

   Further, the project site includes a Fire Protection Plan for each SPA Plan, which establishes a 100-foot fuel modification zone. When finalized, the Fire Protection Plan will include a plant palette reviewed and approved by the project biologist, which restricts the plant palette within the fuel modification zone.

7. ***Description of measures proposed to compensate for identified impacts in a manner that demonstrates that the proposed design including compensation would result in a long-term Preserve design for the species of concern that is functionally equivalent to or better than the Preserve design that would occur in the absence of the***

identified impact. The equivalency analysis will be based on the particular requirements of the species of concern.

While approximately 3,309 individuals of Otay tarplant would be impacted, the Otay Tarplant and Maritime Succulent Compensation and Mitigation Plan ~~a compensation and restoration plan~~ has been prepared (Appendix H of Appendix B1). Restoration and enhancement of areas within the proposed Village Four Preserve will ensure that there is no net loss of Otay tarplant populations.

8. ***A summary conclusion, including findings of consistency with the applicable percentage criterion.***

   Based on the information contained above, the proposed Planned and Future Facilities would ~~provide~~ adhere to the Otay Tarplant and Maritime Succulent Compensation and Mitigation Plan ~~an Otay tarplant compensation plan~~ which includes on-site compensation within the Village Four Preserve (Appendix H of Appendix B1).

Adjacent Land Uses and Setback Criteria

All development located adjacent to the Preserve is required to prepare an Edge Plan (Section 7.2 of the RMP; City of Chula Vista and County of San Diego 2002). The Preserve edge is a strip of land 100 feet wide that surrounds the perimeter of the Preserve; however, it is not part of the Preserve. A Preserve Edge Plan was prepared for Village Four (Appendix B2) in consultation with a qualified biologist. These plans detail the uses allowed within the 100-foot Preserve edge, provide a list of plant species that are appropriate adjacent to the Preserve, and overlap with the proposed 100-foot fuel modification zone. This Draft Preserve Edge Plan also analyzes how each village complies with the Preserve adjacency guidelines from Section 7.5.2 of the Chula Vista MSCP Subarea Plan (City of Chula Vista 2003).

In addition, the RMP outlines eight specific setback criteria in the guidelines for Policy 9.8, which all boundary modifications must adhere by. The setback criteria are designed to provide a buffer between the development and special-status species and resources, including coastal sage scrub, coastal California gnatcatcher, perennial (native) grassland, vernal pools, mulefat scrub, riparian woodlands, oak woodlands, and southern interior cypress forest. The Boundary Line Adjustment would include the following applicable resources: coastal sage scrub and coastal California gnatcatcher. The guidelines for these two resources are as follows (City of Chula Vista and County of San Diego 2002):

1. Coastal sage scrub and chaparral shall be provided a 100-foot setback where interfacing with residences and a minimum of 50 feet where interfacing with commercial and industrial development, active park uses, and schools.

2. Coastal sage scrub habitat occupied by gnatcatcher and/or cactus wren shall be provided a setback no less than 100 feet determined in consideration of topography or other factors through additional study at the SPA level.

The proposed project and associated Boundary Line Adjustment adhere to the setback criteria through compliance with RMP Policy 7.2, which requires a minimum 100-foot setback between development and the Preserve (City of Chula Vista and County of San Diego 2002). The 100-foot Preserve edge is not strictly an open space area but includes storm drainage facilities, recreational community facilities (passive hiking trail, fencing, interpretive and trail signage, and maintenance access via trail access points), and fuel modification zones. Perimeter fencing would be installed along the rear yards of the project site to restrict unauthorized access into the Preserve. There are no public streets that require lighting adjacent to the Preserve edge and trails and maintenance access roads within the Preserve would not be lighted. To avoid erosion impacts to the Preserve, the project has been designed to include energy dissipation and infiltration structures to reduce runoff and flow velocities to below erosive velocity limits. Because the proposed project provides a buffer of 100 feet between development and the Preserve edge, the setbacks prescribed by RMP Policy 9.8 are achieved (see MM-BIO-16 and MM-BIO-17). Please refer to the Preserve Edge Plan for more detailed information regarding uses within the 100-foot Preserve buffer (Appendix B2).

MSCP Preserve Boundary Line Adjustment and Findings

The movement of Main Street would require a Boundary Line Adjustment to the City of Chula Vista MSCP Subarea Plan and Otay Ranch RMP. This proposed action meets the definition of a Boundary Line Adjustment and was approved by the USFWS and CDFW on August 2, 2017 and by the City on August 4, 2017. The following findings are provided to describe the approved Preserve Boundary Line Adjustment Area for the proposed project to ensure that the biological functions and values assumed in the MSCP Subarea Plan are not compromised.

Preserve Boundary Line Adjustment Description

The approved Preserve Boundary Line Adjustment would modify the Preserve boundary along the northern portion of Village Four (Figure 5.3-10). The adjustment to the MSCP Preserve is proposed in order to shift the location of Main Street to the northern edge of Village Four. The City has planned on moving the Main Street alignment to the north prior to the development plans prepared by the Village Four applicant. The proposed alignment for the project reflects this new alignment shift to the north and is the focus of this MSCP Boundary Line Adjustment.

The approved Preserve Boundary Line Adjustment showing the give and take areas is depicted in Figures 5.3-10 and 5.3-11, and the end result of the Boundary Line Adjustment is depicted in Figure 5.3-12. It would result in a 1.72-acre increase in overall acreage of the Preserve.

Applicable Biological Functional Equivalency

Pursuant to the Chula Vista MSCP Subarea Plan, the standard of review for the approved Boundary Line Adjustment is one of "biological functional equivalency." As defined in Section 1.3 of the Chula Vista MSCP Subarea Plan (City of Chula Vista 2003):

> **Biological Functional Equivalency** – A modification to a Preserve boundary which results in a Preserve configuration with a biological value that is equal to or higher than the original Preserve configuration. The comparison of biological value is based on the "like or equivalent" exchange concept for biological factors identified in Section 5.4.2 of the MSCP Subregional Plan.

The following is a discussion and comparison of biological value of the approved Preserve Boundary Line Adjustment, pursuant to the provisions of Section 5.4.2 of the MSCP Subregional Plan (City of Chula Vista 2003):

1. Effects on Significantly and Sufficiently Conserved Habitats (i.e., the exchange maintains or improves the conservation, configuration, or status of significantly or sufficiently conserved habitats)

The exchange maintains or improves the conservation of conserved habitat. The Preserve Boundary Line Adjustment would provide for greater conservation, an increase of 2.48 acres of non-native grassland, an important habitat for raptor foraging, as well as an important habitat for special-status plant species such as Otay tarplant. Small changes would occur to coastal sage scrub (0.08 acre take), maritime succulent scrub (0.20 acre take), tamarisk scrub (0.04 acre take), cismontane alkali marsh (0.05 acre give) and disturbed habitat (0.25 acre give). Although the approved Boundary Line Adjustment would result in the loss of 0.74 acre of disturbed coastal sage scrub, there would be a net increase in overage acreage of the Preserve as a result of the approved Preserve Boundary Line Adjustment (Figure 5.3-11; Table 5.3-20).

Table 5.3-20
Preserve Boundary Line Adjustment Vegetation Impacts

Vegetation Type	Given to Preserve (Acres)	Removed from Preserve (Acres)	Net Change* (Acres)
Coastal Sage Scrub	+0.11	-0.19	-0.08
Disturbed Coastal Sage Scrub	0	-0.74	-0.74
Maritime Succulent Scrub	0	-0.20	-0.20
Non-native Grassland	+5.30	-2.82	+2.48
Cismontane Alkali Marsh	+0.05	0	+0.05
Tamarisk Scrub	0	-0.04	-0.04
Disturbed Habitat	+0.25	0	+0.25
Total	**+5.71**	**-3.99**	**+1.72**

Source: Appendix B1

* A positive number represents a net increase of this vegetation type in the Preserve, and a negative number represents a net decrease of this vegetation type in the Preserve.

Village Four Boundary
Existing MSCP Preserve Line
Planned/Future Facilities within Preserve
MSCP Preserve
Give
Take

0 200 400 Feet

AERIAL SOURCE: SANDAG IMAGERY 2014; DESIGN-HUNSAKER & ASSOC. INC. 2017

DUDEK

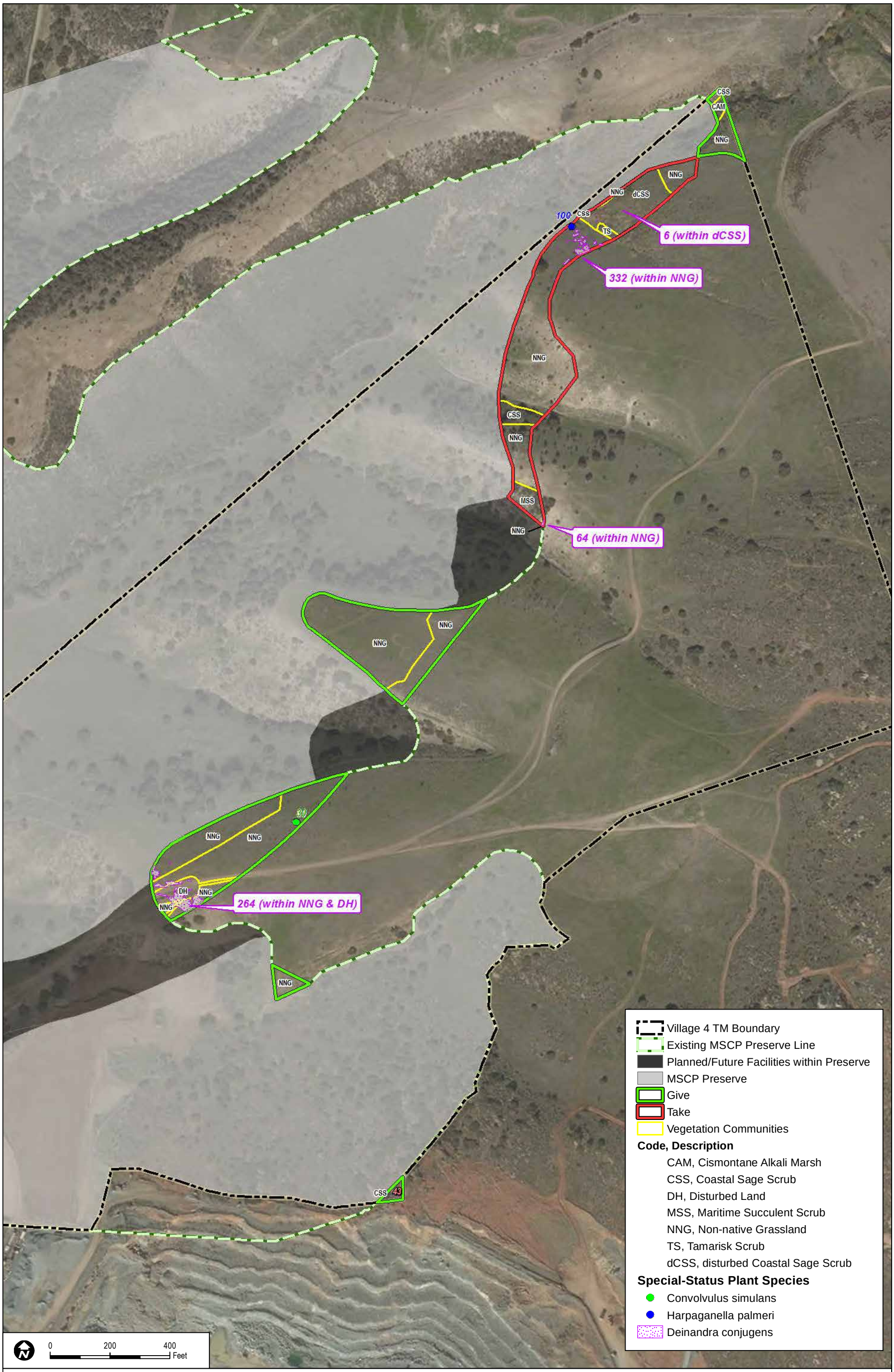
FIGURE 5.3-10

Village Four Give/Take Analysis - Proposed Change in Preserve

Otay Ranch Village Four SPA Plan Environmental Impact Report

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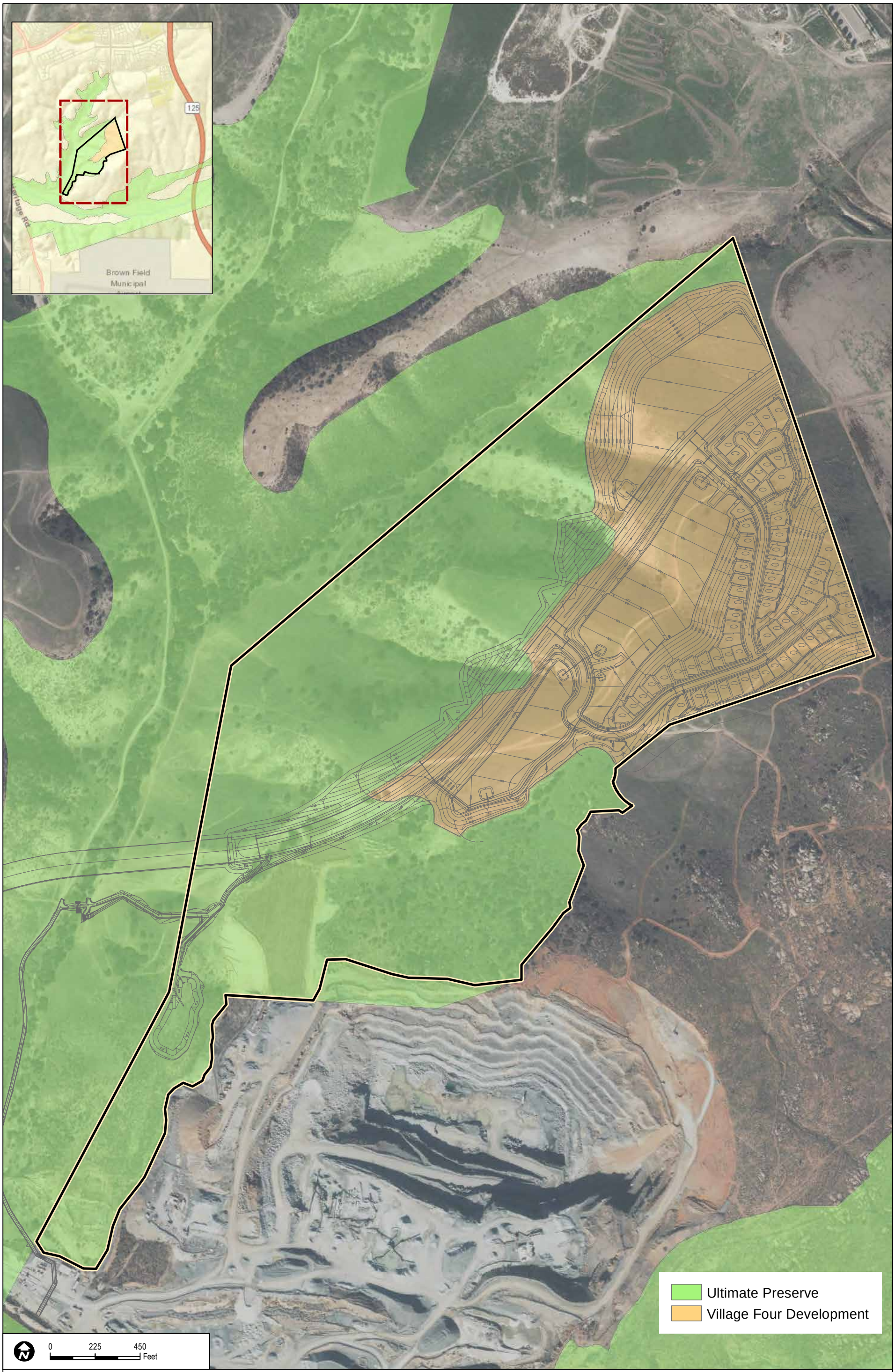
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FIGURE 5.3-11

Village Four Give/Take Analysis - Vegetation/Species Map within Give/Take Areas

Otay Ranch Village Four SPA Plan Environmental Impact Report

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AERIAL SOURCE: SANDAG IMAGERY 2014

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FIGURE 5.3-12

Village Four Give/Take Analysis - Ultimate Preserve Boundary

Otay Ranch Village Four SPA Plan Environmental Impact Report

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The take area is one contiguous polygon within the northern tip of the Village Four boundary in proximity to other development areas, including Village Eight West (Figure 5.3-11). Within this polygon the following vegetation communities would be removed from the Preserve: coastal sage scrub (including disturbed), maritime succulent scrub, non-native grassland, and tamarisk scrub. The coastal sage scrub proposed for take from the Preserve occurs on the slopes of the northern tip of Village Four. The take area is composed of habitat that is dominated by lemonade sumac and that is not occupied by California gnatcatcher. The disturbed coastal sage scrub proposed as part of the take is a portion of a larger polygon of disturbed coastal sage scrub that would be impacted by the proposed project development. This area is immediately adjacent to non-native grassland, which has encroached upon the native habitat (Appendix B1). Upon completion of the project, the slope would be revegetated with native habitat.

The non-native grassland proposed for take is located along the northern portion of the site and is adjacent to coastal sage scrub. It is dominated by non-native grasses and wild oats. The take includes a small portion of a larger maritime succulent scrub polygon. In addition, a small portion of tamarisk scrub, of which the remainder is included in development, is also included as part of this larger take (Appendix B1).

The five areas proposed to be given to the Preserve are largely composed of non-native grassland with coastal sage scrub and cismontane alkali marsh. The northern tip of Village Four included as part of the give is comprised of coastal sage scrub, cismontane alkali marsh, and non-native grassland. Along the southern boundary of Village Four is a small isolated area composed of coastal sage scrub included as part of the give. The other three areas are comprised of non-native grassland with a small patch of disturbed habitat. The non-native grassland proposed for the give is also dominated by non-native grasses and includes wild oats and is very similar in structure and composition to the take area. The net increase of non-native grassland within the Preserve provides valuable habitat for special-status species such as Otay tarplant, burrowing owl, and Quino checkerspot butterfly. It should be noted that not all non-native grassland provides suitable habitat for Quino checkerspot butterfly; however, in this case the give area has low grass cover and is situated at a highpoint (i.e., ridgeline) which is a preferred habitat feature for Quino checkerspot butterfly. The give areas are all adjacent to existing Preserve areas and provide for a net increase in the MSCP Preserve by a total of 1.72 acres (Appendix B1). Any give areas that are included within the Preserve and that might be impacted by the proposed road construction would be restored to native habitat and monitored with a 5-year mitigation and monitoring program to verify meeting success criteria. In addition, impacts to 0.2 acre of maritime succulent scrub associated with the Boundary Line Adjustment and subsequent development would be restored on-site within the Village Four Preserve (Figure 5.3-13). Details of the revegetation would be provided in the revegetation plan.

Configuration. The configuration of the conserved habitat is equivalent or improved with the approved Preserve Boundary Line Adjustment because the give area adds to and widens the Preserve within the tributary of Wolf Canyon. The two large give areas would increase the Preserve width in those areas by 200 feet and 470 feet. This area is important for conservation of special-status plant species and to provide foraging opportunities for raptors. The give areas also eliminate pockets of development that could have intruded into the Preserve. In addition, the take has been designed to follow the contour of the proposed development and limit encroachment into Wolf Canyon, providing a native vegetation buffer adjacent to the Preserve. The take area is entirely composed of graded slope, would be restored to native habitat, and would not contain structures or other hardscape. The northern tip of Village Four is designated development, but as a part of the Boundary Line Adjustment would be given to the Preserve, preventing further fragmentation of the Preserve.

Status of Significantly or Sufficiently Conserved Habitat. The status of the give habitat includes additional acreage of the Tier III habitat non-native grassland and includes conservation of a listed plant species, as discussed below. The small amount of coastal sage scrub that is within the take area is not occupied by listed species and is dominated by lemonade sumac, and the other polygon of coastal sage scrub is considered disturbed. The give also includes the continuation of a wetland community (cismontane alkali marsh) and surrounding uplands within Wolf Canyon (Appendix B1). The 0.2 acre of impact to maritime succulent scrub would be compensated for with the restoration of comparable acreages in the Village Four Preserve. This would offset the loss of maritime succulent scrub within the MSCP Preserve. Hence the status of the conserved habitats would be improved by providing equal or greater acreage of the sensitive species habitat preserved under the MSCP.

2. Effects on Covered Species (i.e., the exchange maintains or increases the conservation of Covered Species)

Surveys for special-status covered species have been conducted within the project site and within the Preserve Boundary Line Adjustment area. Surveys conducted in 2009 were part of a focused survey for California gnatcatcher, burrowing owl, and rare plants within the Otay Quarry property. More recent surveys, conducted in 2014 and 2015, focused on Village Four and included all of the above surveys in addition to focused surveys for Quino checkerspot butterfly. Numerous species were recorded during these survey efforts (Appendix B1). Finally, surveys were conducted for Otay tarplant in 2017 in all areas of the proposed project, including impact and preserve.

The results of the recent surveys indicated that, within the give area, the following Covered Species occurs: Otay tarplant. Within the take area, the Covered Species recorded in the recent surveys also include Otay tarplant (Appendix B1). The analysis of give and take of Covered

Species is provided in Table 5.3-21. A description of the give and take of this species is provided below. The numbers of Otay tarplant within the proposed Planned and Future Facilities, which are approved uses within the preserve are not included in Table 5.3-21. Although these populations are within the Preserve, they will be permanently impacted by the project and are thus not truly representative of the Preserve population.

Table 5.3-21
Summary of Give/Take for Covered and Non-Covered Special-Status Plant Species

Species	Existing Population within the Project Area	Existing Population within the Preserve	Give to the Preserve	Take from the Preserve	Net Population within the Preserve
Otay tarplant (*Deinandra conjugens*)	52,345	34,589 (not including Planned and Future Facilities)	37	-402	34,224
Small-flowered morning glory (*Convolvulus simulans*)	58	n/a	30	n/a	0
Palmer's grapplinghook (*Harpagonella palmeri*)	381	381	n/a	-100	281

Source: Appendix B1
Note: A total population of 264 Otay tarplant will be given as a part of the approved boundary adjustment. However, 227 of those individuals will be impacted by the construction of Main Street (an allowable use within the preserve) so while the 227 Otay tarplant are within the give area, the number is not added to the preservation of Otay tarplant since the area will ultimately be impacted by Main Street. Additionally, the 30 small-flowered morning glory individuals given to the Preserve will be impacted by the Planned Facilities; therefore, the net population within the Preserve is zero.

Otay tarplant. Within the project site, there are approximately 52,345 tarplant individuals. Of that population of 52,345 individuals, 34,589 are currently within the Preserve boundary with an additional 3,082 in the Preserve within the Planned and Future Facilities. There are approximately 264 individuals of Otay tarplant in give areas. However, 227 of those will be impacted by Planned and Future Facilities and therefore cannot be counted towards the populations given to the preserve as a part of the boundary adjustment. Therefore, the give will contain 37 tarplant individuals. A total of 402 Otay tarplant were recorded in the take area. Therefore, implementation of the Preserve boundary adjustment would result in a net reduction of approximately 365 individuals of Otay tarplant, or 0.7% of the project area population of 52,345. The approved Preserve Boundary Line Adjustment provides for suitable habitat for this species, and the species is documented within the give areas. The soils within the give and take areas are either diablo clay or linne clay loam soil, both of which are soils which support this species ~~(Appendix B1)~~. In addition, to compensate for impacts to Otay tarplant that are within the areas given to the Preserve but which would be used for the construction of Main Street, ~~a restoration plan would be prepared~~the Otay Tarplant and Maritime Succulent Compensation and Mitigation Plan has been prepared (Appendix H of Appendix B1). ~~The restoration plan would focus on the following goals and objectives:~~

~~Dethatch areas that previously supported Otay tarplant that are currently dominated by weeds.~~

~~Control non-native weeds that are suppressing Otay tarplant through a 3-year weed control program.~~

~~Enhance habitat and encourage Otay tarplant expansion through sustained weed control and supplemental seeding of native grassland species and Otay tarplant in areas between mapped occurrences.~~

~~Establish a stable trail alignment within the degraded road area and restore disturbed maritime succulent scrub habitat in PMA4 Subunit 4-2b.~~

Summary of MSCP Equivalency Finding "Effects on Covered Species." The approved Preserve Boundary Line Adjustment would remove a net of 0.08 acre of coastal sage scrub that is not occupied by California coastal gnatcatcher and 2.82 acres of non-native grassland with approximately 402 individuals of Otay tarplant. The give area would add 5.30 acres of non-native grassland containing approximately 264 individuals of Otay tarplant. However, construction of Main Street would result in the impact of 227 of those individuals and therefore cannot be counted toward the populations given to the Preserve as a part of the Boundary Line Adjustment. Overall, the Boundary Line Adjustment would result in a loss of approximately 365 Otay tarplant individuals (0.7%) of the known populations within the Village Four project site (52,345 individuals). In addition to the populations being conserved, suitable habitat on suitable soils will also be included, and improved configuration for the species is provided with the Boundary Line Adjustment. Although it would be removed from the Preserve area, the take area is entirely graded slope and would be landscaped with native species to provide a buffer for the Preserve. The slope would also be seeded with Otay tarplant in an effort to re-establish populations within these areas but will not be addressed with success criteria or managed as part of the preserve. In addition, the give areas would be a potential recipient of transplantable species such as cactus which may be location located within the impact area. To compensate for the net loss of 365 Otay tarplant individuals as a part of the Boundary Line Adjustment, the Otay Tarplant and Maritime Succulent Compensation and Mitigation Plan ~~an Otay tarplant mitigation plan would be~~ has been developed which ~~would~~ includes on-site compensation and mitigation (Appendix H of Appendix B1). ~~The mitigation plan would be prepared by a qualified City-approved biologist familiar with the City's MSCP Subarea Plan and will include an implementation plan; appropriate seed mixtures and planting method; an irrigation method (if required); quantitative and qualitative success criteria; a maintenance, monitoring, and reporting program; an estimated completion time; and contingency measures.~~ The project applicant ~~would~~ shall be required to prepare and implement the mitigation plan subject to the oversight and approval of the Development Services Director (or their designee) (Appendix B1). Specific information regarding the revegetation effort for the graded slope and the Otay tarplant mitigation plan will be provided in the Preserve Edge Plan (Appendix B2) and the Revegetation Plan to be prepared for the proposed project.

Otay Tarplant Restoration (2.9 Ac.)
MSS Restoration (1.3 Ac.)
Village Four Boundary
Ownership Boundary
Existing MSCP Preserve Line
Deinandra conjugens (2017)
ACOE/RWQCB/CDFW/CITY Non-Wetland Waters

Vegetation Communities/Land Covers:

Coastal Sage Scrub
Disturbed Coastal Sage Scrub
Disturbed Habitat
Maritime Succulent Scrub
Non-Native Grassland
Not Mapped (within Existing Preserve)

0 75 150 Feet

SANDAG Technical Services - GIS

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FIGURE 5.3-13

Maritime Succulent Scrub and Otay Tarplant Restoration Locations

Otay Ranch Village Four SPA Plan Environmental Impact Report

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3. Effects on Habitat Linkages and Function of Preserve Areas (i.e., the exchange maintains or improves a habitat linkage or wildlife corridor)

Wolf Canyon is an extension of the Preserve system from the Otay River Valley, capturing live-in habitat for birds and smaller mammal species. Wolf Canyon is identified in the Otay Ranch Wildlife Corridor Study as a local corridor for target mammal species. The Wolf Canyon local corridor would be unaffected by the approved Boundary Line Adjustment (Appendix B1).

Covered species that may use the give and take areas for movement would benefit by a reduction of development intrusion into the preserve by the removal of the two "points" of habitat area from development. The take area is entirely graded slope and will be landscaped with native species providing a buffer for the Preserve, although it will be removed from the Preserve area. This graded slope will not contain structures, roads, or infrastructure. Therefore, it would still be able to function as wildlife movement habitat (Appendix B1). Additional information regarding the revegetation of the 2:1 slope will be provided in the Preserve Edge Plan (Appendix B2) and the Revegetation Plan to be prepared for the proposed project.

The edge effects of a Preserve area are assumed to extend approximately 150 feet into Preserve lands (Appendix B1). Edge effects are especially important to species such as birds, which often suffer from predation from homeowner's pets. Edge effects also can be detrimental to special-status plant species that can be outcompeted by invasive plants from developed areas. Improving the edge-to-area ratio of a preserve improves the protection for the special-status species occurring within it and also can improve the efficiency of Preserve management by reducing the stressors upon the Preserve that need to be dealt with and by making it more efficient to monitor since less time is required to monitor a block than a narrow strip of Preserve land. That edge length is directly related to the edge effects associated with the 150-foot-wide edge area. The current edge length along the Preserve/development interface is calculated as 6,300 linear feet. The approved Preserve Boundary Line Adjustment would reduce the linear edge of the Preserve to 4,300 linear feet, which reduces the overall edge effects within the Preserve. When taking into account the 150 feet of edge effect, a reduction of 2,000 linear feet of Preserve/development interface results in almost 7 acres less of edge effect within the Preserve (Appendix B1).

In summary, the habitat linkage and Preserve function would be improved because of the following (Appendix B1):

- The connection that is currently documented to be used in Wolf Canyon is unaffected.
- Two "points" of development will be removed from intrusion into the Preserve thus widening the habitat area within the tributary to Wolf Canyon.

- Efficiency is improved by giving additional habitat to the Preserve to create more of a block of habitat.
- Edge effects are reduced by reducing the linear length of Preserve edge.

4. Effects on Preserve Configuration and Management (i.e., the exchange results in similar or improved management efficiency and/or protection for biological resources)

Preserve management efficiency or effectiveness is not compromised by the approved Preserve Boundary Line Adjustment. As part of the Otay Ranch Resource Management Plan, Preserve lands are required to be conveyed to the Otay Ranch Preserve.

Similar or Improved Management Efficiency. The approved Preserve Boundary Line Adjustment would provide for a more effective and contiguous Preserve design. The current MSCP Preserve has an undulating edge shape with narrow parts of development intruding into the Preserve. This gives the adopted Preserve a high perimeter-to-area ratio, meaning that the Preserve has many narrow parts that have a high linear length and yet small acreage. Two of these narrow intrusion areas are proposed to be adjusted into the Preserve and would reduce edge effects at those two locations by 550 feet and 150 feet. As noted above, the take area is proposed to be a graded slope, will not contain structures, and will be landscaped with native species.

Protection for Biological Resources. The adjustment to the MSCP Preserve is proposed in order to shift the location of Main Street to the northern edge of Village Four. By doing so, the road functions as a barrier to the influences of development within the Preserve, and development is concentrated in the southern and eastern portions of the site so that it is adjacent to other development and away from the Preserve. Covered Species preservation is roughly similar with the approved Preserve Boundary Line Adjustment. Although there is a reduction in the overall population of Otay tarplant, additional habitat for this species would be conserved, thus allowing for the potential expansion of existing populations within the Preserve. In addition, ~~an~~ the on-site the Otay Tarplant and Maritime Succulent Compensation and Mitigation Plan ~~compensation and mitigation plan~~ has been developed to offset project impacts relating to the boundary adjustment (Appendix H of Appendix B1).

5. Effects on Ecotones or Other Conditions Affecting Species Diversity (i.e., the exchange maintains topographic and structural diversity and habitat interfaces of the Preserve)

The approved Preserve Boundary Line Adjustment would result in little change to the ecotone or species diversity since the habitats proposed for give and take are primarily upland habitat (Appendix B1).

6. Effects on Species of Concern not on the Covered Species List (i.e., the exchange does not significantly increase the likelihood that an non-covered species will meet the criteria for listing under either the federal or state Endangered Species Acts)

The approved Boundary Line Adjustment would contribute to the conservation of non-covered species of concern in the area that are known to use grassland. Non-covered grassland bird species recorded occur within the proposed project site include horned lark and loggerhead shrike. Additionally, the proposed adjustment would provide foraging habitat for non-covered raptor species (Appendix B1).

Two additional plant species would be affected by the Boundary Line Adjustment: small-flowered morning glory and Palmer's grapplinghook. The approved Boundary Line Adjustment would include a population of approximately 30 small-flowered morning glory individuals while also removing a population of approximately 100 Palmer's grapplinghook individuals (Appendix B1).

Small-Flowered Morning Glory. The approved Preserve Boundary Line Adjustment would increase the amount of small-flowered morning glory within the Preserve by 30 individuals; however, these 30 individuals would be impacted by the Planned Facilities in the Preserve. Small-flowered morning glory has a CRPR of 4.2, which means that this species is of limited distribution, but is not considered rare, and is only fairly threatened; therefore, loss of 30 individuals does not significantly increase the likelihood that this species will meet the criteria for listing under either the federal or state Endangered Species Acts (Appendix B1).

Palmer's Grapplinghook. Although the approved Preserve Boundary Line Adjustment would result in a loss of approximately 100 individuals, this loss does not significantly increase the likelihood that this species will meet the criteria for listing under either the federal or state Endangered Species Acts. Palmer's grapplinghook has a CRPR of 4.2, which means that this species is of limited distribution, but is not considered rare, and is only fairly threatened (Appendix B1).

Summary of Biological Value Comparison

Based on the analysis contained in this section, the approved Preserve Boundary Line Adjustment, coupled with mitigation for impacts to Otay tarplant, provides for an equivalent or higher biological value of the Preserve, and therefore no significant impacts to regional resource planning would result (Appendix B1). The ultimate design of the Preserve is shown in Figure 5.3-12.

Equivalency Analysis for the Boundary Line Adjustment

Equivalency finding requirements are provided in Section 5.2.3.6 of the Subarea Plan. Equivalency findings are required when a Preserve boundary adjustment results in impacts to covered Narrow Endemic Species beyond the threshold limits identified in the Subarea Plan. The

approved Boundary Line Adjustment would result in a net loss of Otay tarplant populations with on-site compensation(Appendix B1).

1. Definition of the project area.

The project area includes all of Village Four (Preserve and development), and off-site areas necessary for locating sewer and storm drain facilities, along with associated access roads necessary for the detention basin.

2. A written description of the project.

The approved Boundary Line Adjustment to the MSCP Subarea Plan would remove one area currently designated as Preserve and permit this for development; it would also add four areas currently designated as development to the Preserve.

3. A written description of biological information available for the project site including the results of Narrow Endemic surveys.

Please refer to Section 5.3.1 and Appendix B1 for a description of biological resources in the project area. One Narrow Endemic plant species was detected within the project area: Otay tarplant (also listed as federally threatened and state endangered). Approximately 402 individuals of Otay tarplant have been recorded within the take area. The give area includes approximately 264 individuals of Otay tarplant located within non-native grassland primarily in the southwestern give area, of which 227 would be impacted by the construction of Main Street resulting in a give of 37 individuals. Approximately 0.7% of the project area population of Otay tarplant would be affected by the Boundary Line Adjustment (Appendix B1).

4. Written finding of infeasibility of total avoidance of Narrow Endemic species' population(s).

Given the goals and configuration of the proposed project, a complete avoidance of Otay tarplant could not be accomplished in the approved Preserve Boundary Line Adjustment. The location of Main Street has been previously determined with proposed projects to the east and west of Village Four relying on this connection and the City proposed alignment. No additional Narrow Endemic Species would be affected by the approved Boundary Line Adjustment (Appendix B1).

5. Quantification of impacts to Narrow Endemic Species associated with the project including direct and indirect effects.

The approved Preserve Boundary Line Adjustment would remove approximately 402 Otay tarplant individuals from the Preserve. Because this impact to the 402 Otay tarplant individuals is within a 100% conservation area, wildlife agency concurrence is required. Approximately 37 tarplant individuals would be added to the Preserve, resulting in a net decrease of 365 individuals. The RMP includes an 80% ranch-wide preservation of Otay tarplant. Approximately

14,989 additional Otay tarplant individuals would remain within the Preserve boundaries not including those Otay tarplant within the Planned and Future Facilities. The loss of 365 individuals represents approximately 0.7% of the population within the project area (Appendix B1). A compensation plan, focused on on-site compensation within the Village Four Preserve, has been developed to address unavoidable impacts to Otay tarplant.

During construction of the project, indirect effects to Otay tarplant may include dust, which could disrupt plant vitality in the short term, as well as construction-related soil erosion and runoff. Long-term edge effects could include intrusions by humans and domestic pets and possible trampling of individual plants, invasion by exotic plant and wildlife species, exposure to urban pollutants, soil erosion, litter, fire, and hydrological changes (e.g., changes in surface and groundwater level and quality). Mitigation measures to reduce the effects of indirect impacts for the proposed project as outlined in Section 5.3.6.

6. A written description of project design features that reduce indirect effects such as edge treatments, landscaping, elevation differences; minimization; and/or compensation through restoration or enhancement.

The SPA Plans for each village include a Preserve Edge Plan, as required by the Otay Ranch RMP. The Preserve edge is a 100-foot buffer between the Preserve and development and is not located within the Preserve. These plans detail the uses allowed within the 100-foot-wide Preserve edge, provide a list of plant species that are appropriate adjacent to the Preserve, and overlap with the proposed 100-foot fuel modification zone. The Preserve Edge Plan (Appendix B2) addresses drainage, toxic substances, lighting, noise, fuel modification, fencing, and invasive species, as required by Section 7.5.2 of the Chula Vista MSCP Subarea Plan.

The Preserve Edge Plan includes the following: To prevent drainage of toxins, chemicals and other features that can degrade the Preserve, the project will include energy dissipation and infiltration structures and post-construction BMPs; to prevent lighting disruptions within the Preserve, rear yards with no lighting will back against the 100-foot edge, lights will be shielded or will not be present; no toxic substances are anticipated to be used or will be addressed by the drainage protection features above; noise will be addressed in compliance with both construction and long term maintenance by construction of walls and monitoring; landscaping will not include invasive plant species; all fuel modification will be within the development or within the 100-foot edge; and access will be restricted by signage and fencing.

Further, the project site includes a Fire Protection Plan for each SPA Plan (Appendix F), which establishes a 100-foot fuel modification zone. When finalized, the Fire Protection Plan will include a plant palette reviewed and approved by the project biologist, which restricts the plant palette within the fuel modification zone.

Finally, the proposed project is part of the Otay Ranch GDP. The Otay Ranch GDP required the preparation of an RMP, which jointly established the Otay Ranch Preserve. The Otay Ranch Preserve is a "master planned Preserve system" managed by a Preserve Owner/Manager. The operations of the Preserve Owner/Manager are financed by a property tax assessment on all developed parcels within Otay Ranch. Further, the Otay Ranch Phase 2 RMP requires that for every 1 acre of development in Otay Ranch, 1.188 acres will be conveyed to the Otay Ranch Preserve. Therefore, because the project is within Otay Ranch, it will contribute significant land and funding to the Preserve, which are available for restoration and enhancement (Appendix B1).

7. Description of measures proposed to compensate for identified impacts in a manner that demonstrates that the proposed design including compensation would result in a long-term Preserve design for the species of concern that is functionally equivalent to or better than the Preserve design that would occur in the absence of the identified impact. The equivalency analysis will be based on the particular requirements of the species of concern.

While approximately 402 individuals of Otay tarplant would be impacted, the approved Preserve Boundary Line Adjustment would conserve 37 individuals that would otherwise be subject to impacts without the Boundary Line Adjustment. In addition, to compensate for impacts to Otay tarplant that are within the areas given to the Preserve, but which will be used for the construction of Main Street, the Otay Tarplant and Maritime Succulent Compensation and Mitigation Plan has been ~~a restoration plan will be~~ prepared (Appendix H of Appendix B1). Restoration and enhancement of areas within the Village Four Preserve will ensure that there is no net loss of Otay tarplant populations (Figure 5.3-13). The Boundary Line Adjustment proposes to smooth edges of the Preserve in Wolf Canyon, which lessens edge effects by reducing the overall length of interface between development and the Preserve. The give area provides additional suitable habitat and soil types for Otay tarplant, some of which will be utilized for compensation. In addition, the Boundary Line Adjustment would preserve habitat for Narrow Endemic Species that occur, or could potentially occur. The give of acreage to the Preserve is approximately 5.71 acres and the take acreage totals approximately 3.99 acres. The result of the approved Preserve Boundary Line Adjustment is a net increase of 1.72 acres (including disturbed land) to the Preserve. The restoration and enhancement plan for Otay tarplant will also include on-site restoration of 0.2 acre of maritime succulent scrub, which will developed as a part of the Boundary Line Adjustment (Appendix B1).

8. A summary conclusion, including findings of consistency with the applicable percentage criterion.

Based on the information contained above, the approved Preserve Boundary Line Adjustment would provide conservation of Covered Species and habitats within the modified Preserve by

inclusion of additional upland vegetation communities in the Preserve. Although a population of the Narrow Endemic Species Otay tarplant would be impacted, impacts are limited to 0.7% of the population within the entire project area and additional populations will be preserved. The Chula Vista MSCP Subarea Plan states that impacts to Narrow Endemic Species are limited to 5% of the project area. The approved Boundary Line Adjustment's impacts to Otay tarplant are less than that threshold (Appendix B1). To offset unavoidable impacts to Otay tarplant, the Otay Tarplant and Maritime Succulent Compensation and Mitigation Plan~~an Otay tarplant Compensation Plan would be~~ has been developed ~~that will~~which includes on-site compensation within the Village Four Preserve (Appendix H of Appendix B1). This ~~Compensation P~~plan will also include the restoration of 0.20 acre of maritime succulent scrub. The approved Preserve Boundary Line Adjustment would result in an increase of Preserve acreage (1.72 acres), and improve Preserve design by resulting in less edge and, hence, fewer edge effects. The adjustment would not affect Preserve management or wildlife movement: wildlife will continue to be able to move throughout Wolf Canyon to the Otay River Valley (Appendix B1). Based on analysis of approved and currently proposed projects within Otay Ranch, the ranch-wide preservation meets or exceeds the goals of the RMP.

Habitat Loss and Incidental Take Ordinance

As previously stated, a portion of the proposed project is located outside of the Otay Ranch boundary and is subject to the City's HLIT Ordinance (Section 17.35 of the Chula Vista Municipal Code). These off-site areas are all affiliated with the Quarry and are associated with the Planned Facilities or the fuel modification zone (Table 5.3-22). The off-site impact area, as proposed, is consistent with City Planning Guidelines and does not conflict with the goals or standards of the City's Subarea Plan; however, compliance with the City's HLIT Ordinance will require conformance with several standard measures to address habitat loss. As required by the HLIT Ordinance all fuel modification brush management zones, required as a result of new development and as required by the City Fire Marshal, shall be located outside the Preserve (Section 17.35 of the Chula Vista Municipal Code).

Table 5.3-22
Impacts to Vegetation Communities and Land Covers
Associated with Off-Site Development Impacts

Vegetation Type	Off-Site Development Permanent Impacts (Acres)
Sensitive Vegetation Communities	
Coastal Sage Scrub	0.24
Non-Native Grassland	1.47
Desert Saltbush Scrub	<0.01
Sensitive Vegetation Communities Subtotal	*1.72*

Table 5.3-22
Impacts to Vegetation Communities and Land Covers
Associated with Off-Site Development Impacts

Vegetation Type	Off-Site Development Permanent Impacts (Acres)
Non-Sensitive Vegetation Communities/Land Covers	
Disturbed Habitat	0.05
Developed	0.19
Non-Sensitive Vegetation Communities/Land Covers Subtotal	*0.24*
Total	**1.96**

Source: Appendix B1

Impacts to native upland vegetation communities are considered significant under the City's HLIT Ordinance and require mitigation (City of Chula Vista 2003; Table 5.3-10). Vegetation communities considered sensitive under the City Subarea Plan are those listed as Tier I through Tier III (rare uplands to common uplands). Significant impacts include non-native grassland (Tier III), desert saltbush scrub (Tier II), and coastal sage scrub (Tier II). Impacts to vegetation communities that are not considered significant include impacts to Tier IV habitats (other uplands) consisting of disturbed habitat and developed land. Impacts to areas subject to HLIT are quantified in Table 5.3-22, and would be reduced to less than significant by MM-BIO-7 (refer to Appendix B1).

Data collected by Dudek within the Quarry (Dudek 2011) and verification surveys conducted in May 2017 were used to determine that there were no special-status plant or wildlife species observed in the off-site areas of the Quarry, therefore impacts are not expected to occur to special-status species.

The proposed project would apply the HLIT Ordinance to those areas located outside of Otay Ranch, specifically within the Quarry.

Conclusion

The proposed project would be consistent with all applicable plans, policies, and ordinances related to biological resources.

G. Be inconsistent with General Plan biological resource policies thereby resulting in a significant physical impact.

City of Chula Vista General Plan

Governing policies of the General Plan include conservation of sensitive biological resources through implementation of the MSCP Subarea plan and establishment of an open space Preserve

system. The following objective is outlined in the General Plan relevant to biological resources (City of Chula Vista 2005):

- **Objective E 1:** Conserve Chula Vista's sensitive biological resources.

Refer to the analysis of impacts throughout this section. Impacts would be less than significant with the incorporation of mitigation measures, as indicated by the project's Biological Technical Report (Appendix B1).

5.3.5 Level of Significance Prior to Mitigation

Prior to mitigation, impacts associated with biological resources would be considered potentially significant.

5.3.6 Mitigation Measures

MM-BIO-1 **Preserve Conveyance.** Prior to the approval of the first final map for the project, the project applicant shall coordinate with the City of Chula Vista (City) Engineer and annex the project site within the Otay Ranch Preserve Community Facilities District No. 97-2.

Prior to the recordation of each final map, the applicant shall convey land within the Otay Ranch Preserve to the Otay Ranch Preserve Owner/Manager or its designee at a ratio of 1.188 acres for each "Developable Area" as defined by the Resource Management Plan (RMP). Access for maintenance purposes shall also be conveyed to the satisfaction of the Preserve Owner/Manager. Each tentative map (TM) shall be subject to a condition that the applicant shall execute a maintenance agreement with the Preserve Owner/Manager stating that it is the responsibility of the applicant to maintain the conveyed parcel until the Preserve Community Facilities District has generated sufficient revenues to enable the Preserve Owner/Manager to assume maintenance responsibilities. The applicant shall maintain and manage the offered conveyance property consistent with the RMP Phase 2 until the Preserve Community Facilities District has generated sufficient revenues to enable the Preserve Owner/Manager to assume maintenance and management responsibilities.

MM-BIO-2 **Mitigation for Maritime Succulent Scrub.** Prior to the issuance of any land development permits that impact maritime succulent scrub, including clearing and grubbing or grading permits, the project applicant shall prepare a restoration plan to restore impacts to maritime succulent scrub at a 2:1 ratio pursuant to the Otay Ranch Resource Management Plan (RMP). Restoration will occur within the

Village Four Preserve. Impacts would include 0.20 acre from the approved Preserve Boundary Adjustment and 0.52 acre from the Village Four Project (including 0.07 acre from the development area and 0.45 acre from Planned Facilities within the Preserve). Therefore, compensation of maritime succulent scrub loss associated with the Preserve Boundary Adjustment is discussed collectively with mitigation of maritime succulent scrub from the Village Four Project impacts as specified in the table below.

Compensation and Mitigation for Impacts to Maritime Succulent Scrub

Vegetation Community	Permanent Impacts (acres)	Cause of Impact	Replacement Type	Mitigation Ratio	Mitigation Required (acres)
Maritime Succulent Scrub	0.20	Preserve Boundary Adjustment	Compensation	1:1	0.20
Maritime Succulent Scrub	0.07	Development Impacts - Outside Preserve	Mitigation	2:1	0.14
Maritime Succulent Scrub	0.45	Planned Facilities Impacts - Inside Preserve	Mitigation	2:1	0.90
Total	**0.72**	**--**	**--**	**--**	**1.24**

The maritime succulent scrub restoration shall be prepared by a City-approved biologist and to the satisfaction of the Development Services Director (or their designee) pursuant to the Otay Ranch RMP restoration requirements. The restoration plan shall include, at a minimum, an implementation strategy; species salvage and relocation; appropriate seed mixtures and planting method; irrigation; quantitative and qualitative success criteria; a maintenance, monitoring, and reporting program; an estimated completion time; and contingency measures. The project applicant shall also be required to implement the revegetation plan subject to the oversight and approval of the Development Services Director (or their designee). Additionally, since the maritime succulent scrub impacted is assumed to be suitable for coastal cactus wren, the restoration monitoring shall include surveys within the mitigation areas to determine if coastal cactus wren are present.

MM-BIO-3 **On-site Revegetation Plan.** Prior to issuance of land development permits, including clearing, grubbing, grading and construction permits, for the Future and

Planned Facilities associated with Village Four, the project applicant shall provide a revegetation plan for any give areas that are included within the Preserve and that might be impacted by the proposed road construction. The give areas would be restored to native habitat and monitored with a 5-year mitigation and monitoring program to verify meeting success criteria. Additionally, the project applicant shall provide a revegetation plan for the take area. Although it would be removed from the Preserve area, the take area will be a manufactured graded slope and would be landscaped with native species to provide a buffer for the Preserve. The revegetation plan must be prepared by a qualified City-approved biologist familiar with the City of Chula Vista's Multiple Species Conservation Program Subarea Plan and must include, but not be limited to, an implementation plan; appropriate seed mixtures and planting method; an irrigation method; quantitative and qualitative success criteria; a maintenance, monitoring, and reporting program; an estimated completion time; and contingency measures. The project applicant shall be required to prepare and implement the revegetation plan subject to the oversight and approval of the Development Services Director (or their designee).

MM-BIO-4 **Biological Monitor.** Prior to issuance of land development permits, including clearing, grubbing, grading, and/or construction permits, for any areas adjacent to the Preserve and the off-site facilities located within the Preserve, the project applicant shall provide written confirmation that a City-approved biological monitor has been retained and shall be on site during clearing, grubbing, and/or grading activities. The biological monitor shall attend all pre-construction meetings and be present during the removal of any vegetation to ensure that the approved limits of disturbance are not exceeded and provide periodic monitoring of the impact area including, but not limited to, trenches, stockpiles, storage areas, and protective fencing. The biological monitor shall be authorized to halt all associated project activities that may be in violation of the City's Multiple Species Conservation Program Subarea Plan and/or permits issued by any other agencies having jurisdictional authority over the project.

Before construction activities occur in areas containing sensitive biological resources within the off-site facilities area, all workers shall be educated by a City-approved biologist to recognize and avoid those areas that have been marked as sensitive biological resources.

MM-BIO-5 **Construction Fencing.** Prior to issuance of grading permits in portions of the Village Four Development Area that are adjacent to the Preserve, the project applicant shall install fencing. Prior to issuance of land development permits,

including clearing, grubbing, grading, and/or construction permits, the project applicant shall install fencing in accordance with Chula Vista Municipal Code Section 17.35.030. Prominently colored, well-installed fencing and signage shall be in place wherever the limits of grading are adjacent to sensitive vegetation communities or other biological resources, as identified by the qualified monitoring biologist. Fencing shall remain in place during all construction activities. All temporary fencing shall be shown on grading plans for areas adjacent to the Preserve and for all off-site facilities constructed within the Preserve. Prior to release of grading and/or improvement bonds, a qualified biologist shall provide evidence that work was conducted as authorized under the approved land development permit and associated plans.

MM-BIO-6 **Construction Plan Notes.** Prior to issuance of land development permits, including clearing, grubbing, grading, and construction permits, the following notes shall be included on the applicable construction plans to the satisfaction of the Development Services Director (or their designee):

- A qualified biologist shall be on site to monitor all vegetation clearing and periodically thereafter to ensure implementation of appropriate resource protection measures.
- Dewatering shall be conducted in accordance with standard regulations of the Regional Water Quality Control Board. A permit to discharge water from dewatering activities would be required. This would minimize erosion, siltation, and pollution within sensitive communities.
- During construction, material stockpiles shall be placed such that they cause minimal interference with on-site drainage patterns. This would protect sensitive vegetation from being inundated with sediment-laden runoff.
- Material stockpiles shall be covered when not in use. This would prevent fly-off that could damage nearby sensitive vegetation communities.
- Graded areas shall be periodically watered to minimize dust that may affect adjacent vegetation.

MM-BIO-7 **HLIT for Off-Site Areas.** Prior to issuance of any land development permits, including clearing or grubbing and grading and/or construction permits, the project would be required to obtain a Habitat Loss and Incidental Take (HLIT) Permit pursuant to Section 17.35 of the Chula Vista Municipal Code for impacts to Chula Vista Multiple Species Conservation Program (MSCP) Tier I, II, and III vegetation communities as shown below in the table below (Mitigation for

Permanent Impacts to Upland Vegetation Outside of Otay Ranch (HLIT)) and in accordance with Table 5-3 of the Chula Vista MSCP Subarea Plan. These impacts are due to the Planned Facilities and fuel modification. Mitigation for off-site impacts outside of Otay Ranch would be in accordance with the Chula Vista MSCP Subarea Plan and the City's (HLIT) Ordinance (Section 17.35 of the Chula Vista Municipal Code) and as provided in the HLIT Findings (Appendix B1).

Prior to issuance of any land development permits, the applicant shall mitigate for direct impacts pursuant to Section 5.2.2 of the City's MSCP Subarea Plan. In compliance with the City's Subarea Plan, the applicant shall secure mitigation credits within a City- and wildlife agency-approved Conservation Bank or other approved location offering mitigation credits consistent with the ratios specified in the table below or pay into a City established mitigation fee program.

Mitigation for Permanent Impacts to Upland Vegetation Outside of Otay Ranch (HLIT)

Off-Site Area	Vegetation Community	Tier	Permanent Impacts (acres)	Location of Impact	Mitigation Ratio	Mitigation Required (acres)
Otay Quarry- Extension of Planned Facilities	Desert Saltbush Scrub	II	<0.01	Outside Preserve	1:1	<0.01
Otay Quarry- Fuel Modification Zone	Coastal sage scrub	II	0.24	Outside Preserve	1:1	0.24
	Non-native grassland	III	1.47	Outside Preserve	1:1	1.47
					Total for Otay Quarry	**1.71**

Note: Tiers and mitigation ratios are in accordance with the Chula Vista MSCP Subarea Plan's HLIT Upland Habitat Mitigation Ratios. No mitigation is required for Tier IV habitat types (i.e., non-sensitive vegetation communities and land covers including disturbed land, ornamental, or developed land). It is assumed that mitigation would be located inside the Preserve. Mitigation outside of the Preserve (i.e., Chula Vista MSCP Subarea Plan or Planning Area boundary) would require increased mitigation per Table 5-3 of the City's MSCP Subarea Plan.

The applicant shall be required to provide verification of purchase to the City prior to issuance of any land development permits.

In the event that a project applicant is unable to secure mitigation through an established mitigation bank approved by the City and wildlife agencies, the project applicant shall secure the required mitigation through the conservation of an area containing in-kind habitat within the City's MSCP Subarea Plan or MSCP Planning Area in accordance with the mitigation ratios contained in Table 5-3 of the City's MSCP Subarea Plan and subject to wildlife agency concurrence.

Prior to issuance of any land development permit, and to the satisfaction and oversight of the City's Development Services Director (or their designee), the applicant shall secure the parcel(s) that would be permanently preserved for in-kind habitat impact mitigation, prepare a long-term management and monitoring plan for the mitigation area, secure an appropriate management entity to ensure that long-term biological resource management and monitoring of the mitigation area is implemented in perpetuity, and establish a long-term funding mechanism for the management and monitoring of the mitigation area in perpetuity.

The long-term management and monitoring plan shall provide management measures to be implemented to sustain the viability of the preserved habitat and identify timing for implementing the measures prescribed in the management and monitoring plan. The mitigation parcel shall be restricted from future development and permanently preserved through the recordation of a conservation easement or other mechanism approved by the wildlife agencies as being sufficient to insure that the lands are protected in perpetuity. The conservation easement or other mechanism approved by the wildlife agencies shall be recorded prior to issuance of any land development permits.

The project applicant shall be responsible for maintaining the biological integrity of the mitigation area and shall abide by all management and monitoring measures identified in the management and monitoring plan until such time as the established long-term funding mechanism has generated sufficient revenues to enable a City-approved management entity to assume the long-term maintenance and management responsibilities.

MM-BIO-8 **Resource Salvage Plan.** Prior to the issuance of land development permits, including clearing or grubbing and grading permits, for areas with salvageable sensitive biological resources, including Otay tarplant, variegated dudleya, and San Diego barrel cactus, (including plant materials and soils/seed bank), the project applicant shall prepare a resource salvage plan. The Resource Salvage Plan shall be prepared by a City-approved biologist to the satisfaction of the Development Services Director (or their designee).

The Resource Salvage Plan shall, at a minimum, evaluate options for plant salvage and relocation, including individual cactus salvage, native plant mulching, selective soil salvaging, application of plant materials on manufactured slopes, and application/relocation of resources within the Preserve. The Resource Salvage Plan shall include incorporation of relocation efforts for non-covered species, including singlewhorl burrobrush, which is considered special status according to

the California Environmental Quality Act and that would be impacted with project implementation. Relocation efforts may include seed collection and/or transplantation to a suitable receptor site and would be based on the most reliable methods of successful relocation. The program shall also contain a recommendation for method of salvage and relocation/application based on feasibility of implementation and likelihood of success. The program shall include, at a minimum, an implementation plan, maintenance and monitoring program, estimated completion time, and any relevant contingency measures. The program shall also be subject to the oversight of the Development Services Director (or their designee).

MM-BIO-9 **Nesting Birds.** To avoid any direct impacts to raptors and/or any migratory birds protected under the Migratory Bird Treaty Act, removal of habitat that supports active nests on the proposed area of disturbance should occur outside of the breeding season for these species. The breeding season is defined as February 15–August 15 for coastal California gnatcatcher (*Polioptila californica californica*), coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*) and other non-raptor birds and January 15–August 31 for raptor species. If removal of habitat on the proposed area of disturbance must occur during the breeding season, the project applicant shall retain a City-approved biologist to conduct a pre-construction survey to determine the presence or absence of nesting birds on the proposed area of disturbance. The pre-construction survey must be conducted within 10 calendar days prior to the start of construction, and the results must be submitted to the City for review and approval prior to initiating any construction activities. If nesting birds are detected, a letter report or mitigation plan, as deemed appropriate by the City, shall be prepared and include proposed measures to be implemented to ensure that disturbance of breeding activities are avoided. The report or mitigation plan shall be submitted to the City for review and approval and implemented to the satisfaction of the City. The City's mitigation monitor shall verify and approve that all measures identified in the report or mitigation plan are in place prior to and/or during construction. Additionally, if a white-tailed kite is observed nesting, CDFW shall be consulted to ensure all direct and indirect impacts are avoided.

MM-BIO-10 **Northern Harrier.** Prior to issuance of any land development permits, including clearing, grubbing, and grading permits, the project applicant shall retain a City-approved biologist to conduct focused surveys for northern harrier to determine if the species is nesting within 900 feet of the construction area. The pre-construction survey must be conducted within 10 calendar days prior to the start of construction. In the event that the survey are conducted and the construction activities do not start within 30 days, an additional survey shall be conducted to

comply with this 30-day requirement. Furthermore, in the event that surveys are conducted and construction activities begin but then stop for a period longer than 30 days, an additional survey shall be conducted prior to resuming construction activities. The results of the survey must be submitted to the City for review and approval. If active nests are detected by the City-approved biologist, a bio-monitor shall be on site during construction to minimize construction impacts and ensure that no nests are removed or disturbed until all young have fledged.

MM-BIO-11 **Burrowing Owl.** Prior to issuance of any land development permits, including clearing, grubbing, and grading permits, the project applicant shall retain a City-approved biologist to conduct focused pre-construction surveys for burrowing owls. The surveys shall be performed no earlier than 30 days prior to the commencement of any clearing, grubbing, or grading activities. In the event that surveys are conducted and these construction activities do not start within 30 days, additional surveys shall be conducted to comply with this 30-day requirement. Furthermore, in the event that surveys are conducted and construction activities begin but then stop for a period longer than 30 days, additional surveys shall be conducted prior to resuming construction activities. If occupied burrows are detected, the City-approved biologist shall prepare a passive relocation mitigation plan subject to review and approval by the wildlife agencies and the City, including any subsequent burrowing owl relocation plans to avoid impacts from construction-related activities.

MM-BIO-12 **Quino Checkerspot Butterfly.** During the spring, prior to applying for land development permits (including clearing, grubbing, and grading permits), a habitat assessment and an adult flight season survey would be conducted within the footprint of potential Planned and Future Facilities within the Preserve. The adult flight season survey would conducted in accordance with the most recent survey protocol adopted by USFWS. Impacts to habitat for Quino checkerspot butterfly, if observed, shall be avoided to the maximum extent practicable. If Quino checkerspot butterfly is observed, the property owner shall redesign or eliminate facilities to Quino checkerspot butterfly habitat to the maximum extent practicable. Any redesign shall be submitted to the satisfaction of the Development Services Director (or their designee) prepared by a qualified biologist to the satisfaction of the Development Services Director (or their designee).

MM-BIO-13 **Jurisdictional Resource Mitigation.** The City requires that impacts to wetlands be avoided to the maximum extent possible and where impacts are unavoidable, compensatory mitigation within the Chula Vista Subarea or Chula Vista Planning Area shall be required resulting in no overall net loss of wetlands. A total of 0.12 acre

of CDFW-only jurisdictional wetland and 0.~~02~~ 03 acre of waters of the United States/state within the project site may be impacted as a result of project implementation. Off-site areas may impact a total of 0.02 acre of permanent impacts to non-wetland waters/streambed under ACOE, RWQCB, and CDFW jurisdiction. Prior to issuance of land development permits, including clearing, grubbing, and grading permits that impact jurisdictional waters, the project applicant shall prepare a wetlands mitigation and monitoring plan to the satisfaction of the City and the resource agencies. This plan shall include, at a minimum, an implementation plan, a maintenance and monitoring program, an estimated completion time, and any relevant contingency measures. Mitigation areas shall occur within the Otay River watershed in accordance with the wetlands mitigation and monitoring plan to the satisfaction of the City and the resource agencies. The project applicant shall also be required to implement the wetlands mitigation and monitoring plan subject to the oversight of the City, and the resource agencies. Areas under the jurisdictional authority of all three resources agencies shall be delineated on all grading plans.

MM-BIO-14 **Resource Agency Permits.** Prior to issuance of land development permits, including clearing, grubbing, and grading permits, for areas that impact jurisdictional wetlands and waters, the project applicant shall provide evidence that all required regulatory permits, such as those required under Section 404 of the federal Clean Water Act, Section 1600 of the California Fish and Game Code, and the Porter-Cologne Water Quality Control Act, have been obtained.

MM-BIO-15 **SWPPP.** Prior to issuance of grading permits in portions of the SPA Plan Areas that are adjacent to the Preserve, the project applicant shall develop a storm water pollution prevention plan (SWPPP). The SWPPP shall be developed, approved, and implemented during construction to control stormwater runoff such that erosion, sedimentation, pollution, and other adverse effects are minimized. The following performance measures contained in the Edge Plans shall be implemented to avoid the release of toxic substances associated with urban runoff:

1. Sediment shall be retained on site by a system of sediment basins, traps, or other appropriate measures.
2. Where deemed necessary, storm drains shall be equipped with silt and oil traps to remove oils, debris, and other pollutants. Storm drain inlets shall be labeled "No Dumping—Drains to Ocean." Storm drains shall be regularly maintained to ensure their effectiveness.

3. The parking lots shall be designed to allow stormwater runoff to be directed to vegetative filter strips and/or oil-water separators to control sediment, oil, and other contaminants.
4. Permanent energy dissipaters shall be included for drainage outlets.
5. The best management practices contained in the SWPPP shall include, but are not limited to, silt fences, fiber rolls, gravel bags, and soil stabilization measures such as erosion control mats and hydro-seeding.
6. The project area drainage basins would be designed to provide effective water quality control measures, as outlined in the Water Quality Technical Reports (Appendices H1 and H2). Design and operational features of the drainage basins would include design features to provide maximum infiltration and maximum detention time for settling of fine particles; maximize the distance between basin inlets and outlets to reduce velocities; and establish maintenance schedules for periodic removal of sedimentation, excessive vegetation, and debris.

MM-BIO-16 **Preserve Edge Plan.** Prior to the issuance of grading permits, the project applicant shall submit evidence, to the satisfaction of the Development Services Director (or their designee), showing that the following features of the Preserve Edge Plan (Appendix B2) have been incorporated into grading and landscaping plans:

- Provide post markers and loge pole railing and signage for sensitive habitat adjacent to trails. Prior to the issuance of land development permits, including clearing or grubbing and grading and/or construction permits, for the project, the project owner shall submit wall and fence plans depicting appropriate barriers to prevent unauthorized access to the Preserve. The wall and fence plans shall, at a minimum, illustrate the locations and cross-sections of proposed walls, fences, informational and directional signage, access controls, and/or boundary markers along the Preserve boundary and off-site pedestrian trails as conceptually described in the Preserve Edge Plan. The required wall and fence plan shall be subject to the approval of the Deputy City Manager/Development Services Director (or their designee).
- Install storm drains, drainage outfalls, and drainage basins to prevent erosion of drainage and wetlands within the Preserve.
- Prevent release of toxins, chemicals, petroleum products, exotic plant materials, and other elements that might degrade or harm the natural environment or ecosystem within the Preserve.

- Implement all necessary requirements for water quality as specified by the state and local agencies.
- No invasive, non-native plant species shall be introduced into areas immediately adjacent to, or within, the Preserve. All slopes immediately adjacent to, or within, the Preserve shall be planted with native species that reflect the adjacent native habitat, per the Preserve Edge Plan (Appendix B2). Prior to the issuance of land development permits, including clearing or grubbing and grading and/or construction permits, for (1) areas within the 100-foot Preserve edge, and (2) infrastructure (e.g., roads, trails, utilities) sited within the Preserve, the project applicant shall prepare and submit to the satisfaction of the Development Services Director (or their designee) landscape plans to ensure that the proposed plant palette is consistent with the plant list contained in the Preserve Edge Plan (Appendix B2). The landscape plan shall also incorporate a manual weeding program for areas adjacent to the Preserve. The manual weeding program shall describe, at a minimum, the entity responsible for controlling invasive species, the maintenance activities and methods required to control invasive species, and a maintenance/ monitoring schedule.
- Incorporate all fuel modification areas into development plans and do not include any areas within the Preserve.

MM-BIO-17 Indirect Impacts. In accordance with the City's Adjacency Management Guidelines, the following mitigation measures shall be implemented to further reduce indirect impacts (from lighting, noise, invasive species, toxic substances, and public access) to sensitive biological resources located in the adjacent Preserve areas:

- **Lighting.** In compliance with the Chula Vista Multiple Species Conservation Program (MSCP) Subarea Plan, all lighting shall be shielded and directed away from the Preserve. Concurrent with design review and prior to issuance of a building permit for any development located adjacent to the Preserve, the applicant shall prepare a lighting plan and photometric analysis to the satisfaction of the Development Services Director (or their designee), for review and approval. The lighting plan shall illustrate the location of the proposed lighting standards and type of shielding measures. Low-pressure sodium lighting shall be used, if feasible, and shall be subject to the approval of the Development Services Director (or their designee).
- **Noise.** Noise impacts adjacent to the Preserve lands shall be minimized. Berms or walls shall be constructed adjacent to commercial areas and any other use that may introduce noises that could impact or interfere with wildlife utilization

of the Preserve. Construction activities shall include noise reduction measures or be conducted outside the breeding season of sensitive bird species.

- **Noise, Coastal California Gnatcatcher.** For any work proposed between February 15 and August 15, prior to issuance of any land development permits, including clearing, grubbing, grading, and construction permits, associated with the off-site facilities located within the Preserve, the project applicant shall retain a City-approved biologist to conduct a pre-construction survey for the coastal California gnatcatcher to reaffirm the presence and extent of occupied habitat. The pre-construction survey area for the coastal California gnatcatcher shall encompass all habitats within the project work zone, as well as within a 300-foot buffer. The survey shall be performed to the satisfaction of the Development Services Director (or their designee) by a qualified biologist familiar with the City's MSCP Subarea Plan. The results of the pre-construction survey must be submitted in a report to the Development Services Director (or their designee) for review and approval prior to the issuance of any land development permits and prior to initiating any construction activities. If the coastal California gnatcatcher is detected, a minimum 300-foot buffer delineated by orange biological fencing shall be established around the detected birds to ensure that no work shall occur within the occupied habitat from February 15 through August 15 and on-site noise reduction techniques shall be implemented to ensure that construction noise levels do not exceed 60 A-weighted decibels L_{eq-h} at the location of any occupied sensitive habitat areas. The Development Services Director (or their designee) shall have the discretion to modify the buffer width depending on site-specific conditions. If the results of the pre-construction survey determine that the survey area is unoccupied, the work may commence at the discretion of the Development Services Director (or their designee) following the review and approval of the pre-construction report.
- **Invasive Species.** Prior to the issuance of land development permits, including clearing or grubbing and grading and/or construction permits, for (1) areas within the 100-foot Preserve edge, and (2) infrastructure (e.g., roads, trails, utilities) sited within the Preserve, the project applicant shall prepare and submit to the satisfaction of the Development Services Director (or their designee) landscape plans to ensure that the proposed plant palette is consistent with the plant list contained in the Preserve Edge Plan (Appendix B2). The landscape plan shall also incorporate a manual weeding program for areas adjacent to the Preserve. The manual weeding program shall describe, at a minimum, the entity responsible for controlling invasive species, the maintenance activities and methods required to control invasive species, and a maintenance/monitoring schedule.

- **Toxic Substances.** See MM-BIO-4, MM-BIO-6, MM-BIO-13, and MM-BIO-54.
- **Public Access.** Prior to the issuance of grading permits, the project applicant shall submit wall and fence plans depicting appropriate barriers to prevent unauthorized access to the Preserve. The wall and fence plans shall illustrate the locations and cross-sections of proposed walls and fences along the Preserve boundary, subject to the approval the City's Development Services Director (or their designee).

5.3.7 Level of Significance After Mitigation

With incorporation of the proposed mitigation measures, all impacts associated with biological resources would be reduced to a less than significant level.

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5.4 CULTURAL RESOURCES

This section of the EIR addresses potential impacts to cultural resources resulting from the proposed Otay Ranch Village Four Sectional Planning Area (SPA) Plan Project (project). The discussion in this section is based on the Cultural Resources Inventory Report prepared for the project by Dudek in July 2015. The complete report is contained in Appendix C of this EIR.

5.4.1 Existing Conditions

5.4.1.1 Regulatory Framework

National Historic Preservation Act

The National Historic Preservation Act (NHPA) (16 United States Code (U.S.C.) 470 et seq.) establishes the nation's policy for historic preservation and sets in place a program for the preservation of historic properties by requiring federal agencies to consider effects to significant cultural resources (e.g., historic properties) prior to undertakings.

Section 106 of the NHPA requires federal agencies to take into account the effects of projects on historic properties (resources included in or eligible for the National Register of Historic Places (NRHP)). It also gives the Advisory Council on Historic Preservation and the state historic preservation offices an opportunity to consult. Federal agencies issuing permits for the proposed project will be required to comply with NHPA requirements.

Executive Order 11593, "Protection and Enhancement of the Cultural Environment"

Executive Order 11593 (36 Federal Register 8921) (1) orders the protection and enhancement of the cultural environment through requiring federal agencies to administer the cultural properties under their control in a spirit of stewardship and trusteeship for future generations; (2) initiates measures necessary to direct their policies, plans, and programs in such a way that federally owned sites, structures, and objects of historical, architectural, or archaeological significance are preserved, restored, and maintained for the inspiration and benefit of the people; and (3) in consultation with the Advisory Council on Historic Preservation, institutes procedures to ensure that federal plans and programs contribute to the preservation and enhancement of non-federally owned sites, structures, and objects of historical, architectural, or archaeological significance (16 U.S.C. 470-1).

National Register of Historic Places

The NRHP is the nation's official list of historic places. The register is overseen by the National Park Service and requires that a property or resource eligible for listing in the register meet one

or more of the following four criteria at the national, state, or local level to ensure integrity and obtain official designation:

- The property is associated with events that have made a significant contribution to the broad patterns of our history.
- The property is associated with the lives of persons significant to our past. Eligible properties based on this criterion are generally those associated with the productive life of the individual in the field in which the person achieved significance.
- The property embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic value, or represents a significant and distinguishable entity whose components lack individual distinction.
- The property has yielded, or is likely to yield, information important to prehistory or history.

In addition to meeting at least one of these four criteria, listed properties must also retain sufficient physical integrity of those features necessary to convey historic significance. The register has identified the following seven aspects of integrity: (1) location, (2) design, (3) setting, (4) materials, (5) workmanship, (6) feeling, and (7) association.

Properties are nominated to the register by the state historic preservation officer of the state in which the property is located, by the federal preservation officer for properties under federal ownership or control, or by the tribal preservation officer if on tribal lands. Listing in the NRHP provides formal recognition of a property's historic, architectural, or archaeological significance based on national standards used by every state. Once a property is listed in the NRHP, it becomes searchable in the NRHP database of research information. Documentation of a property's historic significance helps encourage preservation of the resource.

California Environmental Quality Act

CEQA requires that all private and public activities not specifically exempted be evaluated for the potential to impact the environment, including effects to historical resources. Historical resources are recognized as part of the environment under CEQA. It defines historical resources as "any object, building, structure, site, area, or place, which is historically significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (Division I, Public Resources Code, Section 5021.1(b)).

Lead agencies have a responsibility to evaluate historical resources against the California Register of Historical Resources (CRHR) criteria prior to making a finding as to a proposed project's impacts to historical resources. Mitigation of adverse impacts is required if the proposed project will cause substantial adverse change. Substantial adverse change includes demolition, destruction, relocation, or alteration such that the significance of an historical resource would be impaired. While demolition

and destruction are fairly obvious significant impacts, it is more difficult to assess when change, alteration, or relocation crosses the threshold of substantial adverse change. The CEQA Guidelines provide that a project that demolishes or alters those physical characteristics of an historical resource that convey its historical significance (i.e., its character-defining features) can be considered to materially impair the resource's significance.

The CRHR is used in the consideration of historic resources relative to significance for purposes of CEQA. The CRHR includes resources listed in, or formally determined eligible for some California State Landmarks and Points of Historical Interest. Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts), or that have been identified in a local historical resources inventory may be eligible for listing in the CRHR and are presumed to be significant resources for purposes of CEQA unless a preponderance of evidence indicates otherwise.

Generally, a resource is considered by the lead agency to be "historically significant" if the resource meets the criteria for listing in the CRHR (Public Resources Code SS5024.1, Title 14 California Code of Regulations (CCR), Section 4852) consisting of the following:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States; or
2. It is associated with the lives of persons important to local, California, or national history; or
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values; or
4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

A "unique" archaeological resource, as defined by the California Public Resources Code Section 21083.2, may be considered significant under CEQA and, if identified, defined mitigation appropriately implemented. As used in this section, "unique archaeological resource" means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

In the event that Native American human remains or related cultural material are encountered, Section 15064.5(e) of the state CEQA Guidelines (as incorporated from Public Resources Code Section 5097.98) and Health and Safety Code Section 7050.5 define the subsequent protocol. In the event of the accidental discovery or recognition of any human remains, excavation or other disturbances shall be suspended of the site or any nearby area reasonably suspected to overlie adjacent human remains or related material. Protocol requires that a county-approved coroner be contacted to determine if the remains are of Native American origin. Should the coroner determine the remains to be Native American, the coroner must contact the Native American Heritage Commission (NAHC) within 24 hours. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98 (CCR Title 14; Chapter 3; Article 5; Section 15064.5(e)).

City of Chula Vista Historic Preservation Ordinance

The City of Chula Vista Historic Preservation Ordinance (Title 21, Chula Vista Municipal Code Section 21.04.100) establishes general standards by which the Historical Significance of a Historical Resource is judged as eligible for designation:

A. A Resource is at least 45 years old; and

B. A Resource possesses historical Integrity defined under Chula Vista Municipal Code §21.04.100 (discussed below) and the Resource is determined to have historical significance by meeting at least one of the following criteria:

    1. It is associated with an event that is important to prehistory or history on a national, state, regional, or local level.

    2. It is associated with a person or persons that have made significant contributions to prehistory or history on a national, state or local level.

    3. It embodies those distinctive characteristics of a style, type, period, or method of construction, or represents the work of a master or important creative individual, and/or possesses high artistic values.

    4. It is an outstanding example of a publicly owned Historic Landscape, that represents the work of a master landscape architect, horticulturalist, or landscape designer, or a publicly owned Historical Landscape that has potential to provide important information to the further study of landscape architecture or history.

    5. It has yielded, or may be likely to yield information important in prehistory or the history of Chula Vista, the state, region or nation.

5.4.1.2 Existing Cultural Setting

Previous Cultural Resource Investigations

On April 27, 2015, a records search was conducted at the South Coastal Information Center (SCIC) at San Diego State University through the California Historical Resources Information System cultural resources database for relevant previously recorded cultural resources and previous investigations completed for the project site and a surrounding 1-mile area (confidential Appendix A to the Cultural Resources Inventory Report). Information reviewed by Dudek included location maps for previously recorded prehistoric and historical-era sites and isolates, site record forms and updates for previously identified cultural resources, previous investigation boundaries and National Archaeological Database citations for associated reports, historic maps, and historic addresses. Additional reviewed sources included the properties listed on/as the California Points of Historical Interest, California Historical Landmarks, California Historical Resources Inventory, local registries of historic properties, CRHR, and NRHP.

Previously Conducted Studies

SCIC records indicate that 110 previous cultural resources technical investigations have been conducted within a 1-mile radius of the project site. Of these, 12 studies are known to have directly included portions, or all, of the project's development boundary (Table 5.4-1).

Table 5.4-1
Previous Technical Studies that Have Included the Project Development Boundary

Author	Year	Company	Title
Smith, Brian F.	2010	Brian F. Smith and Associates	Title Unknown -- Report not on file with the SCIC; Survey, excavation, lab analysis, and report preparation for Otay Village Four area is evident based on review of submitted DPR site forms for all resources within current ADI
Clowery-Moreno, Sara, and Larry J. Pierson	2009	Brian F. Smith and Associates	Archaeological Monitoring of the Otay Ranch Village 2 Project
Pierson, Larry J.	2009	Brian F. Smith and Associates	Negative Archaeological Monitoring Report: A Portion of Heritage Road in Conjunction with Otay Ranch Village 2, Chula Vista, California
Smith, Brian F., and Seth A. Rosenberg	2007	Brian F. Smith and Associates	An Archaeological Study for the Chula Vista International Raceway Project
McGowan, Charlotte	1997	Charlotte McGowan	Volume I Final Report of the Excavation of CSUSD CAL F:5:1
Smith, Brian F.	1996	Brian F. Smith and Associates	Results of an Archaeological Survey at the Otay Valley Parcel of the Otay Ranch
Gross, Timothy, Ruth Alter, and Mary Robbins-Wade	1996	Affinis	Archaeological Survey for the Joint Task Force Six Border Road Repair Project, Otay Mountain, California
Carrico, Richard	1993	Ogden Environmental	Final Cultural Resource Evaluation of the 23,088-Acre Otay Ranch, San Diego County

Table 5.4-1
Previous Technical Studies that Have Included the Project Development Boundary

Author	Year	Company	Title
Mooney, Brian	1992	Brian F. Mooney Associates	Evaluation of a Prehistoric Resource Processing Site CA-SDI-10452 Historic Bird Ranch CA-SDI-11386H and Water Conveyance System CA-SDI-11383 H for the Otay Valley Water
Baksh, Michael	1991	Brian F. Mooney Associates	Cultural Resource Survey for San Diego Water Authority Pipeline 4E11, San Diego County
Smith, Brian F.	1987	Brian F. Smith and Associates	The Archaeological Investigations at the Otay Rio Business Park Project a Cultural Resource Survey of 210 Acres and the Evaluation of the Loci of Site W-3861
Berry, Stanley	1987	TMI Environmental Services	Archaeological Overview and Planning Document for the Proposed Rancho Otay Project

Source: Appendix C

Previously Identified Cultural Resources

Four cultural resources have been previously identified within the project development boundary. Four cultural resources are located outside the project development boundary, within 50 meters (Table 5.4-2). All sites consist of sparse scatters of prehistoric lithic material. A total of 101 sites have been recorded within the surrounding 1-mile records search area (Appendix C).

Table 5.4-2
Recorded Cultural Resources Relative to the Project Development Boundary

Primary	Trinomial	Age	Attributes	Relative to Project Development Boundary
P-37-004738	SDI-4738	Prehistoric	AP14. Rock Shelter	Outside (Adjacent)
P-37-014531	–	Prehistoric	AP16. Isolate	Inside
P-37-014543	SDI-14175	Prehistoric	AP2. Lithic Scatter	Outside (50 meters)
P-37-014611	SDI-14244	Prehistoric	AP2. Lithic Scatter	Outside (Adjacent)
P-37-032399	SDI-20547	Prehistoric	AP2. Lithic Scatter	Inside
P-37-032400	SDI-20548	Prehistoric	AP2. Lithic Scatter	Outside (Adjacent)
P-37-032401	SDI-20549	Prehistoric	AP2. Lithic Scatter	Inside
P-37-032402	SDI-20550	Prehistoric	AP2. Lithic Scatter	Inside

Source: Appendix C

P-37-004738 (SDI-4738)

This prehistoric rock shelter, recorded by Michael Waters on December 26, 1973, was reported to be in a location just outside of the project development boundary. No associated artifacts or features were noted; however, the record does indicate the presence of midden with of a "slight depth." It is

likely that additional cultural material is/was present, and has been reported elsewhere. No update to this site record has been provided as part of subsequent technical studies in the region.

P-37-014531

This prehistoric isolate was recorded by Brian F. Smith and Associates on February 15, 1996, to a location within the eastern limits of the project development boundary. This isolate consists of one lithic flake.

P-37-014543 (SDI-14175)

This prehistoric artifact scatter, measuring 191 by 152 meters, was recorded by Brian Smith in 1996 to a location approximately 50 meters outside of the project development boundary. Reported artifacts include an unspecified number of lithic flakes, three scrapers, one chopper, and one ceramic brownware pottery sherd.

P-37-014611 (SDI-14244)

This prehistoric scatter of lithic tools and flakes, measuring 40 by 30 meters, was first recorded by Brian F. Smith and Associates on February 15, 1996. This falls just outside of the project development boundary. Artifacts noted include one chopper, seven scrapers, one core, and at least 10 flakes. No update to this site record has been provided as part of subsequent technical studies in the region.

P-37-032399 (SDI-20547)

This prehistoric scatter of lithic tools and flakes, measuring 340 by 120 meters, was recorded by Brian F. Smith on July 27, 2010. This site is located within the project development boundary. Artifacts identified include 75 metavolcanic lithic flakes, two cores, and three steep-edge tools. California Department of Parks and Recreation (DPR) forms prepared for this resource indicate that the site was fully recorded through surface collection of artifacts, excavation, analysis of artifacts, and preparation of a catalog. A report documenting these evaluation efforts is not on file with the SCIC; however, results provided by Brian Smith in the DPR forms for this resource identified no subsurface deposit and a limited diversity of material.

P-37-032400 (SDI-20548)

This prehistoric lithic scatter, measuring 45 meters by 45 meters, was recorded in by Brian F. Smith and Associates on July 27, 2010. The site is located just outside of the project development boundary. Reported artifacts include 10 lithic flakes and one tool. DPR forms prepared for this resource indicate that the site was fully recorded through surface collection of artifacts, excavation, analysis of artifacts, and preparation of a catalog. A report documenting these evaluation efforts is

not on file with the SCIC; however, results provided by Brian Smith in the DPR forms for this resource identified no subsurface deposit and a limited diversity of material.

P-37-032401 (SDI-20549)

This prehistoric lithic scatter, measuring 54 meters by 38 meters, was recorded in by Brian F. Smith and Associates on July 27, 2010. The southern portion of this site intersects the project development boundary. Reported artifacts include eight lithic flakes and one core. DPR forms prepared for this resource indicate that the site was fully recorded through surface collection of artifacts, excavation, analysis of artifacts, and preparation of a catalog. A report documenting these evaluation efforts is not on file with the SCIC; however, results provided by Brian Smith in the DPR forms for this resource identified no subsurface deposit and a limited diversity of material.

P-37-032402 (SDI-20550)

This prehistoric lithic scatter, measuring 30 meters by 61 meters, was recorded in by Brian F. Smith and Associates on July 27, 2010. Reported artifacts include eight lithic flakes, one flake-scraper, and one core. The site is located within the project development boundary. A hammerstone was additionally noted in the DPR form artifact constituents, but it was not within the lab catalog table on the final page of this record. DPR forms prepared for this resource indicate that the site was fully recorded through surface collection of artifacts, excavation, analysis of artifacts, and preparation of a catalog. An evaluation report detailing these efforts is not on file with the SCIC; however, results provided by Brian Smith in the DPR forms for this resource identified a very limited subsurface deposit (two flakes within 10 centimeters of the surface) and a limited diversity of material.

NAHC Sacred Lands File Search

Dudek requested a NAHC search of its Sacred Lands File on June 4, 2015, for the proposed project site. The NAHC provided results on July 16, 2015. This search did not indicate the presence of Native American traditional cultural place(s) within the site or the surrounding 1-mile buffer (Appendix C). The NAHC additionally provided a list of Native American tribes and individuals/organizations that might have knowledge of cultural resources in this area.

Tribal Correspondence

Following the NAHC response, letters were sent to NAHC-listed tribal representatives with the intent of requesting information, opinions or concerns relating to the proposed project impacts (Appendix C). These letters contained a brief description of the planned project, reference maps, and a summary of the NAHC Sacred Lands File search results. No responses to these outreach

attempts have been received to date. The lead agency will be provided with any responses should they be received from tribal representatives.

Survey Methods

Dudek Archaeologists Scott Wolf and Anthony Cortez conducted an intensive pedestrian cultural survey of the project site on May 11, 2015. Approximately two-thirds of the ground surface was directly visible within most portions of the project development boundary, but ground surface visibility was restricted to less than 30% in some areas with especially dense, low-laying vegetation. Archaeological survey exceeded the applicable Secretary of Interior Professional Qualifications Standards for archaeological survey and evaluation.

Documentation of cultural resources complied with the Office of Historic Preservation (OHP) and Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 Federal Register 44716 et seq.) and the California Office of Historic Preservation Planning Bulletin Number 4(a). All sites identified during this inventory were recorded on DPR Form 523 (Series 1/95), using the Instructions for Recording Historical Resources (Office of Historic Preservation 1995).

Disturbances

All areas of the project development boundary showed evidence of surface disturbances from disking/plowing activities, as indicated by the presence of furrows and irregular surface topography. Other areas have been previously subject to grading and other mechanical earth-work. All areas have been subject to natural erosion processes. The presence of numerous rodent burros throughout the site suggests that the site soils are likely heavily disturbed by wildlife. The exact depth and character of past disturbances is unclear, allowing for the possibility that deeper strata may have been unaffected. This indicates that undisturbed resources could be present.

Results

Archaeological Survey

Dudek Archaeologists Scott Wolf and Anthony Cortez, as accompanied by Native American monitor Tuchon Phoenix of Red Tail Monitoring and Research, inspected all areas of the project development boundary on May 11, 2015. As part of this survey, the cultural team revisited the recorded locations of all four previously identified archaeological resources within the project development boundary. Two of these resources were located (P-37-032399 and P-37-032402). Two previously recorded resources were not located (P-37-014531 and P-37-032401). P-37-032400, recorded just outside of the project development boundary, was observed to be located in its previously recorded location (Table 5.4-3).

Table 5.4-3
Located Resources Within and Near the Project Development Boundary

Primary	Trinomial	Age	Attributes	Recorded Relative to Development Boundary	Located
P-37-004738	SDI-4738	Prehistoric	AP14. Rock Shelter	Outside (Adjacent)	No
P-37-014531	–	Prehistoric	AP16. Isolate	Inside	No
P-37-014543	SDI-14175	Prehistoric	AP2. Lithic Scatter	Outside (50 meters)	No
P-37-014611	SDI-14244	Prehistoric	AP2. Lithic Scatter	Outside (Adjacent)	No
P-37-032399	SDI-20547	Prehistoric	AP2. Lithic Scatter	Inside	Yes
P-37-032400	SDI-20548	Prehistoric	AP2. Lithic Scatter	Outside (Adjacent)	Yes
P-37-032401	SDI-20549	Prehistoric	AP2. Lithic Scatter	Inside	No
P-37-032402	SDI-20550	Prehistoric	AP2. Lithic Scatter	Inside	Yes

Source: Appendix C

P-37-004738 (SDI-4738)

This prehistoric rock shelter, with associated shallow midden deposit, was recorded by Michael Waters on December 26, 1973. The site is recorded outside of the project development boundary. The reported rock shelter and associated midden soils were not observed during the survey to be within the development boundary, nor was rock shelter-like landscape feature observed to be in the vicinity surrounding the development boundary survey corridor. The mapped location of the site was not revisited due to property access restrictions.

P-37-014531

This prehistoric isolate was recorded in by Brian F. Smith and Associates on February 15, 1996. This isolate consists of one lithic flake recorded to a location within the eastern portion of the development boundary. The recorded location of the isolate was revisited during the current survey; no artifacts were observed.

P-37-014543 (SDI-14175)

This prehistoric artifact scatter, measuring 191 by 152 meters, was recorded by Brian F. Smith and Associates in 1996 to a location approximately 50 meters outside of the development boundary. The site was not encountered during the Dudek survey.

P-37-014611 (SDI-14244)

This prehistoric scatter of lithic tools and flakes, measuring 40 by 30 meters, was first recorded by Brian F. Smith and Associates on February 15, 1996. This resource has been recorded as just outside of the development boundary. No artifacts relating to this site were identified during the current survey, and reported lithic scatter does not appear to extend within the development boundary.

P-37-032399 (SDI-20547)

This prehistoric scatter of lithic tools and flakes, measuring 340 by 120 meters, was recorded by Brian F. Smith and Associates July 27, 2010. This site is located within the project development boundary. DPR forms prepared for this resource indicate that the site was fully recorded through surface collection of artifacts, excavation, analysis of artifacts, and preparation of a catalog. The recorded location of this site was intensively surveyed by Dudek in support of the project. Three artifacts were observed to be present on the surface: a quartzite core, a volcanic assayed cobble, and a volcanic primary flake. It is evident that the reported artifacts on the surface of the site were collected during archaeological testing conducted by Brian Smith prior to the 2010 DPR form preparation for P-37-032399. The three prehistoric artifacts identified by Dudek were either missed during this initial testing process or, as likely, were brought to the surface through subsequent disking activity that is evidenced to have occurred relatively recently throughout the site area by the presence of distinctive furrows. Based on this survey and review of available information provided by Brian Smith & Associates, it appears that P-37-032399 (SDI-20547) is not eligible for local register, CRHR, or NRHP listing.

P-37-032400 (SDI-20548)

This prehistoric lithic scatter, measuring 45 meters by 45 meters, was recorded by Brian F. Smith and Associates on July 27, 2010, to a location immediately outside of the project development boundary. Reported artifacts include 10 lithic flakes and one tool. DPR forms prepared for this resource indicate that the site was fully recorded through surface collection of artifacts, excavation, analysis of artifacts, and preparation of a catalog. Dudek identified a grinding handstone on the surface of this site, just outside of the development boundary. The presence of this handstone identified by Dudek indicates that the artifact was either missed during this initial testing process by Brian Smith or, as likely, was brought to the surface through disking activity that is evidenced to have occurred relatively recently throughout the site area by the presence of distinctive furrows. The site was confirmed not to extend within the development boundary during Dudek's intensive pedestrian survey.

P-37-032401 (SDI-20549)

This prehistoric lithic scatter, measuring 54 meters by 38 meters, was recorded by Brian F. Smith and Associates on July 27, 2010, to a location that intersects the project development boundary. DPR forms prepared for this resource indicate that the site was fully recorded through surface collection of artifacts, excavation, analysis of artifacts, and preparation of a report. The recorded site location was intensively surveyed by Dudek. No surface artifacts remain at P-37-03240. The site area was noted to have been disturbed by recent disking activity, as indicated by visible furrows in the ground surface. Based on this survey and review of available information

provided by Brian Smith & Associates, it appears that P-37-032401 (SDI-20549) is not eligible for local register, CRHR, or NRHP listing.

P-37-032402 (SDI-20550)

This prehistoric lithic scatter, measuring 30 meters by 61 meters, was recorded by Brian F. Smith and Associates on July 27, 2010, to a location that intersects the project development boundary. Reported artifacts include eight lithic flakes, one flake-scraper, and one core. A hammerstone was additionally noted in the DPR form as a constituent artifact; however, it was absent from the lab catalog table on the final page of the record. DPR forms prepared for this resource indicate that the site was fully recorded through surface collection of artifacts, excavation, analysis of artifacts, and preparation of a report. The site was revisited by Dudek as part of the intensive pedestrian survey for the project. Dudek located the reported hammerstone (that was apparently missed during the surface collection of this site) within the recorded boundary of the P-37-032402. No additional artifacts were observed on the surface at this site. The site area was noted to have been disturbed by recent dicing activity, as indicated by visible furrows in the ground surface. Based on this survey and review of available information provided by Brian Smith & Associates, it appears that P-37-032402 (SDI-20550) is not eligible for local register, CRHR, or NRHP listing.

5.4.2 Thresholds of Significance

Would the proposed project:

A. Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5?

B. Cause a substantial adverse change in the significance of an archaeological resource as defined in CEQA Guidelines Section 15064.5?

C. Disturb any human remains, including those interred outside of formal cemeteries?

5.4.3 Impacts

A. Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.

As described in Section 5.4.1.2, Existing Cultural Setting, no historic sites were identified in previous cultural investigations, records search, or pedestrian survey. Therefore, construction and operation of the proposed project would not cause a substantial change in the significance of an historical resource as defined in CEQA Guidelines Section 15064.5, and no impact would occur.

B. Cause a substantial adverse change in the significance of an archaeological resource as defined in CEQA Guidelines Section 15064.5.

CEQA Guidelines provide that a project that demolishes or alters those physical characteristics of an historical resource that convey its historical significance (i.e., its character-defining features) can be considered to materially impair the resource's significance. To best mitigate the effects of the proposed project on cultural resources, a reasonable, good faith effort must be applied to determining their archaeological character and eligibility for listing in the CRHR.

The NAHC Sacred Lands File search and subsequent tribal information outreach failed to indicate the presence of Native American resources or other areas of cultural value. Based on SCIC records and intensive pedestrian survey results, the project as currently designed does have the potential to impact cultural resources considered significant. Three prehistoric archaeological sites (P-37-032399, P-37-032402, and P-37-014531) and one isolate (P-37-014531) have been previously identified within the project development boundary. Four additional prehistoric archaeological sites (P-37-004738, P-37-014543, P-37-014611, and P-37-032400) have been recorded outside the development boundary (within 50 meters). Increased pedestrian and vehicular traffic in the vicinity during project implementation does have the potential to result in indirect effects to these resources.

All archaeological sites within the project development boundary (P-37-032399, P-37-032402, and P-37-014531) were previously evaluated by Brian Smith & Associates (from 2008–2010) for CRHR listing. Based on review of DPR site records, evaluation efforts included surface mapping and collection of artifacts, subsurface excavation, lab analysis, and cataloging of artifacts. From these testing maps, catalog tables, and testing information provided in these DPR site record forms, it is evident that these sites lack the data potential needed to be eligible for listing in the local register or the CRHR. The SCIC has no evaluation report on file summarizing the efforts conducted by Brian Smith & Associates; it unclear if a draft evaluation report was prepared, but appears likely based on the amount of fieldwork and level of analyses provided in DPR forms. All three sites consist of low-density lithic scatters with a limited number of lithic tools. The total subsurface recovery, from all three sites combined, includes two lithic flakes within 10 centimeters of the surface (both from P-37-032402). Taking into consideration the disturbed nature of the ground surface throughout this area, it is likely that the subsurface context of these artifacts is a product of disking activity rather than primary deposition. Based on a review of this information the following significance assessments can be provided: the sites are not associated with any significant events locally, regionally, or nationally (Criterion 1); are not associated with the lives of any important people locally, regionally, or nationally (Criterion 2); do not contain architecture (Criterion 3); and do not have the potential to yield additional information beyond that recovered by Brian Smith & Associates locally, regionally, or nationally (Criterion 4; Public Resources Code SS5024.1, Title 14 CCR, Section 4852; 36 Code of Federal Regulations (CFR)

60.4). The surface artifacts form these sites were collected, and a thorough excavation indicated that the sites have no apparent intact subsurface cultural deposits. It is clear from DPR forms prepared for these resources, that the sites are not eligible for listing on the CRHR or the Local Register, and are not unique archaeological resources under CEQA.

Isolated resources, such as P-37-014531, have limited potential to provide important archaeological or cultural information, nor are they eligible for CRHR listing. Although the isolate does speak to the presence and types of activities of past Native American inhabitants of this region, the provenience of this artifact is questionable due to the highly disturbed setting of its recorded location. OHP guidelines observe that resources lacking individual distinction may still contribute to the understanding and appreciation of prehistory, and as such, recommend that isolated archaeological artifacts be documented to minimum standards (Appendix C). In compliance with these guidelines, DPR forms were previously been prepared for P-37-014531 by Brian Smith prior to being collected. The isolate is not associated with any significant events locally, regionally, or nationally (Criterion 1); is not associated with the lives of any important people locally, regionally, or nationally (Criterion 2); does not contain architecture (Criterion 3); and does not have the potential to yield information locally, regionally, or nationally (Criterion 4; Public Resources Code SS5024.1, Title 14 CCR, Section 4852; 36 CFR 60.4). P-37-014531 is not eligible for listing on the CRHR or the Local Register, and is not a unique archaeological resource under CEQA.

Based on SCIC and NAHC search information, tribal outreach, and intensive pedestrian survey results, the project does have the potential to impact cultural resources. Sites P-37-032399, P-37-032402, and P-37-014531, as well as isolate P-37-014531, do not appear eligible for CRHR or Local Register listing. However, there is always potential to encounter previously unidentified subsurface cultural deposits, resulting in a **potentially significant impact**. Impacts to cultural resources would be reduced to less than significant through implementation of MM-CUL-1, which requires full-time monitoring by an archaeologist and Native American monitor of initial project-related earth-moving activities with the potential to encounter cultural material, installation of temporary fencing along project limits within 100 feet of previously recorded sites located outside of the development boundary for the duration of earth-moving activities, and preparation of a final cultural monitoring report following completion of construction. Prior to the initiation of construction, the cultural consultant should acquire all evaluation information and the draft evaluation report, if a report was prepared by Brian Smith & Associates. The final monitoring report should also incorporate a summary of the evaluation results and analyses previously conducted by Brian Smith & Associates for the archaeological sites recorded within the project site, and should ensure that all archaeological material collected through Phases I–IV archaeological work is appropriately curated.

C. Disturb any human remains, including those interred outside of formal cemeteries.

No human remains were identified within the project site during the cultural testing program. However, the possibility exists that human remains may be discovered during project grading and construction. Any disturbance of human remains that may occur during project grading or construction would be potentially significant. Therefore, impacts would be **potentially significant** and mitigation, as required by mitigation measure (MM) CUL-1 would reduce potentially significant impacts to a level below significance.

5.4.4 Level of Significance Prior to Mitigation

Implementation of the proposed project would result in direct and indirect impacts to cultural resources. Impacts would be considered **potentially significant** prior to mitigation.

5.4.5 Mitigation Measures

The following mitigation measure is recommended to reduce significant impacts to recorded archaeological resources, unrecorded subsurface archaeological resources, and unrecorded human remains within the project site.

MM-CUL-1 A. Prior to beginning construction activities, the Project Archaeologist and Native American representative shall attend any pertinent preconstruction meetings with the construction manager and/or grading contractor to provide recommendations and answer questions relating to the archaeological monitoring program. The Project Archaeologist shall be familiar with the cultural inventory conducted for the current project and be prepared to introduce any pertinent information concerning expectations and probabilities of discovery during ground-disturbing activities. Prior to the initiation of construction, the cultural consultant shall acquire all evaluation information and the draft evaluation report, if a report was prepared by Brian Smith & Associates.

B. An archaeological monitor familiar with local resources and Native American monitor shall be present full-time during the initial disturbances of soil with potential to contain cultural deposits. All areas of initial project-related subsurface disturbance shall be assumed to have potential to contain cultural deposits. Monitoring of initial ground disturbance shall not exceed a depth of 5 feet (1.5 meters) unless cultural resources are identified or if, through direct inspection of subsurface exposures by the Project Archaeologist, an area is observed to have the potential to support the presence archaeological deposits at greater depths. Cultural resources monitoring may be reduced from initial full-time monitoring to periodic spot checks, or discontinued if appropriate,

once the Project Archaeologist determines that there is little or no risk to encounter cultural material.

C. Installation of temporary fencing along project limits within 100 feet of previously recorded sites located outside of the area of direct impact (P-37-004738, P-37-014543, P-37-014611, and P-37-032400) for the duration of earth-moving activities to avoid any indirect impacts to these resources. Archaeological monitors shall be tasked with installation of these exclusionary temporary fences prior to the initiation of construction. Periodic checks shall be made to ensure that these fences remain in sound condition throughout construction. To remain compliant with CEQA and City of Chula Vista–mandated confidentiality restrictions, temporary fencing, and signage as appropriate, shall not directly reference the presence of cultural resources.

D. Daily archaeological and Native American monitoring logs shall be prepared. Logs shall include monitor names and affiliations, a description of general activities observed, cultural discoveries, and comments or concerns as applicable.

E. In the event of an archaeological discovery, and when requested by the archaeological monitor or Native American monitor, the resident contractor shall divert, redirect, or temporarily halt ground-disturbing activities in the area of discovery or impacts to allow for preliminary inspection of potentially significant archaeological resources or impacts. The significance of the discovered resources or impacts shall be determined by the archaeologist, in consultation with the City of Chula Vista. For significant cultural resources, a Research Design and Data Recovery Program shall be prepared and carried out to mitigate impacts before grading activities in the area of discovery is allowed to resume.

F. The Project Archaeologist shall be responsible for ensuring that all cultural materials collected are cleaned, catalogued, and permanently curated with an appropriate institution; that a letter of acceptance from the curation institution has been submitted to the City of Chula Vista; that all artifacts are analyzed to identify function and chronology as they relate to the history of the area; that faunal material shall be identified as to species; and specialty studies are completed, as appropriate. The Project Archaeologist shall make a good faith effort to ensure that all archaeological material collected through previous work conducted by Brian Smith & Associates is appropriately curated with any material recovered through construction monitoring.

G. If human remains are discovered, work shall halt in that area and procedures set forth in the California Public Resources Code (Section 5097.98) and State

Health and Safety Code (Section 7050.5) shall be followed by the archaeological monitor after notification to the County Coroner by the supervising archaeologist. If Native American remains are present, the County Coroner shall contact the Native American Heritage Commission to designate a Most Likely Descendent, who shall arrange for the dignified disposition and treatment of the remains.

H. Within 3 months following the completion of monitoring, two copies of a monitoring results report (even if negative) and/or evaluation report, if applicable, that describes the results, analysis, and conclusions of the archaeological monitoring program (with appropriate graphics) shall be submitted to the City of Chula Vista.

I. For significant archaeological resources encountered during monitoring, the Research Design and Data Recovery Program shall be included as part of the final evaluation monitoring report. Two copies of the final monitoring report for significant archaeological resources, if required, shall be submitted to the City of Chula Vista. This final monitoring report shall also incorporate a summary of the evaluation results and analyses previously conducted by Brian Smith & Associates for the archaeological sites recorded within the project site.

J. The archaeologist shall be responsible for recording (on the appropriate California Department of Parks and Recreation 523 Series forms) any significant or potentially significant resources encountered during the archaeological monitoring program in accordance with the CEQA and City of Chula Vista's Cultural Resources Guidelines, and submittal of such forms to the South Coastal Information Center at San Diego State University with the final monitoring results report.

5.4.6 Level of Significance After Mitigation

Incorporation of MM-CUL-1 would reduce potentially significant impacts to cultural resources and human remains to a level below significance.

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5.5 TRANSPORTATION, CIRCULATION, AND ACCESS

This section of the EIR addresses potential impacts to transportation, circulation, and access resulting from the proposed Otay Ranch Village Four Sectional Planning Area (SPA) Plan Project (project). The discussion in this section is based on the Traffic Impact Analysis (TIA) prepared for the project by Fehr & Peers in July 2016. The complete report is contained in Appendix D of this EIR.

5.5.1 Existing Conditions

5.5.1.1 Regulatory Framework and Analysis Methodology

The traffic analysis prepared for this project was performed in accordance with City of Chula Vista (City) traffic impact analysis guidelines for City intersections and roadway segments (City of Chula Vista 2005), and the San Diego Traffic Engineers' Council and the Institute of Transportation Engineers (SANTEC/ITE) Guidelines for Traffic Impact Studies (SANTEC/ITE 2000) for all California Department of Transportation (Caltrans) facilities. City guidelines require that a project study area be established as follows (City of Chula Vista 2005):

- All freeway mainline segments to which the proposed project will add 2,400 total average daily trips (ADT) or 150 or more peak-hour trips in either direction must be analyzed.
- All arterial segments and intersections (including freeway on/off ramp intersections), to which the proposed project will add 800 or more total trips (ADT) or 50 or more peak-hour trips in either direction must be analyzed.

Peak-Hour Intersection Level of Service Analysis

The operations of roadway facilities are described with the term level of service (LOS). LOS is a qualitative description of traffic flow based on such factors as speed, travel time, delay, and freedom to maneuver. Six levels are defined from LOS A, with the least congested operating conditions, to LOS F, with the most congested operating conditions. Operations are designated as LOS F when volumes exceed capacity, resulting in stop-and-go conditions (Appendix D). The methodology for signalized and unsignalized intersections is described below.

Signalized Intersection Analysis

The signalized intersection analysis conforms to the operational analysis methodology outlined in Chapter 16 of the 2000 Highway Capacity Manual (2000 HCM) (Transportation Research Board 2000). The analysis of roadway operations performed for this project is based on procedures presented in the Highway Capacity Manual (HCM), published by the Transportation Research Board in 2000. The 2010 HCM was available as of the time the TIA was published;

however, not many jurisdictions have yet adopted the 2010 HCM, as many LOS software programs are still fine-tuning updated versions incorporating the 2010 methods. For example, the 2010 HCM software automatically analyzes an intersection assuming there are no right-turns on red (Transportation Research Board 2010), and this can lead to LOS results appearing worse than they truly are. For peak-hour intersection evaluation, use of the 2000 HCM is not expected to change the conclusions of this report. LOS using both methodologies is provided in the TIA (Appendix D of this EIR). The 2000 HCM methodology relates the intersection LOS to intersection control delay, in terms of seconds per vehicle. This methodology sets 1,900 passenger-cars per hour per lane as the base (or ideal) saturation flow rate at signalized intersections, which is based on the minimum headway that can be sustained between departing vehicles at a signalized intersection.

The LOS criteria used for the analysis of signalized intersections are described in Table 5.5-1, identifying the thresholds of control delays and the associated LOS. The computerized analysis of the downtown intersection operations was performed using the Synchro 8.0 traffic analysis software by Trafficware.

Table 5.5-1
Signalized and Unsignalized Intersection Level of Service Criteria

Level of Service	Signalized Intersections		Unsignalized Intersections	
	Description	*Delay (seconds)*	*Description*	*Delay (seconds)*
A	Progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	<10	Little or no delay.	≤ 10
B	Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay.	>10 to 20	Short traffic delay.	<10.1–15
C	Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.	>20 to 35	Average traffic delays.	<15.1–25
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	>35 to 55	Long traffic delays.	<25.1–35
E	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	>55 to 80	Very long traffic delays.	<35.1–50

Table 5.5-1
Signalized and Unsignalized Intersection Level of Service Criteria

Level of Service	Signalized Intersections		Unsignalized Intersections	
	Description	*Delay (seconds)*	*Description*	*Delay (seconds)*
F	This level is considered unacceptable with oversaturation, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels.	>80	Extreme traffic delays with intersection capacity exceeded.	>50

Source: Appendix D

Unsignalized Intersection Analysis

Unsignalized intersections, including two-way and all-way stop controlled intersections were analyzed using the 2000 HCM (Section 10) analysis methodology. The Synchro 8.0 software supports this methodology and was utilized to produce LOS results. The LOS for a two-way stop controlled (TWSC) intersection is determined by the computed or measured control delay and is defined for each minor movement. Table 5.5-1 summarizes the LOS criteria for unsignalized intersections.

Roadway Segment Level of Service Analysis

Roadway Segment LOS standards and thresholds provide the basis for analysis of arterial roadway segment performance. The analysis of roadway segment LOS is based on the functional classification of the roadway, the maximum capacity, roadway geometrics, and existing or forecast average daily traffic (ADT) volumes. Table 5.5-2 presents the roadway segment capacity and LOS standards used to analyze roadway segments within the City of Chula Vista.

These standards are generally used as long-range planning guidelines to determine the functional classification of roadways. The actual capacity of a roadway facility varies according to its physical attributes. Typically, the performance and LOS of a roadway segment is heavily influenced by the ability of the arterial intersections to accommodate peak-hour volumes.

For the purposes of this traffic analysis, LOS C is considered acceptable for Circulation Element roadway segments within the City of Chula Vista (City of Chula Vista 2005). Per the Otay Ranch General Development Plan (GDP), LOS D is permitted on Circulation Element roads within the Otay Ranch Villages (City of Chula Vista and County of San Diego 1993).

Growth Management Program (GMP) Analysis

The City of Chula Vista's Growth Management Program (GMP), outlined in the Chula Vista Municipal Code Chapter 19.09, Growth Management, requires an additional analysis of roadway segment performance under near-term conditions (0–4 years) using the methodology described in Chapter 17, Urban Street Segment, of the 2010 HCM (Transportation Research Board 2010). This methodology determines roadway segment LOS based on functional classification, roadway segment length, and travel speeds. Current information relating to roadway functional classifications, segment lengths, and travel speeds are maintained by the City's Growth Management Traffic Monitoring Program, which is part of Municipal Code Chapter 19.09.

The GMP LOS standard requires the maintenance of LOS C or better, or LOS D for no more than any 2 hours of the day. If LOS D occurs for any period greater than 2 hours, additional analyses may be required along the respective high volume segments based on direction provided by the City Engineer (Municipal Code Chapter 19.09). For planned arterial facilities that are not included in the current Traffic Monitoring Program, the definition of segment length and facility classification would be based on direction provided by the City Engineer.

Table 5.5-2
Roadway Segment Level of Service Thresholds

Classification (Number of Lanes)	Level of Service as Percent of Capacity				
	A (60%)	*B (70%)*	*C (80%)*	*D (90%)*	*E (100%)*
Expressway (8)	52,500	61,300		78,800	87,500
Prime Arterial (6) [(1)]	37,500	43,800		56,300	62,500
Major Street (6)	30,000	35,000		45,000	50,000
Major Street (4)	22,500	26,300		33,800	37,500
Class I Collector (4)	16,500	19,300		24,800	27,500
Class II Collector (2)	9,000	10,500		13,500	15,000
Class III Collector (2)	5,600	6,600		8,400	9,400
Town Center Arterial (6) [(2)]	37,500	43,800	50,000		62,500
Gateway Arterial (6) [(2)]	40,500	47,500	54,500		68,700

Source: City of Chula Vista 2005

1 The technical analysis includes the evaluation of augmented arterials near the freeway on and off ramps. The augmented arterials include auxiliary lanes in advance of the freeway ramps to serve the higher traffic volumes that typically occur. When auxiliary lanes are provided, the capacity of the segments is increased by the equivalent single-lane capacity to account for the benefit in overall operations that is achieved with the construction of auxiliary lanes near the ramps.

2 Town Center and Gateway Arterials are "urban core" classifications. Urban Core facilities are evaluated against a LOS D or better standard.

Analysis of Caltrans Facilities

In accordance with the City's (City of Chula Vista 2005) and Caltrans (Caltrans 2002) requirements, the following analysis was conducted for all study scenarios using the City of

Chula Vista Traffic Impact Study Guidelines, the 2010 HCM, and the Caltrans Highway Design Manual (Caltrans 2015):

- Freeway Mainline Analysis – City of Chula Vista TIS Guidelines
- Intersections – Caltrans Intersection Lane Volume (ILV) Methodology

Basic Freeway Mainline Analysis

Segments of northbound and southbound Interstate (I) 805 were analyzed without and with the proposed project for Existing, 2020, and 2030 conditions. The analysis was conducting using the 2010 HCM Basic Freeway Segment Analysis Methodology (Transportation Research Board 2010). A 5% heavy truck factor was applied in addition to a measured free-flow speed of 65 miles per hour when calculating the operating conditions using the multi-lane freeway analysis.

Intersection Lane Volume Analysis

The ILV methodology evaluates the traffic demand at an intersection to the available capacity at the intersection. Combining traffic signal phasing and intersection geometry with peak-hour traffic volumes, the ILV methodology determines if a ramp is either "stable," "unstable," or at "capacity." The thresholds for operating conditions using the ILV methodology are summarized in Table 5.5-3.

Table 5.5-3
Intersection Lane Volume (ILV) Operational Thresholds

ILV/hour	Description
<1,200 "Stable"	Stable flow with slight, but acceptable delay. Occasional signal loading may develop. Free mid-block operations.
1,200 – 1,500 "Unstable"	Unstable flow with considerable delays possible. Some vehicles occasionally wait to or more cycle to pass through the intersection. Continuous backup occurs on some approaches.
>1,500 "Capacity"	Stop-and-go with severe delay and heavy congestion. Traffic volume is limited by maximum discharge rates of each phase. Continuous back up in varying degrees occurs on all approaches. Where downstream capacity is restrictive, mainline congestion can impede orderly discharge through the intersection.

Source: Caltrans 2015, Table 406

Transportation Development Impact Fee Program

Development impact fees are imposed upon development in an area of benefit, often containing a number of different properties, property owners, and land use types. Such fees are governed by the regulations and requirements of Government Code Section 66000 et seq. of the State of California.

The Chula Vista Transportation Development Impact Fee (TDIF) has two main purposes: (1) To fund the construction of facilities needed to mitigate potential direct and cumulative impacts and (2) To spread the costs associated with construction of the facilities equitably among the developing properties.

5.5.1.2 Existing Conditions

Existing Roadway Network

A field investigation of the existing roadway and intersection conditions was conducted specifically for this project. Traffic signal operations, lanes, parking and other factors that may affect the capacity of the roadway were identified and included in this analysis. A description of existing and future roadways in the project study area is provided below.

Project Study Area

The project study area was defined based on the distribution of project-generated trips on the roadway network. The list of study intersections was determined based on the trip threshold, which includes all intersections where 50 or more peak-hour project-generated trips forecast to be added, including several future intersections and roadway segments. The study area consists of the following intersections and roadway segments:

Intersections

1. I-805 Southbound (SB) Ramps & Olympic Parkway
2. 805 Northbound (NB) Ramps & Olympic Parkway
3. Olympic Parkway & Brandywine Avenue
4. Olympic Parkway & Heritage Parkway
5. La Media Road & Olympic Parkway
6. La Media Road & Santa Venetia Street
7. La Media Road & Birch Road
8. State Route (SR) 125 SB Ramps & Birch Road
9. SR-125 NB Ramps & Birch Road
10. La Media Road & Santa Luna Street
11. I-805 SB Ramps & Main Street
12. I-805 SB Ramps & Main Street A

Study Roadway Segments

Olympic Parkway

- I-805 NB Ramps to Oleander Avenue

- Oleander Avenue to Brandywine Avenue
- Brandywine Avenue to Heritage Road
- Heritage Road to Santa Venetia Street
- Santa Venetia Street to La Media Road
- La Media Road to East Palomar Street
- East Palomar Street to SR-125 SB Ramps

Birch Road

- La Media Road to Magdalena Avenue
- Magdalena Avenue to SR-125

Main Street

- I-805 NB Ramps to Oleander Avenue
- Oleander Avenue to Brandywine Avenue
- Brandywine Avenue to Heritage Road
- Heritage Road to La Media Road
- La Media Road SR-125

Heritage Road

- Olympic Parkway to Santa Victoria Road
- Santa Victoria Road to Main Street
- Main Street to Avenida De Las Vistas

La Media Road

1. Olympic Parkway to Santa Venetia Street
2. Santa Venetia Street to Birch Road
3. Birch Road to Santa Luna Street
4. Santa Luna Street to Main Street

North/South Roadway Facilities

Heritage Road: Heritage Road runs north-south through the City of Chula Vista from north of Palomar Street to south of Main Street. Portions of Heritage Road through the City have not yet been constructed but are included in the TDIF program. At the time the TIA was prepared, the section of Heritage Road from south of Santa Victoria to north of Main Street had not been constructed (Appendix D). When complete, Heritage Road would be a six-lane prime arterial from south of Palomar Street to the southern City boundary.

La Media Road: La Media Road runs north/south through the City from north of Palomar Street to Main Street. At the time the TIA was prepared, La Media Road had not been fully constructed with the southern terminus at Santa Luna Street. When complete, La Media Road would be a six-lane Prime arterial from Olympic Parkway to Santa Luna and a four-lane Town Center Collector from Santa Luna Street to Main Street. South of Main Street, La Media Road changes names to Otay Valley Road.

East/West Roadway Facilities

Olympic Parkway: Olympic Parkway is a six-lane Prime arterial that runs east/west through the City of Chula Vista, connecting I-805 and SR-125 through the project traffic study area.

Main Street: Main Street is a six-lane Prime arterial from I-805 to its existing terminus at Heritage Road. Main Street is planned to extend from Heritage Road to SR-125 as a six-lane Prime arterial. East of SR-125, Main Street is classified as a Gateway Arterial through Village Nine. The project would take access on Main Street at two signalized intersections located on the west side of Main Street.

Birch Road: Birch Road is classified as a six-lane Major road from La Media Road to SR-125 and as a six-lane Prime arterial on the east side of SR-125.

Existing Traffic Volumes

Existing traffic volumes for this project were collected in November 2014 specifically for this project. Raw traffic count volumes are provided in Appendix D.

Existing Traffic Operations

The existing traffic volumes, lane configurations, and signal timings (for signalized intersections) were used to calculate the existing conditions LOS for all of the study locations. The proposed project trips were overlaid on the existing condition traffic to determine the Existing plus Project Conditions impacts (discussed in Section 5.5.3). Table 5.5-4 displays intersection LOS and average

vehicle delay for the key study area intersections under Existing Conditions. The corresponding calculation worksheets for existing conditions are provided in Appendix D.

As shown in Table 5.5-4, the following study intersections operate at LOS E or F in the AM or PM peak period:

- Olympic Parkway / I-805 SB Ramps (PM Peak)
- Olympic Parkway / I-805 NB Ramps (AM Peak)
- La Media Road / Santa Luna Road (AM Peak)

Table 5.5-5 summarizes the results of the roadway segment LOS analysis. As shown, two segments of Olympic Parkway currently operate at deficient LOS:

- Olympic Parkway: Oleander Avenue to Brandywine Avenue
- Olympic Parkway: Brandywine Avenue to Heritage Road

Table 5.5-4
Existing Conditions Intersection Level of Service

Intersection		AM Peak Hour		PM Peak Hour		LOS E or F?
		Delay	*LOS*	*Delay*	*LOS*	
1.	I-805 SB Ramps & Olympic Pkwy	42.3	D	62.7	E	✓
2.	I-805 NB Ramps & Olympic Pkwy	65.0	E	37.1	D	✓
3.	Olympic Pkwy & Brandywine Ave	43.4	D	52.7	D	
4.	Olympic Pkwy & Heritage Road	47.8	D	24.4	C	
5.	La Media Road & Olympic Pkwy	46.6	D	32.2	C	
6.	La Media Road & Santa Venetia Street	45.2	D	18.2	B	
7.	La Media Road & Birch Road	27.7	C	24.3	C	
8.	SR-125 SB Ramps & Birch Road	31.5	C	32.8	C	
9.	SR-125 NB Ramps & Birch Road	3.4	A	4.8	A	
10.	La Media Road & Santa Luna Street* (AWS)	178.1	F	8.7	A	✓
11.	I-805 SB Ramps & Main Street	23.5	C	22.3	C	
12.	I-805 NB Ramps & Main Street	18.9	B	26.5	C	

Source: Appendix D
* Intersection 10 is currently controlled by all-way-stop signs, resulting in high delay during the morning peak.

Table 5.5-5
Existing Conditions Roadway Segment Level of Service

Facility	From	To	Cross-Section	Existing ADT[1]	LOS Threshold (LOS C)	LOS	LOS D, E, or F?
Olympic Pkwy	I-805 SB Ramps	I-805 NB Ramps	6-Ln w/RM	39,453	50,000	B	
Olympic Pkwy	I-805 NB Ramps	Oleander Avenue	6-Ln w/RM	48,508	50,000	C	
Olympic Pkwy	Oleander Avenue	Brandywine Avenue	6-Ln w/RM	52,262	50,000	D	✓
Olympic Pkwy	Brandywine Avenue	Heritage Road	6-Ln w/RM	52,690	50,000	D	✓
Olympic Pkwy	Heritage Road	Santa Venetia Street	6-Ln w/RM	48,232	50,000	C	
Olympic Pkwy	Santa Venetia Street	La Media Road	6-Ln w/RM	45,805	50,000	C	
Olympic Pkwy	La Media Road	East Palomar Street	6-Ln w/RM	31,038	50,000	A	
Olympic Pkwy	East Palomar Street	SR-125 SB Ramps	6-Ln w/RM	35,555	50,000	A	
Birch Road	La Media Road	Magdalena Avenue	6-Ln w/RM	9,160	40,000	A	
Birch Road	Magdalena Avenue	SR-125 SB Ramps	6-Ln w/RM	10,740	40,000	A	
Main St	I-805 NB Ramps	Oleander Avenue	6-Ln w/RM	31,341	50,000	A	
Main St	Oleander Avenue	Brandywine Avenue	6-Ln w/TWLTL	23,065	50,000	A	
Main St	Brandywine Avenue	Heritage Rd	6-Ln w/RM	10,865	50,000	A	
Main St	Heritage Road	Project Access	Does Not Exist				
Main St	Project Access	La Media Road	Does Not Exist				
Main St	La Media Road	SR-125 SB Ramps	Does Not Exist				
Main St	SR-125 SB Ramps	SR-125 NB Ramps	Does Not Exist				
Main St	SR-125 NB Ramps	Eastlake Parkway	Does Not Exist				
Otay Valley Road	Main Street	SR-125	Does Not Exist				
Heritage Road	Olympic Parkway	Santa Victoria Road	Does Not Exist				
Heritage Road	Santa Victoria Street	Main Street	Does Not Exist				

Table 5.5-5
Existing Conditions Roadway Segment Level of Service

Facility	From	To	Cross-Section	Existing ADT(1)	LOS Threshold (LOS C)	LOS	LOS D, E, or F?
Heritage Road	Main Street	Avenida De Las Vistas	2-Ln w/TWLTL	8,787	12,000	A	
La Media Road	Olympic Parkway	Santa Venetia Street	6-Ln w/RM	16,408	50,000	A	
La Media Road	Santa Venetia Street	Birch Road	6-Ln w/RM	11,515	50,000	A	
La Media Road	Birch Road	Santa Luna Street	6-Ln w/RM	2,072	50,000	A	
La Media Road	Santa Luna Street	Main Street			Does Not Exist		

(1) Source: University Villages TIA (Chen Ryan 2014)
Bold letter indicates unacceptable LOS (D), E, or F
RM = Raised Median
SM = Striped Median
TWLTL = two-way left-turn lane

5.5.2 Thresholds of Significance

Would the proposed project:

A. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?

B. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

C. Substantially increase hazards due to a design feature or incompatible uses?

D. Result in inadequate emergency access?

E. Be inconsistent with the General Plan, GDP, ordinances or policies establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non –motorized travel and relevant components of the circulation system including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

F. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

G. Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Determination of Significance

Project impacts are defined as either direct impacts or cumulative impacts. Direct impacts are those impacts for which the addition of project trips results in an identifiable degradation in LOS on freeway segments, or intersections, triggering the need for specific project-related improvement strategies. Cumulative impacts are those in which the project trips contribute to a poor LOS, at a nominal level.

Study horizon year as used herein is intended to describe a future period of time in the traffic studies, which corresponds to SANDAG's traffic model years, and are meant to synchronize study impacts to be in line with typical study years of 2020 and 2030.

Criteria for determining whether the project results in either direct or cumulative impacts on freeway segments, roadway segments, or intersections are described below.

Near Term (0–4 years)

For purposes of near-term analysis, roadway sections are defined as either links or segments. A link is typically that section of roadway between two adjacent Circulation Element intersections, and a segment is defined as that combination of contiguous links used in the Growth Management Plan Traffic Monitoring Program (Municipal Code Chapter 19.09). Analysis of roadway links under near-term conditions may require a more detailed analysis using Growth Management Oversight Committee (GMOC) methodology if the analysis using volume-to-capacity ratios on an individual link indicates a potential impact to that link. The GMOC analysis uses the Highway Capacity Manual (HCM) methodology of average travel speed based on actual measurements on the segments as listed in the Growth Management Plan Traffic Monitoring Program (Municipal Code Chapter 19.09).

Intersections

1. Direct impact if <u>both</u> the following criteria are met:
    a. Level of service is LOS E or LOS F
    b. Project trips comprise 5% or more of entering volume
2. Cumulative impact if only "a" is met.

Street Links/Segments

If the planning analysis using the volume-to-capacity ratio indicates LOS C or better, there is no impact. If the planning analysis indicates LOS D, E, or F, the GMOC method should be used (Municipal Code Chapter 19.09). The following criteria would then be used:

1. Direct impact if ALL the following criteria are met:
    a. Level of service is LOS D for more than 2 hours or LOS E/F for 1 hour
    b. Project trips comprise 5% or more of segment volume
    c. Project adds greater than 800 ADT to the segment
2. Cumulative impact if only "a" is met

Horizon Year (5 or more years)

Intersections

1. Direct impact if both the following criteria are met:
    a. Level of Service is LOS E or LOS F
    b. Project trips comprise 5% or more of entering volume
2. Cumulative impact if only "a" is met

Street Segments

Use the planning analysis using the volume-to-capacity ratio methodology only. The GMOC analysis methodology is not applicable beyond a 4-year horizon (Municipal Code Chapter 19.09).

1. Direct impact if ALL three of the following criteria are met:
    a. Level of service is LOS D, LOS E, or LOS F
    b. Project trips comprise 5% or more of total segment volume
    c. Project adds greater than 800 ADT to the segment
2. Cumulative impact if only "a" is met. However, if the intersections along a LOS D or LOS E segment all operate at LOS D or better, the segment impact is considered not significant since intersection analysis is more indicative of actual roadway system operations than street segment analysis. If segment Level of Service is LOS F, impact is significant regardless of intersection LOS.

The City of Chula Vista has a Transportation Development Impact Fees (TDIF) program that is funded by contributions from developers and is used to mitigate traffic impacts discussed above. Building permits are issued after fees have been paid (Chula Vista Municipal Code Chapter 3.54, Transportation Development Impact Fee).

Freeway Segments

In accordance with the SANTEC/ITE traffic study guidelines, a significant impact along a freeway segment is forecast to occur if one of the following two conditions exist (SANTEC/ITE 2000):

- If the level of service with project is LOS E, a change in V/C ratio of greater than 0.01 (1%) results in a significant impact
- If the level of service with project is LOS F, a change in V/C ratio of greater than 0.005 (0.5%) results in a significant impact

Project Description and Trip Generation

The TIA analyzed the project traffic based on a unit count of 275 multi-family units and 75 single-family units (Appendix D). Since then, the unit count has shifted slightly to be 277 multi-family vs. and 73 single-family units. Because single-family units are modeled to and result in greater trips generated when compared to multi-family units, the revised unit count would result in slightly fewer trips. Therefore, the analysis presented is conservative. The multi-family portion of the project is located on both the north and south side of the future Main Street extension. All single-family units are located on the south side of Main Street.

Project Access

The project would have access from Main Street at two locations. Both access points are planned to be controlled by traffic signals. The project would be responsible for constructing Main Street along the project frontage from La Media Road to the property line. The construction of the Main Street bridge is not assumed to occur with this project. While this is planned to occur, for the purposes of some analysis scenarios, access to the project is assumed to be limited to Main Street via La Media Road until the bridge is constructed by others or by the City through the TDIF program.

Pedestrian access would be provided via sidewalks along Main Street and on all internal roadways. Traffic signals at the two key project entry points would aid in pedestrian access across Main Street. Sidewalks along Main Street would connect the residential community to the Village Two South community park and the Village Eight West town center, when constructed.

Bicycle access would be provided via Class II bicycle lanes along both sides of Main Street.

Transit service would be provided by MTS along Main Street. Both Rapid Bus service and local circulator service would be accessible once service is extended by MTS.

Project Trip Generation

Vehicle trip generation rates for the proposed project were obtained from SANDAG's Traffic Generation Rates (SANDAG 2002). Based on the proposed multi-family and single-family land uses, the project is estimated to generate 2,950 daily trips, including 236 AM peak-hour trips (53 inbound, 183 outbound) and 295 PM peak-hour trips (207 inbound, 89 outbound). Table 5.5-6 displays the daily project trip generation.

Table 5.5-6
Village Four Project Trip Generation

Project Description		Daily		AM Peak Hour				PM Peak Hour			
Land Use	*Dwelling Units*	*Rate*	*Trips*	*Rate[1]*	*Trips*	*In*	*Out*	*Rate[1]*	*Trips*	*In*	*Out*
Apartment	275 DU	8 trips/DU	2,200	8%	176	35	141	10%	220	154	66
Single Family	75 DU	10 trips/DU	750	8%	60	18	42	10%	75	53	23
		Total	2,950		236	53	183		295	207	89

Source: Appendix D
1 Percent of daily trips.

Project Trip Distribution

The TIA uses the SANDAG Series 11 "Southbay 2" traffic forecast model with the most current relevant information available from the City of Chula Vista (Appendix D). The TIA (Appendix D) used a select zone run from SANDAG from the 2030 "Southbay 2" model to determine the distribution of project trips through the study area at General Plan buildout, which includes several roadways not currently constructed in the study area, such as Heritage Road, Main Street, and Otay Valley Road.

The year 2030 model results were used to develop general distribution patterns from the project site into the Chula Vista. The general distribution patterns were used to develop trip distribution patterns for existing plus project and future year 2020 conditions, when many of the planned future roadways do not exist. Refer to Appendix D for trip distribution details.

Project Trip Assignment

Based on the project trip distribution and the peak-hour project trip generation, project trips were assigned to the roadway network (refer to Appendix D for details).

5.5.3 Impacts

A. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections).

The traffic analysis was prepared for existing, 2020, and 2030 conditions in accordance with the City's General Plan. The City's goal for acceptable levels of service is generally LOS D or better at signalized and unsignalized intersections and LOS C along roadway segments (City of Chula Vista 2005).

Existing Plus Project Conditions

The California Environmental Quality Act (CEQA) mandates the assessment of existing conditions with the project buildout conditions. The Existing Plus Project conditions assume the existing street network with existing traffic volumes as the baseline in order to isolate the project impacts. The only new roadways considered in this analysis were Main Street and La Media Road to provide access to the site. Both were considered in this analysis as two-lane roadways from the existing terminus on La Media Road to the project access intersections on Main Street.

Refer to Appendix D the results of the peak-hour intersection analysis for the Existing Plus Project condition. The LOS worksheets are also provided in Appendix D. As shown in Appendix D, three intersections are forecast to operate at LOS E or F during the AM or PM peak period and would result in the following impacts:

- Olympic Parkway / I-805 SB Ramps (PM peak) – **significant cumulative impact**
- Olympic Parkway / I-805 NB Ramps (AM peak) – **significant cumulative impact**
- Olympic Parkway / Brandywine Avenue (PM peak) – **significant cumulative impact**

Both of the intersections at the I-805 ramps currently operate at deficient LOS and the project does not worsen the existing condition. The project contribution to overall traffic at the intersection is less than the allowable 5% threshold; thus, the project impacts at these two locations are cumulative. The project does worsen the existing condition at the intersection of Olympic Parkway and Brandywine Avenue, but the project contribution to overall traffic at the intersection is less than the allowable 5% threshold, therefore the project impact at this location is also cumulative.

Note that the impacts identified on the I-805 ramps cannot be mitigated through payment of TDIFs because they are Caltrans-owned facilities, outside of the jurisdiction of the City. At the

time the TIA was prepared, no feasible mitigation measures or fee programs were in place to mitigate the identified cumulative impacts at the I-805/Olympic Parkway ramps or through the interchange. Therefore, these impacts would be **significant and unavoidable**. The intersection of Olympic Parkway and Brandywine Avenue would be mitigated to **less than significant** through payment of TDIF, as described in Sections 5.5.5 and 5.5.6.

The results of the roadway segment analysis are summarized in Appendix D. As shown in Appendix D, two segments of Olympic Parkway are forecast to operate at LOS D, E, or F, resulting in the following impacts:

- Olympic Parkway: Brandywine Avenue to Oleander Avenue – **significant cumulative impact**
- Olympic Parkway: Oleander Avenue to Heritage Road – **significant cumulative impact**

The portion of trips added to the segments with LOS D, E, or F is less than 5%. Therefore, the impacts are determined to be cumulative based on the City's thresholds of significance criteria (City of Chula Vista 2005). These impacts to Olympic Parkway would be mitigated to **less than significant** through payment of TDIF, as described in Sections 5.5.5 and 5.5.6.

Near Term (2018) Conditions

The City of Chula Vista's Growth Management Program (GMP) requires the analysis of roadway segments under near term conditions on an annual basis when existing operating conditions along a roadway reach or exceed the LOS D threshold (Chula Vista Municipal Code Chapter 19.09). As shown in the existing conditions analysis, the following roadway segments currently operate at LOS D, E, or F within the study area:

- Olympic Parkway – Brandywine Avenue to Oleander Avenue
- Olympic Parkway – Oleander Avenue to Heritage Road

The City conducts annual monitoring of these roadways to assess the existing peak 2-hour performance along these roadways based on travel time, speed, and arterial performance. The GMP requires that these roadways maintain LOS D or better conditions during the 2-hour period to comply with the Growth Management Ordinance (Chula Vista Municipal Code Chapter 19.09).

In April 2011, the City conducted a study to assess the available capacity along these critical roadways and determined that once the 2,463rd building permit is issued, the capacity along Olympic Parkway may be exceeded (City of Chula Vista 2014). Therefore, the following condition has been set forth to ensure compliance with the GMOC thresholds:

Prior to issuance of the 2,463rd building permit for development east of I-805, the applicant may (City of Chula Vista 2014):

- Prepare a traffic study that demonstrates to the satisfaction of the City Engineer that the circulation system has available capacity without exceeding the GMO traffic standards, or
- Demonstrate that other improvements will be constructed by the project that will provide the additional necessary capacity to comply with the GMO traffic thresholds to the satisfaction of the City Engineer.

Based on the project's anticipated construction start date, the project would likely add none or a nominal amount of traffic to the roadway system in 2018 resulting in no near term impacts to Olympic Parkway.

Mid-Term (2020) Conditions

The project is anticipated to be fully constructed by 2020. For this study scenario, the mid-term 2020 traffic volumes were forecast based on volumes reported in the University Villages Traffic Impact Analysis Report (Chen Ryan 2014). The volumes reported in that study included residential land uses for the project which are denser than currently proposed. As a result, the volumes forecast using the SANDAG Series 11 "Southbay 2" model are a conservative estimate of the long-term volumes in the study area. Traffic volumes reported for 2020 in the University Villages study are provided in Appendix D.

Analysis of long term (2020) considers the following roadway network improvements are constructed by others:

- Extension of Heritage Road from Santa Victoria Road to Main Street
- Improvements to the Heritage Road/Main Street intersection (not analyzed in this study scenario due to nominal assignment of project related traffic volumes through this intersection)
- Extension of Main Street east of La Media Road into Village Eight
- Extension of Otay Valley Road south of Main Street into Village Eight
- Main Street/La Media Road couplet

The project is assumed to construct Main Street west of the La Media Road/Main Street couplet to provide access as a two-lane roadway with a center turn lane. Using the long-term forecast volumes and geometries, peak-hour intersection and daily roadway segment operating conditions were analyzed for the long-term 2020 study scenario.

If the first Final Map is submitted for approval prior to the construction of identified improvements by others and open to traffic, then one of the following steps shall be taken, each to the satisfaction of the City Engineer:

A. Development of the proposed project shall stop until those assumed future roadways are constructed by others as presently planned; or

B. City and the project applicant shall meet to determine the need for the incomplete roadway segments. Because of a number of factors, including changes to the tolling structure at SR-125, may affect future traffic patterns in Otay Ranch, additional traffic analysis of the roadway network and level of service assessment may be necessary at that time to determine: (i) if such improvements are in fact necessary; and (ii) the scope and timing of additional circulation improvements, if any; or

C. The project applicant shall construct the missing roadway links and receive a transportation development impact fee credit for those improvements as applicable; or

D. An alternative measure is selected by the City in accordance with the City of Chula Vista Growth Management Ordinance.

The results of the peak-hour analysis are summarized in Appendix D with LOS worksheets also provided. As shown, several intersections are forecast to operate at LOS E or F in either the AM or PM peak period by 2020 with the following impacts:

- I-805 SB Ramps / Olympic Pkwy (AM/PM peak) – **significant cumulative impact**
- I-805 NB Ramps / Olympic Pkwy (AM/PM peak) – **significant cumulative impact**
- Olympic Pkwy / Brandywine Ave (AM/PM peak) – **significant cumulative impact**
- Olympic Pkwy / Heritage Road (AM peak) – **significant cumulative impact**

Project trips added to the deficient intersections fall below the 5% significant impact threshold. Therefore, the impacts are identified as cumulative. Extension of Main Street, which is included in the TDIF program and is included in the City's General Plan Circulation Element, would reduce reliance on Olympic Parkway and La Media Road and would result in improved operating conditions at these intersections. The intersection of Olympic Parkway and Brandywine Avenue as well as Olympic Parkway and Heritage Road would be mitigated to **less than significant** through payment of TDIF, as described in Sections 5.5.5 and 5.5.6. The TDIF program is the most appropriate mitigation measure feasibly available to reduce impacts at the I-805 ramps. However, as previously discussed, the I-805 ramps cannot be mitigated through the TDIF program and would remain **significant and unavoidable**.

The results of the mid-term 2020 roadway segment analysis, summarized in Appendix D, shows that four segments of Olympic Parkway are forecast to operate at LOS D, E or F under Mid-Term (2020) Conditions:

- Olympic Parkway: I-805 SB Ramps to I-805 NB Ramps – **significant cumulative impact**
- Olympic Parkway: I-805 NB Ramps to Oleander Avenue – **significant cumulative impact**
- Olympic Parkway: Oleander Avenue to Brandywine Avenue – **significant cumulative impact**
- Olympic Parkway: Brandywine Avenue to Heritage Road – **significant cumulative impact**

The project contribution to these segments fall below the level of significance criteria for daily traffic volume (800 vehicles per day) and/or account for less than 5% of the total traffic on these segments. As a result, the impacts along these segments are determined to be cumulative impacts and would be mitigated through the payment of TDIF fees, as described in Sections 5.5.5 and 5.5.6.

Long-Term (2030) Conditions

The long-term 2030 study scenario assumes buildout of General Plan land use and General Plan roadway network. Traffic volumes evaluated in this study scenario were forecast based on volumes reported in the University Villages Traffic Impact Analysis Report (Chen Ryan 2014) and were forecast using the SANDAG Series 11 "Southbay 2" model. As stated previously, the land uses assumed in the model for the project site are denser than those proposed in this study. Therefore, the traffic volumes presented are a conservative estimate of the long-term volumes in the study area. Traffic volumes reported for 2030 in the University Villages study are provided in Appendix D.

Analysis of 2030 considers buildout of the City of Chula Vista General Plan Circulation Element. Therefore, future roadways considered to be built by others in the 2030 analysis are as follows:

- Extension of Heritage Road from Olympic Parkway to Main Street as a six-lane Prime Arterial
- Extension of Main Street from Heritage Road to La Media Road
- Otay Valley Road from Main Street to Village Nine including crossing at SR-125
- Main Street from La Media Road to East Lake Parkway including bridge at SR-125
- Construction of SR-125 Ramps at Main Street

If the first Final Map is submitted for approval prior to the construction of identified improvements by others and open to traffic, then one of the following steps shall be taken, each to the satisfaction of the City Engineer:

A. Development of the proposed project shall stop until those assumed future roadways are constructed by others as presently planned; or

B. City and the project applicant shall meet to determine the need for the incomplete roadway segments. Because of a number of factors, including changes to the tolling structure at SR-125., may affect future traffic patterns in Otay Ranch, additional traffic analysis of the roadway network and level of service assessment may be necessary at that time to determine: (i) if such improvements are in fact necessary; and (ii) the scope and timing of additional circulation improvements, if any; or

C. The project applicant shall construct the missing roadway links and receive a transportation development impact fee credit for those improvements as applicable; or

D. An alternative measure is selected by the City in accordance with the City of Chula Vista Growth Management Ordinance.

At the time Main Street is constructed from Heritage Road to La Media Road, the project should conduct warrants and install traffic signals at the two project access intersections if warrants are met. Using the long-term forecast volumes and geometries presented in the TIA (Appendix D), peak-hour intersection and daily roadway segment operating conditions were analyzed for the long-term 2030 study scenario.

The results of the peak-hour analysis are summarized in Appendix D with LOS worksheets also provided. As shown, two intersections are forecast to operate at LOS E or F in either the AM or PM peak period by 2030 with the following impacts:

- I-805 SB Ramps / Olympic Pkwy (PM peak) – **significant cumulative impact**
- I-805 NB Ramps / Olympic Pkwy (AM peak) – **significant cumulative impact**

As shown, the ramps at I-805 are forecast to operate at deficient LOS by 2030. The project results in a cumulative impact at both intersections as the project contribution to these intersections is less than 5% of the total inbound volume. As previously mentioned, Caltrans facilities cannot be mitigated through the TDIF program and the time the TIA was prepared, no feasible mitigation measures or fee programs were in place to mitigate the cumulative identified impacts at the I-805/Olympic Parkway ramps or through the interchange. Additionally, Caltrans facilities are outside of the jurisdiction of the City. The TDIF program is the most appropriate mitigation measure feasibly available to reduce impacts at the I-805 ramps. Thus, these impacts would be **significant and unavoidable**.

The results of the long-term 2030 roadway segment analysis, summarized in Appendix D, shows that several roadway segments are forecast to operate at LOS D or LOS E by 2030. None of the roadway segments are forecast to operate at LOS F. As shown, the following segment is forecast to operate at LOS E by 2030 with the following impacts:

- Olympic Parkway: I-805 NB Ramps to Oleander Avenue – **significant cumulative impact**

Of those segments forecast to operate at LOS D or LOS E, the adjacent intersections are forecast to operate at acceptable levels of service. As stated in the City's thresholds of significance, impacts are not considered significant along deficient segments where adjacent intersections operating at acceptable levels of service (City of Chula Vista 2005). The segment of Olympic Parkway from I-805 to Oleander Avenue is forecast to operate at a deficient LOS and the adjacent I-805 NB Ramp is forecast to operate at LOS E. Therefore, the project would result in a significant cumulative impact on this segment. The cumulative impact would be mitigated to **less than significant** through the payment toward the TDIF program, as described in Sections 5.5.5 and 5.5.6.

Segments of Main Street and La Media Road are classified as either Town Center or Gateway arterials. In accordance with the General Plan, the allowable LOS for these classifications is LOS D or better (City of Chula Vista 2005). Although segments of both La Media Road and Main Street are forecast to operate at LOS D, they are not forecast to be significantly impacted by the project.

Caltrans Facility Analysis

The project would add new trips to SR-125 and I-805 within the traffic study area. Consistent with the Traffic Impact Study Guidelines prepared by SANTEC/ITE for the San Diego region (SANTEC/ITE 2000), two levels of analysis were conducted for state owned facilities in the project study area: Freeway Segment Analysis and Ramp Intersection Analysis. The following section outlines the results of the freeway facility analysis for all study years.

Freeway Segment Analysis

The freeway segment analysis conducted in the TIA was consistent with analysis procedures accepted by Caltrans and are based on the Highway Capacity Manual "Basic Freeway Segment" methodology for calculating peak-hour volumes. Daily traffic volumes used in this analysis were reported by Caltrans and in the SANDAG modeling efforts conducted for the University Villages Traffic Impact Analysis Report (Chen Ryan 2014).

Capacity of the freeway segment is based on 2,400 passenger car vehicles per hour per lane. To calculate the volume-to-capacity ratios, the peak-hour volumes were converted from total

vehicles to passenger car equivalent vehicles using the heavy vehicle adjustment factor, peak-hour factor and number of mainline lanes along the facility. Freeway segment LOS is based on the calculated volume-to-capacity (V/C ratio) for each segment. LOS thresholds are provided in Table 5.5-17.

Table 5.5-7
Freeway Segment Level of Service Thresholds

Level of Service	V/C	Description of Delay	Description
A	< 0.41	None	Free flow
B	0.42 – 0.62	None.	Free flow
C	0.63 – 0.79	None to Minimal	Stable flow
D	0.80 – 0.93	Minimal to Substantial	Approaching Unstable Flow
E	0.93 – 1.0	Substantial to Significant	Extremely Unstable Flow
F	>1.0	Congested	Forced Flow

Source: Transportation Research Board 2000

The results of the freeway segment operating conditions for Existing Plus Project, 2020, and 2030 are summarized in Tables 5.5-8 through 5.5-10**.** As shown in the tables, I-805 and SR-125 operate at acceptable levels of service through 2020. By 2030, segments of I-805 through the study area are forecast to operate at LOS E or F. Caltrans goal for acceptable operating conditions is LOS D or better. Impacts would be **less than significant.**

Intersection Lane Volume (ILV) Analysis

ILV methodology evaluates the ratio of volume through the ramp intersections with the available capacity based on the signal phasing at signalized intersections. The analysis evaluates the conditions as an isolated intersection, which does not consider the overall relationship of one ramp intersection to another. With this in mind, the ILV analysis presented in this report is for information only. Table 5.5-11 summarizes the results of the analysis for all study scenarios. Detailed worksheets are provided in Appendix D.

As shown in Table 5.5-11, both ramps at I-805 and Olympic Parkway either currently operate over capacity or are forecast to operate deficiently in the Long-Term study scenarios. In addition, the I-805 SB Ramps at Main Street also operate over capacity in all study scenarios.

Table 5.5-8
Existing Conditions Freeway Segment Analysis

Freeway Segment		Existing ADT	With Project ADT	Peak Hour Percent	Peak-Hour Volume	Directional Split	Number of Lanes by Direction	PHF	Percent Heavy Vehicles	Peak Hour Volume (pc/ln/hr)	V/C	LOS	Project Contribution	Significant Impact
I-805	North of Olympic Pkwy	153,200	153,486	7.10%	10,897	0.51	4 SOV + 1 Aux	0.92	1.70%	1,218	0.51	B	0.19%	No
	Olympic Pkwy to Main St	121,500	121,786	6.90%	8,403	0.51	4 SOV + 1 Aux	0.93	5.40%	947	0.39	A	0.23%	No
	South of Main St	116,300	116,586	7.10%	8,278	0.58	4 SOV + 1 Aux	0.95	10.30%	1,063	0.44	B	0.25%	No
SR-125	North of Birch Rd	4,800	4,971	7.00%	348	0.58	2 Toll	0.95	5.00%	109	0.05	A	3.45%	No
	Birch Road to Main St	4,800	5,229	7.00%	366	0.58	2 Toll	0.95	5.00%	115	0.05	A	8.20%	No
	South of Main St	4,800	5,229	7.00%	366	0.58	2 Toll	0.95	5.00%	115	0.05	A	8.20%	No

Source: Appendix D
PHF = Peak-hour factor; lower values signify greater variability of flow within the subject hour, and higher values signify little flow variation.

Table 5.5-9
Mid-Term (2020) Freeway Segment Analysis

Freeway Segment		2020 ADT	With Project ADT	Peak Hour %	Peak Hour Volume	Directional Split	Number of Lanes by Direction	PHF	% Heavy Vehicles	Peak Hour Volume (pc/ln/hr)	V/C	LOS	Project Contribution	Significant Impact
I-805	North of Olympic Pkwy	209,214	209,500	7.00%	14,665	0.58	4 SOV + 1 Aux	0.92	1.70%	1,865	0.78	C	0.14%	No
	Olympic Pkwy to Main St	229,314	229,600	7.00%	16,072	0.58	4 SOV + 1 Aux	0.92	5.40%	2,081	0.87	D	0.12%	No
	South of Main St	219,814	220,100	7.00%	15,407	0.58	4 SOV + 1 Aux	0.92	10.30%	2,043	0.85	D	0.13%	No
SR-125	North of Birch Rd	15,143	15,400	7.00%	1,078	0.58	2 Toll	0.92	5.00%	348	0.15	A	1.67%	No
	Birch Road to Main St	25,514	25,800	7.00%	1,806	0.58	2 Toll	0.92	5.00%	584	0.24	A	1.11%	No
	South of Main St	25,514	25,800	7.00%	1,806	0.58	2 Toll	0.92	5.00%	584	0.24	A	1.11%	No

Source: Appendix D
PHF = Peak-hour factor; lower values signify greater variability of flow within the subject hour, and higher values signify little flow variation.

Table 5.5-10
Long-Term (2030) Freeway Segment Analysis

Freeway Segment		2020 ADT	With Project ADT	Peak Hour %	Peak Hour Volume	Directional Split	Number of Lanes by Direction	PHF	% Heavy Vehicles	Peak Hour Volume (pc/ln/hr)	V/C	LOS	Project Contribution	Significant Impact
I-805	North of Olympic Pkwy	271,714	272,000	7.00%	19,040	0.58	4 SOV + 1 Aux + 1 HOV	0.92	1.70%	2,421	1.12	F	0.11%	No
	Olympic Pkwy to Main St	265,657	266,000	7.00%	18,620	0.58	4 SOV + 1 Aux + 1 HOV	0.92	5.40%	2,411	1.12	F	0.13%	No
	South of Main St	257,857	258,000	7.00%	18,060	0.58	4 SOV + 1 Aux + 1 HOV	0.92	10.30%	2,394	1.11	F	0.06%	No
SR-125	North of Birch Rd	30,443	30,700	7.00%	2,149	0.58	2 Toll	0.92	5.00%	694	0.29	A	0.84%	No
	Birch Road to Main St	34,457	34,600	7.00%	2,422	0.58	2 Toll	0.92	5.00%	783	0.33	A	0.41%	No
	South of Main St	93,714	94,000	7.00%	6,580	0.58	2 Toll	0.92	5.00%	2,126	0.89	D	0.30%	No

Source: Appendix D
PHF = Peak-hour factor; lower values signify greater variability of flow within the subject hour, and higher values signify little flow variation.

Table 5.5-11
ILV Analysis for Caltrans Ramp Intersections

	Peak Hour	Existing Plus Project		2020 Plus Project		2030 Plus Project	
		ILV/Hour	*Capacity Condition*	*ILV/Hour*	*Capacity Condition*	*ILV/Hour*	*Capacity Condition*
I-805 SB / Olympic Pkwy	AM	1,253	Capacity	1,667	Over Capacity	1,447	Capacity
	PM	1,875	Over Capacity	2,334	Over Capacity	2,051	Over Capacity
I-805 NB / Olympic Pkwy	AM	1,023	Under Capacity	1,430	Capacity	1,206	Capacity
	PM	1,659	Over Capacity	1,979	Over Capacity	1,840	Over Capacity
SR-125 SB / Birch Road	AM	449	Under Capacity	651	Under Capacity	566	Under Capacity
	PM	421	Under Capacity	622	Under Capacity	552	Under Capacity
SR-125 NB / Birch Road	AM	253	Capacity	492	Under Capacity	515	Under Capacity
	PM	377	Under Capacity	593	Under Capacity	608	Under Capacity
I-805 SB / Main St	AM	831	Under Capacity	2,000	Over Capacity	1,714	Over Capacity
	PM	1,002	Under Capacity	1,977	Over Capacity	2,094	Over Capacity
I-805 NB / Main St	AM	636	Under Capacity	1,161	Under Capacity	950	Under Capacity
	PM	681	Under Capacity	1,486	Capacity	1,315	Capacity
SR-125 SB / Main Street	AM	Does Not Exist				695	Under Capacity
	PM	Does Not Exist				947	Under Capacity
SR-125 NB / Main Street	AM	Does Not Exist				651	Under Capacity
	PM	Does Not Exist				808	Under Capacity

Source: Appendix D

B. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

The proposed project would result in development of residential land uses that does not include a change in air traffic patterns. Therefore, impacts would be **less than significant**.

C. Substantially increase hazards due to a design feature or incompatible uses.

The proposed project includes a circulation network that would serve the project site and surrounding uses. The proposed streets are designed to be consistent with the City of Chula Vista Street Design Standards (City of Chula Vista 2002) and have been refined to reflect the specific opportunities and constraints within the project site. Since the proposed circulation network would be consistent with the City's street design standards, the proposed project would not increase hazards due to a design feature or incompatible uses. Therefore, impacts would be **less than significant**. For additional information regarding site access and on-site circulation, see Appendix D.

D. Result in inadequate emergency access.

The project would have access from Main Street at two locations. Both access points would be controlled by traffic signals. While the construction of the Main Street bridge is not assumed to occur with this project, it is planned to occur by 2030. The internal roadways, along with access points, would be designed per City street design standards (City of Chula Vista 2002), which would ensure design consideration for emergency vehicles. Compliance with street design standards would ensure adequate emergency access and impacts would be **less than significant**.

E. Be inconsistent with the General Plan, GDP, ordinances or policies establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non – motorized travel and relevant components of the circulation system including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

The analysis presented under Threshold (A) considers the applicable General Plan, goals and polices that establish measures of effectiveness for the performance of the circulation system. The City of Chula Vista General Plan contains objectives and policies that support transit, encourage alternative transportation measures and the development of transit-friendly roads, support parking management policies, and ensure pedestrian-oriented environments. Relevant General Plan objectives related to transportation include the following (City of Chula Vista 2005):

- **Objective LUT 17**: Plan and coordinate development to be compatible and supportive of planned transit.
- **Objective LUT 18**: Reduce traffic demand through Transportation Demand Management (TDM) strategies, increased use of transit, bicycles, walking, and other trip reduction measures.
- **Objective LUT 19**: Coordinate with the regional transportation planning agency, SANDAG, and transit service providers such as the Metropolitan Transit System, to develop a state-of-the-art transit system that provides excellent service to residents; workers; students; and the disabled, both within the City, and with inter-regional destinations.
- **Objective LUT 20:** Make transit-friendly roads a top consideration in land use and development design.
- **Objective LUT 21:** Continue efforts to develop and maintain a safe and efficient transportation system with adequate roadway capacity to serve future residents, while preserving the unique character and integrity of recognized communities within the City.

- **Objective LUT 23**: Promote the use of non-polluting and renewable alternatives for mobility through a system of bicycle and pedestrian paths and trails that are safe, attractive and convenient forms of transportation.
- **Objective LUT 30**: Use parking management to better utilize parking facilities and implement policies to reduce parking demand before considering public expenditures for additional parking facilities.
- **Objective LUT 31**: Provide parking facilities that are appropriately integrated with land uses, maximize efficiency, accommodate alternative vehicles, and reduce parking impacts.
- **Objective LUT 32**: Evaluate the use and applicability of various strategies to provide parking.
- **Objective LUT 33:** Ensure that parking facilities are appropriately sited and well-designed in order to minimize adverse effects on the pedestrian-oriented environment, and to enhance aesthetic qualities.
- **Objective LUT 63**: Provide efficient multi-modal access and connections to and between activity centers.

Additionally, the Otay Ranch GDP contains the following goals and policies related to mobility (City of Chula Vista and County of San Diego 1993):

- **Goal:** Provide a safe and efficient transportation system within Otay Ranch with convenient linkages to regional transportation elements abutting the Otay Ranch.
    - Objective: Ensure timely provision of adequate local circulation system capacity to respond to planned growth, maintaining acceptable levels of service (LOS).
    - Objective: Plan and implement a circulation system such that the operational goal of Level of Service "C" for circulation element arterial and major roads and intersections can be achieved and maintained outside village cores and town centers. Sections of Main Streets and internal village streets/roads are not expected to meet this standard.
    - Objective: Encourage other transportation modes through street/road design standards within the village, while accommodating the automobile. Design standards are not focused on achieving LOS standards or providing auto convenience.
    - Objective: Provide an efficient circulation system that minimizes impacts on residential neighborhood and environmentally sensitive areas.

- **Goal:** Achieve a balanced transportation system which emphasizes alternatives to automobile use and is responsive to the needs of residents.
  - Objective: Study, identify, and designate corridors, if appropriate, for transit facilities.
  - Objective: Promote alternative forms of transportation, such as bicycle and low speed electric vehicle paths, riding and hiking trails, and pedestrian walkways as an integral part of the circulation system.

Streets surrounding and internal to Village Four are designed in compliance with the goals and objectives of the General Plan and Otay Ranch GDP. Street design and phasing provide balanced, efficient, and appropriate levels of service for all modes of transportation. The Village Four circulation system provides for accommodation of public transportation. Internal streets are designed to accommodate bicycles, and pedestrian sidewalks are provided throughout the village to provide alternatives to automobile travel. The land use plan for Village Four accommodates future transit opportunities and planning/designing trails and paths for non-motorized movement in order to discourage use of the cars. The internal streets have been narrowed to emphasize pedestrian circulation. Additionally, Village Four provides for future dedicated transit lanes along Main Street. The project would not conflict with plans and policies related to transportation and traffic. Impacts would be less than significant.

F. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

The analysis presented under Threshold (A) considers the applicable congestion management program and the standards established for designated roads and highways as part of the analysis. Impacts are as designated under Threshold (A).

G. Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

All internal roadways within the project site are proposed as two-lane local streets with a typical cross-section of 52 to 59 feet. All internal roadways would have sidewalks and on-street parking. The sidewalks would connect the community to the proposed sidewalks along the future Main Street extension. No bicycle lanes would be provided within most of the internal roadways as the roads are designed to be low volume, low speed streets. Class II bicycle lanes are proposed along the future alignment of Main Street and along Internal Street C. The traffic signals proposed by 2020 would provide pedestrian and bicycle connectivity across and along Main Street within the boundary of the project site. These signals, bicycle lanes, and planned sidewalks and crosswalks

would connect the residential community to activity centers such as the Town Center planned in Village Eight West and the community park planned west of La Media Road at Santa Luna, as well as transit service planned along La Media Road and Main Street.

The proposed project is part of the Otay Ranch GDP, which planned for the extension of mass transit through the community and required right-of-way to be set aside in anticipation of future transit lines (City of Chula Vista and County of San Diego 1993). The proposed land plans were designed to create village cores to accommodate transit stops adjacent to higher density housing. Transit plans have been coordinated with SANDAG and are included in the SPA Plans. Internal streets would implement the Otay Ranch street standards, which were developed to slow traffic and allow for use of personal mobility devices. The proposed project would also implement the City's Trail Plan through compliance with the regional trail program on major arterials, the Otay Valley Regional Park Trails Plan, and the Greenbelt Master Plan. Bicycle lanes would also be provided consistent with the designated bicycle routes as identified in the City's adopted Bikeway Master Plan. Overall, impacts would be **less than significant**.

5.5.4 Level of Significance Prior to Mitigation

Potentially significant impacts would occur at the following intersections and roadway segments in various analysis scenarios:

Existing Plus Project

- Olympic Parkway / I-805 SB Ramps (PM peak) – **significant cumulative impact**
- Olympic Parkway / I-805 NB Ramps (AM peak) – **significant cumulative impact**
- Olympic Parkway / Brandywine Avenue (PM peak) – **significant cumulative impact**
- Olympic Parkway: Brandywine Avenue to Oleander Avenue– **significant cumulative impact**
- Olympic Parkway: Oleander Avenue to Heritage Road– **significant cumulative impact**

Mid-Term (2020)

- I-805 SB Ramps / Olympic Pkwy (AM/PM peak) – **significant cumulative impact**
- I-805 NB Ramps / Olympic Pkwy (AM/PM peak) – **significant cumulative impact**
- Olympic Pkwy / Brandywine Ave (AM/PM peak) – **significant cumulative impact**
- Olympic Pkwy / Heritage Road (AM peak) – **significant cumulative impact**
- Olympic Parkway: I-805 SB Ramps to I-805 NB Ramps – **significant cumulative impact**
- Olympic Parkway: I-805 NB Ramps to Oleander Avenue – **significant cumulative impact**

- Olympic Parkway: Oleander Avenue to Brandywine Avenue – **significant cumulative impact**
- Olympic Parkway: Brandywine Avenue to Heritage Road – **significant cumulative impact**

Long Term (2030)

- I-805 SB Ramps / Olympic Pkwy (PM peak) – **significant cumulative impact**
- I-805 NB Ramps / Olympic Pkwy (AM peak) – **significant cumulative impact**
- Olympic Parkway: I-805 NB Ramps to Oleander Avenue – **significant cumulative impact**

All other impacts would be less than significant.

5.5.5 Mitigation Measures

Because all potentially significant impacts resulting from the proposed project would be considered cumulative, payment into the TDIF is required, as described in the following mitigation measure:

MM-TCA-1 Prior to the issuance of ~~the final map~~each building permit for the Village Four project, the applicant or its designee shall pay its fair share payment, through the Traffic Development Impact Fee program, proportionate to its cumulative impact toward improvements at the following locations:

- Olympic Parkway / Brandywine Avenue
- Olympic Parkway / Heritage Road
- Olympic Parkway: Brandywine Avenue to Oleander Avenue
- Olympic Parkway: Oleander Avenue to Heritage Road
- Olympic Parkway / Interstate (I) 805 Southbound (SB) Ramps
- Olympic Parkway / I-805 Northbound (NB) Ramps
- Olympic Parkway: I-805 SB Ramps to I-805 NB Ramps
- Olympic Parkway: I-805 NB Ramps to Oleander Avenue

The TransNet Extension and Ordinance document, developed by SANDAG, provides for the implementation of the San Diego Transportation Improvement Program. This will result in countywide transportation facility and service improvements for highways, which includes freeway interchanges in addition to other modes of transit, to support smart-growth development and related environmental mitigation and enhancement projects. As a part of this document, the Regional Transportation Congestion Improvement Program (RTCIP) has been

established to required local agencies to collect a specified exaction from the private sector for each newly construct residential housing unit in that jurisdiction to put toward the RTCIP. These exactions shall ensure future development contributes to its proportional share of the funding needed to pay for the Regional Arterial System and relation regional transportation facility improvements, as designed by the SANDAG Regional Transportation Plan. The RTCIP revenue will be used to construct improvements on the Regional Arterial System such as new or widened arterials, traffic signal coordinated and other traffic improvement, freeway interchange and related freeway improvements, railroad grade separations, and improvements required for regional express and rail transit.

The funding of the RTCIP is implemented through the City's Capital Improvement Program. The City Capital Improvement Program designates the payment of TDIF of which portions are contributed to the SANDAG RTCIP fund for regional roadway facilities. The Eastern TDIF was established by City Council in January 1998 and covers the eastern territories of the City. This ~~$230 million~~ program consisting of ~~approximately 70~~ transportation related improvement projects has helped finance improvements to the I-805 interchanges, major arterial roadways, and needed traffic signals. The TDIF program is the most appropriate mitigation measure feasibly available to reduce impacts at the I-805 ramps.

5.5.6 Level of Significance After Mitigation

MM-TCA-1 would reduce cumulatively significant impacts to a level below significance at the following locations:

- Olympic Parkway / Brandywine Avenue
- Olympic Pkwy / Heritage Road
- Olympic Parkway: Brandywine Avenue to Oleander Avenue
- Olympic Parkway: Oleander Avenue to Heritage Road

Because Caltrans facilities are outside the jurisdiction of the City, cumulative impacts at the following locations would remain significant and unavoidable:

- Olympic Parkway / I-805 SB Ramps
- Olympic Parkway / I-805 NB Ramps
- Olympic Parkway: I-805 SB Ramps to I-805 NB Ramps
- Olympic Parkway: I-805 NB Ramps to Oleander Avenue

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5.6 AIR QUALITY

This section of the EIR addresses potential impacts to air quality resulting from the proposed Otay Ranch Village Four Sectional Planning Area (SPA) Plan Project (project). The discussion in this section is based on the Air Quality and Greenhouse Gas Emissions Technical Report prepared for the project by Dudek in December 2016. The complete report is contained in Appendix E of this EIR.

5.6.1 Existing Conditions

5.6.1.1 Climate and Topography

The project site is located within the San Diego Air Basin (SDAB), which is one of 15 air basins that geographically divide California. The SDAB lies in the southwestern corner of California and comprises the entire San Diego region, covering 4,260 square miles.

The SDAB experiences warm summers, mild winters, infrequent rainfalls, light winds, and moderate humidity. This usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The weather of the San Diego region, as in most of Southern California, is influenced by the Pacific Ocean and its semipermanent high-pressure systems that result in dry, warm summers and mild, occasionally wet winters. The average temperature ranges (in degrees Fahrenheit (°F)) from the mid-40s to the high 90s. Most of the region's precipitation falls from November to April, with infrequent (approximately 10%) precipitation during the summer. The average seasonal precipitation in Chula Vista is approximately 9 inches; the amount increases with elevation as moist air is lifted over the mountains to the east (WRCC 2016).

The interaction of ocean, land, and the Pacific High Pressure Zone maintains clear skies for much of the year and influences the direction of prevailing winds (westerly to northwesterly). Local terrain is often the dominant factor inland, and winds in inland mountainous areas tend to blow through the valleys during the day and down the hills and valleys at night. The topography in the San Diego region varies greatly, from beaches on the west to mountains and desert on the east. Along with local meteorology, the topography influences the dispersal and movement of pollutants in the SDAB. The mountains to the east prohibit dispersal of pollutants in that direction and help trap them in inversion layers. The SDAB experiences frequent temperature inversions. Subsidence inversions occur during the warmer months as descending air associated with the Pacific High Pressure Zone meets cool marine air. The boundary between the two layers of air creates a temperature inversion that traps pollutants. Another type of inversion, a radiation inversion, develops on winter nights when air near the ground cools by heat radiation and air aloft remains warm. The shallow inversion layer formed between these two air masses also can

trap pollutants. As the pollutants become more concentrated in the atmosphere, photochemical reactions occur that produce ozone (O_3), commonly known as smog.

Light daytime winds, predominately from the west, further aggravate the condition by driving air pollutants inland, toward the mountains. Under certain conditions, atmospheric oscillation results in the offshore transport of air from the Los Angeles region to the County of San Diego (County). This often produces high O_3 concentrations, as measured at air pollutant monitoring stations within the County. The transport of air pollutants from Los Angeles to San Diego has also occurred within the stable layer of the elevated subsidence inversion, where high levels of O_3 are transported (County of San Diego 2011).

5.6.1.2 Sensitive Receptors

Reduced visibility, eye irritation, and adverse health impacts on sensitive receptors are the most serious hazards of existing air quality conditions in the area. Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. People most likely to be affected by air pollution, as identified by the California Air Resources Board (CARB), include children, the elderly, and people with cardiovascular and chronic respiratory diseases. Sensitive receptors include residences, schools, playgrounds, child care centers, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes (Cal EPA and CARB 2005). The San Diego Air Pollution Control District (SDAPCD) identifies sensitive receptors as schools (preschool–12th grade), hospitals, resident care facilities, and day-care centers (County of San Diego 2007).

The project site is currently undeveloped. The nearest existing sensitive receptors are located north and east of the project site. The closest existing single family residences are located 0.6 mile north of the site. Olympian High School and Wolf Canyon Elementary School are located approximately 0.5 mile northeast of the project site. Additionally, future residential receptors would be located to the east, adjacent to the site as part of the Village Eight West development. It is anticipated that the Village Eight West development would be constructed prior to the proposed project; therefore, receptors associated with Village Eight West are analyzed in this EIR.

5.6.1.3 Pollutants and Effects

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. The federal and state standards have been set, with an adequate margin of safety, at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive persons from illness or discomfort. Pollutants of concern include O_3, nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter with an aerodynamic diameter equal to or less than 10 microns (PM_{10}), particulate matter

with an aerodynamic diameter equal to or less than 2.5 microns ($PM_{2.5}$), and lead. These pollutants and toxic air contaminants (TACs) are discussed in the following text.[1] In California, sulfates, vinyl chloride, hydrogen sulfide, and visibility-reducing particles are also regulated as criteria air pollutants.

Ozone. O_3 is a strong-smelling, pale blue, reactive, toxic chemical gas consisting of three oxygen atoms. It is a secondary pollutant formed in the atmosphere by a photochemical process involving the sun's energy and O_3 precursors, such as hydrocarbons and nitrogen oxide (NO_x). These precursors are mainly NO_x and volatile organic compounds (VOCs). The maximum effects of precursor emissions on O_3 concentrations usually occur several hours after they are emitted and many miles from the source. Meteorology and terrain play major roles in O_3 formation, and ideal conditions occur during summer and early autumn on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. O_3 exists in the upper atmosphere ozone layer and at the Earth's surface in the troposphere. The O_3 that the Environmental Protection Agency (EPA) and CARB regulate as a criteria air pollutant is produced close to the ground level, where people live, exercise, and breathe. Ground-level ozone is a harmful air pollutant that causes numerous adverse health effect and is thus, considered "bad" ozone. Stratospheric ozone, or "good" ozone, occurs naturally in the upper atmosphere, where it reduces the amount of ultraviolet light (i.e., solar radiation) entering the earth's atmosphere. Without the protection of the beneficial stratospheric ozone layer, plant and animal life would be seriously harmed.

O_3 in the troposphere causes numerous adverse health effects; short-term exposures (lasting for a few hours) to O_3 at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. These health problems are particularly acute in sensitive receptors such as the sick, the elderly, and young children.

Nitrogen Dioxide. NO_2 is a brownish, highly reactive gas that is present in all urban atmospheres. The major mechanism for the formation of NO_2 in the atmosphere is the oxidation of the primary air pollutant nitric oxide, which is a colorless, odorless gas. NO_x plays a major role, together with VOCs, in the atmospheric reactions that produce O_3. NO_x is formed from fuel combustion under high temperature or pressure. In addition, NO_x is an important precursor to acid rain and may affect both terrestrial and aquatic ecosystems. The two major emissions sources are transportation and stationary fuel combustion sources such as electric utility and industrial boilers.

NO_2 can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections.

[1] The descriptions of each of the criteria air pollutants and associated health effects are based on the EPA's Criteria Air Pollutants (2016a) and the CARB Glossary of Air Pollutant Terms (2016a).

Carbon Monoxide. CO is a colorless, odorless gas formed by the incomplete combustion of hydrocarbon, or fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas, such as the project location, automobile exhaust accounts for the majority of CO emissions. CO is a nonreactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions—primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, which is a typical situation at dusk in urban areas from November to February. The highest levels of CO typically occur during the colder months of the year, when inversion conditions are more frequent.

In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions.

Sulfur Dioxide. SO_2 is a colorless, pungent gas formed primarily from incomplete combustion of sulfur-containing fossil fuels. The main sources of SO_2 are coal and oil used in power plants and industries; as such, the highest levels of SO_2 are generally found near large industrial complexes. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and limits on the sulfur content of fuels.

SO_2 is an irritant gas that attacks the throat and lungs and can cause acute respiratory symptoms and diminished ventilator function in children. When combined with particulate matter, SO_2 can injure lung tissue and reduce visibility and the level of sunlight. SO_2 can also yellow plant leaves and erode iron and steel.

Particulate Matter. Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. $PM_{2.5}$ and PM_{10} represent fractions of particulate matter. Coarse particulate matter (PM_{10}) is approximately 1/7 the thickness of a human hair. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. Fine particulate matter ($PM_{2.5}$) is roughly 1/28 the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (e.g., from motor vehicles and power generation and industrial facilities), residential fireplaces, and woodstoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as sulfur oxides (SO_x), NO_x, and VOCs.

$PM_{2.5}$ and PM_{10} pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. $PM_{2.5}$ and PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances such as lead, sulfates, and nitrates can cause lung damage directly or be absorbed into the blood stream, causing damage elsewhere in the body. Additionally, these substances can transport adsorbed gases such as chlorides or ammonium into the lungs, also causing injury. Whereas PM_{10} tends to collect in the upper portion of the respiratory system, $PM_{2.5}$ is so tiny that it can penetrate deeper into the lungs and damage lung tissue. Suspended particulates also damage and discolor surfaces on which they settle and produce haze and reduce regional visibility.

People with influenza, people with chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death as a result of breathing particulate matter. People with bronchitis can expect aggravated symptoms from breathing in particulate matter. Children may experience a decline in lung function due to breathing in PM_{10} and $PM_{2.5}$. Other groups considered sensitive are smokers, people who cannot breathe well through their noses, and exercising athletes (because many breathe through their mouths).

Lead. Lead in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline; the manufacturing of batteries, paints, ink, ceramics, and ammunition; and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phaseout of leaded gasoline reduced the overall inventory of airborne lead by nearly 95%. With the phaseout of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities are becoming lead-emissions sources of greater concern.

Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and in severe cases, neuromuscular and neurological dysfunction. Of particular concern are low-level lead exposures during infancy and childhood. Such exposures are associated with decrements in neurobehavioral performance, including intelligence quotient performance, psychomotor performance, reaction time, and growth. Children are highly susceptible to the effects of lead.

Volatile Organic Compounds. Hydrocarbons are organic gases that are formed from hydrogen and carbon and sometimes other elements. Hydrocarbons that contribute to formation of O_3 are referred to and regulated as VOCs (also referred to as reactive organic gases). Combustion engine exhaust, oil refineries, and fossil-fueled power plants are the sources of hydrocarbons. Other sources of hydrocarbons include evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

The primary health effects of VOCs result from the formation of O_3 and its related health effects. High levels of VOCs in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. Carcinogenic forms of hydrocarbons, such as benzene, are considered TACs. There are no separate health standards for VOCs as a group.

Non-Criteria Air Pollutants

Toxic Air Contaminants. A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure, or acute and/or chronic noncancer health effects. A toxic substance released into the air is considered a TAC. TACs are identified by federal and state agencies based on a review of available scientific evidence. In the state of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of risk identification and risk management and reduction was designed to protect residents from the health effects of toxic substances in the air. In addition, the California Air Toxics "Hot Spots" Information and Assessment Act, Assembly Bill (AB) 2588, was enacted by the legislature in 1987 to address public concern over the release of TACs into the atmosphere. The law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hotspots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over 5 years.

Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources, such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources, such as automobiles; and area sources, such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) exposure to a given TAC.

Diesel Particulate Matter. Diesel particulate matter (DPM) is part of a complex mixture that makes up diesel exhaust. Diesel exhaust is composed of two phases, gas and particle, both of which contribute to health risks. The California Air Resources Board (CARB) classified "particulate emissions from diesel-fueled engines" (i.e., DPM; 17 CCR 93000) as a TAC in August 1998. DPM is emitted from a broad range of diesel engines: on-road diesel engines of trucks, buses, and cars and off-road diesel engines including locomotives, marine vessels, and heavy-duty construction equipment, among others. Approximately 70% of all airborne cancer risk in California is associated with DPM (CARB 2000). To reduce the cancer risk associated with DPM, CARB adopted a diesel risk reduction plan in 2000 (CARB 2000).

Odorous Compounds. Odors are generally regarded as an annoyance rather than a health hazard. Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting and headache). The ability to detect odors varies considerably among the population and overall is quite subjective. People may have different reactions to the same odor. An odor that is offensive to one person may be perfectly acceptable to another (e.g., coffee roaster). An unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. Known as odor fatigue, a person can become desensitized to almost any odor and recognition may only occur with an alteration in the intensity. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors.

5.6.1.4 Regulatory Setting

Federal

Criteria Air Pollutants

The federal Clean Air Act, passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. The EPA is responsible for implementing most aspects of the Clean Air Act, including the setting of National Ambient Air Quality Standards (NAAQS) for major air pollutants, hazardous air pollutant (HAP) standards, approval of state attainment plans, motor vehicle emissions standards, stationary source emission standards and permits, acid rain control measures, stratospheric O_3 protection, and enforcement provisions. NAAQS are established for "criteria pollutants" under the Clean Air Act, which are O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead.

The NAAQS describe acceptable air quality conditions designed to protect the health and welfare of the citizens of the nation. The NAAQS (other than for O_3, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. NAAQS for O_3, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over 1- to 3-year periods, depending on the pollutant. The Clean Air Act requires the EPA to reassess the NAAQS at least every 5 years to determine whether adopted standards are adequate to protect public health based on current scientific evidence. States with areas that exceed the NAAQS must prepare a State Implementation Plan that demonstrates how those areas will attain the standards within mandated time frames.

Hazardous Air Pollutants

The 1977 federal Clean Air Act amendments required the EPA to identify National Emission Standards for Hazardous Air Pollutants to protect public health and welfare. HAPs include

certain volatile organic chemicals, pesticides, herbicides, and radionuclides that present a tangible hazard, based on scientific studies of exposure to humans and other mammals. Under the 1990 federal Clean Air Act Amendments, which expanded the control program for HAPs, 189 substances and chemical families were identified as HAPs.

State

Criteria Air Pollutants

The federal Clean Air Act delegates the regulation of air pollution control and the enforcement of the NAAQS to the states. In California, the task of air quality management and regulation has been legislatively granted to CARB, with subsidiary responsibilities assigned to air quality management districts (AQMDs) and air pollution control districts (APCDs) at the regional and county levels. CARB, which became part of the California Environmental Protection Agency (CalEPA) in 1991, is responsible for ensuring implementation of the California Clean Air Act of 1988, responding to the federal Clean Air Act, and regulating emissions from motor vehicles and consumer products.

CARB has established California Ambient Air Quality Standards (CAAQS), which are generally more restrictive than the NAAQS. The CAAQS describe adverse conditions; that is, pollution levels must be below these standards before a basin can attain the standard. The CAAQS for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, PM_{10}, and $PM_{2.5}$ and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. The NAAQS and CAAQS are presented in Table 5.6-1.

Table 5.6-1
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]	National Standards[b]	
		Concentration[c]	*Primary*[c,d]	*Secondary*[c,e]
O_3	1 hour	0.09 ppm (180 μg/m³)	—	Same as Primary Standard[f]
	8 hours	0.070 ppm (137 μg/m³)	0.070 ppm (137 μg/m³)[f]	
NO_2[g]	1 hour	0.18 ppm (339 μg/m³)	0.100 ppm (188 μg/m³)	Same as Primary Standard
	Annual Arithmetic Mean	0.030 ppm (57 μg/m³)	0.053 ppm (100 μg/m³)	
CO	1 hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	None
	8 hours	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	
SO_2[h]	1 hour	0.25 ppm (655 μg/m³)	0.075 ppm (196 μg/m³)	—
	3 hours	—	—	0.5 ppm (1,300 μg/m³)
	24 hours	0.04 ppm (105 μg/m³)	0.14 ppm (for certain areas)[g]	—
	Annual	—	0.030 ppm (for certain areas)[g]	—

Table 5.6-1
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]	National Standards[b]	
		Concentration[c]	*Primary*[c,d]	*Secondary*[c,e]
PM_{10}[i]	24 hours	50 µg/m³	150 µg/m³	Same as Primary Standard
	Annual Arithmetic Mean	20 µg/m³	—	
$PM_{2.5}$[i]	24 hours	—	35 µg/m³	Same as Primary Standard
	Annual Arithmetic Mean	12 µg/m³	12.0 µg/m³	15.0 µg/m³
Lead[j,k]	30-day Average	1.5 µg/m³	—	—
	Calendar Quarter	—	1.5 µg/m³ (for certain areas)[k]	Same as Primary Standard
	Rolling 3-Month Average	—	0.15 µg/m³	
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m³)	—	—
Vinyl chloride[j]	24 hours	0.01 ppm (26 µg/m³)	—	—
Sulfates	24- hours	25 µg/m³	—	—
Visibility reducing particles	8 hour (10:00 a.m. to 6:00 p.m. PST)	Insufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70%	—	—

Source: CARB 2016b.

Notes: ppm = parts per million by volume; µg/m³ = micrograms per cubic meter; mg/m³= milligrams per cubic meter.

a California standards for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, suspended particulate matter—PM_{10}, $PM_{2.5}$, and visibility-reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

b National standards (other than O_3, NO_2, SO_2, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 micrograms per cubic meter (µg/m³) is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

c Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

d National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

e National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

f On October 1, 2015, the primary and secondary NAAQS for O_3 were lowered from 0.075 ppm to 0.070 ppm

g To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (ppb). Note that the national 1-hour standard is in units of ppb. California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

h On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment of the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[i] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 μg/m³ to 12.0 μg/m³. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 μg/m³, as was the annual secondary standard of 15 μg/m³. The existing 24-hour PM_{10} standards (primary and secondary) of 150 μg/m³ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[j] CARB has identified lead and vinyl chloride as TACs with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[k] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 μg/m³ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

Toxic Air Contaminants

The state Air Toxics Program was established in 1983 under AB 1807 (Tanner). The California TAC list identifies more than 700 pollutants, of which carcinogenic and noncarcinogenic toxicity criteria have been established for a subset of these pollutants pursuant to the California Health and Safety Code. In accordance with AB 2728, the state list includes the (federal) HAPs. The Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) seeks to identify and evaluate risk from air toxics sources; however, AB 2588 does not regulate air toxics emissions. TAC emissions from individual facilities are quantified and prioritized. "High-priority" facilities are required to perform a health risk assessment, and if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

In 2000, CARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines. The regulation is anticipated to result in an 80% decrease in statewide diesel health risk in 2020 compared with the diesel risk in 2000. Additional regulations apply to new trucks and diesel fuel, including the On-Road Heavy Duty Diesel Vehicle (In-Use) Regulation, the On-Road Heavy Duty (New) Vehicle Program, the In-Use Off-Road Diesel Vehicle Regulation, and the New Off-Road Compression-Ignition (Diesel) Engines and Equipment program. All of these regulations and programs have timetables by which manufacturers must comply and existing operators must upgrade their diesel powered equipment. Several Airborne Toxic Control Measures that reduce diesel emissions including In-Use Off-Road Diesel-Fueled Fleets (13 CCR 2449 et seq.) and In-Use On-Road Diesel-Fueled Vehicles (13 CCR 2025).

Local

San Diego Air Pollution Control District

CARB is responsible for the regulation of mobile emissions sources within the state, and local AQMDs and APCDs are responsible for enforcing standards and regulating stationary sources. The project site is located within the SDAB and is subject to SDAPCD guidelines and regulations. In San Diego County, O_3 and particulate matter are the pollutants of main concern, since exceedances of the CAAQS for those pollutants are experienced in the County in most years. For this reason, the SDAB has been designated as a nonattainment area for the state PM_{10},

$PM_{2.5}$, and O_3 (1-hour and 8-hour) standards. The SDAB is also designated as a federal O_3 maintenance attainment area for the 1997 8-hour NAAQS and a marginal nonattainment area for the 2008 8-hour NAAQS for O_3.

The SDAPCD and the San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. The *Regional Air Quality Strategy* (RAQS) for the San Diego Air Basin was initially adopted in 1991, and is updated on a triennial basis (most recently in 2009 and currently the 2016 version is under review). The RAQS outlines SDAPCD's plans and control measures designed to attain the state air quality standards for O_3. The RAQS relies on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in San Diego County and the cities in the county, to project future emissions and then determine from that the strategies necessary for the reduction of emissions through regulatory controls. CARB mobile source emission projections and SANDAG growth projections are based on population, vehicle trends, and land use plans developed by San Diego County and the cities in the county as part of the development of their general plans.

The *Eight-Hour Ozone Attainment Plan for San Diego County* indicates that local controls and state programs would allow the region to reach attainment of the federal 8-hour O_3 standard by 2009 (SDAPCD 2007). In this plan, SDAPCD relies on the RAQS to demonstrate how the region will comply with the federal O_3 standard. The RAQS details how the region will manage and reduce O_3 precursors (NO_x and VOCs) by identifying measures and regulations intended to reduce these contaminants. The control measures identified in the RAQS generally focus on stationary sources; however, the emissions inventories and projections in the RAQS address all potential sources, including those under the authority of CARB and the EPA. Incentive programs for reduction of emissions from heavy-duty diesel vehicles, off-road equipment, and school buses are also established in the RAQS.

In December 2005, SDAPCD prepared a report titled "Measures to Reduce Particulate Matter in San Diego County" to address implementation of Senate Bill (SB) 656 in San Diego County (SB 656 required additional controls to reduce ambient concentrations of PM_{10} and $PM_{2.5}$). In the report, SDAPCD evaluates the implementation of source-control measures that would reduce particulate matter emissions associated with residential wood combustion.

The SDAPCD is responsible for planning, implementing, and enforcing federal and state ambient standards in the SDAB. The following rules and regulations would apply construction of the project (SDAPCD 2016):

- **SDAPCD Regulation IV: Prohibitions; Rule 51: Nuisance.** Prohibits the discharge, from any source, of such quantities of air contaminants or other materials that cause or

have a tendency to cause injury, detriment, nuisance, annoyance to people and/or the public, or damage to any business or property.

- **SDAPCD Regulation IV: Prohibitions; Rule 55: Fugitive Dust.** Regulates fugitive dust emissions from any commercial construction or demolition activity capable of generating fugitive dust emissions, including active operations, open storage piles, and inactive disturbed areas, as well as track-out and carry-out onto paved roads beyond a project site.
- **SDAPCD Regulation IV: Prohibitions; Rule 67.0.1: Architectural Coatings.** Requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.

City of Chula Vista

The City of Chula Vista General Plan (City of Chula Vista 2005) includes various policies related to improving air quality (both directly and indirectly). Applicable policies include the following:

Land Use and Transportation Element

- **Policy LUT-23.1:** Encourage the use of bicycles and walking as alternatives to driving.
- **Policy LUT-23.2:** Foster the development of a system of inter-connecting bicycle routes throughout the City and region.
- **Policy LUT-23.5:** Provide linkages between bicycle facilities that utilize circulation element alignments and open space corridors.
- **Policy LUT-23.8:** Provide and maintain a safe and efficient system of sidewalks, trails, and pedestrian crossings.
- **Policy LUT-23.14:** Require new development projects to provide internal bikeway systems with connections to the citywide bicycle networks.

Environmental Element

- **Policy E-6.1:** Encourage compact development featuring a mix of uses that locate residential areas within reasonable walking distance to jobs, services, and transit.
- **Policy E-6.5:** Ensure that plans development to meet the City's energy demand use the least polluting strategies, wherever practical. Conservation, clean renewables, and clean distributed generation should be considered as part of the City's energy plan, along with larger natural gas-fired plants.

- **Policy E-6.6:** Explore incentives to promote voluntary air pollutant reductions, including incentives for developers who go above and beyond applicable requirements and for facilities and operations that are not otherwise regulated.
- **Policy E-6.7:** Encourage innovative energy conservation practices and air quality improvements in new development and redevelopment projects consistent with the City's Air Quality Improvement Plan Guidelines or its equivalent, pursuant to the City's Growth Management Program.
- **Policy E-6.8:** Support the use of alternative fuel transit, City fleet and private vehicles in Chula Vista.
- **Policy E-6.9:** Discourage the use of landscaping equipment powered by two-stroke gasoline engines within the City and promote less-polluting alternatives to their use.
- **Policy E-6.11:** Develop strategies to minimize CO hot spots that address all modes of transportation.
- **Policy E-6.12:** Promote clean fuel sources that help reduce the exposure of sensitive uses to pollutants.
- **Policy E-6.A.1:** Continue to limit exposure to secondhand smoke by encouraging the creation of smoke free spaces and facilities at all workplaces and multi-unit housing.

Otay Ranch General Development Plan

The Otay Ranch General Development Plan adopted by the City of Chula Vista establishes goals to minimize the adverse impacts of development on air quality, including creating a safe and efficient multi-modal transportation network that serves to minimize the number and length of single-passenger vehicle trips. The following objectives and policies may be applicable to the proposed project (City of Chula Vista and County of San Diego 1993):

- **Objective:** Minimize the number and length of single passenger vehicle trips to and from employment and commercial centers to achieve an average of 1.5 persons per passenger vehicle during weekday commute hours.
- **Policies:**
    - Establish or participate in employer based commute programs, which minimize the number and length of single passenger vehicle trips.
    - Encourage the development of a Transportation Management Association (TMA) for the Otay Mesa Area.
    - Encourage, as appropriate, alternative transportation incentives offered to employees, alternative work hour programs, alternative transportation promotional materials,

information on car pool and van pool matching services, transit pass information, space for car-pool and van-pool-riders-wanted advertisements, information about transit and rail service, as well as information about bicycle facilities, routes, storage, and location of nearby shower and locker facilities.

- Promote telecommuting and teleconferencing programs and policies in employment centers.
- Establish or participate in education-based commute programs, which minimize the number and length of single passenger vehicle trips.
- Provide on-site amenities in commercial and employment centers to include childcare facilities, post offices, banking services, cafeterias/delis/restaurants, etc.
- Should Otay Ranch include a college or university, the facility should comply with RAQS transportation demand management strategies relating to such uses.

- **Objective:** Expand the capacity of both the highway and transit components of the regional transportation system to minimize congestion and facilitate the movement of people and goods.
- **Policies:**
  - Facilitate the implementation of the Regional Transportation Plan and Congestion Management Capital Improvement Plan.
  - Expand the capacity of non-vehicular modes of transportation, such as high-occupancy vehicle (HOV) lanes, carts and bicycle networks.
  - Identify, and designate corridors for light rail and public transit facilities, including feeder transit systems connected to "line-haul" networks.
  - Include alternative forms of transportation as a priority part of the circulation system, such as bicycle paths, riding and hiking trails, and pedestrian walkways.
  - Provide park-and-ride facilities, which do not undermine feeder lines. Park and ride facilities may be located near multiple-trip generating activities; intercept trips close to their origin; and target longer trips along corridors with HOV lanes. Park-and-ride facilities should be equipped with secure bicycle storage facilities and should have adequate spaces to serve demand.
- **Objective:** HOV lanes shall be encouraged.
- **Policies:**
  - HOV lanes should include frequent transit stops for transfer of passengers from public transit systems.

- HOV bypass lanes should be provided at all metered SR-125 entrance ramps, where consistent with public safety standards.

- **Objective:** Provide a safe, thorough and comprehensive bicycle network which includes bicycle paths between major destinations within, and adjacent to, Otay Ranch.
- **Policies:**
  - Bicycle facilities should be designated for bicycle use, and pedestrian facilities for pedestrian use to the extent necessary to provide safe, accessible facilities.
  - Bicycling shall be promoted through bicycle lane maps and bicycle destination signage.
  - Provide secure bicycle storage facilities at transit stops, and employment and retail centers.
  - Convenient bicycle access shall be provided to transit nodes.
- **Objective:** Design arterial and major roads and their traffic signals to minimize travel time, stops and delays.
- **Policies:**
  - Optimize traffic signals control systems at all activity centers to minimize travel time, stops and delays. Consider providing priority signal treatment for tenant systems.
  - Minimize the number of ingress and egress to major arterial roads.
  - Traffic signals at the street end of freeway on and off ramps shall be coordinated and integrated with the surrounding street systems.
  - Promote street design to give first priority to transit vehicles.

5.6.1.5 Local Air Quality

San Diego Air Basin Attainment Designation

An area is designated in attainment when it is in compliance with the NAAQS and/or CAAQS. These standards are set by the EPA or CARB for the maximum level of a given air pollutant that can exist in the outdoor air without unacceptable effects on human health or the public welfare.

Pursuant to the 1990 federal Clean Air Act Amendments, the EPA classifies air basins (or portions thereof) as "attainment" or "nonattainment" for each criteria air pollutant, based on whether the NAAQS have been achieved. Generally, if the recorded concentrations of a pollutant are lower than the standard, the area is classified as "attainment" for that pollutant. If an area exceeds the standard, the area is classified as "nonattainment" for that pollutant. If there is not enough data available to determine whether the standard is exceeded in an area, the area is

designated as "unclassified" or "unclassifiable." The designation of "unclassifiable/attainment" means that the area meets the standard or is expected to be meet the standard despite a lack of monitoring data. Areas that achieve the standards after a nonattainment designation are redesignated as maintenance areas and must have approved Maintenance Plans to ensure continued attainment of the standards. The California Clean Air Act, like its federal counterpart, called for the designation of areas as "attainment" or "nonattainment," but based on CAAQS rather than the NAAQS. Table 5.6-2 depicts the current attainment status of the SDAB with respect to the NAAQS and CAAQS.

Table 5.6-2
San Diego Air Basin Attainment Classification

Pollutant	Federal Designation	State Designation
O_3 (1 hour)	Attainment (Maintenance)[1]	Nonattainment
O_3 (8 hour – 1997) (8 hour – 2008)	Attainment (Maintenance) Nonattainment (Marginal)	Nonattainment
NO_2	Unclassifiable/Attainment	Attainment
CO	Attainment (Maintenance)[2]	Attainment
SO_2	Attainment	Attainment
PM_{10}	Unclassifiable[3]	Nonattainment
$PM_{2.5}$	Attainment	Nonattainment
Lead	Attainment	Attainment
Sulfates	(no federal standard)	Attainment
Hydrogen Sulfide	(no federal standard)	Unclassified
Visibility-Reducing Particles	(no federal standard)	Unclassified

Sources: CARB 2016c; EPA 2016b

1 The federal 1-hour standard of 0.12 ppm was in effect from 1979 through June 15, 2005. The revoked standard is referenced here because it was employed for such a long period and because this benchmark is addressed in state implementation plans.

2 The western and central portions of the basin are designated attainment (maintenance), and the eastern portion is designated unclassifiable/attainment.

3 At the time of designation, if the available data does not support a designation of attainment or nonattainment, the area is designated as unclassifiable.

Air Quality Monitoring Data

CARB, air districts, and other agencies monitor ambient air quality at approximately 250 air quality monitoring stations across the state. The project site's local ambient air quality is monitored by the SDAPCD. Air quality monitoring stations usually measure pollutant concentrations 10 feet above ground level; therefore, air quality is often referred to in terms of ground-level concentrations. The most recent background ambient air quality data from 2013 to 2015 are presented in Table 5.6-3. The Chula Vista monitoring station, located at 80 East J Street, is the nearest air quality monitoring station to the project site, located approximately 5 miles northwest from the project site. The data collected at this station are considered representative of the air quality experienced in the project vicinity. Air quality data for O_3, NO_2, PM_{10}, and $PM_{2.5}$ from the Chula Vista monitoring station are provided in Table 5.6-3. Because CO and SO_2 are not monitored at the Chula Vista monitoring station, CO measurements were

taken from the San Diego - Beardsley monitoring station and SO_2 measurements were taken from the El Cajon monitoring station. The number of days exceeding the ambient air quality standards is also shown in Table 5.6-3.

Table 5.6-3
Local Ambient Air Quality Data

Concentration or Exceedances	Ambient Air Quality Standard	2013	2014	2015
Ozone (O_3) (Chula Vista Monitoring Station)				
Maximum 1-hour concentration (ppm)	0.09 ppm (state)	0.073	0.093	0.088
Number of days exceeding state standard (days)		*0*	*0*	*0*
Maximum 8-hour concentration (ppm)	0.070 ppm (state)	0.063	0.072	0.067
	0.070 ppm (federal)	0.062	0.072	0.066
Number of days exceeding state standard (days)		*0*	*1*	*0*
Number of days exceeding federal standard (days)		*0*	*0*	*0*
Nitrogen Dioxide (NO_2) (Chula Vista Monitoring Station)				
Maximum 1-hour concentration (ppm)	0.18 ppm (state)	0.057	0.055	0.049
	0.100 ppm (federal)	0.057	0.055	0.049
Number of days exceeding state standard (days)		*0*	*0*	*0*
Number of days exceeding federal standard (days)		*0*	*0*	*0*
Annual concentration (ppm)	0.030 ppm (state)	0.011	0.011	0.010
	0.053 ppm (federal)	—	—	—
Carbon Monoxide (CO) (San Diego – Beardsley Monitoring Station)				
Maximum 1-hour concentration (ppm)	20 ppm (state)	—	—	—
	35 ppm (federal)	3.0	2.7	2.6
Number of days exceeding state standard (days)		—	—	—
Number of days exceeding federal standard (days)		*0*	*0*	*0*
Maximum 8-hour concentration (ppm)	9.0 ppm (state)	—	—	—
	9 ppm (federal)	2.1	3.0	1.9
Number of days exceeding state standard (days)		—	—	—
Number of days exceeding federal standard (days)		*0*	*0*	*0*
Sulfur Dioxide (SO_2) (El Cajon Monitoring Station)				
Maximum 1-hour concentration (ppm)	0.075 ppm (federal)	0.065	0.010	0.012
Number of days exceeding federal standard (days)		*0*	*0*	*0*
Maximum 24-hour concentration (ppm)	0.14 ppm (federal)	0.006	0.003	0.004
Number of days exceeding federal standard (days)		*0*	*0*	*0*
Annual concentration (ppm)	0.030 ppm (federal)	0.001	0.001	0.001

Table 5.6-3
Local Ambient Air Quality Data

Concentration or Exceedances	Ambient Air Quality Standard	2013	2014	2015
Coarse Particulate Matter (PM_{10}) (Chula Vista Monitoring Station)				
Maximum 24-hour concentration (μg/m³)	50 μg/m³ (state)	40.0	39.0	45.0
	150 μg/m³ (federal)	38.0	38.0	46.0
Number of days exceeding state standard (days)[a]		*0.0 (0)*	*0.0 (0)*	*0.0 (0)*
Number of days exceeding federal standard (days)[a]		*0.0 (0)*	*0.0 (0)*	*0.0 (0)*
Annual concentration (state method) (μg/m³)	20 μg/m³ (state)	23.7	23.4	19.8
Fine Particulate Matter ($PM_{2.5}$) (Chula Vista Monitoring Station)				
Maximum 24-hour concentration (μg/m³)	35 μg/m³ (federal)	21.9	26.5	33.5
Number of days exceeding federal standard (days)[a]		*0.0 (0)*	*0.0 (0)*	*0.0 (0)*
Annual concentration (μg/m³)	12 μg/m³ (state)	9.5	9.3	8.4
	12.0 μg/m³ (federal)	9.4	9.2	8.3

Sources: CARB 2016d; EPA 2016c

Notes: — = not available; μg/m3 = micrograms per cubic meter; ND = insufficient data available to determine the value; ppm = parts per million
Data taken from CARB iADAM (http://www.arb.ca.gov/adam) and EPA AirData (http://www.epa.gov/airdata/) represent the highest concentrations experienced over a given year.
Exceedances of federal and state standards are only shown for O_3 and particulate matter. Daily exceedances for particulate matter are estimated days because PM_{10} and $PM_{2.5}$ are not monitored daily. All other criteria pollutants did not exceed federal or state standards during the years shown. There is no federal standard for 1-hour ozone, annual PM_{10}, or 24-hour SO_2, nor is there a state 24-hour standard for $PM_{2.5}$.
Chula Vista Monitoring Station is located at 80 E. J Street, Chula Vista, California 91910.
The El Cajon-Redwood Avenue Station is located at 1155 Redwood Avenue, El Cajon, California 92019.
San Diego – Beardsley Street Monitoring Station is located at 1110A Beardsley Street, San Diego, California 92112.

[a] Measurements of PM_{10} and $PM_{2.5}$ are usually collected every 6 days and every 1 to 3 days, respectively. Number of days exceeding the standards is a mathematical estimate of the number of days concentrations would have been greater than the level of the standard had each day been monitored. The numbers in parentheses are the measured number of samples that exceeded the standard.

5.6.2 Thresholds of Significance

Would the proposed project:

A. 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?

C. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?

D. Expose sensitive receptors to substantial pollutant concentrations?

E. Create objectionable odors affecting a substantial number of people?

Criteria Pollutants

The City of Chula Vista evaluates project emissions based on the quantitative emission thresholds established by the South Coast Air Quality Management District (SCAQMD). The SCAQMD set forth quantitative emission significance thresholds below which a project would not have a significant impact on ambient air quality (SCAQMD 2015). Use of these significance thresholds is conservative as the SCAQMD's significance thresholds were originally based on the South Coast Air Basin's extreme ozone nonattainment status for the 1-hour NAAQS, whereas the SDAB was designated as an attainment area for the 1-hour NAAQS.

Project-related air quality impacts estimated in this environmental analysis pursuant to Significance Threshold B, above, would be significant if any of the applicable significance thresholds presented in Table 5.6-4 are exceeded. For these pollutants, if emissions exceed the thresholds shown in Table 5.6-4, the project could have the potential to result in a cumulatively considerable net increase in these pollutants and thus could have a significant impact on the ambient air quality pursuant to Significance Threshold 3, above.

Table 5.6-4
City of Chula Vista Air Quality Significance Thresholds

Pollutant	Construction	Operation
Criteria Pollutants Mass Daily Thresholds		
VOC	75 lbs/day	55 lbs/day
NO_x	100 lbs/day	55 lbs/day
CO	550 lbs/day	550 lbs/day
SO_x	150 lbs/day	150 lbs/day
PM_{10}	150 lbs/day	150 lbs/day
$PM_{2.5}$	55 lbs/day	55 lbs/day

Source: SCAQMD 2015.
VOC – volatile organic compounds, NO_x – oxides of nitrogen, CO – carbon monoxide, SO_x – sulfur oxides, PM_{10} – particulate matter less than or equal to 10 microns, $PM_{2.5}$ – particulate matter less than or equal to 2.5 microns

5.6.3 Impacts

A. Conflict with or obstruct implementation of the applicable air quality plan.

The SDAPCD and SANDAG are responsible for developing and implementing the clean air plans for attainment and maintenance of the ambient air quality standards in the SDAB—specifically, the State Implementation Plan (SIP) and RAQS.[2] The federal O_3 maintenance plan, which is part of the SIP, was adopted in 2012. The SIP includes a demonstration that current

[2] For the purpose of this discussion, the relevant federal air quality plan is the ozone maintenance plan (SDAPCD 2012). The RAQS is the applicable plan for purposes of state air quality planning. Both plans reflect growth projections in the basin.

strategies and tactics will maintain acceptable air quality in the SDAB based on the NAAQS. The RAQS was initially adopted in 1991 and is updated on a triennial basis (most recently in 2009). The RAQS outlines SDAPCD's plans and control measures designed to attain the state air quality standards for O_3. The SIP and RAQS rely on information from CARB and SANDAG, including mobile and area source emissions and information regarding projected growth in the County as a whole and the cities in the County, to project future emissions and determine the strategies necessary for the reduction of emissions through regulatory controls. CARB mobile source emission projections and SANDAG growth projections are based on population, vehicle trends, and land use plans developed by the County and the cities in the County as part of the development of their general plans.

If a project proposes development that is greater than that anticipated in the local plan and SANDAG's growth projections, the project might be in conflict with the SIP and RAQS and may contribute to a potentially significant cumulative impact on air quality. The project site is zoned P-C, which allows the site to be developed with residential, industrial, and commercial development. The proposed project would be consistent with the General Plan land use designation for the site and would not require a general plan amendment. Although the SDAPCD does not provide guidance regarding the analysis of impacts associated with air quality plan conformance, the County's *Guidelines for Determining Significance and Report and Format and Content Requirements – Air Quality* does discuss conformance with the RAQS (County of San Diego 2007). The guidance indicates that, if the project, in conjunction with other projects, contributes to growth projections that would not exceed SANDAG's growth projections for the City, the project would not be in conflict with the RAQS (County of San Diego 2007).

The Otay Ranch General Development Plan was adopted on October 28, 1993, and was later amended on May 26, 2015, with the concept to create a complete and balanced community, clustered into villages with conveniently located housing, shops, work places, schools, parks, civic facilities and open spaces. Village Four was designed to contain a maximum of 350 single-family residential units, with a build-out population of approximately 1,141 (City of Chula Vista and County of San Diego 1993). The proposed project would include 73 single-family residential units and 277 multi-family units for a total of 350 residential units. Therefore, the proposed project would not result in an increase in land use intensity or an increase in vehicle trips that has not been anticipated in local air quality plans; therefore, the proposed project would be consistent at a regional level with the underlying growth forecasts, development, and associated vehicle trips as anticipated in the RAQS.

Because the growth forecasts and development assumptions upon which the RAQS are based would not be exceeded, the proposed project would not conflict with or obstruct implementation of the applicable air quality plan. Therefore, because the proposed project would not exceed the growth projections in the RAQS, impacts would be **less than significant**.

B. Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Construction

Construction of the proposed project would result in a temporary, short-term addition of pollutants to the local airshed caused by soil disturbance, fugitive dust emissions, and combustion pollutants from on-site construction equipment, as well as from off-site trucks hauling construction materials. Emissions resulting from construction of the proposed project would be temporary because construction activities would occur intermittently over the construction phase of the project, and construction activities and associated emissions would cease following project buildout. Construction emissions can vary substantially from day to day depending on the level of activity, the specific type of operation and, for dust, prevailing weather conditions. For the purposes of modeling, a worst-case maximum daily emission scenario for proposed project construction activities is analyzed. Fugitive dust (PM_{10} and $PM_{2.5}$) emissions would primarily result from grading and site preparation activities. NO_x and CO emissions would primarily result from the use of construction equipment and motor vehicles. VOC emissions would primarily result from asphalt and architectural coating off-gassing.

Emissions from the construction phase of the project were estimated using CalEEMod and AP-42. As indicated in Chapter 4, Project Description, construction of the proposed project is anticipated to commence in January 2018 and construction would occur intermittently over the course of approximately 22 months. A detailed description of construction subphases (grading, infrastructure, paving, building construction, and architectural coatings), as well as other assumptions made for the purposes of modeling, is included in Appendix E.

For the analysis, it was generally assumed that heavy construction equipment would be operating at the site for approximately 8 hours per day, 5 days per week (22 days per month), during project construction. CalEEMod model assumptions for construction equipment were used in calculating construction emissions as equipment and machinery mix would be typical of residential development. Additional project-specific assumptions regarding vehicle trips, construction schedule, soil export, and architectural coatings are included in Appendix E. The equipment mix is meant to represent a reasonably conservative estimate of construction activity.

The proposed project is subject to SDAPCD Rule 55 – Fugitive Dust Control. This requires that the project take steps to restrict visible emissions of fugitive dust beyond the property line. Compliance with Rule 55 would limit any fugitive dust (PM_{10} and $PM_{2.5}$) that may be generated during grading and construction activities (SDAPCD 2016). To account for dust control measures in the calculations, it was assumed that the active sites would be watered at least three times daily, resulting in an approximately 61% reduction of particulate matter.

The proposed project is also subject to SDAPCD Rule 67.0 – Architectural Coatings. This rule requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories (SDAPCD 2016).

Blasting Emissions

Blasting would generally occur twice per week over a 30-week period. Blasting would generate emissions of NO_x, CO, SO_X from the explosive and PM_{10} and $PM_{2.5}$ from fugitive dust generated by the blast. An estimated 8.2 tons of explosive would be used per day. Using the methodology described in Appendix E, the emissions of NO_x, CO, SO_X, PM_{10}, and $PM_{2.5}$ are presented in Table 5.6-5. Methane is the primary hydrocarbon reported, and methane is not considered to be VOC; thus, no VOC emissions are reported in Table 5.6-5. Detailed emissions calculations are provided in Appendix E.

Table 5.6-5
Blasting Emissions

Activity	VOC	NO_x	CO	SO_X	PM_{10}	$PM_{2.5}$
	Pounds Per Day					
Blasting (January 2018 – July 2018)	—	139.40	549.40	16.40	45.23	2.61

Source: Appendix E
VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter

Rock Crushing Emissions

Rock crushing facilities may be installed to provide capping material and other construction materials for roads and landscaping. The rock crushing emission estimates assume that the processing equipment would consist of a feed hopper into which blasted rock would be loaded using a large front-end loader, a primary and secondary crusher, two screens to capture capping ("6 inch minus") and other construction materials, and several conveyors for inter-device transfers and stacking into stockpiles. The crushers, screens, and conveyors would be equipped with water sprays; thus, the AP-42 controlled emission factors were used, except for the emissions associated with loading the feed hopper. A maximum daily processing rate of 2,500 cubic yards or 5,650 tons per day per crushing facility was assumed for the emission calculations.

Each diesel engine-generator to power the equipment was assumed to be rated at 750 kilowatts (or approximately 1,000 horsepower). It is assumed that each engine-generator would operate up to 8 hours per day. The emission calculations were based on the CalEEMod emission factors for a typical off-road engine operating in 2018 (the first year of construction).

The daily emissions by phase for the rock crushing operation and associated diesel engine-generators are shown by phase in Table 5.6-6. Emission calculations are provided in Appendix E.

Table 5.6-6
Rock Crushing Emissions

Source	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds Per Day					
Rock Crushing (January 2018 – July 2018)						
Rock Crushing	—	—	—	—	16.83	2.24
Diesel Generators	7.75	112.28	31.21	0.14	2.63	2.63
Total	7.75	112.28	31.21	0.14	19.46	4.87

Source: Appendix E
VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter

Approximately, 260,534 cubic yards of soil export would be required. Fugitive dust from soil and excavated material truck loading were estimated using AP-42 emissions factors for drop operations. All grading activities, blasting, and rock crushing operations are anticipated to be completed by July 2018; therefore, emissions generated after in August 2018 and thereafter would only result from general construction activities including infrastructure, building construction, paving, and architectural coating.

Table 5.6-7 shows the estimated unmitigated maximum daily construction emissions associated with the construction of the proposed project. The maximum daily emissions for each pollutant may occur during different phases of construction; however, maximum daily emissions reflect the worst-case day accounting for overlapping construction subphases. It was conservatively assumed that maximum daily construction activities from overlapping construction phases, such as that resulting from grading could occur concurrently with blasting and rock crushing activities. It should be noted that while these activities may occur on the same day, activities could occur in various locations across the project site, which would vary on a daily basis. Therefore, maximum daily emissions shown in Table 5.6-7 reflect a conservative, worst-case construction scenario.

As shown in Table 5.6-7, daily construction emissions would exceed the threshold for NO_x and CO. Impacts for these pollutants would be **potentially significant**. Daily construction emissions would not exceed the threshold for VOCs, SO_x, PM_{10} and $PM_{2.5}$.

Table 5.6-7
Estimated Maximum Daily Construction Criteria Air Pollutant Emissions - Unmitigated

Activity	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds Per Day					
2018						
Construction Activities	9.47	141.49	64.08	0.26	11.30	6.32
Blasting	—	139.40	549.40	16.40	45.23	2.61

Table 5.6-7
Estimated Maximum Daily Construction Criteria Air Pollutant Emissions - Unmitigated

Activity	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds Per Day					
Rock Crushing	7.75	112.28	31.21	0.14	18.58	4.74
Maximum Daily Emissions	17.22	393.17	644.69	16.80	75.11	13.67
2019						
Construction Activities	44.01	41.83	40.92	0.11	7.29	3.03
Maximum Daily Emissions During Any Construction Year	*44.01*	*393.17*	*644.69*	*16.80*	*75.11*	*13.67*
City of Chula Vista Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Threshold Exceeded?	No	Yes	Yes	No	No	No

Source: See Appendix A for detailed results.
Notes: The values shown are the maximum summer or winter daily emissions results from CalEEMod.
These estimates reflect control of fugitive dust required by SDAPCD Rule 55 and compliance with SDAPCD Rule 67, which limits VOC content of architectural coatings.
VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter

Operation

Following the completion of construction activities, the proposed project would generate VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions from mobile and stationary sources, including vehicular traffic and area sources (water heating and landscaping).

Vehicular Traffic

The proposed project would impact air quality through the vehicular traffic generated by project residents. CalEEMod Version 2016.3.1 was used to estimate daily emissions from proposed vehicular sources (refer to Appendix E). CalEEMod default data, including temperature, trip characteristics, variable start information, and emissions factors, were conservatively used for the model inputs. Project-related traffic was assumed to be composed of a mixture of vehicles in accordance with the model outputs for traffic. Emission factors representing the vehicle mix and emissions for 2020 were used to estimate emissions.

Energy

In addition to estimating mobile source emissions, CalEEMod was also used to estimate emissions from the proposed project's energy use, which includes natural gas combustion. The proposed project is expected to meet the 2016 Title 24 standards, which requires that new residential development are required to achieve a 28% energy savings compared with 2013 Title 24 standards (CEC 2015).

Area Sources

In addition to estimating mobile source emissions, CalEEMod was also used to estimate emissions from the project site stationary sources, which include natural gas appliances, hearths, landscaping, and consumer products. It was assumed all residential units would be constructed with natural gas fireplaces and no wood-burning fire places would be constructed. Similar to construction-related architectural coating emission estimates, VOC emissions generated from architectural coatings were estimated based on the number of residential dwelling units and VOC content per SDAPCD Rule 67.0 to determine the VOC emissions.

Table 5.6-8 presents the maximum daily emissions associated with the operation of the proposed project after all phases of construction have been completed. The values shown are the maximum summer or winter daily emissions results from CalEEMod. Complete details of the emissions calculations are provided in Appendix E.

Table 5.6-8
Estimated Daily Maximum Daily Operational Criteria Air Pollutant Emissions

Emission Source	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
Area Sources	11.40	6.14	31.44	0.04	0.63	0.63
Energy	0.11	0.93	0.39	0.01	0.08	0.08
Motor Vehicles	4.69	17.92	45.54	0.14	10.88	3.00
Total	16.20	24.99	77.37	0.19	11.59	3.71
City of Chula Vista Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Threshold Exceeded?	No	No	No	No	No	No

Source: See Appendix E for detailed results.
Notes: The values shown are the maximum summer or winter daily emissions results from CalEEMod.
These estimates reflect compliance with SDAPCD Rule 67, which limits VOC content of architectural coatings, assumed no wood burning devices, adjustments to the trip generation rates and trip lengths as provided in the TIA (Fehr and Peers 2016), improving the pedestrian network, and providing traffic calming measures.
VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter

As shown, daily operational emissions for all criteria pollutants would not exceed the City's significance thresholds; therefore, impacts during operation would be **less than significant**.

C. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors).

In analyzing cumulative impacts from the proposed project, the analysis must specifically evaluate a project's contribution to the cumulative increase in pollutants for which the SDAB is

designated as nonattainment for the CAAQS and NAAQS. If the proposed project does not exceed thresholds and is determined to have less-than-significant project-specific impacts, it may still contribute to a significant cumulative impact on air quality if the emissions from the project, in combination with the emissions from other proposed or reasonably foreseeable future projects, are in excess of established thresholds. However, the project would only be considered to have a significant cumulative impact if the project's contribution accounts for a significant proportion of the cumulative total emissions (i.e., it represents a "cumulatively considerable contribution" to the cumulative air quality impact).

Additionally, for the SDAB, the RAQS serves as the long-term regional air quality planning document for the purpose of assessing cumulative operational emissions in the basin to ensure the SDAB continues to make progress toward NAAQS- and CAAQS-attainment status. As such, cumulative projects located in the San Diego region would have the potential to result in a cumulative impact to air quality if, in combination, they would conflict with or obstruct implementation of the RAQS. Similarly, individual projects that are inconsistent with the regional planning documents upon which the RAQS are based would have the potential to result in cumulative operational impacts if they represent development and population increases beyond regional projections.

The SDAB has been designated as a federal nonattainment area for O_3 and a state nonattainment area for O_3, PM_{10}, and $PM_{2.5}$. PM_{10} and $PM_{2.5}$ emissions associated with construction generally result in near-field impacts. The nonattainment status is the result of cumulative emissions from all sources of these air pollutants and their precursors within the SDAB. As discussed previously, the emissions of all criteria pollutants would be below the significance levels. Construction would be short term and temporary in nature. Once construction is completed, construction-related emissions would cease. Operational emissions generated by the proposed project would not exceed the significance thresholds for VOC, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$, and would not cause a significant impact. As such, the proposed project would result in less-than-significant impacts to air quality relative to operational emissions.

Regarding long-term cumulative operational emissions in relation to consistency with local air quality plans, the SIP and RAQS serve as the primary air quality planning documents for the state and SDAB, respectively. The SIP and RAQS rely on SANDAG growth projections based on population, vehicle trends, and land use plans developed by the cities and the County as part of the development of their general plans. Therefore, projects that propose development that is consistent with the growth anticipated by local plans would be consistent with the SIP and RAQS and would not be considered to result in cumulatively considerable impacts from operational emissions. As stated previously, the proposed project would be consistent with the existing zoning and land use designation for the site, and would not result in significant regional growth that is not accounted for within the RAQS. Additionally, the proposed project is

consistent with the existing use for the site; thus, at a regional level, it would be consistent with the underlying growth forecasts in the SIP and RAQS. As a result, the proposed project would not result in a cumulatively considerable contribution to regional O_3 concentrations or other criteria pollutant emissions. Cumulative impacts would be less than significant.

The SDAB has been designated as a federal nonattainment area for O_3, a federal maintenance area for CO, and a state nonattainment area for O_3, PM_{10}, and $PM_{2.5}$. PM_{10} and $PM_{2.5}$ emissions associated with construction generally result in near-field impacts. The nonattainment status is the result of cumulative emissions from all sources of these air pollutants and their precursors within the SDAB. Construction of cumulative projects simultaneously with the proposed project would result in a temporary addition of pollutants to the local airshed caused by soil disturbance and hauling activities, fugitive dust emissions, and combustion pollutants from on-site construction equipment, as well as from off-site trucks hauling construction materials and worker vehicular trips. Fugitive dust (PM_{10} and $PM_{2.5}$) emissions would primarily result from site preparation activities. NO_x and CO emissions would primarily result from the use of construction equipment and motor vehicles, the latter of which would generally be dispersed over a large area where the vehicles are traveling. The closest cumulative projects to be constructed in the vicinity of the project site are Village Three to the west, and Village Eight West and Village Eight East located immediately east of the site. Village Two is also located to the north and is currently under construction; therefore, the potential exists for various construction phases of these projects to occur concurrently, resulting in cumulatively considerable air emissions.

The emissions of NO_x and CO would exceed the applicable significance threshold levels during construction. To reduce NO_x and CO emissions, mitigation measures MM-AQ-1 through MM-AQ-3 would be implemented. Following implementation of mitigation, emissions would not be reduced to a level below the City's significance thresholds. As such, effects regarding NO_x and CO emissions during construction activities would be significant and unavoidable. Additionally, emissions of PM_{10}, $PM_{2.5}$, NO_x, and/or VOCs generated during project construction would be primarily localized to the proposed project site. Moreover, the proposed project would be required to comply with SDAPCD Rule 55 regarding fugitive dust emissions. Although emissions would be below the thresholds at the project level, generation of these criteria pollutant emissions when combined with other cumulative projects, particularly those occurring simultaneously during various construction periods of the proposed project, could potentially result in a temporary significant cumulative impact to air quality. Mitigation measures MM-AQ-1 and MM-AQ-2 would be implemented to reduce fugitive dust emissions.

Should other projects occur in the vicinity of the proposed project, significant effects related to NO_x and CO emissions would be further intensified due to exhaust emissions from construction equipment, worker vehicles (resulting in increased NO_x and CO emissions) and truck trips associated with material deliveries and on-site hauling activities. While construction would be

short-term and temporary in nature occurring over an approximate 22-month period, the proposed project's temporary cumulative construction effects relative to NO_x and CO emissions would be **significant and unavoidable** following project-specific mitigation when considered in combination with reasonably foreseeable future projects under the cumulative scenario.

Regarding operational emissions, the proposed project would not result in an increase in land use intensity or an increase in vehicle trips that has not been anticipated in local air quality plans; therefore, the proposed project would be consistent at a regional level with the underlying growth forecasts, development, and associated vehicle trips as anticipated in the RAQS. Therefore, because the proposed project would not exceed the growth projections in the RAQS, impacts associated with project operations would not be cumulatively considerable.

D. Expose sensitive receptors to substantial pollutant concentrations.

Air quality varies as a direct function of the amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. Air quality problems arise when the rate of pollutant emissions exceeds the rate of dispersion. Reduced visibility, eye irritation, and adverse health impacts on "sensitive receptors" are the most serious hazards of existing air quality conditions in the area. Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. Sensitive receptors include residences, schools, playgrounds, child-care centers, athletic facilities, long-term health-care facilities, rehabilitation centers, convalescent centers, and retirement homes. The closest sensitive receptors are located north and east of the site. Olympian High School and Wolf Canyon Elementary School are located approximately 0.5 mile northeast of the project site. The closest existing single-family residences are located 0.6 mile north of the site. Additionally, future residential receptors would be located to the east, adjacent to the site as part of the Village Eight West development.

Table 5.6-9 presents a list of the criteria pollutants and other related pollutants of concern, emission sources, associated health effects, and current SDAB attainment status.

Table 5.6-9
Pollutants, Sources, Health Effects, and Attainment Status

Pollutant	Sources	Health Effects	Attainment Status	
			NAAQS	*CAAQS*
O_3	Formed when VOCs and NO_x react in the presence of sunlight. VOC sources include any source that burns fuels (e.g., gasoline, natural gas, wood, oil); solvents; petroleum processing and storage.	Breathing difficulties, lung tissue damage, vegetation damage, damage to rubber and some plastics.	Attainment	Nonattainment

Table 5.6-9
Pollutants, Sources, Health Effects, and Attainment Status

Pollutant	Sources	Health Effects	Attainment Status	
PM_{10}	Road dust, windblown dust, agriculture and construction, fireplaces. Also formed from other pollutants (NO_x, SO_x, organics). Incomplete combustion.	Increased respiratory disease, lung damage, cancer, premature death, reduced visibility, surface soiling.	Unclassifiable	Nonattainment
$PM_{2.5}$	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning. Also formed from reaction of other pollutants (NO_x, SO_x, organics, and NH_3).	Increases respiratory disease, lung damage, cancer, and premature death, reduced visibility, surface soiling. Particles can aggravate heart diseases such as congestive heart failure and coronary artery disease	Attainment	Nonattainment
CO	Any source that burns fuel such as automobiles, trucks, heavy construction and farming equipment, residential heating.	Chest pain in heart patients, headaches, reduced mental alertness.	Attainment	Attainment
NO_2	See carbon monoxide.	Lung irritation and damage. Reacts in the atmosphere to form ozone and acid rain.	Unclassifiable/ Attainment	Attainment
Lead	Metal smelters, resource recovery, leaded gasoline, deterioration of lead paint.	Learning disabilities, brain and kidney damage.	Attainment	Attainment
SO_2	Coal or oil burning power plants and industries, refineries, diesel engines.	Increases lung disease and breathing problems for asthmatics. Reacts in the atmosphere to form acid rain.	Attainment	Attainment
Sulfates	Produced by reaction in the air of SO_2, (see SO_2 sources), a component of acid rain.	Breathing difficulties, aggravates asthma, reduced visibility.	(no federal standard)	Attainment
Hydrogen Sulfide	Geothermal power plants, petroleum production and refining, sewer gas.	Nuisance odor (rotten egg smell), headache and breathing difficulties (higher concentrations).	(no federal standard)	Unclassified
Visibly Reducing Particles	See $PM_{2.5}$	Reduced visibility (e.g., obscures mountains and other scenery), reduced airport safety.	(no federal standard)	Unclassified
Vinyl Chloride	Exhaust gases from factories that manufacture or process vinyl chloride (construction, packaging, and transportation industries)	Central nervous system effects (e.g., dizziness, drowsiness, headaches), kidney irritation, liver damage, liver cancer.	N/A	N/A

Table 5.6-9
Pollutants, Sources, Health Effects, and Attainment Status

Pollutant	Sources	Health Effects	Attainment Status	
TAC	Combustion engines (stationary and mobile), diesel combustion, storage and use of TAC-containing substances (i.e., gasoline, lead smelting, etc.)	Depends on TAC, but may include cancer, mutagenic and/or teratogenic effects, other acute or chronic health effects	N/A	N/A

Source: County of San Diego 2007.
O_3 = ozone; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; CO = carbon monoxide; NO_2 = nitrogen dioxide; SO_2 = sulfur dioxide; TAC = toxic air contaminant

Health Impacts of Toxic Air Contaminants

In addition to impacts from criteria pollutants, project impacts may include emissions of pollutants identified by the state and federal government as TACs or HAPs. State law has established the framework for California's TAC identification and control program, which is generally more stringent than the federal program and aimed at TACs that are a problem in California. The state has formally identified more than 200 substances as TACs, including the federal HAPs, and is adopting appropriate control measures for sources of these TACs. The greatest potential for TAC emissions during construction would be diesel particulate emissions from heavy equipment operations and heavy-duty trucks and the associated health impacts to sensitive receptors. The following measures are required by state law to reduce diesel particulate emissions:

- Fleet owners of mobile construction equipment are subject to the CARB Regulation for In-use Off-road Diesel Vehicles (Title 13 California Code of Regulations, Chapter 9, Section 2449), the purpose of which is to reduce diesel particulate matter (DPM) and criteria pollutant emissions from in-use (existing) off-road diesel-fueled vehicles.
- All commercial diesel vehicles are subject to Title 13, Section 2485 of the California Code of Regulations, limiting engine idling time. Idling of heavy-duty diesel construction equipment and trucks during loading and unloading shall be limited to five minutes; electric auxiliary power units should be used whenever possible.

Health effects from carcinogenic air toxics are usually described in terms of cancer risk. The SDAPCD recommends an incremental cancer risk threshold of 10 in 1 million (SDAPCD 2014). "Incremental cancer risk" is the net increased likelihood that a person continuously exposed to concentrations of TACs resulting from a project over a 9-, 30-, and 70-year exposure period will contract cancer based on the use of standard Office of Environmental Health Hazard Assessment (OEHHA) risk-assessment methodology. The proposed project would not require the extensive use of heavy-duty construction equipment, which is subject to a CARB Airborne Toxics Control

Measure for in-use diesel construction equipment to reduce diesel particulate emissions and would not involve extensive use of diesel trucks, which are also subject to a CARB Airborne Toxics Control Measure.

Maximum daily particulate matter (PM_{10} or $PM_{2.5}$) emissions generated by construction equipment operation and haul-truck trips during construction (exhaust particulate matter, or DPM), combined with fugitive dust generated by equipment operation and vehicle travel, would be well below the applicable daily thresholds. Moreover, total construction of the proposed project would last approximately 22 months, after which project-related TAC emissions would cease. Thus, the proposed project would not result in a long-term (i.e., 9-year, 30-year, or 70-year) source of TAC emissions. No residual TAC emissions and corresponding cancer risk are anticipated after construction, and no long-term sources of TAC emissions are anticipated during operation of the proposed project. Therefore, the exposure of project-related TAC emission impacts to sensitive receptors would be less than significant.

Additionally, CARB has published the *Air Quality and Land Use Handbook: A Community Health Perspective* (Cal EPA and CARB 2005), which identifies certain types of facilities or sources that may emit substantial quantities of TACs and therefore could conflict with sensitive land uses, such as "schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities." The *Air Quality and Land Use Handbook* is a guide for siting of new sensitive land uses, but it does not mandate specific separation distances to avoid potential health impacts. The enumerated facilities or sources include the following:

- High-traffic freeways and roads
- Distribution centers
- Rail yards
- Ports
- Refineries
- Chrome plating facilities
- Dry cleaners
- Large gas dispensing facilities

CARB recommends that sensitive receptors not be located downwind or in proximity to such sources to avoid potential health hazards.

The proposed project would neither include any of the previously listed land uses nor generate substantial TAC emissions that would conflict with surrounding sensitive receptors.

Additionally, the proposed project would not expose nearby inhabitants to TAC emissions from these sources. Impacts would be **less than significant**.

Health Impacts of Carbon Monoxide

Mobile-source impacts occur on two scales of motion. Regionally, project-related travel would add to regional trip generation and increase the vehicle-miles travelled (VMT) within the SDAB. Locally, proposed project traffic would be added to the City's roadway system. If such traffic occurs during periods of poor atmospheric ventilation, consists of a large number of vehicles "cold-started" and operating at pollution-inefficient speeds, and operates on roadways already crowded with non-project traffic, there is a potential for the formation of microscale CO "hotspots" in the area immediately around points of congested traffic. Because of continued improvement in mobile emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the basin is steadily decreasing (CARB 2004).

Projects contributing to adverse traffic impacts may result in the formation of CO hotspots. To verify that the proposed project would not cause or contribute to a violation of the CO standard, a screening evaluation of the potential for CO hotspots was conducted. The potential impact of the proposed project on local CO levels was assessed at these intersections with the California Department of Transportation (Caltrans) CL4 interface, based on the California LINE Source Dispersion Model (CALINE4), which allows microscale CO concentrations to be estimated along each roadway corridor or near intersections (Caltrans 1998a).

In accordance with the CO Protocol, CO hotspots are typically evaluated when (1) the LOS of an intersection or roadway decreases to LOS E or worse, (2) signalization and/or channelization is added to an intersection, and (3) sensitive receptors such as residences, schools, and hospitals are located in the vicinity of the affected intersection or roadway segment.

For the mid-term 2020 conditions, two intersections would result in LOS E or worse requiring a qualitative CO hotspot analysis. These intersections include the following:

1. Intersection #1 – I-805 southbound ramp and Olympic Parkway for AM and PM peak hours
2. Intersection #2 – I-805 northbound ramp and Olympic Parkway for AM and PM peak hours

The modeling analysis was performed for worst-case wind angle, in which the model selects the wind angles that produce the highest CO concentrations at each of the receptors. The suburban land classification of 40 inches (100 centimeters) was used for the aerodynamic roughness coefficient, which determines the amount of local air turbulence that affects plume spreading. The at-grade option was used in the analysis; for at-grade sections, CALINE4 does not permit the plume to mix below ground level. The mixing zone, which is defined as the width of the

roadway plus 10 feet (3 meters) on either side, was estimated for each roadway using Google Earth. The calculations assume a mixing height of 3,280 feet (1,000 meters), a flat topographical condition between the source and the receptor (link height of 0 meters), and a meteorological condition of little to almost no wind (3.3 feet (1 meter) per second), consistent with Caltrans guidance (Caltrans 1998b).

The vehicle emissions factor was predicted using CARB's mobile source emissions inventory model, EMFAC2014, and represents the weighted average emissions rate of the local San Diego County vehicle fleet expressed in grams per mile per vehicle. Consistent with the traffic report, emission factors for 2020, representing the mid-term 2020 with roadway connection traffic conditions, were used in the CALINE4 model. Emission factors were based on a 5-mile-per-hour (mph) average speed for all of the intersections, a temperature of 49°F,[3] and an average humidity of 55%. The hourly traffic volume anticipated to travel on each link, in units of vehicles per hour, was based on the traffic report. Since project-generated traffic would have a direct impact for all of the intersections in the PM peak hours, vehicle counts for the PM hours were used. Modeling assumptions are outlined in Appendix E.

Four receptor locations at each intersection were modeled to determine CO ambient concentrations. A receptor was assumed on the sidewalk at each corner of the modeled intersections, for a total of four receptors adjacent to the intersection, to represent the possibility of extended outdoor exposure. CO concentrations were modeled at these locations to assess the maximum potential CO exposure that could occur in 2020. A receptor height of 5.9 feet (1.8 meters) was used in accordance with Caltrans recommendations for all receptor locations (Caltrans 1998b).

The maximum 1-hour CO background concentration of 3.0 ppm, as measured in 2012, was assumed in the CALINE4 model. The model provides predicted concentrations in parts per million at each of the receptor locations. To estimate an 8-hour average CO concentration, a persistence factor of 0.6, as is recommended for suburban locations, was applied to the output values.

The results of the model are shown in Table 5.6-10. Model input and output data are provided in Appendix E.

[3] The Caltrans Institute of Transportation Studies *Transportation Project-Level Carbon Monoxide Protocol* (CO Protocol) (Caltrans 1997) guidance is to use the smallest mean minimum temperature observed in January over the past 3 years plus the temperature adjustment for the geographic location and time period. The smallest mean minimum at the Chula Vista station was 48.71°F in January 2014 (WRCC 2016). Assuming a 5°F correction factor for both AM and PM traffic conditions, average morning and evening temperature would be approximately 53.71°F (Caltrans 1997).

Table 5.6-10
CALINE4 Predicted Carbon Monoxide Concentrations

Intersection	Maximum Modeled Impact Long-Term 2020 (ppm)	
	1-hour	*8-hour*
I-805 SB ramp and Olympic Parkway	3.8	2.3
I-805 NB ramp and Olympic Parkway	3.8	2.3

Source: Caltrans 1998a (CALINE4).
Notes: CO = carbon monoxide; ppm = parts per million.
Modeled concentrations reflect background 1-hour concentration of 3.0 ppm.
8-hour concentrations were obtained by multiplying the 1-hour concentration by a factor of 0.6, as referenced in Caltrans 1997, Table B.15.

As shown in Table 5.6-9, maximum CO concentrations predicted for the 1-hour averaging period would be 3.8 ppm, which is below the state 1-hour CO standard of 20 ppm (see Table 5.6-1 for state standards). Maximum predicted 8-hour CO concentrations of 2.3 ppm would be below the state CO standard of 9 ppm. Neither the 1-hour nor 8-hour state standard would be equaled or exceeded at any of the intersections studied. Accordingly, CO hotspot impacts would be **less than significant**.

Health Impacts of Other Criteria Air Pollutants

Construction and operation of the proposed project would not result in emissions that exceed the City's emission thresholds for any criteria air pollutants including VOC, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$. Some VOCs would be associated with motor vehicles and construction equipment, and others would be associated with architectural coatings, the emissions of which would not result in the exceedances of the City's thresholds. Additionally, SDAPCD Rule 67.0.1 restricts the VOC content of coatings for construction and operational applications (SDAPCD 2016).

In addition, VOCs and NO_x are precursors to O_3, for which the SDAB is designated as nonattainment with respect to the NAAQS and CAAQS (the SDAB is designated by the EPA as an attainment area for the 1-hour O_3 NAAQS standard and 1997 8-hour NAAQS standard). The health effects associated with O_3, as discussed in Section 5.6.1.3, are generally associated with reduced lung function. The contribution of VOCs and NO_x to regional ambient O_3 concentrations is the result of complex photochemistry. The increases in O_3 concentrations in the SDAB due to O_3 precursor emissions tend to be found downwind from the source location to allow time for the photochemical reactions to occur. However, the potential for exacerbating excessive O_3 concentrations would also depend on the time of year that the VOC emissions would occur because exceedances of the O_3 AAQS tend to occur between April and October when solar radiation is highest.

The holistic effect of a single project's emissions of O_3 precursors is speculative due to the lack of quantitative methods to assess this impact. Nonetheless, the VOC and NO_x emissions associated with project construction could minimally contribute to regional O_3 concentrations

and the associated health impacts. Due to the minimal contribution during construction and operation, as well as the existing good air quality in coastal San Diego areas, health impacts would be **less than significant**.

Regarding nitrogen dioxide, according to the construction emissions analysis, construction of the proposed project would contribute to exceedances of the NAAQS and CAAQS for NO_2. NO_2 and NO_x health impacts are associated with respiratory irritation, which may be experienced by nearby receptors during the periods of heaviest use of off-road construction equipment. However, off-road construction equipment would be operating at various portions of the site and would not be concentrated in one portion of the site at any one time. Additionally, rock crushing activities was assumed to require two stationary emission sources (diesel generators). These activities combined with grading and blasting activities would create substantial, localized NO_x impacts. Mitigation measures MM-AQ-1 through MM-AQ-3 would be implemented by the proposed project to reduce NO_x emissions. However, following implementation of mitigation, emissions would not be reduced to a level below the City's significance thresholds. Therefore, health impacts would be considered **significant and unavoidable**. Similar to O_3, construction of the proposed project would not exceed thresholds for PM_{10} or $PM_{2.5}$ and would not contribute to exceedances of the NAAQS and CAAQS for particulate matter. The project would also not result in substantial DPM emissions during construction and operation and therefore, would not result in significant health effects related to DPM exposure. Due to the minimal contribution of particulate matter during construction and operation, health impacts would be **less than significant**.

Regarding nitrogen dioxide, according to the construction emissions analysis, construction of the proposed project would not contribute to exceedances of the NAAQS and CAAQS for NO_2. NO_2 and NO_x health impacts are associated with respiratory irritation, which may be experienced by nearby receptors during the periods of heaviest use of off-road construction equipment. However, off-road construction equipment would be operating at various portions of the site and would not be concentrated in one portion of the site at any one time. Construction of the proposed project would not require any stationary emission sources that would create substantial, localized NO_x impacts. Therefore, health impacts would be **less than significant**.

In summary, construction and operation of the proposed project would not result in exceedances of City's emission-based thresholds for criteria pollutants. The VOC and NO_x emissions, as described previously, would minimally contribute to regional O_3 concentrations and the associated health effects. In addition to O_3, NO_x emissions would not contribute to potential exceedances of the NAAQS and CAAQS for NO_2. As shown in Table 5.6-3, the existing NO_2 concentrations in the area are well below the NAAQS and CAAQS standards. Thus, it is not expected the project's operational NO_x emissions would result in exceedances of the NO_2 standards or contribute to the associated health effects. CO tends to be a localized impact associated with congested intersections. The associated CO "hotspots" were discussed previously

as a less-than-significant impact. Thus, the project's CO emissions would not contribute to significant health effects associated with this pollutant. PM_{10} and $PM_{2.5}$ would not contribute to potential exceedances of the NAAQS and CAAQS for particulate matter and would not obstruct the SDAB from coming into attainment for these pollutants and would not contribute to significant health effects associated with particulates. Therefore, health impacts associated with criteria air pollutants would be **less than significant**.

E. Create objectionable odors affecting a substantial number of people?

Odors would be generated from vehicles and/or equipment exhaust emissions during construction of the proposed project. Odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment and architectural coatings. Such odors are temporary and generally occur at magnitudes that would not affect substantial numbers of people. Therefore, impacts associated with odors during construction would be less than significant.

Land uses and industrial operations associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed project involves residential uses and would not result in the creation of a land use that is commonly associated with odors. Therefore, project operations would result in an odor impact that is **less than significant**.

5.6.4 Level of Significance Prior to Mitigation

The proposed project would result in potentially significant direct and cumulative impacts during construction.

5.6.5 Mitigation Measures

Although the proposed project would not exceed any of the City's significance thresholds during construction, cumulative construction impacts due to potential construction activities occurring concurrently with other projects within the vicinity would be significant. Therefore, the following mitigation is required to reduce cumulative construction impacts.

MM-AQ-1 Prior to approval of any construction-related permits, the project applicant or its designee shall place the following requirements on all plans, which shall be implemented during grading of each phase of the project to minimize carbon monoxide (CO) nitrogen oxide (NO_x) emissions:

- Heavy-duty diesel-powered construction equipment shall be equipped with Tier 4 Final or better diesel engines, except where Tier 4 Final or better

engines are not available for specific construction equipment. The County shall verify and approve all pieces within the construction fleet that would not meet Tier 4 Final standards;

- Minimize simultaneous operation of multiple construction equipment units. During construction, vehicles in loading and unloading queues shall not idle for more than 5 minutes and shall turn their engines off when not in use to reduce vehicle emissions;
- All construction equipment shall be properly tuned and maintained in accordance with manufacturer's specifications;
- The use of electrical or natural gas-powered construction equipment shall be employed where feasible including forklifts and other comparable equipment types;
- The use of catalytic reduction for gasoline-powered equipment shall be employed where feasible;
- Electrical hookups shall be provided on site for the use of hand tools such as saws, drills, and compressors used for building construction to reduce the need for electric generators and other fuel-powered equipment;
- All diesel-fueled on-road construction vehicles shall meet the emission standards applicable to the most current year to the greatest extent possible. To achieve this standard, new vehicles shall be used, or older vehicles shall use post-combustion controls that reduce pollutant emissions to the greatest extent feasible.
- The effectiveness of the latest diesel emission controls is highly dependent on the sulfur content of the fuel. Therefore, diesel fuel used by on- and off-road construction equipment shall be low sulfur (less than 15 parts per million) or other alternative, low-polluting diesel fuel formulation.

MM-AQ-2 Prior to approval of any grading permits, and during project construction, the project applicant or its designee shall require implementation of the City of Chula Vista's standard construction best management practices (BMPs) to minimize PM_{10} and $PM_{2.5}$ emissions, including the following, to be shown as notes on the Grading Plan:

- Water or use another acceptable San Diego Air Pollution Control District dust control agent on, the grading areas at least twice daily to minimize fugitive dust.
- Stabilize grading areas as quickly as possible to minimize fugitive dust.
- Install wheel washers adjacent to a paved apron prior to vehicle entry on public roads.

- Wet wash the construction access point at the end of the workday if any vehicle travel on unpaved surfaces has occurred.
- Provide sufficient perimeter erosion control to prevent washout of silty material onto public roads.
- Cover haul trucks or maintain at least 12 inches of freeboard to reduce blow-off during hauling.
- Suspend all soil disturbance and travel on unpaved surfaces if winds exceed 25 miles per hour (mph).
- Cover/water on-site stockpiles of excavated material.
- Enforce a 20 mph speed limit on unpaved surfaces.
- Pave permanent roads as quickly as possible to minimize dust.

MM-AQ-3 The following measure shall be included as part of the proposed project's Fugitive Dust Plan to reduce emissions associated with blasting and rock crushing activities:

a. During blasting activities, the construction contractor shall implement all feasible engineering controls to control fugitive dust including exhaust ventilation, blasting cabinets and enclosures, vacuum blasters, drapes, water curtains or wet blasting. Watering methods, such as water sprays and water applications shall be implemented during blasting, rock crushing, cutting, chipping, sawing, or any activity that would release dust particles to reduce fugitive dust emissions.

a. During rock crushing transfer and conveyance activities, material shall be watered prior to entering the crusher. Crushing activities shall not exceed an opacity limit of 20% (or Number 1 on the Ringelmann Chart) as averaged over a 3 minute period in any period of 60 consecutive minutes, in accordance with SDAPCD Rule 50, Visible Emissions. A qualified opacity observer shall monitor opacity from crushing activities once every 30 days while crushers are employed on site to ensure compliance with SDAPCD Rule 50. Water sprayers, conveyor belt enclosures or other mechanisms shall be employed to reduce fugitive dust generated during to transfer and conveyance of crush material.

5.6.6 Level of Significance After Mitigation

Table 5.6-11 shows maximum daily emissions following implementation of mitigation measures MM-AQ-1 through MM-AQ-3. It should be noted that not all mitigation measures are quantifiable; therefore, Table 5.6-10 presents emission estimates following implementation of site watering two times per day (MM-AQ-2), reduction of vehicle speeds on unpaved roads to 20 miles per hour (MM-AQ-2), and use of Tier 4 Final equipment (MM-AQ-1).

Table 5.6-11
Estimated Daily Maximum Construction Emissions - Mitigated

Activity	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds Per Day					
2018						
Construction Activities	4.01	74.18	59.48	0.26	7.79	3.05
Blasting	—	139.40	549.40	16.40	48.56	2.80
Rock Crushing	7.75	112.28	31.21	0.14	18.58	4.74
Maximum Daily Emissions	11.76	325.86	640.09	16.80	74.93	10.59
2019						
Construction Activities	41.74	21.28	41.72	0.12	5.92	1.73
Maximum Daily Emissions During Any Construction Year	*41.74*	*325.86*	*640.09*	*16.80*	*74.93*	*10.59*
Pollutant Threshold	*75*	*250*	*550*	*250*	*100*	*55*
Threshold Exceeded?	No	Yes	Yes	No	No	No

Source: See Appendix E for detailed results.
Notes: The values shown are the maximum summer or winter daily emissions results from CalEEMod.
These estimates reflect control of fugitive dust required by SDAPCD Rule 55, compliance with SDAPCD Rule 67 which limits VOC content of architectural coatings, and use of Tier 4 Final EPA engine standards.
VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter

The emissions associated with construction would be temporary, lasting approximately 2 years. As shown in Table 5.6-9, daily construction emissions would still exceed the thresholds for NO_x and CO following implementation of mitigation measures MM-AQ-1 through MM-AQ-3. It should be noted that not all reductions that would result from implementation of mitigation provided in measures MM-AQ-1 through MM-AQ-3 are quantifiable; therefore, emissions shown in Table 5.6-9 are overestimated and emissions would be further reduced on a daily basis but not to a level below significance. Impacts would remain **significant and unavoidable**.

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5.7 HAZARDS AND RISK OF UPSET

This section addresses hazardous materials, airport hazards, wildland fire, and emergency response and evacuation plan issues associated with the proposed Otay Ranch Village Four Sectional Planning Area (SPA) Plan Project (project) and off-site infrastructure improvement areas. This analysis provides information on the existing conditions of the project site, the locations of potentially hazardous materials sites, and the potential for the proposed project to expose the public or the environment to hazards or hazardous materials. Information provided in this section was gleaned from the Fire Protection Plan for Otay Ranch Village Four, prepared by Dudek in November 2016 and included in Appendix F of this EIR; and other sources are as cited throughout this section.

5.7.1 Existing Conditions

5.7.1.1 Regulatory Framework

Federal Level

Federal Toxic Substances Control Act and Resource Conservation and Recovery Act

The Federal Toxic Substances Control Act of 1976 (15 United States Code (U.S.C.) 2601–2697) and the Resource Conservation and Recovery Act (RCRA) of 1976 (42 U.S.C. 6901–6992) established a program administered by the U.S. Environmental Protection Agency (EPA) for regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (PL 98-616), which affirmed and extended the "cradle-to-grave" system of regulating hazardous wastes. The use of certain techniques for the disposal of some hazardous wastes was specifically prohibited by the Hazardous and Solid Waste Act. Under the authority of RCRA, the regulatory framework for managing hazardous waste, including requirements for entities that generate, store, transport, treat, and dispose of hazardous waste is found in 40 Code of Federal Regulations (CFR), Parts 260–299.

Hazardous Materials Transportation Act

The U.S. Department of Transportation regulates hazardous materials transportation under Title 49 of the United States Code. State agencies with primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol and the California Department of Transportation. These agencies also govern permitting for hazardous materials transportation. Title 49 CFR reflects laws passed by Congress as of January 2, 2006.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) (42 U.S.C. 9601–9675), commonly known as "Superfund," was enacted by Congress on December 11, 1980. This law provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA established requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA also enabled the revision of the National Contingency Plan. The National Contingency Plan provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants.

International Fire Code

The International Fire Code (IFC), created by the International Code Council (ICC), is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The IFC regulates the use, handling, and storage requirements for hazardous materials at fixed facilities (ICC 2014). The IFC and the International Building Code (IBC) use a hazard classification system to determine what protective measures are required to protect life safety in relation to fire. These measures may include construction standards, separations from property lines, and specialized equipment. To ensure that these safety measures are met, the IFC employs a permit system based on hazard classification. The IFC is updated every 3 years.

Federal Aviation Administration Functions

The Federal Aviation Administration (FAA) has primary responsibility for the safety of civil aviation. The FAA's major functions regarding hazards include (1) developing and operating a common system of air traffic control and navigation for both civil and military aircraft, (2) developing and implementing programs to control aircraft noise and other environmental effects of civil aviation, (3) regulating U.S. commercial space transportation, and (4) conducting reviews to determine that the safety of persons and property on the ground are protected (FAA 2016).

Federal Response Plan

The Federal Response Plan of 1999 (FEMA 1999) is a signed agreement among 27 federal departments and agencies, including the American Red Cross, that (1) provides the mechanism for coordinating delivery of federal assistance and resources to augment efforts of state and local governments overwhelmed by a major disaster or emergency; (2) supports implementation of the Robert T. Stafford Disaster Relief and Emergency Act, as well as individual agency statutory

authorities; and (3) supplements other federal emergency operations plans developed to address specific hazards. The Federal Response Plan is implemented in anticipation of a significant event likely to result in a need for federal assistance or in response to an actual event requiring federal assistance under a presidential declaration of a major disaster or emergency.

State Level

California Occupational Safety and Health Administration

The California Occupational Safety and Health Administration (CalOSHA) is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. CalOSHA standards are generally more stringent than federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR 330 et seq.). The regulations specify requirements for employee training, availability of safety equipment, accident prevention programs, and hazardous substance exposure warnings.

California Hazardous Waste Control Act

The Department of Toxic Substances Control is responsible for the enforcement of the Hazardous Waste Control Act (California Health and Safety Code, Section 25100 et seq.), which creates the framework under which hazardous wastes are managed in California. The law provides for the development of a state hazardous waste program that administers and implements the provisions of the federal RCRA cradle-to-grave waste management system in California. It also provides for the designation of California-only hazardous waste and development of standards that are equal to or, in some cases, more stringent than federal requirements. Although the Hazardous Waste Control Act is generally more stringent than RCRA, until the EPA approves the California hazardous waste control program (which is charged with regulating the generation, treatment, storage, and disposal of hazardous waste), both the state and federal laws apply in California. The Hazardous Waste Control Act lists 791 chemicals and approximately 300 common materials that may be hazardous; establishes criteria for identifying, packaging, and labeling hazardous wastes; prescribes management controls; establishes permit requirements for treatment, storage, disposal, and transportation; and identifies some wastes that cannot be disposed of in landfills.

According to 22 CCR 66001 et seq., substances having a characteristic of toxicity, ignitability, corrosivity, or reactivity are considered hazardous waste. Hazardous wastes are hazardous substances that no longer have a practical use, such as material that has been abandoned, discarded, spilled, contaminated, or are being stored prior to proper disposal.

Also according to 22 CCR 66001 et seq., Toxic substances may cause short-term or long-lasting health effects ranging from temporary effects to permanent disability or death. For example,

toxic substances can cause eye or skin irritation, disorientation, headache, nausea, allergic reactions, acute poisoning, chronic illness, or other adverse health effects if human exposure exceeds certain levels (the level depends on the substance involved). Carcinogens (substances known to cause cancer) are a special class of toxic substances. Examples of toxic substances include most heavy metals, pesticides, and benzene (a carcinogenic component of gasoline). Ignitable substances (e.g., gasoline, hexane, and natural gas) are hazardous because of their flammable properties. Corrosive substances (e.g., strong acids and bases such as sulfuric (battery) acid or lye) are chemically active and can damage other materials or cause severe burns upon contact. Reactive substances (e.g., explosives, pressurized canisters, and pure sodium metal, which react violently with water) may cause explosions or generate gases or fumes.

Other types of hazardous materials include radioactive and biohazardous materials. Radioactive materials and wastes contain radioisotopes, which are atoms with unstable nuclei that emit ionizing radiation to increase their stability. Radioactive waste mixed with chemical hazardous waste is referred to as "mixed wastes." Biohazardous materials and wastes include anything derived from living organisms. They may be contaminated with disease-causing agents, such as bacteria or viruses (22 CCR 66261.1 et seq.).

DTSC's Hazardous Waste and Substances Site List

The California Department of Toxic Substances Control (DTSC) Hazardous Waste and Substances Sites (Cortese) List is a database used by the state, local agencies, and developers to comply with CEQA requirements in providing information about the location of hazardous materials release sites. Government Code Section 65962.5 requires the California Environmental Protection Agency (EPA) to develop at least annually an updated Cortese List. DTSC is responsible for a portion of the information contained in the Cortese List. Other state and local government agencies are required to provide additional hazardous material release information for the Cortese List. DTSC's Brownfields and Environmental Restoration Program (Cleanup Program) EnviroStor database provides DTSC's component of Cortese List data by identifying Annual Workplan (now referred to State Response and/or Federal Superfund), and backlog sites listed under the Health and Safety Code Section 25356. In addition, DTSC's Cortese List includes Certified with Operation and Maintenance sites.

California Accidental Release Prevention Program

Similar to the EPA Risk Management Program, the California Accidental Release Prevention (CalARP) Program (19 CCR 2735.1 et seq.) regulates facilities that use or store regulated substances, such as toxic or flammable chemicals, in quantities that exceed established thresholds. The overall purpose of CalARP is to prevent accidental releases of regulated substances and reduce the severity of releases that may occur. The CalARP Program meets the

requirements of the EPA Risk Management Program, which was established pursuant to the Clean Air Act Amendments.

California Health and Safety Code

In California, the handling and storage of hazardous materials is regulated by Division 20, Chapter 6.95, of the California Health and Safety Code (Section 25500 et seq.). Under Sections 25500–25543.3, facilities handling hazardous materials are required to prepare a hazardous materials business plan. Hazardous materials business plans contain basic information about the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of in the state.

Chapter 6.95 of the Health and Safety Code establishes minimum statewide standards for Hazardous Materials Business Plans. Each business shall prepare a Hazardous Materials Business Plan if that business uses, handles, or stores a hazardous material (including hazardous waste) or an extremely hazardous material in disclosable quantities greater than or equal to the following (California Health and Safety Code, Section 25503.5):

- 500 pounds of a solid substance
- 55 gallons of a liquid
- 200 cubic feet of compressed gas
- A hazardous compressed gas in any amount (highly toxic with a Threshold Limit Value of 10 parts per million or less)
- Extremely hazardous substances in threshold planning quantities

In addition, in the event that a facility stores quantities of specific acutely hazardous materials above the thresholds set forth by California code, facilities are also required to prepare a risk management plan and California accidental release prevention plan. The risk management plan and accidental release prevention plan provide information about the potential impact zone of a worst-case release and require plans and programs designed to minimize the probability of a release and mitigate potential impacts.

California Fire Code

The California Fire Code (CFC) is Chapter 9 of Title 24 of the CCR. It was created by the California Building Standards Commission, and it is based on the IFC created by the ICC. It is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The CFC regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The CFC and the California Building Code use a hazard classification system to determine what protective measures are required to protect fire and life safety. These measures

may include construction standards, separations from property lines, and specialized equipment. To ensure that these safety measures are met, the CFC employs a permit system based on hazard classification. The CFC is updated every 3 years.

Title 14 Division 1.5 of the California Code of Regulations

CCR, Title 14, Division 1.5 establishes the regulations for CALFIRE and is applicable in all State Responsibility Areas—areas where CALFIRE is responsible for wildfire protection. Most of the unincorporated area of San Diego County is a State Responsibility Area, and any development in State Responsibility Areas must comply with these regulations. Among other things, Title 14 Section 1270, et seq. establishes minimum standards for emergency access, fuel modification, setback to property line, signage, and water supply. The County of San Diego's (County) most recent adoption of the Consolidated Fire Code (2014) was certified by the State Board of Forestry, indicating that its code requirements meet or exceed Title 14 Section 1270, et seq., and with that certification, the County Consolidated Fire Code supersedes Title 14 Section 1270, et seq. in the unincorporated areas of San Diego County.

California Emergency Services Act

Under the Emergency Services Act (California Government Code, Section 8550 et seq.), the State of California developed an emergency response plan to coordinate emergency services provided by federal, state, and local agencies. Rapid response to incidents involving hazardous materials or hazardous waste is an integral part of the plan, which is administered by the Governor's Office of Emergency Services. The Office of Emergency Services coordinates the responses of other agencies, including the EPA, California Highway Patrol, Regional Water Quality Control Boards (RWQCBs), air quality management districts, and county disaster response offices.

CCR Title 5, Division 1, Chapter 13, Subchapter 1 – School Facilities Construction

CCR Title 5, Division 1, Chapter 13, Subchapter 1 establishes minimum standards for siting of schools and school construction to provide safety for students and staff. The regulation establishes minimum distances that schools can be located from potential hazards such as power line easements, and sets screening distances for other hazards that would require a safety study, such as a railroad track easement. Section 14010(h) states that school shall not be located near an above-ground water or fuel storage tank or within 1,500 feet of the easement of an above-ground or underground pipeline that can pose a safety hazard as determined by a risk analysis study. Section 14010(t) states that if the proposed site is on or within 2,000 feet of a significant disposal of hazardous waste, the school district shall contact the Department of Toxic Substance Control for a determination of whether the property should be considered a hazardous waste property or border zone property and unsuitable for school development.

Regional

Regional Water Quality Control Board

The RWQCB implements the California Water Code, which regulates waste discharges to land. If a discharge of waste threatens a water of the state, a report waste discharge or an application for a waiver of a report of waste discharge must be filed with the RWQCB. The RWQCB accomplishes its permitting responsibility by issuing either a general or site-specific permit (Waste Discharge Permit) or a waiver of a permit.

Local Level

San Diego County Emergency Plan

The San Diego County Emergency Plan is a comprehensive emergency management system that provides for a planned response to disaster situations associated with natural disasters, technological incidents, and nuclear defense operations. The Emergency Plan includes operational concepts relating to various emergency situations, identifies components of the Emergency Management Organization and describes the overall responsibilities for protecting life and property and assuring the overall well-being of the population. The plan also identifies the sources of outside support that might be provided (through mutual aid and specific statutory authorities) by other jurisdictions, state and federal agencies, and the private sector (County of San Diego 2014a).

County of San Diego, Consolidated Fire Code

The County, in collaboration with the local fire protection districts, created the first Consolidated Fire Code in 2001. The Consolidated Fire Code contains the County and fire protection districts amendments to the California Fire Code. The purpose of consolidation of the County and local fire districts' adoptive ordinances is to promote consistency in the interpretation and enforcement of the fire code for the protection of the public health and safety. The ordinances include permit requirements for the installation, alteration, or repair of new and existing fire protection systems, and penalties for violations of the Consolidated Fire Code. The Consolidated Fire Code provides the minimum requirements for access, water supply and distribution, construction type, fire protection systems, and vegetation management. Additionally, the Consolidated Fire Code regulates hazardous materials and associated measures to ensure that public health and safety are protected from incidents relating to hazardous substance releases. San Diego County's 2014 Consolidated Fire Code (the most recent adoption) was certified by the State Board of Forestry, resulting in its superseding Title 14, CCR Section 1270, et seq., as it would otherwise apply within San Diego County (County of San Diego 2014b).

San Diego County Multi-Jurisdiction Hazard Mitigation Plan

The San Diego County Multi-Jurisdiction Hazard Mitigation Plan was prepared in July 2010 to meet federal and state requirements for disaster preparedness to make the county eligible for funding and technical assistance from state and federal hazard mitigation programs. The plan includes a risk assessment to enable local jurisdictions to identify and prioritize appropriate mitigation actions to reduce losses from potential hazards, including flooding, earthquakes, fires, and man-made hazards. To address potential hazards, the plan then incorporates mitigation goals and objectives, mitigation actions and priorities, an implementation plan, and documentation of the mitigation planning process for each of the 21 participating jurisdictions, including Chula Vista (County of San Diego 2010).

California Disaster and Civil Defense Master Mutual Aid Agreement

As provided for in the California Emergency Services Act, the California Disaster and Civil Defense Master Mutual Aid Agreement was developed in 1950 and adopted by all 58 California counties. This statewide mutual aid system is designed to ensure that adequate resources, facilities, and other support is provided to jurisdictions whenever their own resources prove to be inadequate to cope with a given situation. San Diego County is located in Mutual Aide Region 6 of the state system, which also includes Imperial, Riverside, San Bernardino, Inyo, and Mono Counties (OES 2006).

Unified County Emergency Services Organization

The Unified San Diego County Emergency Services Organization consists of the County and the cities within the County. It was established in 1961 and provides for "preparing mutual plans for the preservation of life and property and making provisions for the execution of these plans in the event of a local emergency, state of emergency, and to provide for mutual assistance in the event of such emergencies" (County of San Diego 2014a).

The City of Chula Vista has comprehensive agreements with the Bureau of Land Management, California Department of Forestry, California Conservation Corps, Urban Search and Rescue Corps, San Diego County Fire Mutual Aid, and other agencies in conjunction with the California Disaster and Civil Defense Master Mutual Aid Agreement. Village Three North and Portion of Village Four, Village Eight East, and Village Ten are incorporated into Chula Vista's existing emergency disaster programs, including all fire and emergency services and mutual aid agreements.

Brown Field Airport Land Use Compatibility Plan

The Plan is mandated by Section 21675 of the Public Utilities Code. Local agency adoption or amendment of general and specific plans, zoning ordinances, building regulations, or other land use

ordinances or regulations that affect land within the airport influence area, and individual development proposals, airport master plans, construction plans for new airports, and expansion plans for existing airports that are within the airport influence area are required to be submitted to the Airport Land Use Commission (ALUC) for a determination of consistency with the Plan. The Plan was financed with local funds. Local actions or individual development proposals are required to be submitted to the ALUC for a consistency review only when a local agency has neither revised its general plan or specific plan to be consistent with the commission's compatibility plan (SDCRAA 2010).

Community Emergency Response Team Program

The City of Chula Vista provides a Community Emergency Response Team (CERT) program that offers training to citizens to teach them how to effectively and efficiently respond to emergency situations without placing themselves or others in unnecessary danger. CERT training includes lessons on managing utilities, putting out small fires, providing basic emergency medical aid, searching and rescuing victims safely, effectively organizing volunteers, and collecting disaster information to support first responders (City of Chula Vista 2016).

City of Chula Vista General Plan

The goals of the General Plan to remediate future development sites in accordance with applicable state and federal standards are to manage household hazardous waste and to minimize the risk of injury and property damage associated with wildland fire hazards (Objective E 16) and ensure that adequate remediation of contaminated sites as redevelopment occurs to protect public health and safety (Objective E 17) and ways to minimize damage due to flooding (Objective E 15) (City of Chula Vista 2005).

Otay Ranch General Development Plan/Subregional Plan

The Otay Ranch General Development Plan/Subregional Plan (Otay Ranch GDP/SRP) includes a Safety chapter that addresses the long range and comprehensive protection of the community and residents of Otay Ranch from natural and man-made disasters. The Otay Ranch GPD/SRP includes guiding principles augmented by planning, building, public works, and safety goals, policies, codes and ordinances, which, when taken together, constitute an effective method of protecting life and property. The following policies apply to the proposed project (City of Chula Vista and County of San Diego 1993):

- **Policy:** Otay Ranch SPA plans shall include Emergency Disaster Plans to become operative during periods of major emergency.
- **Policy:** Otay Ranch shall participate in cooperative agreements with urban and rural emergency services providers.

- **Policy:** Incorporate the Otay Ranch project area into existing regional disaster preparedness programs. Otay Ranch shall site fire and emergency services facilities consistent with the following factors: a) Ability to meet travel/response time policies; b) Proximity to a pool of volunteer firefighters for service within the unincorporated areas, when appropriate; c) Ability of the site to support the appropriate facility to serve current and future development in the intended service area; d) Distances from other fire stations, including those operated by neighboring districts: e) Safe access to roadways in emergency responses; f) Special needs for fire suppression, and emergency services, including needs created by recreation areas and industrial land uses; g) avoid close proximity to fault traces; and h) Ability to meet any adopted local community facility level standard, if appropriate. Consideration shall be given to shared law enforcement and fire services facilities such as public safety "storefronts" within village centers, training rooms and equipment storage.
- **Policy:** Otay Ranch shall evaluate the provision of fire suppression sprinkler systems for residential development within the project area as part of SPA plans.
- **Policy:** Fire protection and emergency services facilities shall be available or will be available concurrent with need.
- **Policy:** In areas lacking local public structural fire protection and within the sphere of influence of a fire protection agency, approval of Otay Ranch discretionary applications shall be conditioned on the annexation to that agency.
- **Policy:** Otay Ranch shall cooperate in the development of a strategy to address emergency medical service facilities and responsibilities in areas lacking a local provider of these services.
- **Policy:** Otay Ranch shall work with affected fire protection agencies to cooperatively develop guidelines for appropriate water provision requirements necessary for fire protection in ground water dependent areas.
- **Policy:** Otay Ranch shall participate in fire mitigation fee or development impact fee programs to enable fire protection agencies to meet the facility and equipment needs generated by Otay Ranch.

5.7.1.2 Regulatory Databases

Government Code Section 65962.5, referred to as the Cortese List, was originally enacted in 1985. Provisions set forth in Section 65962.5 require that the Department of Toxic Substances Control compile and update a list of the following:

- All hazardous waste facilities subject to corrective action

- All land designated as hazardous waste property or border zone property
- All information received by the Depart of Toxic Substances Control on hazardous waste disposals on public lands
- All sites listed pursuant to Section 25356 of the Health and Safety Code (hazardous substance release sites)
- All sites included in the Abandoned Site Assessment Program

The Hazardous Waste and Substances Sites (Cortese) List was searched in December 2016 by Dudek staff to identify listed hazardous waste and substances sites from the DTSC EnviroStor database, leaking underground storage tank sites from Water Board GeoTracker database, solid waste disposal sites identified by Water Board, active Cease and Desist Orders and cleanup and abatement orders from the Water Board, and hazardous waste facilities subject to corrective action pursuant to Section 25184.5 of the Health and Safety Code and identified by DTSC. Hazardous sites listed on EnviroStor within a 2-mile radius of the project site are outlined below in Table 5.7-1. Sites with "active" and "closed" status, as well as "no further action," are included below.

Table 5.7-1
Hazardous Sites Identified within 2-Mile Radius Search

Project Name	Location	Site Type/Status	Site History	Distance from Project Site
High School No. 13	Rock Mountain Road/Magdaline Avenue, Chula Vista	School Investigation/ No further action	The site is currently vacant, surrounded by vacant land, slated for development. The site has been historically used for agricultural purposes, indicating potential pesticide application.	0.5 miles east
Otay Ranch Village 2 South, S-1 School Site	1644 Santa Alexia Avenue, Chula Vista	School Investigation/ No further action	The District would like to purchase the Site for construction of an elementary school. The Site consists of 10.34 acres of vacant land with overgrown vegetation including grasses and shrubs. Utility improvements and grading has occurred along the northern boundary adjacent to Santa Diana Road. The Site is part of the larger Otay Ranch Village 2 South master development. The 10.34-acre Site is a vacant land with overgrown vegetation, bounded by Santa Diana Road to the North and Santa Alexia Road to the East. The surrounding vicinity is currently undergoing development, and includes Single and multi-family developments to the north and east, undeveloped land to	0.5 miles northwest

Table 5.7-1
Hazardous Sites Identified within 2-Mile Radius Search

Project Name	Location	Site Type/Status	Site History	Distance from Project Site
			the south and west. The Site was used for agricultural purposes from approximately 1949 to sometime after 1994. Undocumented fill was placed on the Site from at least 2000 through 2014, reportedly associated with the kelp by-product, construction of a former off-road truck racing track and development in Otay Ranch Village 2. The fill thicknesses are estimated to be up to approximately 30 to 40 feet. A limited pesticide assessment was conducted in 2004/2005. Soil samples were analyzed for organochlorine pesticides (OCPs). OCPs were detected above the screening levels throughout the development Based on the information provided in the Phase I, DTSC concurred with the recommendation that a further action is required (please check the recommendation language). DTSC therefore, requested a completion of Preliminary Environmental Assessment (PEA)	
Millenia (Lot 16) Proposed School Site	East of S-125/South of Birch Road/West of Eastlake Parkway, Chula Vista	School Investigation/ Active (as of 8/31/2015)	N/A	1.0 miles east
Appropriate Technologies II Inc.	1700 Maxwell Road, Chula Vista	Haz Waste – RCRA/ Closed	The cleanup status of this corrective action site has been listed as inactive as of 1/1/2008	1.8 miles west
Omar Rendering Disposal Site	4826 Otay Valley Road, Chula Vista	Evaluation/ REFER: RWQCB as of 2/8/2013	The Omar Rendering site is situated on forty acres enclosed by a chain-link and wood fence. The facility accepted hazardous wastes from 1959 to 1978 and used evaporation ponds for disposal. These ponds were excavated upon closure and the residues were left onsite. Chemicals disposed of onsite include petroleum hydrocarbons, acids, caustic solutions, and heavy metals. Soil samples indicate the presence of copper, chromium, nickel, lead, 1,1-dichloroethane, cadmium,	1.6 miles southwest

Table 5.7-1
Hazardous Sites Identified within 2-Mile Radius Search

Project Name	Location	Site Type/Status	Site History	Distance from Project Site
			dichlorodiphenyl, trichloro- ethane (TCA), aldrin, and polychlorinated biphenyls (PCBs). The public may be exposed to contaminated dust and/or volatile organic compounds (VOCs) if soil is disturbed. Groundwater contamination could occur if the pond residuals are released from the disposal cell. Chronic exposures could occur if contaminated soils are left exposed after construction. There is currently no documented exposure.	
Otay Skeet & Trap Range	5350 Heritage Road, Chula Vista	Evaluation/ REFER: Local Agency	The area of investigation is approximately 115 acres in size (site), located within two parcels totaling approximately 268 acres in the Otay Valley of Chula Vista, California. According to the information provided, former site activities included operation of a shooting range from the mid-1960's through approximately the mid-1990's under different ownership and operators. Current site structures include an inactive clubhouse, parking lot, and a series of shooting stations with trap houses and high/low skeet houses. The former shooting area extended north of these structures, to the southern edge of the Otay River floodplain, which is partly defined by a discontinuous soil berm up to approximately nine feet in height. Chemical of potential concern includes metals such as lead, arsenic, chromium and polycyclic aromatic hydrocarbons (PAHs) in soil and perchlorate in the groundwater.	2.0 miles southwest

Sources: CalEPA 2016; DTSC 2016

Otay Valley Rock Quarry

The active Otay Valley Rock Quarry and crushing operation has been in operation since approximately 1970, and is located just south of the project site at 2041 Heritage Road in Chula Vista. The Otay Valley Rock Quarry is not listed on EnviroStor as an existing or previously hazardous site.

Brown Field Formerly Used Defense Site

The Brown Field Formerly Used Defense Site (FUDS) consists of real property formerly owned, leased, or otherwise controlled by U.S. military services (U.S. Navy) during which contamination occurred, and where such property was disposed of prior to 1986. Specifically, the Brown Field FUDS was used by the Navy between 1942 and 1960 for practice dive-bombing and later as an aerial rocket range. By mid-1961, the Brown Field FUDS area was determined to be surplus and was sold or otherwise disposed of through the General Services Administration (Parsons 2007). The only structures within the former Brown Field FUDS-eligible property boundary are buildings associated with the state's Richard J. Donovan State Correctional Facility. Another portion of the Brown Field FUDS area consists of Preserve land. The Brown Field FUDS is located just outside the 2 mile radius, southeast of the project site and is not expected to impact the proposed project.

5.7.1.3 Existing Setting

The proposed project is located on the western flank of Rock Mountain. The property slopes west and includes several east/west-trending, small drainages that empty into Wolf Canyon, which eventually drains into the Otay River Valley. Elevations range from roughly 185 feet above mean sea level in the southwestern edge of Rock Mountain near the entrance to Vulcan Materials Company Quarry, to nearly 608 feet above mean sea level at the extreme southeast property boundary. Overall gradients are inclined up to 10%. Some terrain is inclined at 25% or steeper along the western portion of the property within the drainages.

Hazardous Risk

Historically, the project site has been used for ranching, grazing, dry farming, and truck farming activities. There is the potential some areas containing contaminated soils exist on-site. Soils on the project site may contain organochlorine pesticides, organophosphorous pesticides, organochlorine herbicides, and metals including arsenic (City of Chula Vista 2014).

Wildfire Risk

Field assessments of the project site were conducted during April 2015 to document existing site conditions and for gathering necessary information to support overall fire risk evaluation. There have been several fires recorded by California Department of Forestry and Fire Protection (CAL FIRE) in its Fire and Resource Assessment Program (FRAP) database in the vicinity of the project site, although no recorded fires have burned on site (CAL FIRE 2015). The lack of fire history however, does not indicate that fire cannot occur in the vegetation that would be adjacent to the project site. It is expected that fires have not consistently spread into the project site due to several factors: (1) the position of urban development to the north, which is newer and ignition resistant; (2) the position of Otay Lake to the east, presenting a very wide fuel break; (3) the

position of the Otay River valley to the south, where fire spread is inhibited due to higher vegetation moisture and less ignition-prone vegetation types; and (4) the narrow opening south of Otay Lake and north of the Otay River Valley, which can be more easily defended under typical fire conditions. Although fire risk is determined to be low at the project site, there are no guarantees that fire would not occur in the area.

Airports

The nearest airport to the project site is the Brown Field Municipal Airport, which is located approximately 1.5 miles south of the project site. A portion of the proposed project is located within the Brown Field Municipal Airport Influence Area (see Figure 5.1-3 in Section 5.1) as defined in the Brown Field Airport Land Use Compatibility Plan (SDCRAA 2010). However, these areas and all other parts of the project site are not within the flight activity zones, which are the areas adjacent to the ends of the runway that are associated with the greatest risk. The portion of the project site within Review Area 1 is designated as Safety Zone 6–Traffic Pattern Zone under the Brown Field Airport Compatibility Policy Map: Safety; however, it is not exposed to aircraft noise levels of 60 dB CNEL or greater. The Traffic Pattern Zone has a low relative risk level and both residential and non-residential development is compatible in this zone. A majority of the project site is within the FAA Height Notification Boundary, and the southern portion of the project site is subject to height restrictions ranging from 676.3 feet above mean sea level to 876.3 feet above mean sea level. In addition, a majority of the project site is within the Airport Overflight Notification Area, which requires notification for all new residential development in this area (SDCRAA 2010).

5.7.2 Thresholds of Significance

Would the proposed project:

A. Creates a significant hazard to the public or environment through the routine transport, use or disposal of hazardous materials?

B. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

C. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

D. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, a significant hazard to the public or the environment is created?

E. Is located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport and would result in a safety hazard for people residing or working in the project area?

F. Impairs implementation of or physically interferes with an adopted emergency response plan or emergency evacuation plan?

G. Exposes people or structures to a significant risk or loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

H. Be inconsistent with General Plan, GDP, and other objectives and policies regarding hazards thereby resulting in a significant physical impact?

I. According to the Otay Ranch GDP Program EIR, impacts to public health and safety would be significant if:

   i. The increase in urbanization would result in an increase in the uses, transport, storage, and disposal of hazardous waste materials and an associated increase in the risk of an upset condition in the area.

   ii. The historic use of pesticides would result in soil contamination and health effects.

5.7.3 Impacts

A. Creates a significant hazard to the public or environment through the routine transport, use or disposal of hazardous materials.

Construction Impacts

Construction of the proposed project would involve the transport of commonly used hazardous substances, such as gasoline, diesel fuel, lubricating oil, grease, and solvents. These materials would be used and stored in designated construction staging areas within the project site boundaries. These materials would be transported, handled, and disposed of in accordance with all federal, state, and local laws regulating the management and use of hazardous materials. Consequently, use of these materials for their intended purpose would not pose a significant risk to the public or environment. Therefore a **less than significant** impact would occur.

Operational Impacts

Once project construction is complete, the transport, use, or disposal of hazardous materials would be limited to household cleaning products, landscaping chemicals and fertilizers, and other substances associated with residential and recreation (park) uses. Although the proposed project would result in the increase in routine transport, use and disposal of hazardous materials and/or wastes generated by future growth, all hazardous materials would be transported and handled in accordance with all federal, state, and local laws regulating the management and use of hazardous materials. Therefore a **less than significant** impact would occur.

B. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Construction Impacts

Construction activities on the project site would involve the use and storage of commonly used hazardous materials such as gasoline, diesel fuel, lubricating oil, grease, solvents, and other vehicle and equipment maintenance fluids. These materials would be used and stored in designated construction staging areas within the project site boundaries. These materials would be transported and handled in accordance with all federal, state, and local laws regulating the management and use of hazardous materials. Consequently, the materials alone, and use of these materials for their intended purpose, would not pose a significant risk to the public or environment.

As described in Section 5.7.1.3, Otay Ranch land, including the project site, was historically cultivated for agricultural use, and there is the potential some areas containing contaminated soils exist on site. Soils on the project site may contain organochlorine pesticides, organophosphorous pesticides, organochlorine herbicides, and metals including arsenic. In the event that the proposed project encounters contaminated soils during grading and excavation it could result in increased health risks to construction workers, future residents, and potentially impact water quality. Additional testing would be required prior to grading, and contaminated soils would be remediated in accordance with County of San Diego Department of Environmental Health and RWQCB requirements. Therefore impacts would be **potentially significant**. To reduce this potential impact, mitigation measure **MM-HAZ-1** is provided.

Operational Impacts

Once project construction is complete, the transport, use, or disposal of hazardous materials would be limited to household cleaning products, landscaping chemicals and fertilizers, and other substances associated with residential and recreation (park) uses. Although the proposed project would result in the increase in routine transport, use and disposal of hazardous materials and/or wastes generated by future growth, all hazardous materials would be transported and handled in accordance with all federal, state, and local laws regulating the management and use of hazardous materials. Therefore, a **less-than-significant** impact would occur.

C. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

Existing schools near the project site include Olympian High School, located approximately 0.58 mile east of the project site; Wolf Canyon Elementary School, located approximately 0.60 mile east of the project site; Mater Dei Catholic High School, located approximately 0.93 mile northeast of the project site; and High Tech High School, located approximately 1.9 miles east of the project site.

As previously discussed in Threshold B, some areas of the project site have the potential to contain contaminated soils associated with former agricultural use. Soils on the project site may contain organochlorine pesticides, organophosphorous pesticides, organochlorine herbicides, and metals including arsenic. In the event that the proposed project encounters contaminated soils during grading and excavation, it could result in increased health risks to construction workers, future residents, and potentially impact water quality. However, additional testing would occur prior to grading and contaminated soils would be remediated in accordance with County of San Diego Department of Environmental Health and RWQCB requirements. The use of hazardous materials during construction and operation of the proposed project would not result in a significant risk to the public from the use, transport, or disposal of hazardous materials and wastes. However, no schools are located within one-quarter mile, and impacts would be less than significant.

D. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, a significant hazard to the public or the environment is created.

As outlined above in Section 5.7.1.2, the Hazardous Waste and Substances Sites (Cortese) List (Government Code Section 65962.5) was searched on December 12, 2016, by Dudek staff to identify listed hazardous waste and substances sites from the DTSC EnviroStor database, leaking underground storage tank sites from Water Board GeoTracker database, solid waste disposal sites identified by Water Board, active Cease and Desist Orders and cleanup and abatement orders from the Water Board, and hazardous waste facilities subject to corrective action pursuant to Section 25184.5 of the Health and Safety Code and identified by DTSC. Results of the EnviroStor database search determine there are no existing or previously existing hazardous sites listed within the project site, or any other potentially hazardous activities occurring or having occurred on-site. To further analyze potential hazards in the surrounding area, hazardous sites listed on EnviroStor within a 2-mile radius of the project site were recorded and are outlined above in Table 5.7-1. EnviroStor cleanup sites recorded within Table 5.7-1 are identified as evaluation sites, school investigation sites, and a non-operating site, and are not expected to result in a hazardous impact to the proposed project. As the proposed project is not located on a site included in the Cortese List, or pursuant to Government Code Section 65962.5, impacts would be **less than significant**.

E. Is located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport and would result in a safety hazard for people residing or working in the project area.

Brown Field is a general aviation airport accommodating both propeller- and jet-powered aircraft and serves as a port of entry for private aircraft coming into the United States from Mexico. Brown Field is also heavily used by military and law enforcement agencies and is classified as a

"reliever airport" by the Federal Aviation Administration. As depicted in Figure 5.1-3 in Section 5.1, a small portion of the most southern portion of the project site is within Review Area 1 of the Brown Field Airport Influence Area. As described above in Section 5.7.1.3, the portion of the project site within Review Area 1 is designated as Safety Zone 6–Traffic Pattern Zone under the Brown Field Airport Compatibility Policy Map: Safety (SDCRAA 2010); however, it is not exposed to aircraft noise levels of 60 dB CNEL or greater. The Traffic Pattern Zone has a low relative risk level, and both residential and non-residential development is compatible in this zone. A majority of the project site is within the FAA Height Notification Boundary and the southern portion of the project site is subject to height restrictions ranging from 676.3 feet above mean sea level to 876.3 feet above mean sea level. In addition, a majority of the project site is within the Airport Overflight Notification Area, which requires notification for all new residential development in this area (SDCRAA 2010). Due to the proximity of Brown Field Airport, impacts would be **potentially significant**. The proposed project would be required to comply with all Brown Field Airport Land Use Compatibility Plan (ALUCP) conditions. To ensure development of the project would not result in any safety hazard for residents, mitigation measures **MM-HAZ-2**, **MM-HAZ-3,** and **MM-HAZ-4** are provided.

F. Impairs implementation of or physically interferes with an adopted emergency response plan or emergency evacuation plan.

Construction of the proposed project is not anticipated to interfere with an adopted emergency response plan or evacuation plan, nor would it substantially impede public access or roadway circulation. There may be a temporary increase in traffic on roadways surrounding the project site due to increased truck loads or the transport of construction equipment to and from the project site during the construction period. However, the proposed project would not obstruct any existing roadways or evaluation routes. The proposed project is incorporated into the City's existing emergency disaster programs, including all fire and emergency services and mutual aid agreements. Emergency response to the project site would be serviced by the City of Chula Vista Fire Department, Police Department, and other responsible agencies.

The proposed roadways in the project site would increase regional connectivity and provide new potential emergency evacuation routes. The project exceeds the allowable dead end road length, but is proposed for a modification based on provision of an emergency secondary access road that resolves this issue. As the project may be constructed prior to the completion of the Main Street Extension, which would negate the long dead-end road on site, the project proposes Wiley Road as an emergency secondary egress route. The road would be improved to 18 to 25 feet wide; provided with a 12-foot-wide, all-weather surface; and maintained in a passable condition. Site access, including fire lane, driveway, and entrance road widths; primary and secondary access; gates; turnarounds; turning radii; dead-end lengths; signage; aerial fire apparatus access; surface; and other requirements would comply with the requirements of the Chula Vista Fire

Code (including 2013 Fire Code and 2000 Urban-Wildland Interface Code), or would be reviewed and approved by Chula Vista Fire Department (CVFD). Therefore, the proposed project would not interfere with an adopted emergency response or emergency evacuation plan; impacts would be **less than significant**.

G. Exposes people or structures to a significant risk or loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

More people in a given area results in the potential for increased exposure of residents to wildland fire, opportunity for fire starts, and subsequent exposure to dangerous conditions. Service level requirements could, in the absence of additional fire facilities and resources improvements, cause a decline in the CVFD response times and capabilities as a result of the proposed project's buildout population of approximately 958~~9~~ people. The inclusion of homes adjacent to preserved open space areas and the potential for wildfire indicates the need for measures to minimize the likelihood of fire ignition and specialized wildland firefighting apparatus nearby should wildland fire occur.

The requirements described in the FPP (Appendix F), and herein are intended to aid fire-fighting personnel and minimize the demand placed on the existing emergency service system. The potential impacts to the firefighting and response resources and to the residents residing within this area are considered insignificant with respect to wildland fire. The project's inclusion of the most recent fire safety codes and a layered fire protection system, designed to reduce demands placed on the fire responders while minimizing exposure of humans to potentially harmful fire environments, would result in wildfire exposure levels that are below the significance threshold. The fact that the area has not been placed in a high or very high fire hazard severity zone indicates that CVFD agrees that the fuels and terrain present lower risk of wildfire.

Features that the proposed project would implement in compliance with Fire Code requirements include ignition-resistant construction including roods, walls and decks; vent restrictions; interior fire sprinklers; windows (dual pane/tempered); and fuel reduction areas (Municipal Code Chapter 15.36, Fire Code). These features are required by the Fire Code, and provide measureable safety improvements when used. They are part of the Fire Code because they are critical in minimizing structure ignition. Additionally, the following features to be implemented would further provide fire protection to the project site (Appendix F):

- Specialized firefighting apparatus within the CVFD fleet for wildland and structure fires along with highly trained firefighters.

- Customized fuel modification zones[1] that would be managed and maintained throughout the year (refer to Figure 5.7-1, Fuel Modification Zone Exhibit).
- Highly restrictive Fire and Building Codes for both residential and commercial/ industrial buildings.
- Robust mutual and automatic aid agreements that provide a large arsenal of firefighters, and ground- and aerial- based firefighting apparatus.

Given the climatic, vegetation, ignition sources, wildland-urban interface location, and topography characteristics along with the fire history, ignition sources and fire behavior modeling results discussed above, and further within the FPP, the project site is potentially exposed to wildfire encroaching on the perimeter of the development or spotting into the Preserve areas to the north and south of the site, especially from up-wind fires driven by on-shore or Santa Ana–type winds funneled into the Otay River Valley. Based on this information and the recorded history of fires in the area, along with the persistency of naturally vegetated open space within the project site, it is expected that wind driven wildfires could occur near the project site in the future, but are not anticipated to spread into the project site based on the provided protections.

To ensure that the proposed project's improvements and uses are provided suitable fire protection that would minimize risks associated with fire, all components of the fire protection system must be maintained and in place. The FPP provides the direction and nexus for that maintenance to occur. Specifically, the HOA or other funded management entity would be funded and authorized to ensure that at least annual inspections of the fuel modification areas, construction features, fire protection system, and infrastructure design are completed to ensure they meet the requirements specified in the FPP. Additionally, the proposed project is not located within a Very High Fire Hazard Severity Zone; therefore specific findings stated in Government Code 66474.02 for approval of a tentative map are not required (CAL FIRE 2009). With implement of all provided FPP recommendations and design features, it is determined that development of the proposed project would not exposes people or structures to significant wildfire risk, and impacts would be **less than significant**.

H. Be inconsistent with General Plan, GDP, and other objectives and policies regarding hazards thereby resulting in a significant physical impact.

During construction and operation of the proposed project, compliance with applicable hazardous materials codes and regulations would ensure proper use, transport, and disposal of hazardous materials. Project compliance with the General Plan and Otay Ranch GDP, as well as FPP compliance with City regulations, are outlined below.

[1] The term "customized fuel modification zone" refers to fuel modification zones that are customized to this project based on results of fire behavior, ignition sources, weather, and fire risk.

General Plan Policy LUT 6.8 – Hazardous Materials

The proposed project is consistent with General Plan and Otay Ranch GDP (City of Chula Vista and County of San Diego 1993) goals, objectives, and policies. General Plan Policy LUT 6.8 requires land uses that handle, generate, or transport hazardous materials to not negatively impact existing or future sensitive receptors (City of Chula Vista 2005). Construction of the proposed project would involve the transport of commonly used hazardous substances, such as gasoline, diesel fuel, lubricating oil, grease, and solvents. Once project construction is complete, the transport, use or disposal of hazardous materials would be limited to household cleaning products, landscaping chemicals and fertilizers, and other substances associated with residential and recreation (park) uses and such items that may be available for resale in future commercial uses. Although the proposed project would result in the increase in routine transport, use, and disposal of hazardous materials and/or wastes generated by future growth, all hazardous materials would be transported and handled in accordance with all federal, state, and local laws regulating the management and use of hazardous materials. Implementation of the proposed project would be consistent with applicable General Plan policies and objectives.

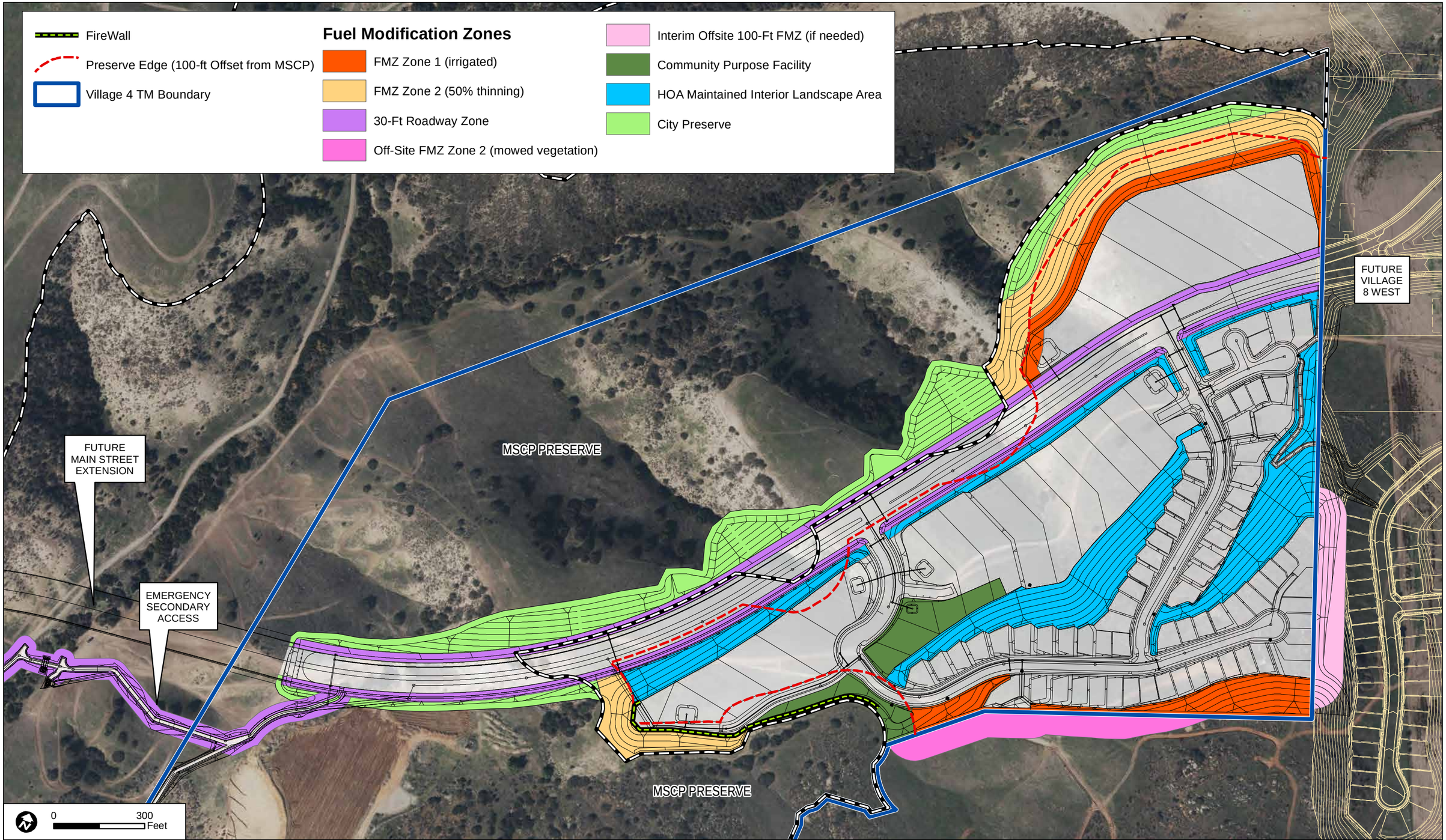
Otay Ranch GDP

- **Objective:** Prevent property damage and loss of life due to fire, crime or hazardous substances.

Village Four is planned to reduce potential effects of fire through adequate water supply, street design that facilitates emergency vehicle access, fuel-modification landscape techniques, and adequate location of fire facilities (refer to the FPP included as Appendix F). City codes and policies would be implemented and enforced to minimize potential effects of hazardous substances.

FPP Consistency

The FPP (Appendix F) demonstrates compliance with the 2013 Chula Vista Fire Code requirements, namely Title 15 – Building and Construction, Sections 15.34 (Fire Zones), 15.36 (Fire Code Adopting the 2013 California Fire Code), Section 15.38 (Urban Wildland Interface Code adopting the 2000 Urban Wildland Interface Code), and Section 15.08 adopting the 2013 California Building Code, specifically Chapter 7A for development in WUI areas, in the Chula Vista Municipal Code. Additionally, the FPP is consistent with the Chula Vista Fire Department's Fire Prevention Division's Fire Engineering Safety Detail and Specification Sheets. Lastly, the FPP conforms to the City's MSCP Sub Area Plan Brush Management Guidelines and Resource Management Plan Preserve Edge Requirements. The project would comply with the applicable adopted codes in place at the time of construction.



SOURCE: HUNSAKER & ASSOCIATES 2017

DUDEK

FIGURE 5.7-1

Fuel Modification Zone Exhibit

Otay Ranch Village Four SPA Plan Environmental Impact Report

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The proposed project would be in compliance with all applicable plans and policies related to hazards and risk of upset, and impacts would be **less than significant**.

I. According to the Otay Ranch GDP Program EIR, impacts to public health and safety would be significant if:

i. The increase in urbanization would result in an increase in the uses, transport, storage, and disposal of hazardous waste materials and an associated increase in the risk of an upset condition in the area.

The proposed project would result in an increase in routine transport, use and disposal of hazardous materials and/or wastes generated by future growth. The transport, use or disposal of hazardous materials would be limited to household cleaning products, landscaping chemicals and fertilizers, and other substances associated with residential and recreation (park) uses and such items that may be available for resale in future industrial and commercial uses. All hazardous materials would be transported and handled in accordance with all federal, state, and local laws regulating the management and use of hazardous materials. Therefore, although the proposed project would increase the transport, use, and disposal of hazardous materials, impacts would be **less than significant**.

ii. The historic use of pesticides would result in soil contamination and health effects.

The project site history is similar to the history of other Otay Ranch Villages, which have undergone assessment for organochlorine pesticides, organophosphorous pesticides, organochlorine herbicides, and metals, including arsenic and lead associated with former agricultural use (City of Chula Vista 2014). In some areas, these analytes have been detected in soil samples above their respective EPA Region IX Preliminary Remediation Goals for residential use (City of Chula Vista 2014). In the event that the proposed project encounters contaminated soils during grading and excavation it could result in increased health risks to construction workers, future residents, and potentially impact water quality. Remediation may be required that would involve the removal of top soil and disposing of it. Considering the potential consequences of encountering contaminated soils, impacts would be **potentially significant**.

5.7.4 Level of Significance Prior to Mitigation

Prior to mitigation, the proposed project would have potentially significant impacts associated with exposure of construction workers and future residents to pesticide residue. Impacts prior to mitigation would be **potentially significant**. The remaining issues addressed in this section would be less than significant.

5.7.5 Mitigation Measures

The following mitigation measures would reduce identified significant impacts associated with potential hazards and risk of upset to a less than significant level.

MM HAZ-1 Prior to issuance of the grading permit for Otay Ranch Village Four Sectional Planning Area Plan Project, the applicant shall prepare a soils assessment to the satisfaction of the City of Chula Vista Engineer to determine if residual pesticides, herbicides, and/or arsenic are present on site. The assessment shall be prepared by a Registered Environmental Assessor in accordance with Department of Toxic Substances Control guidance document. The assessment shall include analysis for organochlorine pesticides that include compounds such as toxaphene, dichlorodiphenyldichloroethane (DDD), dichlorodiphenyltrichloroethane (DDT), and dichlorodiphenyldichloroethylene (DDE), which have been historically identified at properties in the site vicinity. The concentrations of the contaminants shall be compared to regulatory agency soil screening levels for residential land use (e.g., U.S. Environmental Protection Agency Region IX Soil Screening Levels). If levels of contamination exceeding the soil screening levels are found on site, a Soil Reuse Plan shall be prepared prior to construction on site. The Soil Reuse Plan shall include a determination of the suitability of the soils for on-site or off-site reuse, any special handling provisions that shall be incorporated as part of the site grading activities, and the procedure for the proper remediation and disposal of the contaminated soils, either on site or off site. The results of the limited soil assessment and the Soil Reuse Plan shall be submitted to the County of San Diego Department of Environmental Health, the Development Services Director (or their designee), and/or the Regional Water Quality Control Board for review and approval, prior to implementation.

MM HAZ-2 Prior to issuance of a building permit for the first structure and/or dwelling unit within the Airport Influence Area of Brown Field, the applicant shall prepare and file a Form 7460-1, Notice of Proposed Construction or Alteration, with the Federal Aviation Administration to ensure that no objects related to development would present a hazard to air navigation.

MM HAZ-3 Prior to the issuance of a building permit for the first structure and/or dwelling unit within the Airport Influence Area of Brown Field, the applicant shall obtain and provide proof of Federal Aviation Administration clearance to the satisfaction of the Development Services Director (or their designee).

MM HAZ-4 Prior to approval of the first Final Map for those areas within the overflight notification area for Brown Field, the applicant shall record the Airport Overflight Agreement with the County of San Diego Recorder's office, and provide a signed copy of the recorded Airport Overflight Agreement to the City of Chula Vista's Development Service Director (or their designee).

5.7.6 Level of Significance After Mitigation

The mitigation measures listed in Section 5.7.5 would reduce potential impacts associated with hazards and risk of upset to a **less than significant level**.

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5.8 NOISE

This section of the EIR addresses the potential noise impacts resulting from the implementation of the proposed Otay Ranch Village Four Sectional Planning Area (SPA) Plan Project (project). The discussion found in this section is based on the Noise Assessment Technical Report for the Otay Ranch Village Four Project that was prepared by Dudek in August 2015. The complete report is contained in Appendix G of this EIR. This section evaluates noise effects of the project, including potential impacts from current and future ambient noise levels upon proposed land uses, as well as noise generation potential from proposed land uses and activities within the proposed project site. Noise generation sources from future implementation of the project include traffic and mechanical equipment.

5.8.1 Existing Conditions

5.8.1.1 Regulatory Framework

Federal

Federal Aviation Administration Standards

Enforced by the Federal Aviation Administration (FAA), Code of Federal Regulations (CFR) Title 14, Part 150 prescribes the procedures, standards and methodology governing the development, submission, and review of airport noise exposure maps and airport noise compatibility programs, including the process for evaluating and approving or disapproving those programs. Title 14 also identifies those land uses that are normally compatible with various levels of exposure to noise by individuals. The FAA has determined that interior sound levels up to 45 (A-weighted decibel) dBA L_{dn} (or Community Noise Equivalent Level (CNEL)) are acceptable within residential buildings. The FAA also considers residential land uses to be compatible with exterior noise levels at or less than 65 dBA L_{dn} (or CNEL).

Federal Highway Administration Standards

CFR Title 23, Part 772 sets procedures for the abatement of highway traffic noise and construction noise. Title 23 is implemented by the Department of Transportation Federal Highway Administration (FHWA). The purpose of this regulation is to provide procedures for noise studies and noise abatement measures to help protect the public health and welfare, to supply noise abatement criteria, and to establish requirements for information to be given to local officials for use in the planning and design of highways. All highway projects that are developed in conformance with this regulation are deemed to be in conformance with the Department of Transportation FHWA Noise Standards. Title 23 establishes 67 dBA as the worst-case hourly average noise level standard for impacts of federal highway projects to land uses, including residences, recreational uses, hotels, hospitals, and libraries (23 CFR Chapter 1, Part 772, Section 772.19).

Federal Transit Administration Standards and Federal Railroad Administration Standards

Although the Federal Transit Administration (FTA) standards are intended for federally funded mass transit projects, the impact assessment procedures and criteria included in the FTA Transit Noise and Vibration Impact Assessment Manual are routinely used for projects proposed by local jurisdictions. The FTA and Federal Railroad Administration have published guidelines for assessing the impacts of groundborne vibration associated with rail projects, which have been applied by other jurisdictions to other types of projects. The FTA measure of the threshold of architectural damage for conventional sensitive structures from groundborne vibration is 0.2 inches per second peak particle velocity (FTA 2006).

State

California Noise Control Act of 1973

Sections 46000 through 46080 of the California Health and Safety Code, known as the California Noise Control Act of 1973, finds that excessive noise is a serious hazard to the public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. It also finds that there is a continuous and increasing bombardment of noise in the urban, suburban, and rural areas. The California Noise Control Act declares that the State of California has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. It is the policy of the state to provide an environment for all Californians free from noise that jeopardizes their health or welfare.

California Code of Regulations, Title 24

Title 24 of the California Code of Regulations (CCR) sets standards that new development in California must meet. According to Title 24, interior noise levels are not to exceed 45 dBA CNEL for new multi-family residences, hotels and other attached residences. Title 24 does not apply to single-family homes. However, as a matter of practice, the City of Chula Vista (City) applies a 45 dBA CNEL standard to single-family homes.

Title 24 also requires that an interior acoustical study demonstrating that interior noise levels due to exterior sources will be less than or equal to 45 CNEL be performed for affected multi-family structures that are exposed to exterior noise levels in excess of 60 CNEL.

2013 California Green Building Standards Code

Section 5.507 of the California Green Building Standards Code (CalGreen) establishes requirements for acoustical control in non-residential buildings. The standards require that wall and roof-ceiling assemblies making up the building envelope have a sound transmission class

value of at least 50, and exterior windows have a minimum sound transmission class of 40 for building locations within the 65 dBA CNEL noise contour of an airport or of a freeway or expressway, railroad, industrial source or fixed-guideway source, as determined by the Noise Element of the General Plan. Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places must have a sound transmission class of at least 40.

Local

City of Chula Vista General Plan

The City of Chula Vista General Plan Noise Element establishes noise criteria for various land uses (City of Chula Vista 2005). The maximum allowable exterior noise level at outdoor usable areas for new residential development is an annual CNEL of 65 dBA. The City's exterior land use-noise compatibility guidelines for various land uses are depicted in Table 5.8-1. For residential development, the City typically applies the noise criteria at the backyards of single-family homes and at private patios, exterior balconies, and exterior common use areas of multi-family developments.

Table 5.8-1
City of Chula Vista Exterior Land Use/Noise Compatibility Guidelines

Land Use	Annual CNEL in Decibels					
	50	*55*	*60*	*65*	*70*	*75*
Residential						
Schools, Libraries, Daycare Facilities, Convalescent Homes, Outdoor Use Areas, and other Similar Uses Considered Noise Sensitive						
Neighborhood Parks, Playgrounds						
Community Parks, Athletic Fields						
Offices and Professional						
Places of Worship (excluding outdoor use areas)						
Golf Courses						
Retail and Wholesale Commercial, Restaurants, Movie Theaters						
Industrial, Manufacturing						

Source: City of Chula Vista 2005

Also, Objective E22 (Protect the community from the effects of transportation noise) of the City's General Plan Noise Element, Policy E22.5 requires projects to construct appropriate mitigation measures to attenuate existing and projected traffic noise levels, in accordance with applicable standards, including the exterior land use/noise compatibility guidelines listed in Table 5.8-1 (City of Chula Vista 2005).

For off-site project-related traffic, the City considers a noise impact to be significant if implementation of the proposed project results in noise levels that exceed the exterior noise

limits established in the City's General Plan, including 65 dBA CNEL for residences, schools, and recreational uses; 70 dBA CNEL for offices, community parks, and athletic fields; and 75 dBA CNEL for commercial uses. For transportation-related noise, a significant impact would occur if a project results in a 3 dBA CNEL or greater increase in traffic noise on a roadway segment and the resultant noise level would exceed the General Plan exterior noise limits (City of Chula Vista 2005).

City of Chula Vista Municipal Code

The City of Chula Vista Noise Ordinance (Municipal Code Section 19.68) contains regulations restricting land use related noise-generating activities and operations, so as to avoid noise nuisance in the community. Section 19.68.030 establishes the maximum allowable exterior noise limits, based on the classification of the receiving land use. These standards typically apply to stationary sources such as noise from mechanical equipment or event noise, as opposed to traffic noise. For instance, a school, commercial enterprise, or industrial operation must not generate noise that exceeds a certain specified noise level at any property boundary where an adjacent residential use exists. The property-line noise standards are presented in Table 5.8-2.

Table 5.8-2
City of Chula Vista Exterior Property-Line Noise Limits

Receiving Land Use Category	Noise Level (dBA)	
	10 p.m. to 7 a.m. (Weekdays)	*7 a.m. to 10 p.m. (Weekdays)*
	10 p.m. to 8 a.m. (Weekends)	*8 a.m. to 10 p.m. (Weekends)*
All residential (except multiple dwelling)	45	55
Multiple dwelling residential	50	60
Commercial	60	65
Light industry – I-R and I-L zone	70	70
Heavy industry – I zone	80	80

Source: City of Chula Vista Noise Ordinance (Municipal Code Section 19.68)

Title 17 of the Chula Vista Municipal Code (Environmental Quality), Chapter 24, addresses managing noisy and disorderly conduct. Section 17.24.040.C.8 specifically addresses restrictions against generation of construction noise in overnight periods. The use of any tools, power machinery, or equipment, or the conduct of construction and building work in residential zones so as to cause noises disturbing to the peace, comfort, and quiet enjoyment of property of any person residing or working in the vicinity, shall be prohibited between 10 p.m. and 7 a.m., Monday–Friday, and between 10 p.m. and 8 a.m., Saturday and Sunday, except when the work is necessary for emergency repairs required for the health and safety of any member of the community.

Otay Ranch General Development Plan

The Otay Ranch General Development Plan (GDP) was approved jointly by the City of Chula Vista and County of San Diego in 1993 for the future development of Otay Ranch. The Otay Ranch GDP was amended in December 2005 as part of the City's General Plan Update and most recently was amended in February 2013. The Otay Ranch GDP establishes land use plans, design guidelines, objectives, policies, and implementation measures that apply to all portions of Otay Ranch while supporting a balance of housing, shops, workplaces, schools, parks, civic facilities, and open spaces. The majority of development is intended to be clustered in villages, with conveniently located "core" features and well-defined edges such as the Chula Vista greenbelt, open spaces, and wildlife corridors. The goals of the Otay Ranch GDP are to (1) create a well-integrated, balanced land use; (2) reduce reliance on the automobile and promotion of alternative modes of transportation; and (3) diversify the economic base within Otay Ranch (City of Chula Vista and County of San Diego 1993).

The Otay Ranch GDP includes goals, objectives, and policies related to noise that direct the identification of conditions under which noise occurs and provide general guidelines to protect Otay Ranch residents from the adverse effects of unwanted sound. Policy directions are provided to simultaneously control noise at its source, along its transmission path, and at the receiver site.

City of Chula Vista Multiple Species Conservation Program Subarea Plan

The Multiple Species Conservation Program (MSCP) Subarea Plan regulates impacts to sensitive biological resources, including noise impacts. In accordance with Section 7.5.2 of the Chula Vista Subarea Plan, Adjacency Management Issues, uses in or adjacent to the Preserve should be designed to minimize noise impacts. Berms or walls should be constructed adjacent to commercial areas and any other use that may introduce noises that could impact or interfere with wildlife utilization of the Preserve. Excessively noisy areas or activities adjacent to breeding areas, including temporary grading activities, must incorporate noise reduction measures or be curtailed during the breeding season of sensitive bird species, consistent with Table 3-5 of the MSCP Subregional Plan, included as Appendix A to the MSCP Subarea Plan. In general, the construction noise threshold for sensitive biological resources is an hourly average noise level of 60 dBA and no clearing, grubbing, and/or grading is permitted within the MSCP Preserve during the breeding season of the sensitive species present (City of Chula Vista 2003).

5.8.1.2 Existing Setting

The project site is generally located near the southern boundary of the City of Chula Vista, east of Interstate (I) 805, west of State Route (SR) 125, and north of SR-905. The project site is located on the east side of Wolf Canyon, straddling the future extension of Main Street from La Media Road to the north to Heritage Road to the southwest. The project site is surrounded by

Village Three to the west, Villages Two and Four to the north, Village Eight West to the east, and rock quarry to the south. The project site currently consists of vacant, undeveloped land. Primary regional access to the project site includes SR-125 and I-805 via Olympic Parkway and La Media Road. Traffic along these major local roadways would be the dominant source of noise contributing to the future community noise level within the project site. There is currently no public roadway access to or within the site.

5.8.1.3 Sound Terminology

The following descriptions are provided for direct reference in reviewing the information in this section. Please refer to Appendix A of the Noise Assessment Technical Report (Appendix G) for detailed definitions of technical terms used in the description and evaluation of noise.

Sound is defined as any pressure variation detected by the human ear. The preferred unit for measuring sound is the decibel (dB). The dB expresses the logarithmic ratio of the amount of energy radiating from a source in the form of an acoustic wave. Zero dB corresponds approximately to the threshold of healthy human hearing, and 120–140 dB corresponds to an average person's threshold of pain.

The human ear is not equally responsive to all frequencies of the audible sound spectrum. An electronic filter is normally used when taking noise measurements that de-emphasizes certain frequencies in a manner that mimics the human ear's response to sound; this method is referred to as A-weighting. Sound levels expressed under the A-weighted system are sometimes designated dBA. All sound levels discussed in this report are A-weighted.

The equivalent continuous sound level (L_{eq}) is a single noise level that, if held constant during the specified time period, would represent the same total energy as a fluctuating noise. L_{eq} values are commonly expressed for periods of 1 hour, but longer or shorter time periods may be specified.

The noise descriptor CNEL is typically used when describing community noise. CNEL averages the varying sound levels occurring over a 24-hour period and gives a 10 dBA penalty to noises occurring between 10 p.m. and 7 a.m. and a 5 dBA penalty for noise between 7 p.m. and 10 p.m. to take into account noise sensitivity during nighttime and evening hours, respectively.

5.8.1.4 Methodologies and Instrumentation

To establish baseline (existing) noise levels within the project site, several short-term noise measurements were conducted. Most measurements were conducted adjacent to roadways, for use in validating the traffic noise model and to characterize current ambient noise levels. One measurement was also conducted away from the influence of busy streets to characterize the

general existing noise environment typified by much of the project area where major roadways are currently absent.

To determine the existing noise levels and future noise levels from major transportation sources, short-term noise measurements were conducted adjacent to existing roadways in the project vicinity that currently contribute to the ambient noise levels within the project site. Noise modeling was conducted using the Federal Highway Administration (FHWA) traffic noise prediction model (TNM Version 2.5) (FHWA 1997). TNM was used to determine noise levels associated with current average daily traffic volumes and to predict the noise levels from traffic volumes forecast to exist in the future. Data inputs used in the noise model included the number and types of vehicles on the roadway, vehicle speeds, and physical characteristics of the road and topography, as well as receiver and noise barrier heights and locations.

The noise measurements were conducted using a laboratory-calibrated Piccolo digital integrating sound level meter. The accuracy of the sound level meter was verified before and after each measurement using a Larson Davis Cal150 handheld field calibrator. The sound level meter meets the current American National Standards Institute standard for a Type 2 sound level meter.

Traffic counts were made during the noise measurements. To validate the noise model, the same traffic volume and vehicle composition ratios counted during the noise measurements were used along with the observed vehicle speed. Using vehicle counts and observed speeds, the modeled noise values were within 2 dBA of the measured noise levels, which confirms the accuracy of the inputs used in the noise model.

The future modeled traffic speed was assumed to be the posted speed limit for existing roads and anticipated speed limit for future roads. The truck percentages used in the noise model for existing and future scenarios on existing and future arterials were 2% medium trucks and 2% heavy trucks. This truck mix is based on vehicle surveys conducted for a number of similar roads in Chula Vista and San Diego County that allow truck traffic. Based on observations during the noise measurements, a 1% vehicle composition was assigned to motorcycles for existing and future scenarios.

As part of the CNEL calculation process, based on typical travel patterns, the analysis assumed the average hourly traffic volume is approximately equal to 10% of the average daily trips (ADT). 10% of the ADT is generally accepted to be roughly equivalent to the worst-case hourly traffic volume; using this value in the noise model results in an average hourly equivalent noise level approximately equal to the CNEL for the corresponding ADT and actual hourly traffic distribution. Thus, this relationship results in a CNEL value that is representative of traffic noise resulting from typical daytime, evening and nighttime traffic distribution.

5.8.1.5 Ambient Noise Monitoring

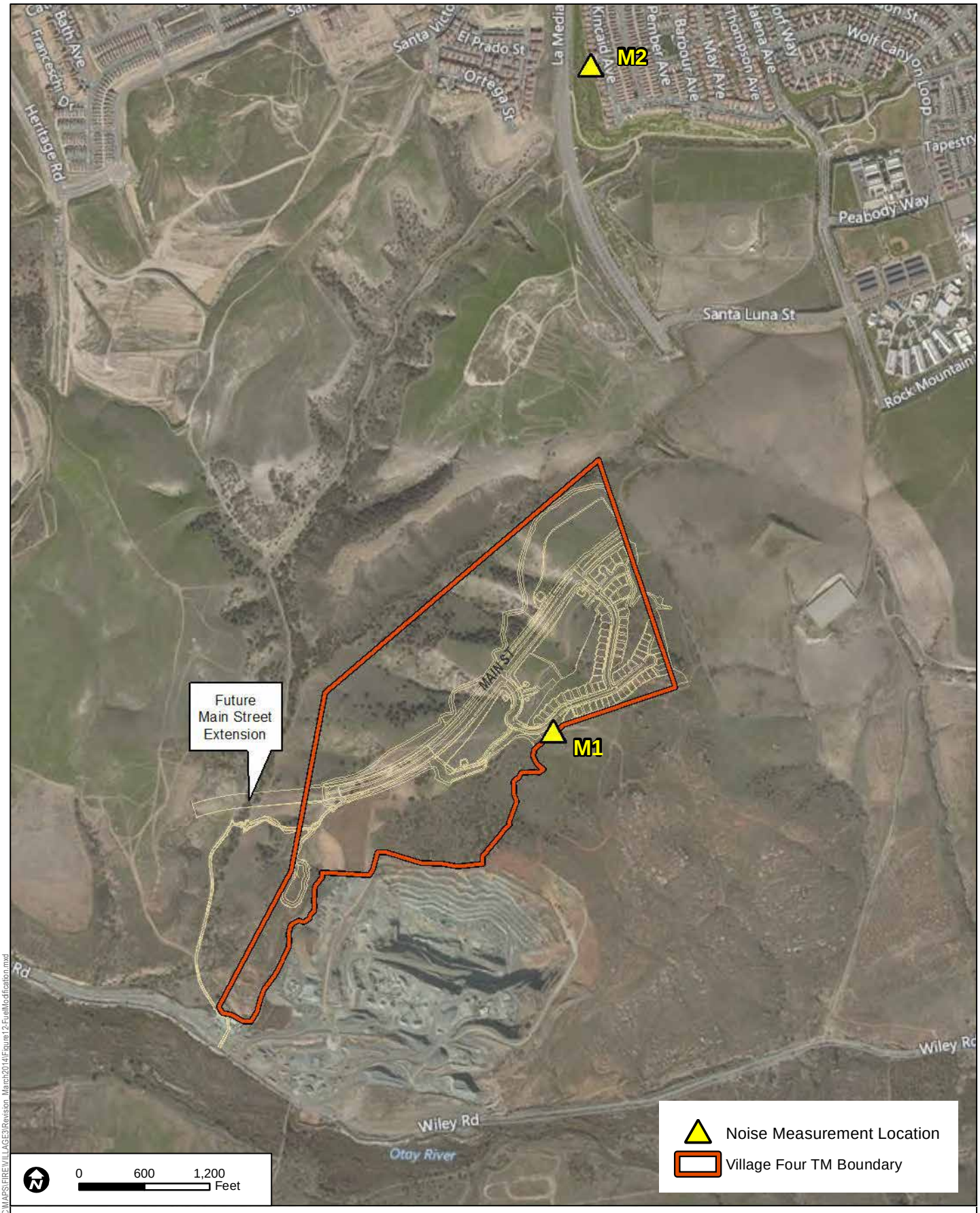
Typical Existing Conditions (Undeveloped Land)

Today, much of the project site exists as undeveloped open space. Areas within the project site that are not located immediately adjacent to an existing roadway would be expected to have ambient noise levels less than typical levels found in the urban environment. One short-term noise measurement was conducted within the project site to characterize the baseline conditions representative of the undeveloped areas (see Figure 5.8-1, Field Noise Measurement Locations).

Table 5.8-3 provides the results of the noise measurement within the project site. Assuming that the noise measurement represents the hourly average noise level (which is valid for environmental noise sources that are steady or nearly steady), an approximate CNEL value can be calculated by adding 7 dBA to the hourly average noise level (Harris 1979). Table 5.8-3 provides a calculated existing CNEL level, based on the approach of employing the measured L_{eq} value as the hourly average noise level.

Table 5.8-3
Existing On-Site Noise Levels

Site ID	Description	Date/Time	L_{eq}	CNEL
M1	Village Four Ambient	7/06/15 9:50–10:10 a.m.	43.1 dBA	50 dBA



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FIGURE 5.8-1

Field Noise Measurement Locations

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Existing Roadway-Related Noise and Modeled Calibration Results

One noise measurement (M2) was conducted along La Media Road north of the project site see Figure 5.8-1). La Media Road would be one of the primary access routes to the project site, as described in Section 5.8.1.2, above. Table 5.8-4 provides a description of the M2 measurement location with respect to the roadway centerline, the observed traffic speed, measured noise level (as equivalent noise level, or L_{eq}), the concurrent traffic volume for each vehicle type (i.e., number of vehicles passing the measurement point during the measurement), and the corresponding TNM noise modeling result. As shown in Table 5.8-4, the difference between the measured and modeled traffic noise level for M2 was found to be 1 dBA, which is regarded in the state of the practice (i.e., generally accepted and used methodologies by noise control practitioners) as an acceptable degree of tolerance between measured and modeled (Caltrans 2009). No correction factors were applied to any of the subsequent traffic modeling results.

Table 5.8-4
Existing Measured Average Sound Levels Associated with Local Roadways Near Village Four and Validation Results

Site	Description	Date/ Time	Measured Leq[1]	Cars	MT[2]	HT[3]	Busses	MC[4]	Miles Per Hour[5]	Corresponding Model Calibration Result (Leq[1])	Difference (Measured –Modeled)
M2	Approximately 220 feet to center line of La Media Road	7/06/15 9:50–10:10 a.m.	54 dBA	85	0	0	0	0	45	53 dBA	1 dBA

1 Equivalent Continuous Sound Level (Time-Average Sound Level)
2 Medium Trucks (Includes busses)
3 Heavy Trucks
4 Motorcycle
5 Observed speed of traffic during noise measurement
Temperature 66°F, overcast sky, calm wind.

Traffic Noise Modeling

The existing CNEL along major roadways anticipated to affect future noise levels within/adjacent to the project site (i.e., La Media Road and Main Street) was determined based on the ambient noise measurements, using the current daily traffic volume pertinent to each road as identified in the Fehr & Peers traffic impact assessment (normalized for automobile [95%], medium and heavy truck [2% each][1], and motorcycle [1%] percentages) in the traffic noise prediction model (Fehr & Peers 2016). One representative model receiver location was selected for each of the modeled roadway segments (R1 through R3) along La Media Road from Olympic Parkway to Santa Luna Road. The existing CNEL modeled for each major roadway is presented in Table 5.8-5. The dBA

1 Includes busses.

values in Table 5.8-5 calculated for existing roadway traffic volumes are on a CNEL basis, and are, therefore, different than the dBA L_{eq} values measured for La Media Road in the field (as presented in Table 5.8-4). The measured L_{eq} values simply reflect actual traffic occurring during the short term measurement, which is used to calibrate the model. The noise level (CNEL) from existing traffic volume is then calculated using the calibrated model.

Table 5.8-5
Existing Community Noise Equivalent Level (CNEL) Associated with Local Roadways

Description of Roadway/ Noise Modeling Location	Traffic Analysis Period	Traffic Volume (Average Daily Trips)	Modeled Average Traffic Speed (miles per hour)	CNEL (dBA)
R1: La Media Road – Olympic Parkway to Santa Venetia Street, approximately 140 feet from center line	Existing Conditions	16,408	45	54
R2: La Media Road –Santa Venetia Street to Birch Road, approximately 140 feet from center line	Existing Conditions	11,515	45	54
R3: La Media Road –Birch Road to Santa Luna Street, approximately 125 feet from center line	Existing Conditions	2,072	45	48

Based on the modeled CNEL values presented in Table 5.8-5, La Media Road currently does not generate noise levels in excess of 65 dBA CNEL beyond the roadway rights-of-way.

5.8.2 Thresholds of Significance

Would the proposed project result in:

A. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

B. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

C. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

D. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

E. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

F. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

G. Be inconsistent with General Plan, GDP or other objectives and policies regarding noise thereby resulting in a significant physical impact?

5.8.3 Impacts

A. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

On-Site Traffic Noise Exposure – Major Roadways

As described in Section 5.8.1.2, Main Street, which would provide direct access to the project site, would be the predominant source of noise contributing to the future community noise level within the project site. Future traffic along Main Street represents the principle source for potential noise exposure levels that exceed adopted criterion for noise sensitive land uses within the project site.

To evaluate future on-site noise exposure levels from traffic along major roadways, the FHWA's TNM version 2.5 noise prediction model was run with worst-case traffic volumes as provided in the Village Four Traffic Impact Analysis (Appendix D). Dudek compiled roadway traffic volumes for each roadway segment reported in the traffic analysis, for the existing and Year 2030 scenarios, without and with the project.

Because of the size of the off-site traffic impact analysis area and the number of associated roadway segments, a preliminary screening analysis[2] was done to estimate the relative increase in traffic noise from the project. Using this preliminary screening analysis, it was found that with the exception of three segments of three segments of La Media Road in the existing-plus-project scenario and one segment of La Media Road in the future-plus-project scenario, none of the major roadway or freeway segments in the traffic impact analysis would have an estimated increase in noise levels of 1 dBA or more. Therefore the roadways modeled in detail using the TNM model were limited to those adjacent to the project site (Main Street) and La Media Road from Olympic Parkway to Main Street. Figure 5.8-2, Modeled Roadway Segments, shows the modeled roadway segments within the project site (Main Street) and off site (La Media Road).

[2] Using the following basic relation: Delta = $10*\text{Log}(V_2/V_1)$, where Delta is the change in noise level, V_2 is the "new" volume, and V_1 is the "prior" volume (Harris 1991).

The noise modeling used the current site plans and grading elevations available from the project designers; off-site modeling used elevations from Google Earth; and the traffic speeds were the posted speed limits (for existing roadways) or the presumed speed limits for future roadways based on roadway type (i.e., 45 miles per hour for the Main Street extension adjacent to and north of the project site). The assumed traffic mix for the arterials was 95% autos, 2% medium trucks (including busses), 2% heavy trucks and 1% motorcycles.

To evaluate noise exposure for future residential lots located within the project site in TNM, modeled receiver points representing noise receivers were placed in the yard area of selected parcels. In general, two receiver points (one at a height of 5 feet above the future, graded elevation and one at a height of 15 feet to approximate the noise level at the second-floor façade) were specified to represent blocks of approximately four to seven side-by-side single-family lots along the frontage of Main Street adjacent to the project site, and every 100 to 200 feet along the multi-family parcels. Upon completion of the model runs, the noise exposure levels were identified for each of the receiver points. Using this method, the on-site noise sensitive land uses were assessed to determine if adjacent traffic-related noise exposure would exceed the 65 dBA CNEL exterior noise criterion at on-site residences. Additionally, groupings of model receiver points were placed at 50-foot intervals[3] perpendicular to Main Street, in order to determine the distances beyond the front row that the 65 and 60 dB noise levels may[4] extend. The same methodology was used for the existing roadway segments modeled along La Media Road (off-site traffic noise exposure).

Multi-family residential land uses would be north (R-3) and south (R-2a and R-2b) of Main Street and single-family residential land uses (R-1) would be south of Main Street. Main Street in the project vicinity does not currently exist, but by 2030 it would be a major arterial forecast to carry up to 48,193 ADT (from Heritage Road to La Media Road) with the proposed project. Modeled noise levels for representative noise-sensitive receptors are summarized in Table 5.8-6. As shown, the first row of residences aligned closest to Main Street would be exposed to traffic noise levels ranging from 68 to 73 dBA CNEL from future traffic. All of the on-site modeled receivers along the first row would exceed the exterior noise criterion of 65 dBA CNEL; this would be a potentially significant impact. Mitigation for this **potentially significant impact** is provided as mitigation measure (**MM) N-1**, and involves construction of 6-foot high sound walls along the northern and southern frontage of Main Street, as shown in Figure 5.8-3, Approximate Soundwall Locations and Modeled Receiver Locations.

3 From 50 feet to 300 feet back from the site boundary fronting Main Street.

4 Because floor plans/building designs have not yet been developed for the project site, these calculations are considered preliminary.



AERIAL SOURCE: BING MAPPING SERVICE

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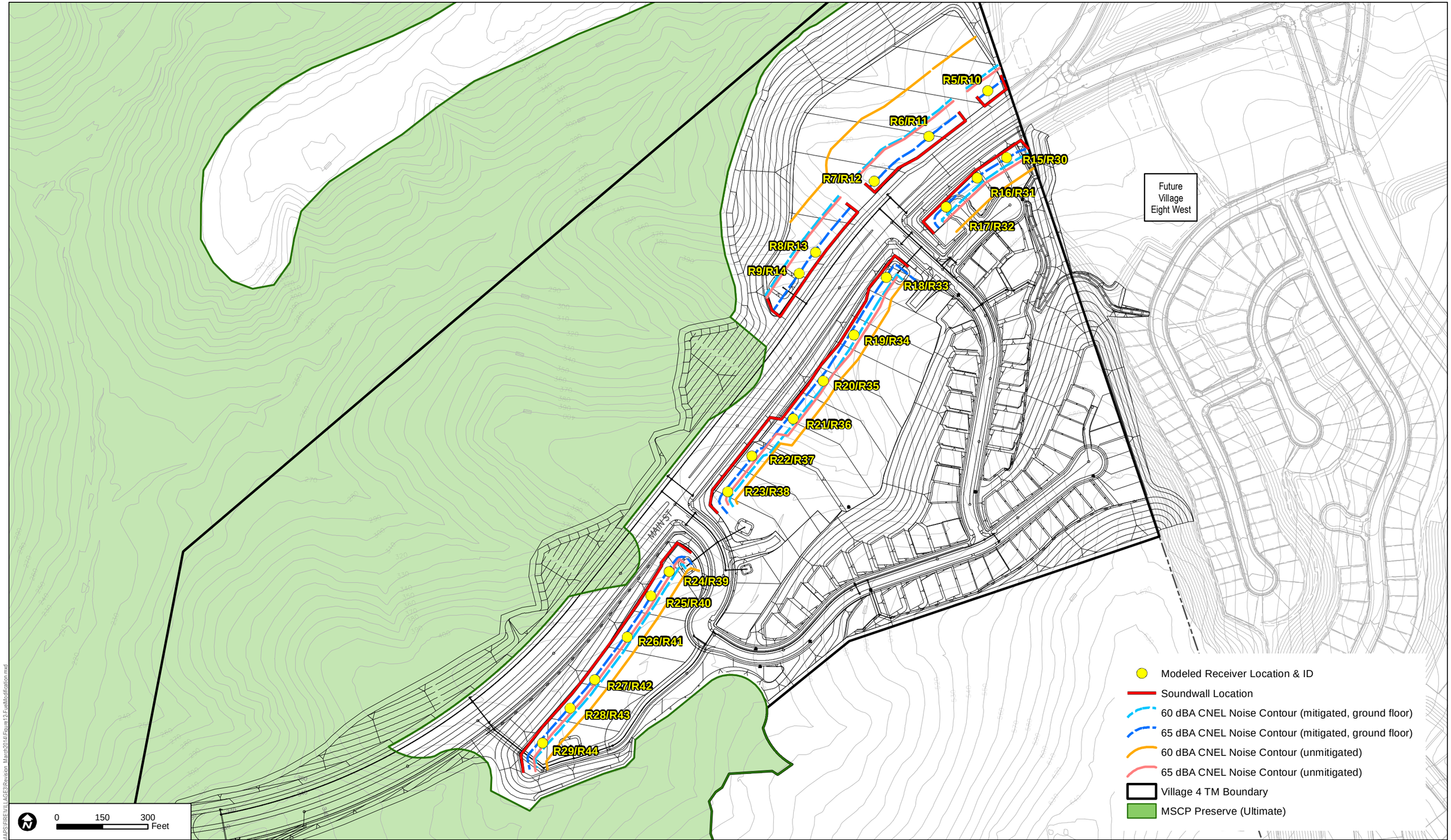
FIGURE 5.8-2

Modeled Roadway Segments

Otay Ranch Village Four SPA Plan Environmental Impact Report

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AERIAL SOURCE: BING MAPPING SERVICE

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FIGURE 5.8-3

Approximate Soundwall Locations & Modeled Receiver Locations

Otay Ranch Village Four SPA Plan Environmental Impact Report

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Table 5.8-6 presents the noise levels with the recommended sound walls. As shown, the resultant noise levels with sound walls would not exceed the 65 dBA CNEL noise standard at first-floor receivers.

Second-floor exterior uses such as usable balconies (if these are incorporated into the residential designs) fronting along Main Street would still exceed the City's 65 dBA CNEL noise standard. Therefore, a potentially significant impact related to second-floor exterior levels would occur. Mitigation for this **potential significant impact** is provided as **MM-N-2** and **MM-N-3**.

Additionally, interior noise levels at residences adjacent to Main Street would have the potential to exceed 45 dBA CNEL; therefore, a potentially significant impact related to interior noise levels would also occur. Mitigation for this **potentially significant impact** is provided as **MM-N-2** and **MM-N-3**.

Table 5.8-6
Traffic Noise Modeling Results (Year 2030) – Village Four

Receiver #	2030 with Project (CNEL)	Significant Impact?	2030 with Project with walls (6-foot height) (CNEL)	Significant Impact?
R5: Parcel R-3 N side	72	Yes	65	No
R6: Parcel R-3 N central	73	Yes	65	No
R7: Parcel R-3 central	72	Yes	65	No
R8: Parcel R-3 S central	72	Yes	64	No
R9: Parcel R-3 S side	73	Yes	64	No
R10: Parcel R-3 N side 2nd floor	72	Yes	72	Yes
R11: Parcel R-3 N central 2nd floor	73	Yes	73	Yes
R12: Parcel R-3 central 2nd floor	72	Yes	72	No
R13: Parcel R-3 S central 2nd floor	72	Yes	72	Yes
R14: Parcel R-3 S side 2nd floor	72	Yes	72	No
R15 Parcel R-1 Lot # 68	72	Yes	62	No
R16: Parcel R-1 Lot # 69	72	Yes	63	No
R17: Parcel R-1 Lot # 72	71	Yes	62	No
R18: Parcel R-2a N side	71	Yes	63	No
R19: Parcel R-2a N central	71	Yes	64	No
R20: Parcel R-2a central	70	Yes	60	No
R21: Parcel R-2a central 2	70	Yes	61	No
R22: Parcel R-2a S central	72	Yes	66	No
R23: Parcel R-2a S side	72	Yes	63	No
R24: Parcel R-2b N side	71	Yes	61	No
R25: Parcel R-2b N Central	70	Yes	62	No
R26: Parcel R-2b Central	70	Yes	61	No
R27: Parcel R-2b Central 2	69	Yes	61	No
R28: Parcel R-2b S Central	69	Yes	58	No

Table 5.8-6
Traffic Noise Modeling Results (Year 2030) – Village Four

Receiver #	2030 with Project (CNEL)	Significant Impact?	2030 with Project with walls (6-foot height) (CNEL)	Significant Impact?
R29: Parcel R-2b S	68	Yes	57	No
R30: Parcel R-1 Lot # 68 2nd floor	72	Yes	72	Yes
R31: Parcel R-1 Lot # 69 2nd floor	72	Yes	72	Yes
R32: Parcel R-1 Lot # 72 2nd floor	71	Yes	71	Yes
R33: Parcel R-2a N 2nd floor	71	Yes	71	Yes
R34: Parcel R-2a N central 2nd floor	70	Yes	70	Yes
R35: Parcel R-2a central 2nd floor	70	Yes	70	Yes
R36: Parcel R-2a central 2 2nd floor	70	Yes	70	Yes
R37: Parcel R-2a S central Parcel 23 2nd floor	72	Yes	72	Yes
R38: Parcel R-2a S 2nd floor	72	Yes	72	Yes
R39: Parcel R-2b N side 2nd floor	71	Yes	71	Yes
R40: Parcel R-2b N Central 2nd floor	70	Yes	70	Yes
R41: Parcel R-2b Central 2nd floor	70	Yes	70	Yes
R42: Parcel R-2b Central 2 2nd floor	69	Yes	69	Yes
R43: Parcel R-2b S Central 2nd floor	69	Yes	69	Yes
R44: Parcel R-2b S 2nd floor	68	Yes	68	Yes
R5: Parcel R-3 N side	72	Yes	65	No
R6: Parcel R-3 N central	73	Yes	65	No

Source: Appendix G

Noise modeling of receiver locations beyond the first row of residences (summarized in Table 5.8-7) indicates that at parcel R-3, ground-floor traffic noise levels would be at or below 65 dB CNEL within approximately 50 feet of the parcel boundary, and at or below 60 dB CNEL within approximately 100 feet of the parcel boundary. At parcels R-1, R-2a and R-2b, ground-floor traffic noise levels would be at or below or below 60 dB CNEL within approximately 50 feet of the parcel boundary. At parcel R-3, second-floor traffic noise levels would be at or below 65 dB CNEL within approximately 100 feet of the parcel boundary, and at or below 60 dB CNEL within approximately 200 to 250 feet of the parcel boundary. At parcel R-1, second-floor traffic noise levels would be at or below 65 dB CNEL within approximately 100 feet of the parcel boundary and at or below 60 dB CNEL within approximately 150 feet of the parcel boundary. At parcel R-2a, second-floor traffic noise levels would be at or below 60 dB CNEL within approximately 100 feet of the parcel boundary. At parcel R-2b, second-floor traffic noise levels would be at or below 65 dB CNEL within approximately 50 feet of the parcel boundary and at or below 60 dB CNEL within approximately 100 feet of the parcel boundary. Noise contours for the unmitigated and mitigated condition are shown in Figure 5.8-3.

Because the ultimate building configurations and designs for these land uses have not yet been determined, preliminary assumptions regarding building row shielding were made, and thus

these results are considered preliminary. However, based on these results, second-floor exterior uses such as usable balconies (if these are incorporated into the residential designs) with a direct view of Main Street may exceed the City's 65 dB CNEL noise standard beyond the first row of residences at the distances shown in Table 5.8-7. The specific portions of the parcels requiring subsequent analysis are specified in Table 5.8-8. Therefore, a potentially significant impact related to second-floor exterior levels would occur. Mitigation for this **potentially significant impact** is provided as **MM-N-2** and **MM-N-3**.

Also, interior noise levels at residences beyond the first row of residences adjacent to Main Street may exceed 45 dBA CNEL at the distances shown in Table 5.8-7; therefore, a potentially significant impact related to interior noise levels would also occur. Mitigation for this **potentially significant impact** is provided as **MM-N-2** and **MM-N-3**.

Table 5.8-7
Traffic Noise Modeling (Year 2030) Results for
Distances Beyond the Parcel Boundary Line

Receiver Location	Noise Level[5] at Specified Distance from Parcel Boundary (dB CNEL)					
	50'	*100'*	*150'*	*200'*	*250'*	*300'*
Parcel R-3 North side	63	58	57	59	54	54
Parcel R-3 North-Central	64	57	56	55	52	53
Parcel R-3 Central	63	59	57	52	53	52
Parcel R-3 South side	62	60	59	58	54	54
Parcel R-1 Single-family Lots	59	57	56	55	56	55
Parcel R-2a	58	55	53	47	50	51
Parcel R-2b N side	58	55	54	52	51	50
Parcel R-2b S side	55	51	50	46	47	45
Parcel R-3 North 2nd Floor	70	63	62	61	57	58
Parcel R-3 N Central 2nd Floor	70	63	61	60	58	58
Parcel R-3 Central 2nd Floor	70	63	62	56	58	57
Parcel R-3 S 2nd Floor	69	64	62	61	57	58
Parcel R-1 Single-family Lots 2nd Floor	67	61	59	58	60	60
Parcel R-2a 2nd Floor	66	59	57	54	54	55
Parcel R-2 B side 2nd Floor	65	59	57	54	54	54
Parcel R-2b S side 2nd Floor	62	53	52	48	50	50

Bold = 65 dBA CNEL or less
60 dBA CNEL or less

5 Noise levels with soundwalls as specified

Table 5.8-8
Parcels Requiring Subsequent Noise Analysis

Receiver Location	Ground-Floor Level	2nd-Floor Level
Parcel R-3	Within 100' of parcel boundary line[1]	Within 250 ' of parcel boundary line[1]
Parcel R-1	Within 50 ' of parcel boundary line[1]	Within 150' of parcel boundary line[1]
Parcel R-2a	Within 50 ' of parcel boundary line[1]	Within 100' of parcel boundary line[1]
Parcel R-2b	Within 50 ' of parcel boundary line[1]	Within 100' of parcel boundary line[1]

[1] Parcel boundary line adjacent to Main Street.

Impacts from Operation of Off-Site Facilities

The Otay Valley Rock Quarry is located south of the project site, approximately 1,000 feet from the nearest planned residential portion of the project site. According to the EIR prepared for the proposed quarry reclamation plan amendment, daytime average noise levels along the perimeter of the quarry range from approximately 45 dBA to 55 dBA (City of Chula Vista 2011). Operation of the quarry may be audible but is not particularly prominent on the project site, as demonstrated by the ambient noise measurements taken at the site. Intermittent noise from particularly loud operations, such as blasting, may be occasionally audible on the project site. Due to the temporary and periodic nature of noise from the quarry operations, it is determined there would be **less than significant** impacts to development in the project site.

B. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

Project-related construction activities have the potential to create groundborne vibration. Construction activities can result in varying degrees of ground vibration, depending on the equipment and methods employed. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings founded on the soil in the vicinity of the construction site respond to these vibrations, with varying results ranging from no perceptible effects at the lowest levels, perceptible vibrations at moderate levels, and slight damage at the highest levels (FTA 2006). There are no businesses or institutions with highly sensitive equipment (such as hospitals, laboratories or printing presses) in the vicinity of the project. The nearest such institution would be the Sharp Chula Vista Medical Center, located approximately 2.5 miles from the project site. At 2.5 miles from the nearest construction activity, the facility would be located outside of the vibration screening distances for major construction activity (200 feet) and pile driving (600 feet). Therefore construction activity would not affect any off-site vibration-sensitive land use and impacts related to groundborne vibration during construction at off-site land uses would not be substantial.

Vibrations from smaller, rubber-tired trucks and other equipment would typically not result in perceptible or damage-inducing vibration levels beyond a distance of approximately 45 feet.[6]The highest vibration levels during construction typically occur during pile-driving, blasting or demolition activities. Neither pile driving, blasting or demolition activities are anticipated as part of this project although blasting of native rock and the crushing of that rock may be necessary.

It should be noted that ground vibrations from construction activities do not often reach the levels that can damage structures or affect activities that are not vibration-sensitive, although the vibrations may be felt by nearby persons in proximity and result in annoyance (FTA 2006). Additionally, the proposed project would consist of new buildings constructed in accordance with all building codes and would not be susceptible to vibration damage. Vibration impacts would be temporary and would cease following construction. Thus, the potential for on-site impacts from vibration is **less than significant**.

Blasting and Rock Crushing

The locations of the rock blasting and rock crushing, if any, have not yet been determined; however if blasting and rock crushing occur, they would take place during the early phases of the project, when the site would be unoccupied. Based on information from the applicant's engineering contractors, it is estimated that up to 60 blasting events, at a rate of 2 per week over a 30-week period, could take place. The following information is provided in the event that blasting is necessary for project implementation.

Rock blasting is typically done as a single event to break up rock material, which can then be processed. The duration is very brief (fractions of a second) for a blasting event, and typically only one blast occurs per day. The City of Chula Vista does not have a threshold for this type of temporary, impulsive and intermittent construction-related noise. The U.S. Bureau of Mines Report of Investigations 8485 recommends a maximum safe overpressure of 0.013 pound per square inch (133 dB peak) for impulsive airblast (Appendix G). Typical rock blasting operations generate approximately 119–123 dB at 600 feet (Appendix G). Given that the project site is within approximately 2,000 feet of planned residential uses in Village Three which are currently under construction, this would result in a potential peak noise level of approximately 109-113 dB Peak. A peak noise level of this magnitude would fall within the range (90–120 dB Peak) of strongly perceptible to mildly unpleasant, and would be well below the threshold of damage to physical property. Although this would not exceed any City thresholds, blasting, if determined to be necessary, is considered to have a **potentially significant impact**.

[6] Assumes vibration levels from a loaded truck (86 VdB at reference distance of 25 feet). Resulting vibration level at a distance of 45 feet would be approximately 78 VdB, which is below the FTA criteria for Type 2 (residential) land uses of 80 VdB for infrequent events (FTA 2006).

In addition, another planned residential development (Village Eight West) is adjacent to the eastern boundary of the project site. The phasing of Village Eight West relative to the proposed project (Village Four) is not known at this time; however, if Village Eight West is occupied prior to or during blasting activities at Village Four, significant impacts could occur. To avoid **potentially significant impacts**, mitigation measures **MM-N-4 and MM-N-5** is provided.

The project applicant is also required to retain a qualified blasting specialist to develop a site specific blasting program report to assess, control, and monitor ground vibration from blasting, for any residences located within 1,000 feet of the mining operation. The applicant is required to provide public notification of the blasting schedule for residents within 1,000 feet of blasting. The applicant will give a monthly blasting schedule in writing to residences within 1,000 feet of potential blast locations. The notice will disclose the anticipated blasting schedule and provide a contact phone number for the blasting contractor. Unscheduled changes to the blasting schedule will require the blasting schedule to be reissued no less than 24 hours prior to the blasting. Therefore, groundborne vibration impacts would be **less than significant**.

On-site rock crushing may be associated with the blasting activities. Approximately 406,500 cubic yards of rock material would be crushed over an estimated time span of 163 working days[7]. Similarly to blasting, it is not known at this stage of the project if rock-crushing will be necessary or if so, the location within the project site of such activity. Typically, rock-crushing operation would begin with a front-end loader picking up material and dumping the material into a primary crusher. The material would then be crushed, screened, and stacked in product piles. The material would be stockpiled adjacent to the rock-crushing equipment. All material will be used on site. Electric power would most likely be provided by a diesel engine generator. Based on noise measurements that have been conducted for portable rock crushing operations, the rock crushing activity would generate a one-hour average noise level of approximately 80 dB at a distance of 100 feet from the primary crusher. The primary crusher would also generate impulsive noise events. Maximum noise levels associated with the primary crusher could reach approximately 88 dB at 100 feet. Although the overall noise levels are not substantially different from those of other heavy construction equipment, the character of rock-crushing noise is more impulsive and thus could be more annoying to nearby noise-sensitive land uses. Additionally, rock-crushing installations remain in-place for long periods of time and can run for long periods throughout a work-day. Therefore, whenever possible they should not be located in proximity of residences or other noise-sensitive land uses. At a distance of 600 feet, the average noise level from a typical rock crushing operation would be reduced to below 65 dBA L_{eq}.

As discussed previously, the phasing of the adjacent Village Eight West relative to the proposed project (Village Four) is not known at this time; however, if Village Eight West is occupied prior

7 Based upon the assumption of a daily rock-crushing rate of 2,500 cubic yards per day.

to or during rock crushing activity within Village Four, **potentially significant impacts** could occur. To avoid potentially significant impacts, mitigation measure **MM-N-5** is provided.

C. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

Significant impacts from project-related traffic noise could result at existing and planned future noise-sensitive land uses in the project vicinity. Additionally, significant traffic noise impacts could occur at the on-site noise-sensitive land uses which would be constructed as a result of the proposed project. To evaluate future off-site and on-site noise exposure levels from traffic along major roadways, the FHWA's TNM version 2.5 noise prediction model was run with worst-case traffic volumes as provided in the Village Four Traffic Impact Analysis (Appendix D). Dudek compiled roadway traffic volumes for each roadway segment reported in the traffic analysis, for the existing and Year 2030 scenarios, without and with the Project. The tables in Appendix G provide the volume comparison for all roadway segments for these analysis years.

Because of the size of the traffic impact analysis area (as listed in Appendix G) and the number of associated roadway segments, a preliminary screening analysis[8] was done to estimate the relative increase in traffic noise from the project. Using this preliminary screening analysis, it was found that with the exception of three segments of La Media Road in the Existing plus Project scenario and one segment of La Media Road in the Future plus Project scenario, none of the major roadway or freeway segments in the traffic impact analysis would have an estimated increase in noise levels of one dB or more. Therefore the roadways modeled in detail using the TNM model were limited to those adjacent to the Village Four project site (Main Street) for on-site noise impacts analysis and La Media Road from Olympic Parkway to Main Street for off-site noise impacts analysis. Figure 5.8-4 shows the modeled roadway segments within Village Four (Main Street) as well as off-site (La Media Road).

Noise effects of the project would, for the most part, be confined to the project site and are evaluated on a project-specific basis. Long-term on-site activities associated with the project would not have a regional effect on community noise levels, and therefore need not be considered in combination with approved or proposed projects in the region. The one exception is the project's contribution to traffic-related noise levels, which extend beyond the site boundaries, and which must be considered in the context of proposed projects in the region.

La Media Road is located to the northeast of Village Four. Currently La Media Road terminates at Santa Luna Street, but by Year 2030 it would extend southward to Main Street. La Media Road is a major arterial forecast to carry up to 33,900 ADT (from Santa Venetia Street to Birch

[8] Using the following basic relation: Delta = $10*\text{Log}(V_2/V_1)$, where Delta is the change in noise level, V_2 is the "new" volume, and V_1 is the "prior" volume. Ref: Harris, 1991

Road) in 2030. Modeled noise levels for representative noise-sensitive receptors for the existing and existing plus project scenarios are summarized in Table 5.8-9. As shown, the first row of homes aligned closest to La Media Road (all of which have and were modeled with minimum 6-foot high masonry walls) would be exposed to noise levels ranging to 55 dB CNEL in the Existing plus Project scenario. The noise levels associated with Existing plus Project La Media Road traffic volumes would not exceed the exterior noise criterion of 65 dB CNEL, and is considered a **less than significant impact**.

Table 5.8-9
Project Contribution to Off-Site Traffic Noise – Existing Plus Project
(Off-Site Traffic Noise Level Increase)

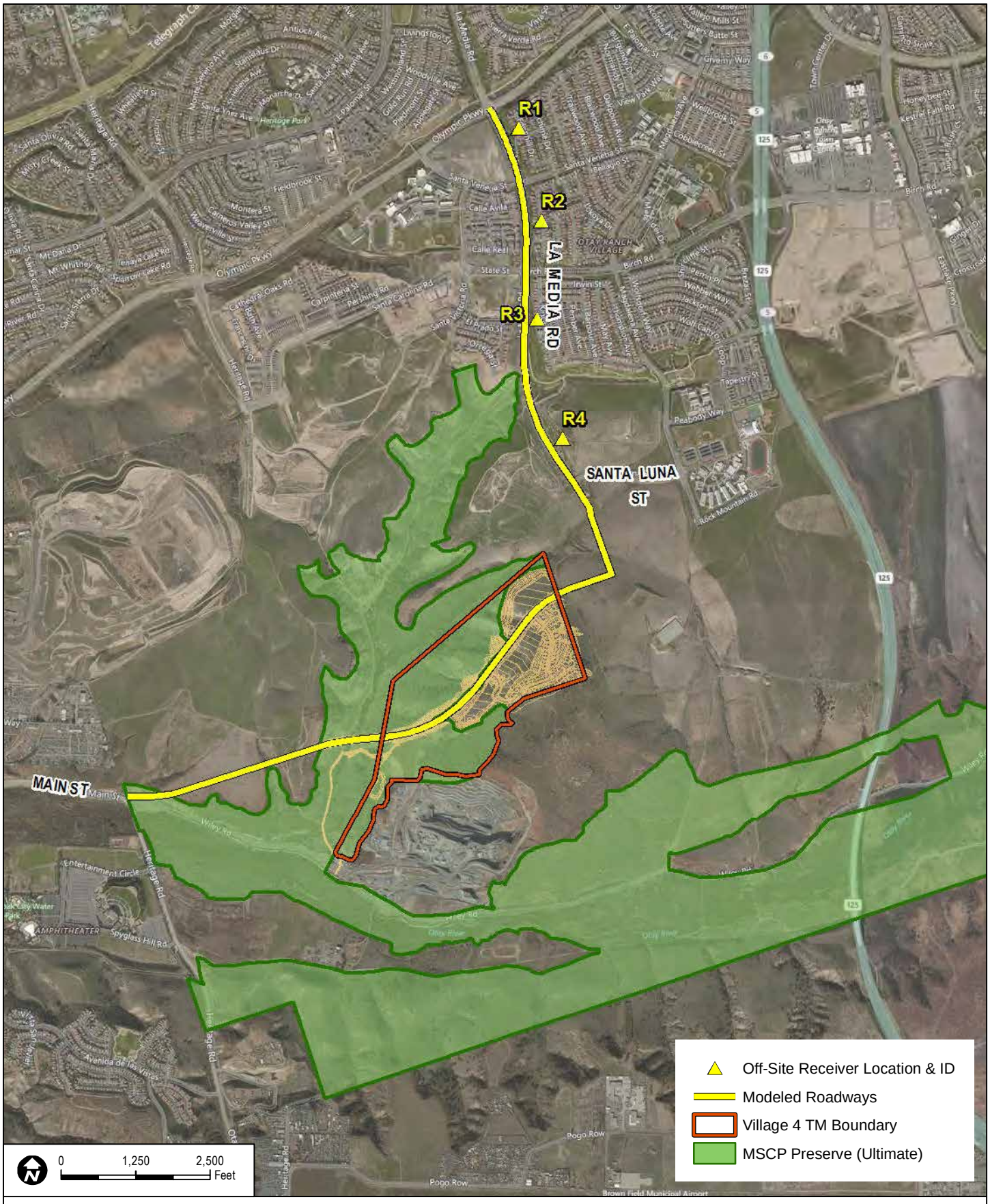
Roadway (segment)	Rcvr #	CNEL (dB)		
		Existing	*Existing + Project*	*dB Change*
La Media Road Olympic Parkway to Santa Venetia Street	R1	54	55	1
La Media Road Santa Venetia Street to Birch Road	R2	54	55	1
La Media Road Birch Road to Santa Luna Street	R3	48	53	5

The project's contribution to cumulatively significant noise impacts is presented in Table 5.8-10. The methodology again uses the TNM model to compare the resulting noise levels from Year 2030 with and without project traffic volumes.

Table 5.8-10
Project Contribution to Off-Site Traffic Noise – Year 2030
(Off-Site Traffic Noise Level Increase)

Roadway (segment)	Rcvr #	CNEL (dBA)		
		Year 2030	*Year 2030 + Project*	*dBA Change*
La Media Road Olympic Parkway to Santa Venetia Street	R1	57	58	1
La Media Road Santa Venetia Street to Birch Road	R2	59	59	0
La Media Road Birch Road to Santa Luna Street	R3	58	58	0
La Media Road Birch Road to Main Street	R4	57	58	1

As seen in Table 5.8-10, the project's contribution to cumulative noise levels would be limited; a 1 dBA increase at most, which by itself is not a discernible increase. Additionally as shown in Table 5.8-10, the proposed project would not result in any modeled receivers to exceed the City's 65 dBA CNEL noise standard for residential land uses. Therefore, the project's contribution to increased noise levels is not considered substantial, and impacts would **be less than significant**.



AERIAL SOURCE: BING MAPPING SERVICE

FIGURE 5.8-4

DUDEK

Modeled Roadway Segments and Off-Site Receiver Locations

Otay Ranch Village Four SPA Plan Environmental Impact Report

Document Path: Z:\Projects\j819001\MAPDOC\MAPS\EIR Figs\Section 5\5-8 Noise\Fig 5-8-4 Modeled Rd Segments+Off Receivers.mxd

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D. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Because the development of the project would be a multi-year endeavor, portions of the development would be completed and occupied during the construction of subsequent portions (phases). Therefore, the occupied project phases have the potential to be impacted by noise from on-going construction activities. Additionally, construction of the proposed project, which is adjacent to other planned communities that may be constructed first (such as Village Eight West, located to the east of the project site), has the potential to result in short-term noise impacts at adjacent noise-sensitive land uses.

Noise from construction activity is generated by the broad array of powered, noise-producing mechanical equipment used in the construction process. This equipment ranges from hand-held pneumatic tools to bulldozers, dump trucks, and front loaders. The exact complement of noise-producing equipment that would be in use during any particular period has not yet been determined. Noisy construction activities could be in progress on more than one part of the project site at a given time. However, the noise levels from construction activity during various phases of a typical construction project have been evaluated, and their use provides an acceptable prediction of a project's potential noise impacts.

To assess the potential noise effects of construction, this noise analysis used data from an extensive field study of various types of industrial and commercial construction projects (EPA 1971). Noise levels associated with various construction phases where all pertinent equipment is present and operating, at a reference distance of 50 feet, are shown in Table 5.8-11. Because of vehicle technology improvements and stricter noise regulations since the field study was published, this analysis uses the average noise levels shown in Table 5.8-11 for the loudest construction phase. This information indicates that the overall average noise level generated on a construction site could be 89 dBA at a distance of 50 feet during excavation and finishing phases. The noise levels presented are value ranges; the magnitude of construction noise emission typically varies over time because construction activity is intermittent and the power demands on construction equipment (and the resulting noise output).

Table 5.8-11
Typical Noise Levels from Construction Activities for Large Construction Projects

Construction Activity	Average Sound Level at 50 Feet (dBA L_{eq})	Standard Deviation (dBA)
Ground Clearing	84	7
Excavation	89	6
Foundations	78	3
Erection	87	6
Finishing	89	7

Source: EPA 1971

Noise levels generated by construction equipment (or by any point source) decrease at a rate of approximately 6 dBA per doubling of distance from the source (Harris 1979). Therefore, if a particular construction activity generated average noise levels of 89 dBA at 50 feet, the L_{eq} would be 83 dBA at 100 feet, 77 dBA at 200 feet, 71 dBA at 400 feet, and so on. This calculated reduction in noise level is based on the loss of energy resulting from the geometric spreading of the sound wave as it leaves the source and travels outward. Intervening structures that block the line of sight, such as buildings, would further decrease the resultant noise level by a minimum of 5 dBA. The effects of molecular air absorption and anomalous excess attenuation would reduce the noise level from construction activities at more distant locations at the rates of 0.7 dBA and 1.0 dBA per 1,000 feet, respectively.

With respect to the potential for construction of the project or phases to have nuisance noise impacts upon completed and occupied components within the project site, a worst-case scenario would be a completed "block" or "neighborhood" separated only by an internal public roadway from another block that is under construction. The narrowest roadway proposed within the project site has a right-of-way of 58 feet. Construction noise is attenuated by approximately 6 dBA for every doubling of distance. Thus, assuming no shielding from intervening barriers or buildings, the maximum noise levels would be approximately 88 dBA at the residential property lines situated across a 58-foot roadway right-of-way from active construction. This noise level could intermittently occur for a few days when construction equipment is operating immediately adjacent to the opposite side of the roadway right-of-way from occupied homes. The remainder of the time the construction noise level would be less because the equipment would be operating in a large area farther away from the existing residences. When the construction equipment is operating, the existing residences could be disturbed by the activities.

The generation of noise from construction activities during noise-sensitive time periods upon completed and occupied components of the project is considered a significant impact. Additionally, construction noise could affect existing off-site noise-sensitive land uses. The nearest potential off-site noise-sensitive land uses relative to the project site would be Village Eight West (if constructed before the proposed project), located adjacent to the project site boundary. As such, project-generated construction noise would pose a potentially significant impact on noise-sensitive receptors if construction hour limitations are not imposed. However, with adherence to a restricted construction schedule dictating project-related site preparation and construction activities limited to between 7 a.m. and 6 p.m., Monday–Friday, and between 8 a.m. and 6 p.m. Saturday, significant construction-related noise impacts could be avoided. **MM-N-6** is provided to address the **potentially significant** temporary noise impacts as a result of the proposed project. Impacts would be reduced to less than significant. Additionally, as discussed above, impacts from blasting and rock crushing associated with project construction would be mitigated to less than significant with incorporation of mitigation measures **MM-N-4** and **MM-N-5**.

E. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

Brown Field Airport is located along the north side of Otay Mesa Road, approximately 1.5 miles south of the project site. The runways are oriented in an east/west direction. The project site is subject to overflights of planes and helicopters taking off from Brown Field, which are audible on the project site and would be audible in the future. Overflights from Brown Field may be considered a nuisance to residents. In accordance with Standard Condition 46 in Section 5-300 of the City's Subdivision Manual, applicants are required to record an Airport Overflight Agreement against the property to the satisfaction of the Director of Development Services prior to recordation of any Final Map (City of Chula Vista 2012). This condition would run with the property, and as such, potential nuisance noise from aircraft overflights would be disclosed to future residents.

The San Diego County Airport Land Use Commission adopted an Airport Land Use Compatibility Plan for Brown Field in 2010 (SDCRAA 2010). The graphics in the 2010 Airport Land Use Compatibility Plan indicate that the project site (i.e., the residential uses of Village Four) is north and outside of the 60 and 65 dBA CNEL noise contours for Brown Field (see Figure 5.8-5, Brown Field Airport Influence Area). According to existing data for Brown Field, the project site would not be exposed to noise levels from aircraft operations that exceed 60–65 dBA CNEL. In that 65 dBA CNEL is an acceptable exterior noise exposure level for all of the land uses proposed within the project site, airport noise exposure levels would remain below significant levels. Therefore, impacts would be **less than significant** and no mitigation is required to address airport noise exposure.

F. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.

There are no private airstrips identified in the surrounding area of the project site. Therefore, impacts would be **less than significant**.

G. Be inconsistent with General Plan, GDP or other objectives and policies regarding noise thereby resulting in a significant physical impact.

The proposed project would promote the policies and goals of the City's General Plan, including minimizing noise impacts from adjacent land uses such as schools and residences; mitigation of interior noise levels; promotion of available noise attenuation technologies; implementation and enforcement of the City's noise ordinance; minimizing traffic noise through redistribution of traffic volume and calming measures; promotion of a quiet community; and ensuring that

residents are not adversely affected by noise. The following noise objectives outlined in the General Plan are applicable to the proposed project (City of Chula Vista 2005):

- **Objective E 21:** Protect people from excessive noise through careful land use planning and the incorporation of appropriate mitigation techniques.
- **Objective E 22:** Protect the community from the effects of transportation noise.

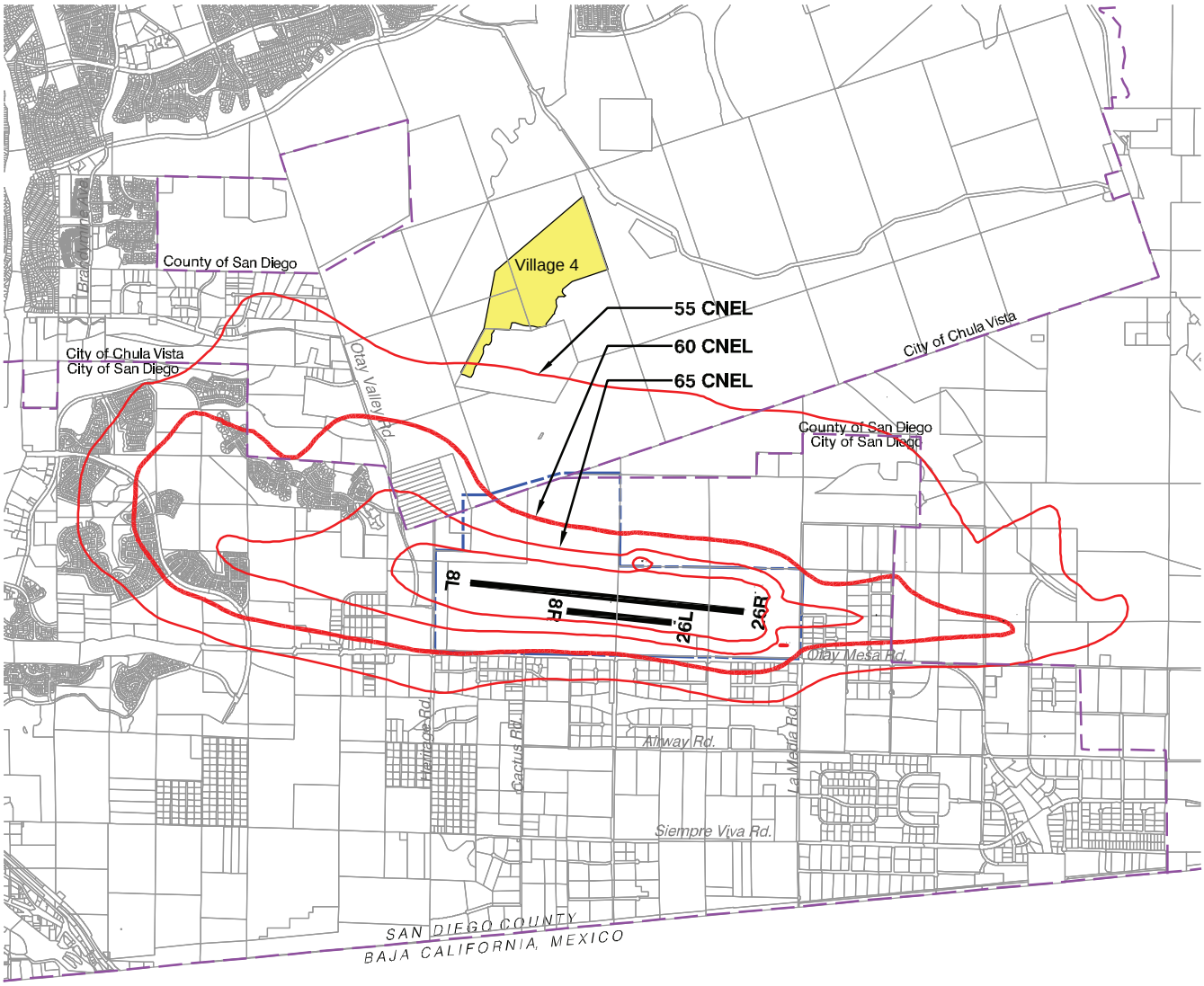
A site-specific noise assessment was conducted for the proposed project prepared by Dudek (Appendix G), and mitigation is provided in the technical report that would reduce noise impacts to land uses within the project site. All project development proposed under the project would be built and designed according to the City of Chula Vista General Plan noise compatibility guidelines and noise regulations outlined in the City's Municipal Code. The proposed project's internal roadway network would be designed to minimize noise impacts from major roadways and site design would include mitigation to reduce noise impacts generated by mobile sources along roadways. Internal roadways would be designed to encourage slower traffic through posted speed limit signs, traffic calming measures such as corner sidewalk bulb outs, allowing bicycles to share the road right-of-way, and encourage pedestrian and bicycle modes of transportation. Therefore, the proposed project would not conflict with the General Plan and impacts would be **less than significant**.

Otay Ranch GDP

The purpose of the goals related to noise outlined in the Otay Ranch GDP is to direct the identification of conditions under which noise occurs and provide general guidelines to protect Otay Ranch residents from the adverse effects of unwanted sound. Policy directions are provided to simultaneously control noise at its source, along its transmission path, and at the receiver site. The following noise goals outlined in the Otay Ranch GDP are applicable to the proposed project (City of Chula Vista and County of San Diego 1993):

- **Goal:** Promote a quiet community where residents live without noise that is detrimental to health and enjoyment of property.
- **Goal:** Ensure residents are not adversely affected by noise.
- **Objective:** Otay Ranch shall have a noise abatement program to enforce regulations to control noise.

Noise-abating features, such as masonry walls and dual-glazed windows, would be provided as needed, as described within this section and the noise assessment prepared for the proposed project (Appendix G). City standards for noise regulation and abatement would be enforced throughout the project. Therefore, the proposed project would not conflict with the Otay Ranch GDP and impacts would be **less than significant**.



Legend

- Noise Contours
- Airport Property
- City Limits

Existing (2004)	
Annual Operations	109,000
Average Annual Day	299

Prepared by Mead & Hunt, Inc. (November 2004)
Sources:

- *Noise Contours - Harris Miller Miller & Hanson, Inc. (October 2004).*
- *Parcel Base Map - San Diego Association of Governments (SANDAG), 2004.*
- *Portions of this DERIVED PRODUCT contain geographic information copyrighted by SanGIS. All Rights Reserved.*

Noise Impacts — Existing
Brown Field Municipal Airport

N

5,000'

0 FEET 10,000'

1" = 5,000'

SOURCE: *San Diego County ALUCP—Public-Use Airports Background Data (March 2005 Draft)*

DUDEK

FIGURE 5.8-5
Brown Field Airport Influence Area

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5.8.4 Level of Significance Prior to Mitigation

On-site modeled receivers would exceed the exterior noise criterion of 65 dBA CNEL; this is a potentially significant impact. Mitigation for this **potentially significant impact** is provided as **MM-N-1.**

Second-floor exterior uses such as usable balconies (if these are incorporated into the residential designs) fronting along Main Street would exceed the City's 65 dBA CNEL noise standard. Therefore, a **potentially significant impact** related to second-floor exterior levels would occur. Mitigation for this potential significant impact is provided as **MM-N-2** and **MM-N-3.**

Interior noise levels at residences adjacent to Main Street would have the potential to exceed 45 dBA CNEL; therefore, a potentially significant impact related to interior noise levels would also occur. Mitigation for this **potentially significant impact** is provided as **MM-N-2** and **MM-N-3**.

Project construction may require blasting and rock crushing. Mitigation for this **potentially significant impact** is provided as **MM-N-4** and **MM-N-5.**

Project-generated construction noise would pose a potentially significant impact on noise-sensitive receptors if construction hour limitations are not imposed. Mitigation for this **potentially significant impact** is provided as **MM-N-6**.

5.8.5 Mitigation Measures

The following mitigation measures are recommended to address the identified potentially significant noise impacts.

MM-N-1 Prior to the approval of grading permits for residential development adjacent to Main Street, the project applicant or its designee shall be responsible for the preparation of a subsequent acoustical study based on the final map design and implementation of any measures recommended as a result of the analysis to the satisfaction of the Development Services Director (or their designee). The study shall include the following:

1. Location, height, and building material of the noise barriers in accordance with Figure 6 (Approximate Sound Wall Locations), contained in the Noise Assessment Technical Report for the Otay Ranch Village Four Project (Appendix G to the EIR). The sound wall noise barriers shall be a minimum of 6 feet in height, must have a surface density of at least 4 pounds per square foot, and be free of openings and cracks. The wall may be constructed of acrylic glass, masonry material, earthen berm, or a combination of these materials.

Heights are provided relative to final pad elevation. Required heights may be achieved through construction of walls, berms or a wall/berm combination.

2. A detailed analysis that demonstrates that barriers and/or setbacks have been incorporated into the project design, such that noise exposure to residential receivers placed in all useable outdoor areas, including multi-family residential patios and balconies, are at or below 65 dBA CNEL.

3. Should pad grade elevations, lot configuration/site design, and/or traffic assumptions change during the processing of any final maps, the barriers shall be refined to reflect those modifications.

MM-N-2 Site-Specific Acoustic Analysis – Single-Family Residences. Concurrent with design review and prior to the approval of building permits for single-family residential development where the exterior noise level exceeds 60 dBA CNEL and/or where usable outdoor area (patios or balconies) noise levels exceed 65 dBA CNEL (as shown on Figure 5.8-3 of the EIR), the applicant shall prepare an acoustical analysis ensuring that interior noise levels due to exterior noise sources are at or below 45 dBA CNEL and the City of Chula Vista's Exterior Land Use/Noise Compatibility Guidelines for outdoor use areas (i.e., 65 dBA CNEL) are met. Design-level architectural plans shall be used to calculate the exterior-to-interior transmissions loss for habitable rooms. Contingent on the results of the interior acoustical analysis, units may need to include an air conditioning system to provide a habitable interior environment with the windows closed while meeting the interior standard of 45 dBA CNEL. The acoustical analysis shall be prepared to the satisfaction of the Director of Development Services (or their designee), and all required noise control measures identified in the acoustical analysis shall be made conditions of building permit issuance.

MM-N-3 Site-Specific Acoustic Analysis – Multi-Family Residences. Concurrent with design review and prior to the approval of building permits for multi-family areas where first and/or second floor exterior noise levels exceed 60 dBA CNEL and/or where usable outdoor area (patios or balconies) noise levels exceed 65 dBA CNEL (as shown on Figure 5.8-3 of the EIR), the applicant shall prepare an acoustical analysis demonstrating compliance with California's Title 24 Interior Noise Standards (i.e., 45 dBA CNEL) and the City of Chula Vista's Exterior Land Use/Noise Compatibility Guidelines for outdoor use areas (i.e., 65 dBA CNEL). Design-level architectural plans shall be available during design review and will permit the accurate calculation of transmissions loss for habitable rooms. For these areas, it may be necessary for the windows to be able to remain closed to ensure that interior noise levels meet the interior standard of 45 dBA CNEL.

Consequently, the design for buildings in these areas may need to include a ventilation or air conditioning system to provide a habitable interior environment with the windows closed based on the result on the interior acoustical analysis.

MM-N-4 Prior to the issuance of a grading permit, a blasting plan shall be required in the event that blasting is proposed in Village Four. The project applicant or its designee shall prepare a blasting plan to ensure that exterior noise levels and vibrations at noise sensitive land uses are in compliance with the City of Chula Vista General Plan Exterior Land Use / Noise Compatibility Guidelines and the City's Noise Ordinance Exterior Noise Limits. The plan shall be prepared by a licensed blasting engineer and identify when such blasting events would occur, the approximate amount of explosives to be used (which amount shall be limited to the extent practicable so as to minimize resulting noise), and the location and proximity of the blasting event relative to sensitive receptors. If deemed beneficial for noise reduction purposes, the plan shall include a requirement that blasting mats be used. The blasting plan shall also detail the surrounding zone in which noise-sensitive land uses would be notified of planned blasting activities, and of the nature of audible warning signals to be used just prior to blasting. The blasting plan shall be prepared to the satisfaction of the Development Services Director (or their designee), and all noise control measures identified in the blasting plan shall be made conditions of grading permit issuance.

MM-N-5 The project applicant, or its designee, shall ensure that on-site rock crusher facilities are located a minimum of 600 feet from the property line of occupied residences or other noises-sensitive uses.

MM-N-6 All project-related site preparation and construction activities shall be limited to the hours between 7 a.m.–6 p.m., Monday–Friday, and between 8 a.m.–6 p.m. Saturday. No construction activities shall occur on federal holidays (e.g., Thanksgiving, July 4th, Labor Day). All maintenance of construction equipment shall be limited to the same hours. This language shall be added to the project grading plans. Non-noise-generating construction activities such as interior painting are not subject to these restrictions.

5.8.6 Level of Significance After Mitigation

The mitigation measures listed in Section 5.8.5 above would reduce potential noise impacts to a **less than significant** level.

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5.9 WATER QUALITY AND HYDROLOGY

This section describes the hydrologic setting within the proposed Otay Ranch Village Four Sectional Planning Area (SPA) Plan Project (project) site, and evaluates the potential for changes in drainage, runoff, and water quality resulting from implementation of the proposed project. The discussion in this section is based on the Drainage Study and Stormwater Quality Management Plan for Village Four that were prepared by Hunsaker and Associates, and the Preliminary Geotechnical Investigation prepared by Geocon Inc. The complete reports are contained in Appendices H1, H2, and I of this EIR.

5.9.1 Existing Conditions

5.9.1.1 Regulatory Framework

Federal Level

Clean Water Act

The U.S. Environmental Protection Agency (EPA) regulates water quality under the Clean Water Act (also known as the Federal Water Pollution Control Act). Enacted in 1972 and significantly amended in subsequent years, the Clean Water Act is designed to restore and maintain the chemical, physical, and biological integrity of waters of the United States. The Clean Water Act provides the legal framework for several water quality regulations, including the National Pollutant Discharge Elimination System (NPDES). The NPDES program characterizes receiving water, identifies harmful constituents, targets potential sources of pollutants and implements a comprehensive stormwater management program. Construction and industrial activities are typically regulated under statewide general permits that are issued by the State Water Resources Control Board (SWRCB). The Regional Water Quality Control Board (RWQCB) also issues waste discharge requirements that serve as NPDES permits under the authority delegated to the RWQCBs under the Clean Water Act.

The Clean Water Act requires NPDES permits for the discharge of pollutants to waters of the United States from any point source. In 1987, the Clean Water Act was amended to require that the EPA establish regulations for permitting of municipal and industrial stormwater discharges under the NPDES permit program. In November 1990, under Phase I of the urban runoff management strategy, the EPA published NPDES permit applicant requirements for municipal, industrial and construction stormwater discharges. These requirements are implemented through permits issued by the SWRCB or the local RWQCB in which the project is located (California RWQCB San Diego Region, herein San Diego RWQCB) and/or the governing municipality where the project is located (City of Chula Vista).

The EPA delegated its responsibility for administration of portions of the Clean Water Act to state and regional agencies. The Clean Water Act requires states to adopt water quality standards for receiving water bodies and to have those standards approved by the EPA. Water quality standards consist of designated beneficial uses for a particular receiving water body (e.g., wildlife habitat, agricultural supply, fishing), along with water quality criteria necessary to support those uses. Water quality criteria are prescribed concentrations or levels of constituents, such as lead, suspended sediment, and fecal coliform bacteria, or narrative statements that represent the quality of water that supports a particular use.

National and State Safe Drinking Water Acts

The federal Safe Drinking Water Act, established in 1974, is administered by the EPA and sets drinking water standards throughout the country. The drinking water standards established in the act, as set forth in the Code of Federal Regulations (CFR), are referred to as the National Primary Drinking Water Regulations (Primary Standards; 40 CFR 141), and the National Secondary Drinking Water Regulations (Secondary Standards; 40 CFR 143). According to the EPA, the Primary Standards are legally enforceable standards that apply to public water systems. The Secondary Standards are non-enforceable guidelines regulating contaminants that may cause cosmetic or aesthetic effects in drinking water. The EPA recommends the Secondary Standards for water systems but does not require systems to comply. California passed its own Safe Drinking Water Act in 1986 that authorizes the state's Department of Health Services to protect the public from contaminants in drinking water by establishing maximum contaminant levels (as set forth in the California Code of Regulations (CCR), Title 22, Division 4, Chapter 15) that are at least as stringent as those developed by the EPA, as required by the federal Safe Drinking Water Act.

Federal Antidegradation Policy

The federal Antidegradation Policy (40 CFR 131.12) requires states to develop statewide antidegradation policies and identify methods for implementing them. Pursuant to this policy, state antidegradation policies and implementation methods will, at a minimum, protect and maintain (1) existing in-stream water uses; (2) existing water quality where the quality of the waters exceeds levels necessary to support existing beneficial uses, unless the state finds that allowing lower water quality is necessary to accommodate economic and social development in the area; and (3) water quality in waters considered an outstanding national resource. State permitting actions must be consistent with the federal Antidegradation Policy.

State Level

California Toxics Rule

Because of gaps in California's regulations, the EPA promulgated the California Toxics Rule (40 CFR 131.38), which established numeric water quality criteria for certain toxic substances in California surface waters. The California Toxics Rule establishes acute (i.e., short-term) and chronic (i.e., long-term) standards for water bodies that are designated by the Santa Ana RWQCB as having beneficial uses protective of aquatic life or human health. The California Toxics Rule criteria are applicable to the receiving waters from the project site.

Section 402(p) – Construction General Permit

Pursuant to the Porter-Cologne Act, Section 402(p), requiring regulations for permitting of stormwater runoff from construction activity that results in soil disturbances of at least 1 acre of total land area (and projects that meet other specific criteria), the SWRCB has issued a statewide general NPDES permit and waste discharge requirements for stormwater discharges from construction sites (NPDES No. CAS000002, General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, as amended July 17, 2012).

These regulations prohibit discharges of polluted stormwater from construction projects that disturb 1 or more acres of soil unless the discharge complies with the general NPDES permit requirements. The San Diego RWQCB oversees permits for the project site. It is the responsibility of the landowner to obtain coverage under the Construction General Permit (CGP) prior to commencement of construction activities. Coverage under the CGP is attained by completing and filing a Notice of Intent with the SWRCB. Each applicant under the CGP must ensure that a Storm Water Pollution Prevention Plan (SWPPP) is prepared prior to grading and implemented during construction. The primary objective of the SWPPP is to identify, construct, implement, and maintain best management practices (BMPs) to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from the construction site during construction. The CGP requires the control of pollutants to meet Best Available Technology Economically Achievable and Best Conventional Pollutant Control Technology standards. Compliance with the requirements of the CGP is used as one method to evaluate project construction-related impacts on surface water quality. To ensure that preparation and implementation of the SWPPP are sufficient for effective pollution prevention, it must be created and implemented by a Qualified SWPPP Developer (QSD) and Qualified SWPPP Practitioner (QSP) who have attended a SWRCB sponsored or approved QSD and/or QSP training course (SWRCB 2012). Typical BMPs include the following (SWRCB 2012):

- **Minimizing disturbed areas.** Clearing of land is limited to that which would be actively under construction in the near term, new land disturbance during the rainy season is

minimized, and disturbance to sensitive areas or areas that would not be affected by construction is minimized.

- **Stabilizing disturbed areas.** Temporary stabilization of disturbed soils is provided whenever active construction is not occurring on a portion of the site, and permanent stabilization is provided by finish grading and permanent landscaping.
- **Protecting slopes and channels.** Outside of the approved grading plan area, disturbance of natural channels is avoided, slopes and crossings are stabilized and increases in runoff velocity caused by the project is managed to avoid erosion to slopes and channels.
- **Controlling the site perimeter.** Upstream runoff is diverted around or safely conveyed through the project and is kept free of excessive sediment and other constituents.
- **Controlling internal erosion.** Sediment-laden waters from disturbed, active areas within the site are detained.

It is assumed that the CGP adopted by the SWRCB on July 17, 2012, effective on July 12, 2012, would be in effect during construction of the project.

Local Level

Chula Vista BMP Design Manual

In May 2013, the California Regional Water Quality Control Board for the San Diego Region reissued (SDRWQCB) a municipal storm water, National Pollutant Discharge Elimination System permit (Municipal Separate Storm Sewer Systems [MS4] Permit) that covered its region. The San Diego Region is comprised of San Diego, Orange, and Riverside County Copermittees. The MS4 Permit reissuance to the San Diego County Copermittees went into effect in 2013 (Order No. R9- 2013-0001 and as amended by Order Nos R9-2015-0001 & R9-2015-0100) (City of Chula Vista 2015).

The reissued MS4 Permit updates and expands storm water requirements for new developments and redevelopments. In February 2015, the MS4 Permit was amended by Order R9-2015-0001, and again in November 2015 by Order R9-2015-0100. As required by the reissued MS4 Permit, the Copermittees have prepared the Model Best Management Practices (BMP) Design Manual to replace the current Countywide Model Standard Urban Stormwater Mitigation Plan (SUSMP), dated March 25, 2011, which was based on the requirements of the 2007 MS4 Permit (City of Chula Vista 2015).

The BMP Design Manual addresses updated onsite post-construction storm water requirements for Standard Projects and Priority Development Projects (PDPs), and provides updated procedures for

planning, preliminary design, selection, and design of permanent storm water BMPs based on the performance standards presented in the MS4 Permit (City of Chula Vista 2015).

Chula Vista Municipal Code Section 14.20, Storm Water Management and Discharge Control

The purpose of this ordinance is to promote the health, safety, and general welfare of the citizens of Chula Vista by prohibiting non-stormwater discharges to the stormwater conveyance system, preventing discharges to the stormwater conveyance system from disposal of materials other than stormwater, reducing pollutants in stormwater discharges to the maximum extent practicable, and reducing pollutants in stormwater discharges to achieve applicable water quality objectives for surface waters in San Diego County (Chula Vista Municipal Code Section 14.20, Storm Water Management and Discharge Control). This ordinance states that it is unlawful for any person to cause either individually or jointly, any discharge into or from the stormwater conveyance system that results in or contributes to a violation of any NPDES permit. Any person engaged in activities that may result in pollutants entering the stormwater conveyance system shall, to the maximum extent practical, undertake all measures to reduce the risk of illegal discharges. The following requirements apply (Chula Vista Municipal Code Section 14.20):

- **Best Management Practices Implementation.** It is unlawful for any person not to comply with the BMPs and pollution control requirements established by the city or other responsible agency to eliminate or reduce pollutants entering the city stormwater conveyance system. BMPs shall be complied with throughout the life of the activity.
- **Stormwater Pollution Prevention Plan.** When the enforcement official determines that a business or business-related activity causes or may cause an illegal discharge to the stormwater conveyance system then the enforcement official may require the business to develop and implement a SWPPP. Businesses which may be required to prepare and implement a SWPPP include, but are not limited to, those which perform maintenance, storage, manufacturing, assembly, equipment operations, vehicle loading and/or cleanup activities partially or wholly out of doors.
- **Coordination with Hazardous Materials Response Plans and Inventory.** Any activity subject to the hazardous materials inventory and response program, pursuant to Chapter 6.95 of the California Health and Safety Code, shall include provisions for compliance with this chapter in its hazardous materials response plan, including prohibitions of unlawful non-stormwater discharges and illegal discharges and provisions requiring the use of BMPs to reduce the discharge of pollutants in stormwater.
- **Impervious Surfaces**. Persons owning or operating a parking lot or an impervious surface (including, but not limited to, service station pavements or paved private streets and roads) used for automobile-related or similar purposes shall clean those surfaces as

frequently and as thoroughly as is necessary, in accordance with BMPs, to prevent the discharge of pollutants to the city stormwater conveyance system. Sweepings or cleaning residue from parking lots or impervious surfaces shall not be swept or otherwise made or allowed to go into any stormwater conveyance, gutter or roadway, but must be disposed of in accordance with regional solid waste procedures and practices.

- **Compliance with NPDES Permit for Storm Water Discharges**. Each discharger subject to any NPDES permit for stormwater discharges shall comply with all requirements of such permit.

The BMP Design Manual is incorporated into this ordinance by reference. The ordinance states that no landowner or development project proponent in Chula Vista shall receive any City permit or approval for land development activity or significant redevelopment activity unless the project meets or would meet the requirements of the Development Storm Water Manual (Chula Vista Municipal Code Section 14.20).

City of Chula Vista General Plan

The Public Facilities and Services and Environmental Elements of the City of Chula Vista General Plan address reliable drainage facilities and the protection of water quality. The Public Facilities and Services Element includes objectives to increase efficiencies in handling stormwater runoff through use of alternative technologies (Objective PFS 2). Objective E 2 in the Environmental Element is to protect and improve water quality within surface water bodies and groundwater resources within and downstream of Chula Vista (City of Chula Vista 2005).

Zoning Code and Growth Management Ordinance

In accordance with Chula Vista Municipal Code Section 19.80.030, development is not permitted in the City of Chula Vista that would degrade stormwater collection systems below acceptable standards. Similarly, Section 19.09, Growth Management, provides policies and programs that tie the pace of development to the provision of public facilities and improvements. Section 19.09(H) specifically requires that (1) stormwater flows and volumes shall not exceed City engineering standards as set forth in the subdivision manual and (2) the Growth Management Oversight Commission shall annually review the performance of the City's storm drain system to determine its ability to meet the goals and objectives of the subdivision manual. Section 19.09 also requires a Public Facilities Financing Plan (PFFP) and the demonstration that public services, such as police services, meet the Growth Management Oversight Commission quality of life threshold standards. The analysis of storm drain systems provided in this section, along with the PFFP to ensure funding for any needed expansion of services, would ensure that storm drain systems are provided commensurate with development and demand.

5.9.1.2 Existing Setting

The project site is located north of the Otay River, south of Wolf Canyon, west of Village Eight West, and east of the future Village Three within the City of Chula Vista, California.

Currently, the project site generally flows in a northwesterly direction toward a tributary of Wolf Canyon where runoff would then travel west then south toward the Otay River.

The Multiple Species Conservation Program Open Space Preserve is located along the site northern and western boundaries. Since this project site is located adjacent to a Preserve area, it would adhere to Section 7.5.2 of the City's Multiple Species Conservation Program Subarea Adjacency Guidelines pertaining to drainage and water quality.

5.9.2 Thresholds of Significance

A. Would the project: Violate any water quality standards or waste discharge requirements, including City of Chula Vista Engineering Standards for storm water flows and volumes?

B. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

C. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?

D. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

E. 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?

F. Otherwise, substantially degrade water quality?

G. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

H. Place structures within a 100-year flood hazard area which would impede or redirect flood flows?

I. Be inconsistent with General Plan, GDP or other objectives and policies regarding water quality thereby resulting in a significant physical impact?

J. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

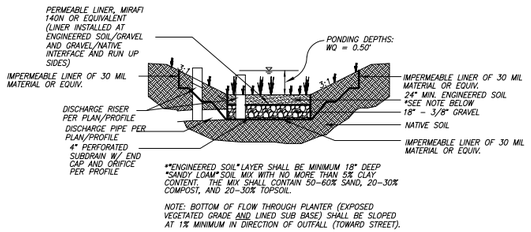
K. Inundation by seiche, tsunami, or mudflow?

L. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

5.9.3 Impacts

A. Violate any water quality standards or waste discharge requirements, including City of Chula Vista Engineering Standards for storm water flows and volumes.

Prior to discharge from the site, all developed site runoff would receive full water quality treatment in accordance with the most current City Storm Water Manual standards applicable at the time of final engineering. All runoff conveyed in the proposed storm drain systems would be treated in compliance with RWQCB regulations and NPDES criteria prior to discharging to natural watercourses. California RWQCB Order No. R9-2013-0001 (Order No. R9-2013-0001 was amended by Order Nos. R9-2015-0001 and R9-2015-0100) sets the waste discharge requirements for discharges of urban runoff from municipal storm separate drainage systems draining the watersheds of San Diego County. Prior to project-related construction, a site-specific SWPPP would be prepared in accordance with the SWRCB Order No. 2012-0006-DWQ NPDES General Permit No. CAS00002 (General Construction Permit) and the modifications to the General Construction Permit Order No. 2001-046, adopted by the SWRCB. As such, the proposed project would be designed to comply with any water quality standards and waste discharge requirements. Per the project's Drainage Study and Stormwater Quality Management Plan (Appendix H1), a stormwater drainage system was been incorporated into project design, as shown in Figure 5.9-1. Therefore, in accordance with the analysis and recommendations provided by the Drainage Study and the Stormwater Quality Management Plan for the proposed project, which are incorporated into project design, impacts would be less than significant.



SOIL SECTION FOR WATER QUALITY/HYDROMODIFICATION BIOFILTRATION BASIN (PRIVATE)

NOT TO SCALE

LEGEND

- PROJECT BOUNDARY
- DRAINAGE BOUNDARY
- FLOW DIRECTION
- ONSITE DEVELOPED AREA
- OFFSITE AREA TRIUBUTARY TO BASIN
- BASIN BOTTOM SURFACE AREA
- TRIBUTARY AREA (XX.XX ACRES)

TREATMENT CONTROL BMPs

BF-1-1 BIOFILTRATION BASIN

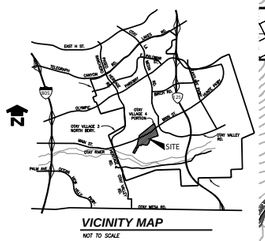
UNDERLYING SOIL GROUP : C & D
APPROXIMATE DEPTH TO GROUNDWATER > 20'
NO CRITICAL COARSE AREAS REQUIRE PRESERVATION

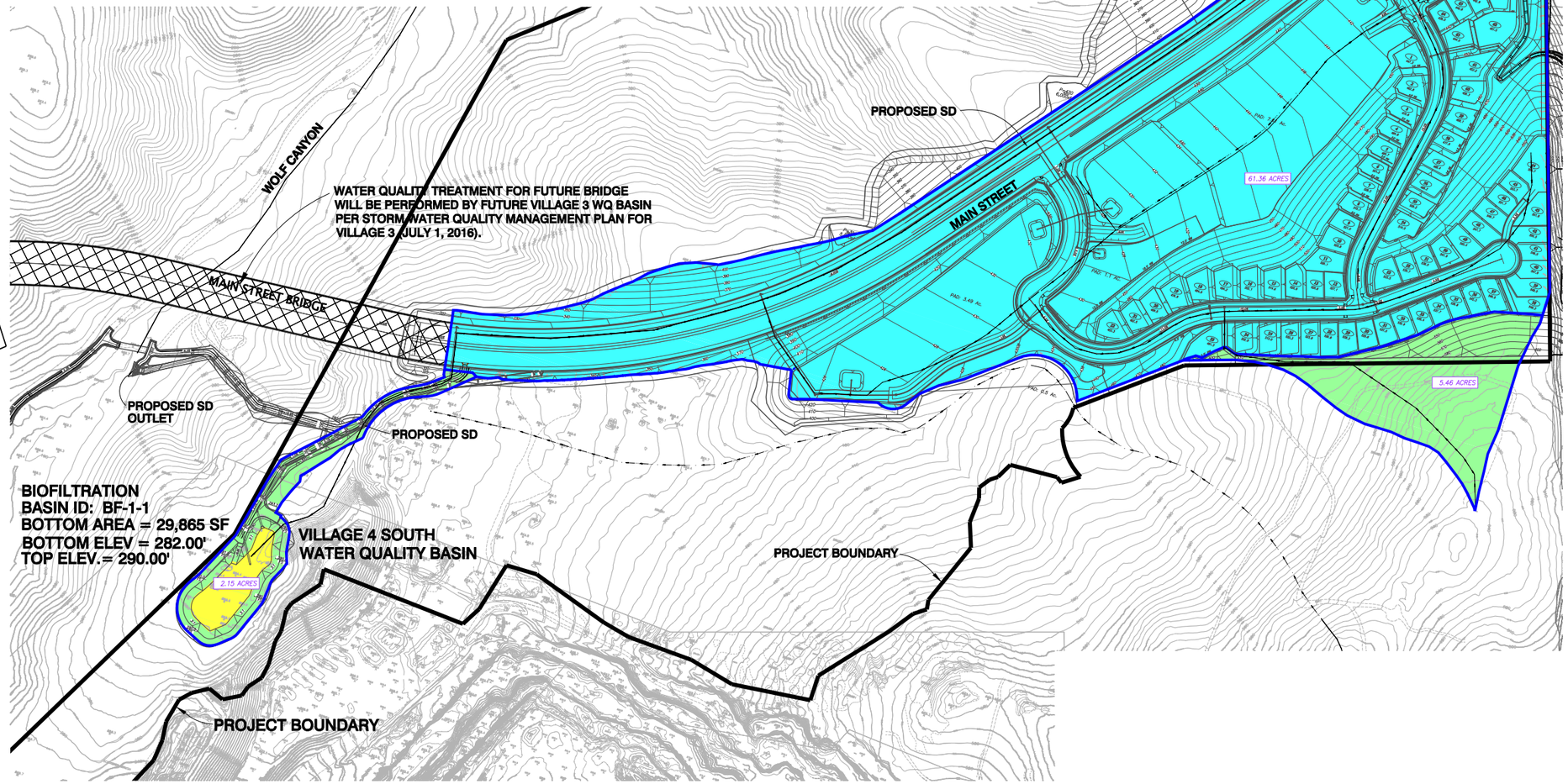
SOURCE CONTROL BMPs

SC-1 PREVENTION OF ILLICIT DISCHARGES TO MS4
SC-2 STORM DRAIN STENCILING OR SIGNAGE
SC-3 PROTECT OUTDOOR MATERIAL STORAGE AREAS
SC-5 PROTECT TRASH STORAGE AREAS
SC-6 NEED FOR INDOOR & STRUCTURAL PEST CONTROL
SC-6 MINIMIZE PESTICIDE USE
SC-6 STREET AND SIDEWALK SWEEPING

SITE DESIGN BMPs

SD-1 MAINTAIN NATURAL HYDROLOGIC FEATURES
SD-2 CONSERVE NATURAL AREAS, SOILS, VEGETATION
SD-3 MINIMIZE IMPERVIOUS AREAS
SD-4 MINIMIZE SOIL COMPACTION
SD-5 IMPERVIOUS AREA DISPERSION
SD-7 LANDSCAPING WITH NATIVE OR DROUGHT TOLERANT SPECIES





SOURCE: CITY OF CHULA VISTA 2017

DUDEK

FIGURE 5.9-1
Proposed Drainage Management

Otay Ranch Village Four SPA Plan Environmental Impact Report

Z:\Projects\

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B. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

The proposed project does not have any components that would withdraw groundwater. Additionally, as noted in the Geotechnical Investigation prepared by Geocon (Appendix I), it is expected that groundwater is deeper than approximately 100 feet below the existing grade. Development of the proposed project would ultimately result in a decrease in pervious surfaces and increase of surface runoff, resulting in reduced percolation and groundwater recharge. However, the general drainage pattern of the site that ultimately flows into the Otay River would remain the same (Appendix I). The proposed project would not interfere substantially with groundwater recharge, nor would the proposed project use the groundwater supply for any construction or operational use (Appendix I). Compliance with the necessary RWQCB permits would further reduce potential impacts to groundwater. Therefore, due to the project not withdrawing groundwater, no groundwater or seepage being encountered during the site investigation, and that the general drainage pattern would remain the same, impacts associated with depletion of groundwater supplies would be less than significant.

C. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site.

The project site is largely undeveloped. Upon buildout of the proposed project, the amount of pervious surfaces would decrease and surface run off would generally increase. The proposed project would adhere to found in the proposed project's Drainage Study and Stormwater Quality Management Plan (Appendix H1) to reduce impacts to existing drainage pattern. Such recommendations and design features include mimicking existing conditions where grading is proposed for the intent that manufactured slopes follow existing drainage, and implementing LID and BMPs such as bioretention basins to control for erosion and other water quality issues, in accordance with the City BMP Design Manual. In existing condition, the project site generally flows in a northwesterly direction toward a tributary of Wolf Canyon where runoff then travels west then south toward the Otay River; these general drainage flows would still remain upon development of the proposed project (Appendix H1). The proposed project would adhere to the provided recommendations in the Drainage Study and Stormwater Quality Management Plan, and, thus, impacts to the existing drainage pattern with respect to erosion would be less than significant.

D. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

Grading proposed within the project site would be designed to mimic existing conditions on these sites where the proposed grading ties into the existing terrain. It is intended that the stormwater from the manufactured slopes would sheet flow and follow the existing drainage patterns. In addition, LID-based BMPs are proposed, which include conservation of natural areas; minimizing impervious footprint; minimizing directly connected impervious areas; minimizing soil compaction in landscaped areas; soil amendments; and protection of slopes, channels, and erosion control, which would help reduce the rate and amount of stormwater runoff. Proposed drainage facilities are designed to accommodate 100-year peak flood flows. Development of project would result in the net decrease of runoff discharged to Wolf Canyon when considering the effect of the proposed detention basin.

For the reasons described above, and with implementation of the proposed BMPs and drainage systems, the proposed project would not substantially alter the existing drainage pattern of the project site in a manner that would result in flooding on site or off site. Therefore, impacts would be less than significant.

E. 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.

The proposed project would involve the replacement of existing permeable surfaces and exposed soils, which would substantially increase the amount of impervious surface area within the project site. Site-generated surface water runoff would be directed from the project site to drainage facilities and bioretention basins. However, the proposed project would include development of stormwater drainage facilities to meet the need created by the impervious developments of the proposed project.

The proposed project would provide stormwater drainage facilities and would comply with all federal, state, and local laws and ordinances. Prior to project-related construction, a site-specific SWPPP would be prepared in accordance with the SWRCB Order No. 2012-0006-DWQ NPDES General Permit No. CAS00002 (General Construction Permit) and the modifications to the General Construction Permit Order No. 2001- 046, adopted by the SWRCB. All runoff conveyed in the proposed storm drain systems would be treated in compliance with RWQCB regulations and NPDES criteria prior to discharging to natural watercourses.

The storm drain system and layout would be designed to address peak flows and to integrate water quality features needed to comply with the City's SUSMP requirements for water quality. The proposed storm drain system would be designed to prevent the co-mingling of treated flows with untreated runoff. The proposed project would use the construction of new facilities to ensure that the increase in runoff upon development of the site is met with adequate capacity and would not contribute to substantial pollution. Such facilities include storm drains, a water quality detention basin, cleanouts, inlets, headwalls, energy dissipating measures, and treatment filters. The runoff produced from the project site would be subject to the implementation of a variety of BMPs, in accordance with the City BMP Design Manual. Proposed LID BMPs include conservation of natural areas, minimizing impervious footprint, minimizing directly connected impervious areas to area drains, minimizing soil compaction in landscaped areas, soil amendments, and protection of slopes, channels and erosion control. Source control BMPs include designing outdoor material storage areas to reduce pollution, designing trash storage areas to reduce pollution introduction, Integrated Pest Management principles, efficient irrigation systems and landscape design, stormwater conveyance system stenciling and signage, efficiently designed loading dock areas, and maintenance of sidewalks and parking lots. Additional BMPs applicable to individual priority development project categories would be implemented regarding the following projects: roads, residential driveways and guest parking, surface parking lots, steep hillside landscaping.

The combination of the proposed construction and permanent BMPs would reduce, to the maximum extent practicable, the expected pollutants and would not adversely impact the beneficial uses of the receiving waters.

For the reasons described above, and with implementation of the proposed BMPs, the proposed project would not substantially create runoff that would exceed the capacity of planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Therefore, impacts would be less than significant.

F. Otherwise, substantially degrade water quality.

As described above, the combination of the proposed construction and permanent BMPs for the proposed project would reduce, to the maximum extent practicable, the expected pollutants, and would not adversely impact the beneficial uses of the receiving waters.

The runoff produced from the project would be subject to the implementation of a variety of BMPs, in accordance with the City BMP Design Manual. Proposed LID BMPs include conservation of natural areas, minimizing impervious footprint, minimizing directly connected impervious areas to area drains, minimizing soil compaction in landscaped areas, soil amendments, and protection of slopes, channels and erosion control. Source control BMPs

include designing outdoor material storage areas to reduce pollution, designing trash storage areas to reduce pollution introduction, Integrated Pest Management principles, efficient irrigation systems and landscape design, stormwater conveyance systems stenciling signage, efficiently designed loading dock areas, maintenance of sidewalks and parking lots. Additional BMPs applicable to individual priority development project categories would be implemented regarding the following projects: roads, residential driveways and guest parking, surface parking lots, steep hillside landscaping. Implementation of these BMPs would prevent the degradation of water quality, and, therefore, impacts would be less than significant.

G. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.

Per the Flood Insurance Rate Map No. 06073C2176G (FEMA 2016), proposed housing lies outside the Federal Emergency Management Agency (FEMA) floodplain boundary (see Figure 5.9-2). Therefore, no impacts would occur.

H. Place structures within a 100-year flood hazard area which would impede or redirect flood flows.

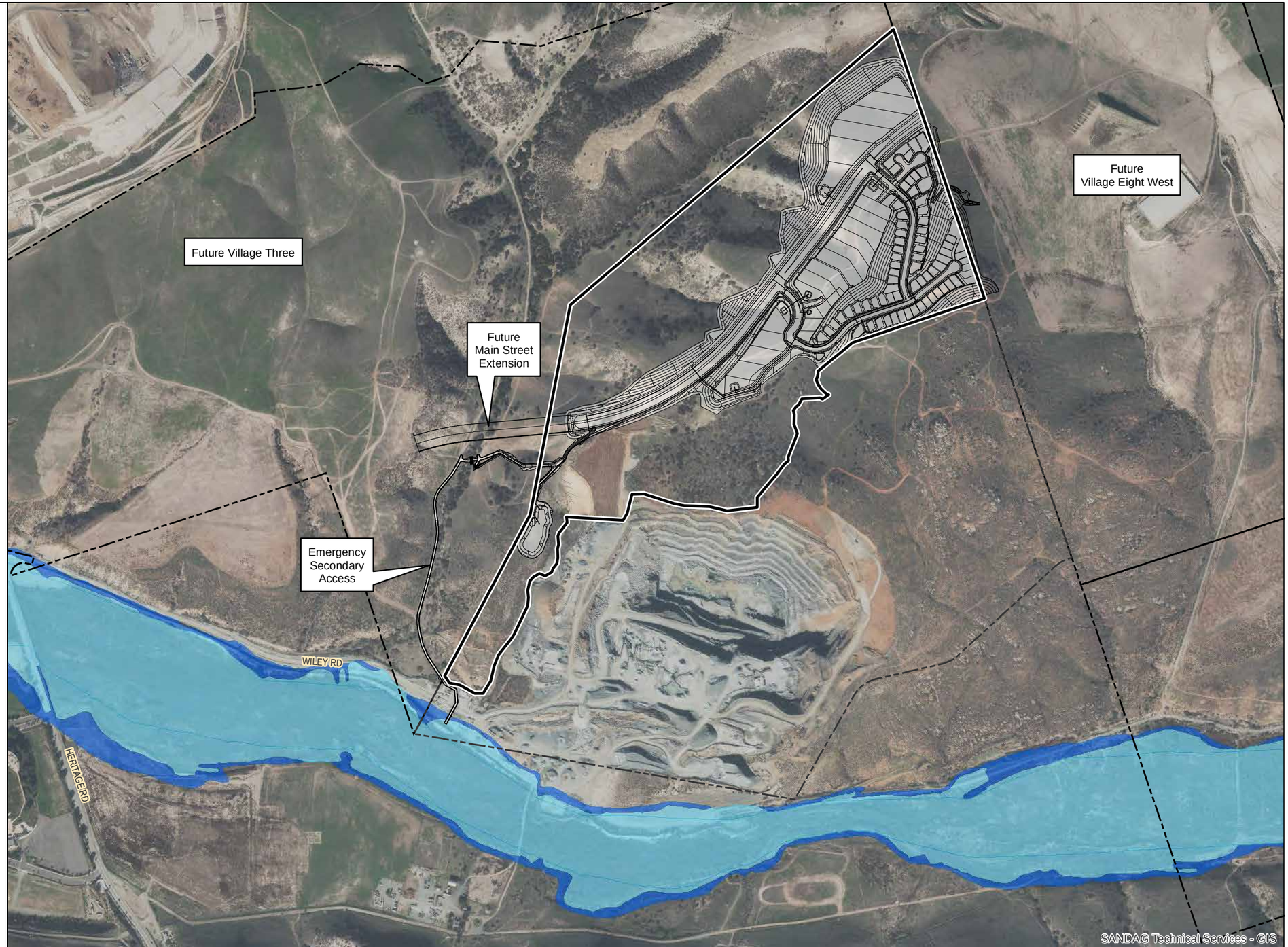
The proposed project would not place any structures within a 100-year flood hazard area that would impede or redirect flows, as the project site is not located in a FEMA floodplain boundary (see Figure 5.9-2). Therefore, no impacts would result.

Village Four TM Boundary

FEMA Flood Hazard Zones

100-Year Floodplain

500-Year Floodplain



SOURCE: AERIAL-SANDAG IMAGERY 2014; FEMA-USGS

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FIGURE 5.9-2

FEMA Flood Hazard Zones

Otay Ranch Village Four SPA Plan Environmental Impact Report

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I. Be inconsistent with General Plan, GDP or other objectives and policies regarding water quality thereby resulting in a significant physical impact.

City of Chula Vista General Plan

The Chula Vista General Plan has been comprehensively updated from the previous 1989 version to the current 2005 version, or Chula Vista Vision 2020. The proposed project would promote the policies and goals of the General Plan and the Otay Ranch General Development Plan (GDP), including increase water and wastewater efficiency, use, re-use, and generation; protect and improve water quality within Otay Ranch; and control stormwater flows and conveyance; and require on-site detention basins to prevent downstream overload. The following objectives associated with water quality and hydrology are included in the General Plan (City of Chula Vista 2005):

- **Objective PFS 2:** Increase efficiencies in water use, wastewater generation and its re-use, and handling of storm water runoff throughout the city through use of alternative technologies.
- **Objective E 2:** Protect and improve water quality within surface water bodies and groundwater resources within and downstream of Chula Vista.
- **Objective E 15:** Minimize the risk of injury and property damage associated with flood hazards.

Construction and operation would be in accordance with the primary policies and goals of the proposed project. The Drainage Study and Stormwater Quality Management Plan outlines the drainage infrastructure required for detention of storm runoff and sediment control, including incorporation of energy dissipaters to minimize potential erosion (Appendices H1 and H2). Additionally, as discussed above, the Drainage Study and Stormwater Quality Management Plan outlines the proposed water quality BMPs, including LID, to encourage the use of natural channels that simulate natural drainage ways. Implementation of the project would not disrupt any natural water bodies. The proposed project would be consistent with the objectives outlined in the General Plan (Appendices H1 and H2), and impacts would be less than significant.

Otay Ranch General Development Plan

The following goals associated with drainage and water quality are provided in the Otay Ranch GDP (City of Chula Vista and County of San Diego 1993):

- **Goal:** Provide protection to the Otay Ranch project area and surrounding communities from fire, flooding and geologic hazards.
- **Goal:** Ensure that water quality within the Otay Ranch project area is not compromised.

- **Goal:** Promote public safety and provide public protection from fire, flooding, seismic disturbances, geologic phenomena and manmade hazards in order to preserve life, health and property; continue government functions and public order; maintain municipal services; and rapidly resolve emergencies and return the community normalcy and public tranquility.

The Chula Vista BMP Design Manual requires the project to meet site-specific performance standards, site management requirements, seasonal requirements, limitation of grading, and potential advanced treatment for any identified sedimentation (City of Chula Vista 2015). The proposed project would not expose people or structures to a significant risk of loss, injury or death involving flooding since proposed housing is not located within a FEMA floodplain (see Figure 5.9-2). The proposed project would be consistent with applicable Otay Ranch GDP policies, and impacts would be less than significant.

J. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

As discussed in response above, the proposed project would not expose people or structures to a significant risk of loss, injury or death involving flooding since the project is not located within a FEMA floodplain (see Figure 5.9-2). Although the project site is located downstream of the Savage Dam, proposed housing and structures would be outside of the dam inundation zone (Figure 5.9-3), and an Emergency Action Plan is in place for this dam. Therefore, the proposed project would result in less-than-significant impacts related to flooding.

K. Result in inundation by seiche, tsunami, or mudflow.

The proposed project site is approximately 8 miles from the Pacific coast and ranges from 150 feet to 610 feet above mean sea level. Thus, risks associated with tsunamis would be less than significant. A seiche is a run-up of water within a lake or embayment triggered by a fault- or landslide-induced ground displacement. Large bodies of water are not adjacent to the proposed project site, thus the potential for seiches affecting the site is considered negligible. As discussed in Section 5.10, Geology and Soils, grading would provide stabilization of any possible loose soils on site, and mudflows or other forms of landslides would be mitigated. Therefore, potential impacts due to seiche, tsunami, or mudflow would be less than significant.

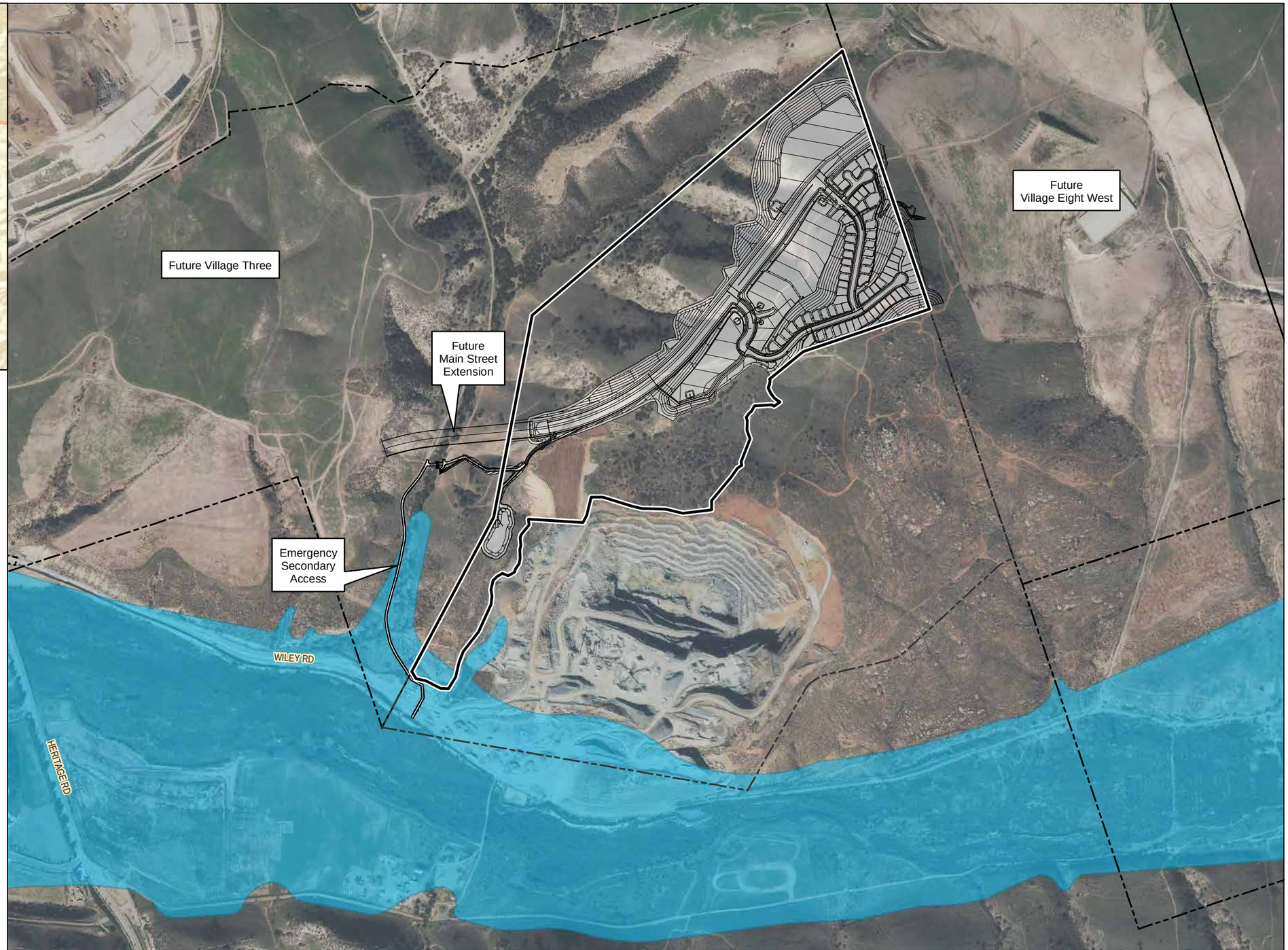


Q-EmergencyAccessFills

Village Four TM Boundary

Dam Innundation

Upper & Lower Otay Dams



0 450 900 1,800 Feet

SOURCE: AERIAL-SANDAG IMAGERY 2014; FEMA-USGS

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FIGURE 5.9-3

Dam Inundation Zones

Otay Ranch Village Four SPA Plan Environmental Impact Report

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L. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

The proposed project would involve construction of new stormwater drainage facilities. The potential environmental effects of these facilities are analyzed under each of the resource topic presented in Chapter 5 of this EIR, and mitigation measures are provided to reduce potential impacts. Therefore, impacts would be less than significant.

5.9.4 Level of Significance Prior to Mitigation

All impacts related to water quality and hydrology were found to be less than significant or no impact.

5.9.5 Mitigation Measures

All impacts related to water quality and hydrology were found to be less than significant or no impact and no mitigation is required.

5.9.6 Level of Significance After Mitigation

No mitigation is required for the proposed project.

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5.10 GEOLOGY AND SOILS

This section describes the existing geology and soils setting of the proposed Otay Ranch Village Four Sectional Planning Area (SPA) Plan Project (project), identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures to reduce or avoid significant impacts. The following analysis is based on the Otay Ranch Village 4 Preliminary Geotechnical Investigation prepared by Geocon Inc. in March 2015. The geotechnical investigation is provided as Appendix I of this EIR.

5.10.1 Existing Conditions

5.10.1.1 Regulatory Framework

Federal

International Building Code

The International Building Code (IBC) is a model building code developed by the International Code Council that provides the basis for the California Building Code (CBC). The purpose of the IBC is to provide minimum standards for building construction to ensure public safety, health, and welfare. Prior to the creation of the IBC, several different building codes were used; however, by 2000, the IBC had replaced these previous codes. The IBC is updated every 3 years.

Occupational Safety and Health Administration Regulations

Excavation and trenching are among the most hazardous construction activities. The Occupational Safety and Health Administration (OSHA) Excavation and Trenching standard, Title 29 of the Code of Federal Regulations (CFR), Part 1926.650, covers requirements for excavation and trenching operations. OSHA requires that all excavations in which employees could potentially be exposed to cave-ins be protected by sloping or benching the sides of the excavation, supporting the sides of the excavation, or placing a shield between the side of the excavation and the work area.

State

California Geologic Survey

The California Geologic Survey (CGS) provides guidance with regard to seismic hazards. The CGS's Special Publication 117, Guidelines for Evaluating and Mitigating Seismic Hazards in California provides guidance for evaluation and mitigation of earthquake-related hazards for projects within designated zones of required investigation.

California Building Code

The 2013 CBC, which went into effect January 1, 2014, with portions of the energy regulations going into effect on July 1, 2014, is a model building code developed by the International Code Council that sets rules specifying the minimum acceptable level of safety for constructed objects such as buildings in the United States. In addition, the CBC contains necessary amendments based on the American Society of Civil Engineers (ASCE) Minimum Design Standards 7-05. ASCE 7-05 provides requirements for general structural design and includes means for determining earthquake and other types of loads for inclusion in building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure, and any appurtenances connected or attached to such buildings or structures, throughout California.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 (California Public Resources Code (PRC), Sections 2621–2630) regulates development and construction of buildings intended for human occupancy to avoid the hazard of surface fault rupture. The act helps define areas where fault rupture is most likely to occur. The act groups faults into categories of active, potentially active and inactive. Historic and Holocene age faults are considered active. Late Quaternary and Quaternary age faults are considered potentially active and pre-Quaternary age faults are considered inactive. These classifications are qualified by the conditions that a fault must be shown to be sufficiently active and well defined by detailed site-specific geologic explorations to determine whether building setbacks should be established. Cities and counties affected by the zones must regulate certain development projects within the zones. They must withhold development permits for sites within the zones until geologic investigations demonstrate that the sites are not threatened by surface displacement from future faulting.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (PRC Sections 2690–2699.6) addresses earthquake hazards from non-surface fault rupture, including liquefaction, landslides, strong ground shaking, or other earthquake and geologic hazards. The Seismic Hazards Mapping Act also specifies that the lead agency for a project may withhold development permits until geologic or soils investigations are conducted for specific sites and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils.

Local

City of Chula Vista General Plan

Individual project development proposed on property under City of Chula Vista (City) jurisdiction has requirements similar to IBC and CBC requirements, and must comply with Objective E 14 and its three associated policies (E 14.1, E 14.2, and E 14.3) contained in the City's General Plan. Implementation of this objective and policies are intended to reduce potential impacts associated with geological hazards and public safety.

5.10.1.2 Existing Setting

Geologic Setting

The project site is located in the coastal plain of the Peninsular Ranges province of southern California. The Peninsular Ranges is a geologic and geomorphic province that extends from the Imperial Valley to the Pacific Ocean and from the Transverse Ranges to the north and into Baja California to the south. The coastal plain of San Diego County is underlain by a thick sequence of relatively undisturbed and non-conformable sedimentary rocks that range in age from Upper Cretaceous through the Pleistocene with intermittent deposition. Geomorphically, the coastal plain is characterized by a stair-stepped series of marine terraces, which are younger to the west and have been dissected by west flowing rivers that drain the Peninsular Ranges to the east. The coastal plain is a relatively stable block that is dissected by relatively few faults consisting of the potentially active La Nacion Fault Zone and the active Rose Canyon Fault Zone. The Peninsular Ranges are also dissected by the Elsinore Fault Zone that is associated with and sub-parallel to the San Andreas Fault Zone, which is the plate boundary between the Pacific and North American Plates (Appendix I).

The project site is located on the central portion of the coastal plain, and is in contact with a prominent hill composed of metavolcanic rock. The metavolcanic rock makes up the southeaster and eastern edge of the site. Marine sedimentary units unconformably overlie the metavolcanic rock, and make up the northern and western portions of the site, and consist of the Tertiary age Otay Formation. The Otay Formation typically consists of three lithostratagraphic members composed of a basal conglomerate member, a middle gritstone member, and an upper sandstone-claystone member with a maximum reported regional thickness of roughly 400 feet. The thickness of the Otay formation varies at the site as it is underlain by metavolcanic rock but generally increases to the west. The site has been dissected by a series of northwest-trending canyons that have exposed the Otay Formation. Additionally, Pleistocene-age Terrace Deposits are present on the northern flank of the Otay River (Appendix I).

Geologic Materials

Four surficial soil types and three geologic are present on the site. The surficial units consist of undocumented fill, topsoil/colluvium, alluvium, and landslide debris. Formational units include Pleistocene-age Terrace deposit, Tertiary-age Otay Formation, and Jurassic- to Cretaceous-age metavolcanic rock (Appendix I). The formational and surficial units are discussed below in order of increasing age. A geologic map of the project site is shown in Figure 5.10-1.

Undocumented Fill

Undocumented fill soil is present in the form of a stockpile on the southwestern portion of the site, which is attributed to the existing quarry. The depth of the stockpile is unknown, but the northeast side of the stockpile abuts native, undisturbed grassland. Several hundred feet of the slope at the north end of the stockpile have been covered with hydro-mulch. The undocumented fill is compressible and removal would be necessary within the limits of grading in areas proposed to support compacted fill or structures (Appendix I).

Topsoil/Colluvium

Holocene-age topsoil/colluvium is present as a thin veneer locally overlying formational material across the site. The topsoil/colluvium has an average thickness of approximately 3 feet and is characterized as soft to stiff and loose to medium dense, dry to damp, dark brown, sandy clay to clayey sand with gravel and cobble. The clayey portion of the topsoil is typically expansive and compressible. Removal of the topsoil would be necessary in areas to support fill or structures (Appendix I).

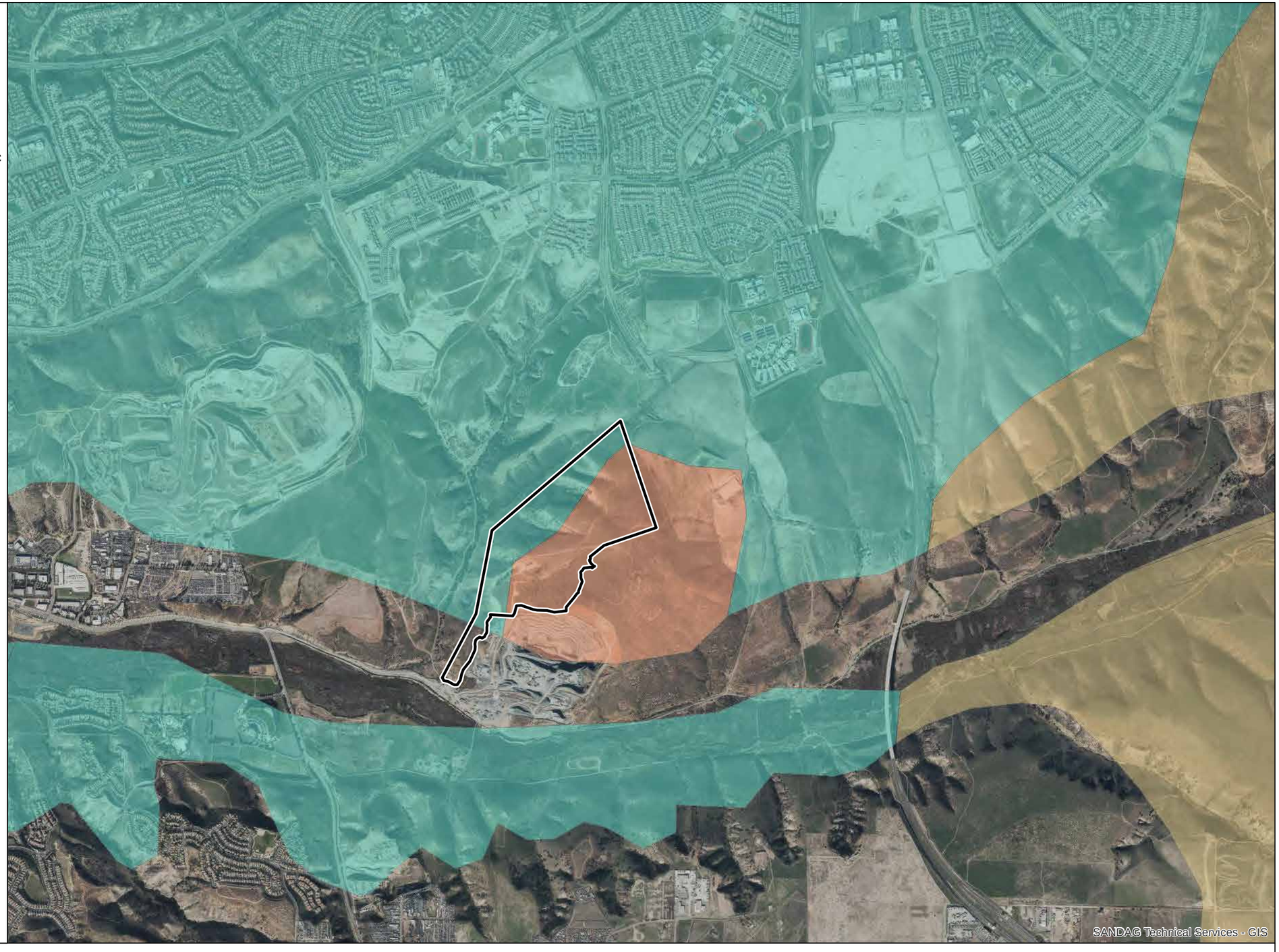
Alluvium

Holocene-age alluvium is sheet-flow or stream deposited material found within the canyon drainages and generally vary in thickness dependent on the size of the canyon and extent of the drainage area. The alluvium within the canyon drainages is characterized as loose to medium dense and can become saturated and difficult to excavate during the rainy season. Exploratory excavations within the alluvium areas were limited due to habitat restrictions, but it is expected that the alluvium ranges up to approximately 8 feet within the limits of grading. Due to the relatively unconsolidated nature of the alluvial deposits, remedial grading would be necessary to receive fill or structures (Appendix I).

Village Four TM Boundary

Geologic Unit

- Mc, Miocene nonmarine
- Mzv, Mesozoic volcanic and metavolcanic rocks; Franciscan volcanic rocks
- P, Pliocene marine



SOURCE: AERIAL-SANDAG IMAGERY 2014; GEOLOGY-USGS 2012

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FIGURE 5.10-1

Geologic Map

Otay Ranch Village Four SPA Plan Environmental Impact Report

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Landslide Debris

Two landslide shave been mapped and may exist approximately 800 feet north of the limits of development on the southern flank of Wolf Canyon. The landslides are typically controlled by a basal bentonite claystone bed. The majority of the landslide debris is generated from the Otay Formation and likely consists of a mixture of sandstone, siltstone, and claystone fragments with local remolded clays, highly fractured and crushed zones, and soil and carbonate fracture infilling. The base of the landslide is typically sliding along the top of a bentonitic claystone layer that was undercut during erosion by the canyon drainage. The landslide is not located near any proposed development (Appendix I).

Terrace Deposits

Pleistocene-age Terrace Deposits are deposited as shallow marine and non-marine near shore soil located on the southern corner of the site. This unit is expected to have a maximum thickness of approximately 15 to 20 feet. The Terrace Deposits are generally dense to very dense, reddish brown, silty to clayey sandstone with portions of the unit containing intermittent layers of cobbles and boulders up to approximately 2 feet in diameter. The Terrace Deposits are not located in an area planned for development, and are not expected to be encountered (Appendix I).

Otay Formation

The Tertiary-age (upper Oligocene) Otay Formation is located along most of the northern and western portions of the site on the ridges and along the side slopes of canyon drainages. This unit consists of dense to very dense and hard, slightly and moderately cemented, clayey sandstone and sandy claystone with interbeds of gravel, cobble, and boulders up to 30%, with a maximum dimension of approximately 10 inches. Excavation within this unit would be possible with heavy-duty grading equipment; however, cemented zones may create difficult ripping and generate oversize cemented boulders. The Otay Formation is suitable for the support of proposed full and structural loads. The sandstone portions of this unit are generally stable when excavated to construct cut slopes. The claystone layers may require slope stabilization in cut slopes, if encountered during grading operations. Slope drains may be necessary to intercept potential seepage on cut slopes created by landscape irrigation. The upper weathered portion of the Otay Formation (approximately 1 to 2 feet) would likely require remedial grading (Appendix I).

Metavolcanic Rock

Metavolcanic rock is present within and north of the quarry site on the southeastern and northeastern portions of the site and generally varies from weak to strong, highly to slightly weathered. Highly weathered portions of the Metavolcanic rock consists of highly expansive clay and soft rock. The highly weathered portion is generally rippable to depths varying from

2 to 10 feet deep with heavy-duty grading equipment. The majority of this unit is moderately to slightly weather, and would generally be unrippable. Blasting would likely be required to excavate the hard rock portions of this unit and would generate oversize material. The metavolcanic rock is generally suitable for the proposed fill and structural loads; however, the intensely weathered clayey upper portions of this unit would require remedial grading. The portion of this unit that generates rock when excavated is not suitable to cap streets and lots unless properly crushed. The metavolcanic rock would be considered stable for construction of the proposed cut slopes, as long as it is free of loose rock after blasting and excavation (Appendix I).

Geologic Structure

The geologic structure within the sedimentary units at the site is characterized by a gentle west to southwesterly dip. The contact between the sedimentary units and the underlying metavolcanic rock generally slopes down steeply to the west and north. The geologic structure within the portions of the metavolcanic rock not subject to intense weathering is characterized as a hard rock mass displaying a relatively consistent, northwest/southeast-trending foliation with dips generally averaging 50 degrees to the southwest and 50 degrees to the northeast. The dominant structural feature within the rock mass is jointing. Joints are surfaces, fractures or partings within a rock mass that do not show evidence of displacement. Jointing within the rock mass was formed as a result of regional tectonic stresses and joints generally have dips of approximately 50 degrees. Geologic structure within the hard rock units is highly variable and should be evaluated for each individually proposed cut slope during grading operations (Appendix I).

Groundwater

No groundwater or seepage was encountered during the geotechnical investigation. However, it is not uncommon for seepage conditions to developed where none previously existed when sites are irrigated. Seepage is dependent on seasonal precipitation, irrigation, and land use, among other factors, and varies as a result. Proper surface drainage would be important to future performance of the project. It is expected that groundwater is deeper than approximately 100 feet below the existing grade. Perched groundwater may exist at or near the surface in the canyon approximately 300 feet to the north of the planned development. It is not expected that groundwater or seepage would be encountered during construction of the proposed project (Appendix I).

Geologic Hazards

Earthquakes

The Newport–Inglewood and Rose Canyon Fault Zones, located approximately 10 miles west of Village Four. Newport–Inglewood and Rose Canyon Fault Zones are the nearest known active faults and are the dominant source of potential ground motion. Earthquakes that might occur on

the Newport–Inglewood and Rose Canyon Fault Zones or other faults within the southern California and northern Baja California area are potential generators of significant ground motion at the project site (Appendix I). Figure 5.10-2 illustrates major regional faults surrounding the project site. The estimated maximum earthquake magnitude for the Newport–Inglewood Fault is 7.5 (Appendix I). Table 5.10-1 lists the estimated maximum earthquake magnitude for the most dominant faults in relation to the project site.

Table 5.10-1
Principal Active Faults Near Village Four

Fault Name	Distance From Project Site (miles)	Maximum Earthquake Magnitude (M_{max})
Newport–Inglewood	10	7.5
Rose Canyon	10	6.9
Coronado Bank	18	7.4
Palos Verdes Connected	18	7.7
Elsinore	41	7.9
Earthquake Valley	45	6.8

Source: Appendix I.

Liquefaction

Liquefaction typically occurs when a site is located in a zone with seismic activity, on-site soils are cohesionless, static groundwater is encountered within 50 feet of the surface, and soil relative densities are less than approximately 70%. If the four previous criteria are met, a seismic event could result in a rapid pore-water pressure increase from the earthquake-generated ground accelerations. Seismically induced settlement may occur whether the potential for liquefaction exists or not. The potential for liquefaction and seismically induced settlement occurring within the site soil is considered to be very low due to the dense nature of proposed fill, the very dense nature of the formational materials, and the lack of a permanent groundwater table within the upper 50 feet of the planned finish grade elevations (Appendix I).

Expansive Soil

The majority of the geologic units would likely possess a “very low” to “medium” expansion potential (Expansion Index of 90 or less). However, some of the geologic units contain a “high” expansive potential (Expansion Index of 90 or less). These units can include topsoil and colluvium and the claystone beds within the Otay Formation, and the highly weathered clays of the metavolcanic rock. If highly expansive clays and claystone beds are exposed near finish grade, undercutting of lots, streets, curb and gutters, and sidewalk subgrade would be required. Stability fills may also be required if claystone beds within the Otay Formation are exposed in cut slopes (Appendix I).

Slope Stability

The portions of the Village Four site planned for development are generally underlain by Quarternary-age surficial soil, Tertiary-age Otay Formation, and Jurassic- to Cretaceous-age metavolcanic rock. The units most likely to be subject to slope instability are the slopes located above the claystone portion of the Otay Formation (Appendix I).

Landslides

The geotechnical investigation found that landslides would not be present at a location that could impact the site. The northwest portion contains a small landslide that is within Wolf Canyon, approximately 800 feet from the limits of development (Appendix I).

5.10.2 Thresholds of Significance

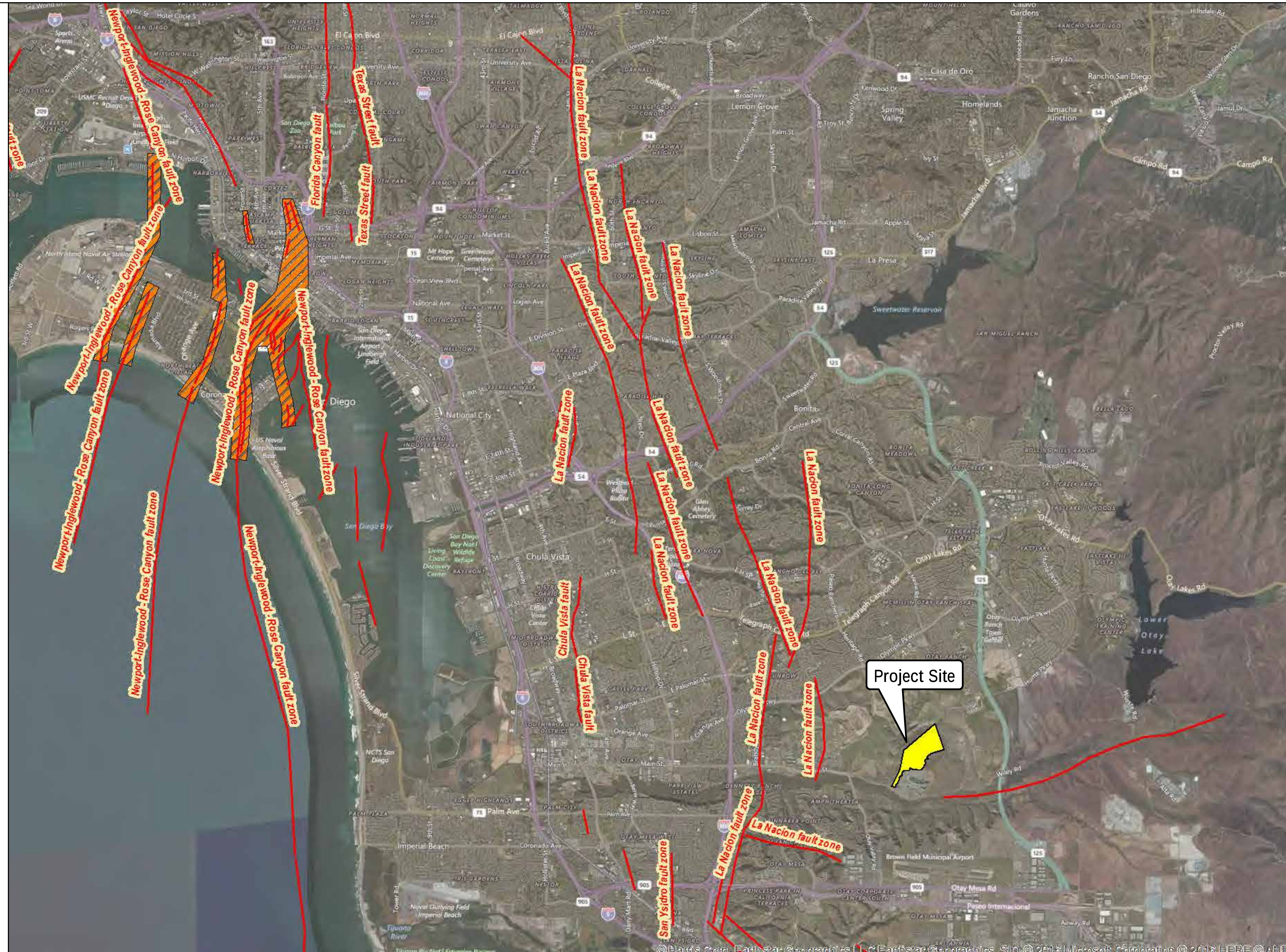
Would the project:

A. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
    i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. (refer to Division of Mines and Geology Special Publication 42);
    ii. Strong seismic ground shaking;
    iii. Seismic-related ground failure, including liquefaction; and/or
    iv. Landslides?
    v. Result in substantial soil erosion or the loss of topsoil?
B. 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?
C. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?
D. Be inconsistent with General Plan geotechnical policies thereby resulting in a significant physical impact?

Village Four TM Boundary

Alquist-Priolo Earthquake Fault Zone

County Faults



0 4,000 8,000 16,000 Feet

SOURCE: AERIAL-SANDAG IMAGERY 2014; FAULTS-SANDAG

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FIGURE 5.10-2

Nearby Active Faults

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5.10.3 Impacts

A. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (refer to Division of Mines and Geology Special Publication 42).

The Newport–Inglewood and Rose Canyon Fault Zones are located approximately 10 miles from the Village Four site. Newport–Inglewood and Rose Canyon Fault Zones are the nearest known active faults and are the dominant source of potential ground motion. According to the geotechnical investigation, the project site is not located on any known active, potentially active, or inactive fault traces. An active fault is defined by the CGS as a fault showing evidence for activity within the last 11,000 years. The project site is not located within a State of California Earthquake Special Study Zone or Alquist-Priolo Zone. Additionally, the geotechnical investigation concluded that no active, potentially or inactive faults are present underlying or trending toward the site (Appendix I).

Surface ground cracking related to shaking from distant events is not considered a significant hazard, although lurching or cracking of the ground surface as a result of nearby seismic events is possible (Appendix I). Components of the proposed project would be constructed in accordance with the City's Grading Ordinance, current seismic design specifications, current CBC standards, and other regulatory requirements, which would reduce the potential for risks related to seismic events. Therefore, since development would not be located within an Alquist-Priolo Zone, and would be in compliance with applicable regulatory requirements, impacts associated with the rupture of a known earthquake fault would be less than significant.

ii. Strong seismic ground shaking.

Earthquakes that might occur on the Newport–Inglewood and Rose Canyon Fault Zones or other faults within the Southern California and northern Baja California area are potential generators of significant ground motion at the site. As previously discussed, the Newport–Inglewood and Rose Canyon Fault Zones are both located approximately 10 miles northwest of the project site. Newport–Inglewood and Rose Canyon Fault Zones are the nearest known active faults and are the dominant source of potential ground motion. In the event of a major earthquake on any of the active faults within the Southern California and northern Baja California region, the project site, as with other sites in the general vicinity, could be subject to moderate to severe ground shaking (Appendix I). However, components of the proposed project would be constructed in accordance with the City's Grading Ordinance, current seismic

design specifications, current CBC standards, and other regulatory requirements, which would reduce the potential for risks related to seismic events. Therefore, impacts associated with strong seismic ground shaking would be less than significant.

iii. Seismic-related ground failure, including liquefaction.

The potential for liquefaction and seismically induced settlement occurring within the proposed project site is considered to be very low due to the dense nature of proposed fill, the very dense nature of the formational materials, and the absence of a permanent groundwater table within the upper 50 feet of the planned finish grade elevations (Appendix I). Seismically induced settlement may occur whether the potential for liquefaction exists or not. Although there is potential for seismic-related ground failure to occur, compliance with the City's Grading Ordinance, current seismic design specifications, current CBC standards, and other regulatory requirements, impacts associated with seismic-related ground failure, including liquefaction would be less than significant.

iv. Landslides.

The northwest portion of the Village Four site, within Wolf Canyon approximately 800 feet from the limits of development, contains a small area that has been mapped as having landslides. However, according to the geotechnical investigation, these areas would not be located near proposed development, and the project site is not in a location where landslides would pose a geologic hazard (Appendix I). Although there is low potential for landslides to occur, compliance with the City's Grading Ordinance, current seismic design specifications, current CBC standards, and other regulatory requirements ensures that impacts related to landslides would be less than significant.

B. Result in substantial soil erosion or the loss of topsoil.

Construction Impacts

Excavation and ground-disturbing activities during construction of the proposed project could potentially leave loose soil exposed to the erosive forces of rainfall and high winds, which would increase the potential for soil erosion and loss of topsoil. A site-specific Storm Water Pollution Prevention Plan (SWPPP) would be prepared in accordance with the State Water Resources Control Board (SWRCB) Order No. 2009-0008-DWQ NPDES General Permit No. CAS00002 (Construction General Permit), amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ. For coverage by the Construction General Permit, the project applicant is required to submit to the SWRCB a Notice of Intent (NOI) and develop a SWPPP describing best management practices (BMPs) to be used during and after construction to prevent discharge of sediment and other pollutants in storm water runoff from the project site. The BMPs would

provide erosion and sedimentation control through measures such as silt fences, fiber rolls, gravel bags, temporary desilting basins, velocity check dams, temporary ditches or swales, stormwater inlet protection, and soil stabilization measures such as erosion control mats, tackifier, and hydroseeding. Hillside areas disturbed by project development would be landscaped with deep rooted, drought-tolerant, and/or native plant species selected for erosion control, satisfactory to the City. Earth-disturbing activities associated with construction would be temporary and with compliance with the General Construction Permit and BMPs outlined in the SWPPP, impacts related to soil erosion and the loss of topsoil would be less than significant.

Operational Impacts

Source control BMPs are proposed for the project, which include maintenance of surface drainage so it is directed away from structures; conservation of natural areas; minimizing impervious footprint; minimizing directly connected impervious areas; minimizing soil compaction in landscaped areas; soil amendments; and protection of slopes, channels, and erosion control, which would help reduce any potential erosion. With implementation of BMPs and proposed drainage facilities outlined in Section 5.9, Water Quality and Hydrology, impacts related to soil erosion and the loss of topsoil would be less than significant.

C. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

According to the geotechnical investigation, the surficial soil within the project site consists of topsoil, colluvium, alluvium, and compressible portions of the landslide debris. These soils are not considered suitable for the support of the proposed project development, and impacts would be potentially significant (Appendix I). With remedial grading consisting of the removal, moisture conditioning, and compaction of these soils, as included within mitigation measure (**MM) GEO-1**, future hazards related to unstable soils and landslides would be reduced to less than significant.

The proposed project site is not located on any known active, potentially active, or inactive fault traces, although cracking or lateral spreading of the ground surface as a result of nearby seismic events is possible (Appendix I). Surface ground cracking or lateral spreading related to shaking from distant events is not considered a significant hazard because the potential for liquefaction and seismically induced settlement occurring within the project site is considered to be very low due to the dense nature of the formational materials and the lack of a permanent groundwater table in the upper 50 feet (Appendix I).

According to the geotechnical investigation, although the project site currently exists with potentially hazardous expansive and compressible soils, no soil or geologic conditions would preclude the development of Village Four (Appendix I). Compliance with the City's Grading

Ordinance, current seismic design specifications, current CBC standards, and other regulatory requirements, in addition to implementation of project design features and BMPs, and following recommendations of the geotechnical investigation, which are included within **MM-GEO-1**, would ensure that the proposed project would have less than significant impacts associated with geologic hazards.

D. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

Expansive soils contain minerals, such as clay, that are capable of absorbing water and expanding, and losing water and shrinking. The repetitive stress of a swell/shrink cycle on a foundation can cause severe damage to buildings and structures. The geotechnical investigation found that the majority of the geologic units on site would likely possess a "very low" to "medium" expansion potential. However, some of the sites geologic units contain a "high" expansive potential (Appendix I). Recommendations found in **MM-GEO-1** include additional geotechnical report updates for individual areas within the proposed project site. With the incorporation of **MM-GEO-1**, and provided that recommendations within subsequent geotechnical report updates are followed, impacts would be less than significant.

E. Be inconsistent with General Plan geotechnical policies thereby resulting in a significant physical impact.

City of Chula General Plan

The proposed project would promote the policies and goals of the General Plan, including minimizing injury and damage associate with geologic hazards through engineering analysis and design; requiring site-specific geotechnical investigations; promoting public safety; and preventing development on lands subject to potential geologic hazards. The following objective is outlined in the General Plan relevant to geology and soils (City of Chula Vista 2005):

- **Objective E 14:** Minimize the risk of injury, loss of life, and property damage associated with geologic hazards.
    - **Consistency:** The project includes a Preliminary Geotechnical Investigations for Village Four that identifies potential geologic hazards and proposed mitigation to reduce the risk of injury, loss of life, and property damage.

Development of the proposed project would be consistent with the most recent CBC standards and other regulatory requirements to protect against injury, loss of life, and major property damage to the maximum extent feasible. The proposed project would be consistent with objectives outlined in the General Plan and impacts would be less than significant.

Otay Ranch General Development Plan

The following goals are outlined in the Otay Ranch General Development Plan to minimize potential impacts, to the extent feasible, damage or loss due to geologically hazardous areas (City of Chula Vista and County of San Diego 1993):

- **Goal 12.9:** Promote public safety and provide public protection from fire, flooding, seismic disturbances, geologic phenomena and manmade hazards in order to preserve life, health and property; continue government functions and public order; maintain municipal services; and rapidly resolve emergencies and return the community normalcy and public tranquility.
    - **Consistency:** The proposed project allows for safety related land uses including police and fire stations through the requirement to pay impact fees to finance the need for increased staff and services generated by development in the SPA.
- **Goal 12.11.7B:** Minimize soil loss due to development.
    - **Consistency:** Landform grading, slope stabilization, vegetation protection, revegetation, and other techniques will be employed to meet this goal and objective.
- **Goal 12.11.7C:** Reduce impacts to environmentally sensitive and potential geologically hazardous areas associated with steep slopes.
    - **Consistency:** The final grading plan for Village Four is based on a geotechnical study. The site grading design will terrace the property to follow the natural grade elevation change. Manufactured slope heights and forms will be in conformance with City ordinances and policies.

The project includes a Preliminary Geotechnical Investigations for Village Four that identifies potential geologic hazards and proposed mitigation to reduce the risk of injury, loss of life, and property damage (Appendix I). Development of the proposed project would be consistent with the most recent CBC standards and other regulatory requirements including with the Chula Vista Grading Ordinance and current seismic design specifications of the Structural Engineering Association of California. Compliance with the geotechnical investigation recommendations and other regulatory requirements would ensure consistency with the geotechnical policies in the General Plan and Otay Ranch General Development Plan. Therefore, impacts would be less than significant.

5.10.4 Level of Significance Prior to Mitigation

Prior to mitigation the proposed project would have potentially significant impacts associated with expansive and compressible soils.

5.10.5 Mitigation Measures

The following mitigation measure was developed from recommendations provided in the Update Geotechnical Report (Appendix I) prepared by Geocon for the proposed project:

MM-GEO-1 Prior to the issuance of the grading permit, the applicant(s) shall verify that the applicable recommendations of the Preliminary Geotechnical Investigation: Otay Ranch Village 4, prepared by Geocon Inc. on March 15, 2015, have been incorporated into the project design and construction documents and conforms to the most recent California Building Code to the satisfaction of the City of Chula Vista Engineer.

Recommendations include the following:

1. Potential for soil expansion shall be evaluated once final grade is achieved.
2. During grading, compressible soils shall be removed and replaced with compacted fill.
3. Site drainage and moisture protection measures, such as provisions for underground utilities, landscaping, and maintaining adequate site drainage to prevent soil movement, shall be ensured.
4. Additional geotechnical report updates shall made as development of Village Four continues to assess proposed grading for each neighborhood.

5.10.6 Level of Significance After Mitigation

The mitigation measure listed in Section 5.10.5 would reduce potential impacts associated with geology and soils to less than significant.

5.11 PUBLIC SERVICES AND UTILITIES

This section describes the existing setting related to public services and utilities that would serve the proposed project and evaluates potential impacts to public services and utilities due to implementation of the proposed project. Fire protection and emergency medical services are addressed in Subsection 5.11.1; police services are addressed in Subsection 5.11.2; libraries in Subsection 5.11.3; schools in Subsection 5.11.4; parks and recreation in Subsection 5.11.5; water in Subsection 5.11.6; recycled water in Subsection 5.11.7; sewer in Subsection 5.11.8; solid waste disposal in Subsection 5.11.9; and energy in Subsection 5.11.10. The discussions found in the following sections are based on information provided by the local service providers, findings from other approved planning documents, and technical reports related to the provision of public services and utilities.

The discussion below is based on the following studies:

- Fire Protection Plan, Otay Ranch Village Four South prepared by Dudek in November 2016 (Appendix F)
- Otay Ranch Village 4 South II.8 Water Conservation Plan prepared by Dexter Wilson Engineering in December 2016 (Appendix J1)
- Overview of Water Service for Otay Ranch Village 4 South prepared by Dexter Wilson Engineering in December 2016 (Appendix J2)
- Overview of Water Service for Otay Ranch Village 4 South prepared by Dexter Wilson Engineering in December 2016 (Appendix J3)
- Non-Renewable Energy Conservation Plan prepared by Atlantis Group in January 2017 (Appendix J4)

5.11.1 Fire Protection and Emergency Medical Services

Regulatory Framework

Local Level

City of Chula Vista General Plan

Fire Protection Services

The 2005 Chula Vista General Plan recognizes that fire protection and emergency services will need to expand as the population in the City of Chula Vista (City) grows. The Public Facilities and Services Element includes objectives to maintain sufficient levels of fire protection and emergency medical service to protect public safety and property (Objective PFS 5) and provide adequate fire

protection services to newly developing and redeveloping areas of the City (Objective PFS 6). Additional GM 1 and Policy GM 1.11 encourage withholding discretionary approvals and subsequent building permits from projects demonstrated to be out of compliance with applicable threshold standards for fire and emergency medical services (City of Chula Vista 2005a).

The General Plan identifies the current and planned fire station locations in Otay Ranch. Fire Station No. 7, located at 1640 Santa Venetia Street, is the closest existing station to Village Two.

Otay Ranch General Development Plan

The purpose of the fire protection and emergency medical facility section of the Otay Ranch General Development Plan (GDP) is to establish goals, objectives, policies, standards, and processing requirements for the timely provision of these facilities. As stated therein, the goal is to provide protection to the Otay Ranch area and surrounding communities from loss of life and medical emergencies. The 1993 Otay Ranch GDP, last amended in 2015, states that four new fire stations are necessary to serve the Otay Ranch area at build-out. To meet ongoing demand, Fire Station No. 7 was developed in Otay Ranch Village Two to serve Otay Ranch. The Otay Ranch GDP shows a fire station location within the Eastern Urban Center (EUC). Fire Station No. 10 is sited to meet project growth within the Otay Ranch, including buildout of the EUC and other surrounding villages. Fire Station No. 10 has not yet been built. The remaining two fire stations needed to serve the buildout of the Otay Ranch GDP area have not yet been planned by the Chula Vista Fire Department (CVFD) (City of Chula Vista and County of San Diego 1993).

Fire Facility, Equipment, and Deployment Master Plan

The existing Chula Vista Fire Facility, Equipment, and Deployment Master Plan (FMP) dated 2012, focuses on fire protection services deployment. Deployment is measured by three different indicators: distribution, concentration, and reliability. The FMP recommends three more fire stations to meet expected growth within the City. It also concluded that current staffing should be increased to provide a higher level of efficiency of service (City of Chula Vista Fire Department 2012).

Chula Vista Municipal Code

Chapter 19.80, Controlled Residential Development, Section 19.80.030 of the Chula Vista Municipal Code (CVMC) is intended to ensure that new development would not degrade existing public services and facilities below acceptable standards for fire and other public services. The preparation of a Public Facilities Finance Plan (PFFP) is required in conjunction with the preparation of each SPA Plan to ensure that development is consistent with the overall goals and policies of the General Plan and would not degrade public services. Similarly, CVMC Section 19.09 (Growth Management) provides policies and programs that tie the pace of development to the provision of public facilities and improvements. Section 19.09.040B specifically requires that

"properly equipped and staffed fire and medical shall respond to calls throughout the City within seven minutes in 80% of the cases." Section 19.09 also requires a PFFP.

Fire Protection Plan

A Fire Protection Plan (FPP) has been prepared for Village Four. Fuel modification zones have been incorporated into the proposed Village Four development areas adjacent to natural open space. These fuel modification zones are consistent with the requirements of the Chula Vista Multiple Species Conservation Program (MSCP) Subarea Plan (City of Chula Vista 2003a) and Otay Ranch Phase 2 Resource Management Plan (RMP) (City of Chula Vista and County of San Diego 1996). No fuel modification activities will occur within Otay Ranch Preserve/ MSCP Preserve areas. Graded landscaped slope areas will be maintained pursuant to FPP requirements and will be outside of the Preserve. Streets and hard surface and irrigated landscaped areas may be included in the Brush Management Zone, in accordance with specific requirements of the FPP.

Chula Vista Public Facilities Development Impact Fee

In August 1989, the Chula Vista City Council adopted Ordinance No. 2320 establishing a PFDIF, which helps cover the cost of new or expanding public facilities within the City. The facilities are required to support future development within the City, and the fee schedule has been adopted in accordance with Government Code Section 66000. The proposed project would be subject to the payment of the fee at the rate in effect at the time building permits are issued. The PFDIF amount is determined through evaluation of the need for new facilities as it relates to the level of service demanded by new development, which varies in proportion to the equivalent dwelling unit generated by a specific land use.

The PFDIF addresses the project's proportional impact on capital facilities, such as structures and equipment. It does not address the impact associated with operations and maintenance for those facilities. Public funds such as property taxes, sales taxes, and fees generated by the project would be used to cover the incremental costs associated with providing services. The project would be required to pay the PFDIF, which would be used exclusively for future facility improvements necessary to ensure that the development contributes its fair share of the cost of facilities and equipment determined to be necessary to adequately accommodate new development in the City.

Existing Conditions

Fire Protection Services

Fire protection for the City of Chula Vista is provided by the CVFD. The CVFD currently employs 140 people, including firefighters and administrative staff. There are currently nine fire stations in the City of Chula Vista, serving a population of approximately 256,000 people and an area covering over 52 square miles. According to the 2016 Growth Management Oversight Commission (GMOC) Annual Report, the CVFD received approximately 17,000 calls for service in Fiscal Year (FY) 2015 (City of Chula Vista 2016a). Of these calls, 78.3%, were responded to within a response time of 7 minutes during FY 2015. The current GMOC threshold standard for emergency fire response is 7 minutes or less in 80% of calls. The CVFD did not meet the GMOC threshold standard in FY 2015.

Table 5.11-1 lists the locations and service areas of the nine fire stations serving the City of Chula Vista. Table 5.11-2 summarizes CVFD staffing. The proposed project is located within the service area of Fire Station No. 7, which is located at 1640 Santa Venetia in Otay Ranch Village Two, immediately adjacent to the proposed project. CVFD Fire Station No. 7 serves the communities of Otay Ranch, the Village of Heritage, Heritage Hills, and the Village of Countryside (City of Chula Vista 2016b). Every day the Fire Department has two Battalion Chiefs on-duty, each covering one half of the City. These Chiefs serve as supervisors for a number of fire stations and their respective crews, and take command of major emergency incidents Fire Station No. 7 is equipped with one fire engine, one fire truck, a heavy rescue truck, a type III brush rig, and a reserve engine. Fire Station No. 7 is also the battalion headquarters for the eastern part of the City. During a typical 24-hour shift, there are 34 line firefighters and two Battalion Chiefs on constant duty spread among the City's nine fire stations. Each station has a captain, engineer and one firefighter. Fire Station No. 7 is the Battalion Headquarters for the eastern part of the City.

Table 5.11-1
City of Chula Vista Fire Station Facilities

Location	Service Area	Apparatus
Fire Station 1 447 F Street Chula Vista, California 91910	Downtown, Bay Front, Northwest City, Interstate 5 (I-5), I-54, and I-805/North	Truck 51 Engine 51 Battalion 51
Fire Station 2 80 East J Street Chula Vista, California 91910	Central City, I-805/Central, Hilltop, Country Club	Engine 52
Fire Station 3 1410 Brandywine Ave. Chula Vista, California 91911	Sunbow, I-805 South, Woodlawn Park, East/Main Street	USAR 53 USAR 53 Tender/Trailer

Table 5.11-1
City of Chula Vista Fire Station Facilities

Location	Service Area	Apparatus
Fire Station 4 850 Paseo Ranchero Chula Vista, California 91910	Rancho Del Rey, Bonita Long Canyon, Southwestern College	Engine 54
Fire Station 5 391 Oxford Street Chula Vista, California 91911	Montgomery, Harborside, Otay, I-5 South, Southwest City, West/Main Street	Engine 55
Fire Station 6 605 Mt. Miguel Road Chula Vista, California 91914	East Lake, Rolling Hills Ranch, San Miguel Ranch	Engine 56 Brush 52
Station 7 1640 Santa Venetia Chula Vista, California 91913	Otay Ranch, Village of Heritage, Heritage Hills, Village of Countryside	Engine 57 Truck 57 Battalion 52
Station 8 1180 Woods Drive Chula Vista, California 91914	East Lake, Rolling Hills Ranch, San Miguel Ranch, Tour De Elegance, The Woods	Engine 58
Station 9 266 E Oneida Chula Vista, California 91911	Sunbow, I-805 South, Woodlawn Park, East/Main Street	Engine 59

Source: City of Chula Vista Fire Department 2016

Table 5.11-2
Chula Vista Fire Department Staffing

Position	Number of Employees
EMS Nurse Coordinator	1
Deputy Fire Chief	2
EMS Nurse Coordinator	1
Facility & Supply Specialist	1
Fire Battalion Chief	7
Fire Captain	35
Fire Chief	1
Fire Division Chief	1
Fire Engineer	33
Fire Inspector I/II	6
Fire Inspector/Prevention Engineer	1
Firefighter	34
Firefighter / Paramedics	8
GIS Specialist	2
Office Specialist	1
Principal Management Analyst	1
Public Safety Analyst	1
Senior Administrative Secretary	1

Table 5.11-2
Chula Vista Fire Department Staffing

Position	Number of Employees
Senior Fire Inspector/Investigator	1
Total	**140**

Source: City of Chula Vista 2016a

Emergency Medical Services

The Fire Department has completed its transition to a new level of Emergency Medical Services (EMS) which provides a Paramedic or Advanced Life Support (ALS) on all responses from the department. The Department's fire paramedics provide Advanced Life Support (ALS) services to those who need assistance including the capacity to start an intravenous drip (IV), defibrillation of the heart, decompression of a collapsed lung and various other advanced aid procedures.

In July 2013, the Fire Department began providing this level of care via five engines located at stations 5, 6, 7, 8, and 9. By June of 2015, the Fire Department began providing ALS level of care via the remaining engines located at stations 1, 2, 3, and 4, two years ahead of schedule. Recently, Truck 51 and 57 have been added as ALS providers making the Fire Department fully ALS capable – years ahead of schedule. In the event of a community disaster or emergency, the Chula Vista Fire Department operates an Emergency Operations Center (EOC). The EOC is staffed by emergency personnel and trained City staff members with the purpose of supporting residents during disaster by focusing on life safety, evacuation needs, as well as public utilities and infrastructure maintenance (City of Chula Vista 2016b).

Thresholds of Significance

The following significance criteria, included in Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.), will determine the significance of fire protection and emergency medical services impact. Impacts to fire and emergency medical services would be significant if the proposed project would:

A. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection and emergency services?

B. The City's Threshold Standard Policy states that the proposed project would have a significant impact on fire protection services if it would:

i. Reduce the ability of properly equipped and staffed fire and medical units to respond to calls throughout the City within 7 minutes in 80% of the cases?

C. Be inconsistent with General Plan, GDP, and other objectives and policies regarding fire protection and emergency medical services thereby resulting in a significant physical impact?

Proposed Project Impact Analysis

A. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection and emergency services.

Fire Protection and Emergency Services

If constructed as anticipated in the approved Chula Vista FFMP, the proposed Village Eight West Fire Station is located 0.73 mile to the most remote portion of the village from the project site and would also respond to emergency calls for service within 5 minutes. The closest existing fire station to the proposed project site is fire station 7, which is located approximately 1.88 miles from the furthest point in the community. It is the closest existing station and does meet CVFD's 5-minute travel time goal for all structures, although it is staffed with a three-person crew so may not be suitable for initial response in terms of providing 4 firefighters so the Occupational Safety and Health Administration (OSHA) two in and two out regulation is met. The following call volume data for Station 7 was obtained from Chula Vista Fire Department's 2015 Annual Stats Report: engine 57 (1,468 calls) and truck 57 (436 calls). Based on the total number of calls handled in 2015 by Station 7, the average daily call volume is calculated as follows:

- **Station 7:** engine 57 – 4 calls per day, truck 57 – 1.2 calls per day

Using the CVFD estimate of 74 annual calls per 1,000 population, the project's estimated 958 residents and visitors would generate approximately 71 calls per year (about 0.19 calls per day) (see Table 5.11-3), roughly 68% of which (0.13 call per day) is expected to be medical emergencies, based on past call statistics.

Additional stations would be necessary, as identified by the City's FFMP, to adequately absorb the increased demand from the complete build out of Otay Ranch. With the addition of two planned fire stations in the area, and the currently low call volume at Station 7, the additional calls associated with build out can be absorbed and still result in better than adequate emergency response. Only a small number (estimated at 1.6 calls per day) of fire related calls would be potentially realized at build out while the majority of calls would be medical related.

Table 5.11-3
Fire Station Call Volumes

Chula Vista Fire Station	Current Daily Call Volume	Estimated Daily Call Volume Increase	Estimated Total Daily Call Volumes with Proposed Project
7	4.0 (engine) + 1.2 (truck)	0.19	5.4

Source: Appendix F

Based on call volume, the existing station would be able to respond to Village Four call volume increases. The construction of new fire stations would be supported on a fair share basis by future development, including the proposed project, through payment of the City's Public Facilities Development Impact Fee (PFDIF) Program, addressed by the project's Public Facilities Financing Plan (PFFP). The PFDIF addresses a project's proportional impact on capital facilities, such as structures and equipment, associated with fire protection. It does not address the impacts associated with operations and maintenance for those facilities, and it is the City's policy to use public funds such as property taxes, sales taxes, and fees generated by the project to cover the incremental costs associated with providing fire services. This impact would be potentially significant if these mechanisms are not enforced. Therefore, impacts would be **potentially significant** and mitigation is required.

~~Emergency Medical Services~~

If constructed as anticipated in the approved Chula Vista FFMP, the proposed Village Eight West Fire Station located 0.73 mile to the most remote portion of the village from the project site would also respond to emergency calls for service within 5 minutes. Existing Fire Station 3 (4.63 miles from the project) and the approved EUC Fire Station (2.02 miles from the project) would possibly also respond, but would not meet 5 minutes for the entire project.

The first arriving engine from Station 7 achieves a 5-minute travel time throughout the entire development, which is sufficient for the approved response goal of 7 minutes 90% of the time (5 minutes travel + dispatch + turnout). Station 7 can successfully achieve response to 75 single-family and three multi-family lots (100%) of Village Four South within 3 minutes 50 seconds travel time. Achievement of 100% coverage under 4 minutes is considered to exceed the City's standard. The Effective Fighting Force (EFF) (first three engines, one truck and battalion chief for a total of 14 firefighters) could be on-scene within roughly 10 minutes 11 seconds travel time from three existing stations and within one minute (to the furthest village extent) from the proposed Village Eight West station and 4 minutes 5 seconds from the EUC-B station. In this case, the proposed Village Eight West and EUC-B stations provide time savings, as both Effective Firefighting Force responses are within 5 minutes and under the 8-minute travel time goal.

The impacts associated with the proposed Village Eight West and EUC-B stations would be analyzed in their respective environmental review process and any significant impacts to the environment would be mitigated to the maximum extent feasible. The proposed project does not include the construction of any stations, and the project site would be adequately served by Station 7. Thus, impacts would be less than significant.

B. The City's Threshold Standards Policy states that the proposed project would have a significant impact on fire protection services if it would:

i. Reduce the ability of properly equipped and staffed fire and medical units to respond to calls throughout the City within 7 minutes in 80% of the cases.

Fire Protection and Emergency Services

As previously discussed, Fire Station 7 currently meets the CVFD's 5-minute travel time goal for all structures. The proposed project is expected to increase daily call volumes by 0.23 calls per day. Due to the minimal increase in call volumes as a result of the proposed project, it is anticipated that CVFD would continue to respond to calls throughout the City within 7 minutes in 80% of the cases. The additional 0.23 call per day expected to be generated by Village Four South would not significantly stress City of Chula Vista Fire Protection capabilities of existing stations, thus impacts would be less than significant.

~~***Emergency Medical Services***~~

Station 7 can successfully achieve response to all proposed residences within 3 minutes 50 seconds travel time. Achievement of 100% coverage under 4 minutes is considered to exceed the City's standard. The additional 0.23 call per day expected to be generated by Village Four South would not adversely affect the City of Chula Vista emergency response capabilities of existing stations, thus impacts would be less than significant.

C. Be inconsistent with General Plan, GDP, and other objectives and policies regarding fire protection and emergency medical services thereby resulting in a significant physical impact.

City of Chula Vista General Plan

The proposed project would promote the policies and goals of the General Plan including: support the provision of new fire stations; ensure development is phased with adequate fire protection services; require adequate emergency access in new development; and maintain sufficient levels of fire protection and emergency medical services. The following objectives are identified in the General Plan relevant to fire protection and emergency medical services (City of Chula Vista 2005a):

- **Objective PFS 5:** Maintain sufficient levels of fire protection, emergency medical service and police services to protect public safety and property.

- **Objective PFS 6:** Provide adequate fire and police protection services to newly developing and redeveloping areas of the City.
- **Objective PFS 8:** Develop pre-disaster programs to ensure swift and efficient response to emergencies and disasters.

The General Plan identifies the current and planned fire station locations in Otay Ranch. Fire Station No. 7, located at 1640 Santa Venetia Street, is the closest existing station to the project site. As described previously, the proposed project would promote public safety and provide public protection from fire through implementation and compliance with the Village Four FPP and the City's policies and regulations. The FPP and other regulations include guidelines and requirements for fuel modification, emergency access, and other means to ensure public safety. Overall, the proposed project would be consistent with the objectives identified in the General Plan associated with fire protection and emergency medical services, and impacts would be less than significant.

Otay Ranch GDP

The purpose of the fire protection and emergency medical facility section of the Otay Ranch GDP is to establish goals, objectives, policies, standards, and processing requirements for the timely provision of these facilities. As stated therein, the goal is to provide protection to the Otay Ranch area and surrounding communities from loss of life and medical emergencies. The 1993 Otay Ranch GDP, last amended in 2015, states that four new fire stations are necessary to serve the Otay Ranch area at build-out. The following goals are included in the Otay Ranch GDP provide adequate public safety and protection from fires (City of Chula Vista and County of San Diego 1993):

- **Goal:** Provide protection to the Otay Ranch project area and surrounding communities from the loss of life and property due to fires and medical emergencies**.**
- **Goal:** Promote public safety and provide public protection from fire, flooding, seismic disturbances, geologic phenomena and manmade hazards in order to:
  - Preserve Life, Health and Property;
  - Continue Government Functions and Public Order;
  - Maintain Municipal Services; and
  - Rapidly Resolve Emergencies and Return the Community Normalcy and Public Tranquility.
- **Objective:** Provide sufficient fire and emergency service facilities to respond to calls within the Otay Ranch urban communities within a 7-minute response time in 85-percent of the cases.

These goals and objectives would be met through implementation of the PFFP and the Fire Protection Plan, which have been provided in conjunction with the SPA plan. Additionally, the circulation design of Village Four facilitates emergency vehicle access to all areas of the villages. The proposed project would therefore be consistent with the applicable goals related to fire protection and emergency medical services in the Otay Ranch GDP. Impacts associated with the proposed project would be less than significant.

Level of Significance Prior to Mitigation

Prior to mitigation, the proposed project would have **potentially significant** impacts on fire and emergency medical services due to the increase in demand for service.

Mitigation Measures

MM-PUB-1 Prior to the issuance of each building permit for any residential dwelling units, the Applicant(s) shall pay a Public Facilities Development Impact Fee (PFDIF) in accordance with the fees in effect at the time of building permit issuance and phasing approved in the Public Facilities Finance Plan, unless stated otherwise in a separate development agreement.

Level of Significance After Mitigation

With implementation of **MM-PUB-1**, impacts to fire and emergency medical services and facilities as a result of the project would be less than significant.

5.11.2 Police Protection

Regulatory Framework

Local Level

City of Chula Vista General Plan

The Chula Vista General Plan recognizes that police services will need to expand as the City's population grows. The Public Facilities and Services Element of the General Plan includes objectives to maintain sufficient levels of police service to protect public safety and property (Objective PFS 5) and to provide adequate police protection services to newly developing and redeveloping areas of the City (Objective PFS 6). Additionally, Growth Management Objective GM 1 and Policy GM 1.11 encourage withholding discretionary approvals and subsequent building permits from projects demonstrated to be out of compliance with applicable threshold standards for police services (City of Chula Vista 2005a).

Otay Ranch General Development Plan

The purpose of the Law Enforcement Facilities section of the Otay Ranch GDP is to establish goals, objectives, policies, standards, and processing requirements for the timely provision of law enforcement facilitates. The goal is to prevent the occurrence of crime and protect life, and property. As stated in the Otay Ranch GDP, one police station, located in the EUC is necessary to serve the Otay Ranch area at build-out (City of Chula Vista and County of San Diego 1993).

Chula Vista Municipal Code Growth Ordinance

CVMC Section 19.80.030 is intended to ensure that new development would not degrade existing public services and facilities below acceptable standards for police protection. The preparation of PFFPs is required in conjunction with the preparation of SPA Plans to ensure that the development of the proposed project is consistent with the overall goals and policies of the General Plan and would not degrade public services. Similarly, CVMC Section 19.09, Growth Management, provides policies and programs that tie the pace of development to the provision of public facilities and improvements. Section 19.09.040A specifically requires that properly equipped police units must respond to 81% of Priority One emergency calls within 7 minutes and maintain an average response time of 5.5 minutes or less. Priority One calls include felony crimes in progress, life-threatening situations, and injury to property. For Priority Two urgent calls, the police units must respond to 57% of the calls within 7 minutes with an average response time to all Priority Two calls within 7.5 minutes or less. Priority Two calls include misdemeanor crimes in progress, non–life-threatening situations, possible injury to property, and emergency public services such as traffic signal failure. Finally, Section 19.09 requires PFFPs to demonstrate that public services, such as police services, meet the Growth Management Program quality of life threshold standards.

Chula Vista Public Facilities Development Impact Fee

In August 1989, the Chula Vista City Council adopted Ordinance No. 2320 establishing a PFDIF, which helps cover the cost of new or expanding public facilities within the City. The facilities are required to support future development within the City, and the fee schedule has been adopted in accordance with Government Code Section 66000. The proposed project would be subject to the payment of the fee at the rate in effect at the time building permits are issued. The PFDIF amount is determined through evaluation of the need for new facilities as it relates to the level of service demanded by new development, which varies in proportion to the equivalent dwelling unit generated by a specific land use.

The PFDIF addresses the project's proportional impact on capital facilities, such as structures and equipment. It does not address the impact associated with operations and maintenance for those facilities. Public funds such as property taxes, sales taxes, and fees generated by the project

would be used to cover the incremental costs associated with providing services. The project would be required to pay the PFDIF, which would be used exclusively for future facility improvements necessary to ensure that the development contributes its fair share of the cost of facilities and equipment determined to be necessary to adequately accommodate new development in the City.

Existing Conditions

Police protection for the Otay Ranch area is provided by the Chula Vista Police Department (CVPD) from its existing police facility located at 315 Fourth Avenue in downtown Chula Vista. The CVPD is currently authorized for 322 employees (City of Chula Vista 2016c), a ratio of approximately one sworn personnel per 1,000 residents. The project site is within Patrol Beats 24 and 32. At least one patrol car serves each beat in the City 24 hours a day. As the City continues to grow and the demand for police services increases, the CVPD regularly evaluates beat structure. Patrol officers respond to calls Citywide, and the beat strength does not include traffic units, school resource officers, roving patrol officers, and patrol sergeants who would service the project as needed. In addition the CVPD participates in regional mutual aid agreements. The CVPD opened a new community storefront facility located at 2015 Birch Road of the Otay Ranch Town Center in Chula Vista in early 2011, which provides limited police services to the community.

The GMOC 2016 Annual Report reported that the Police Department responded to 71.2% of Priority One emergency calls within 7 minutes and maintained an average response time for Priority One calls of 5 minutes 17 seconds during FY 2015. This did not meet the growth management ordinance threshold standard requiring properly equipped and staffed police units to respond to 81% of Priority One emergency calls within 7 minutes with an average response time of 5 minutes 30 seconds. During the same period addressed in the 2016 GMOC Annual Report, the CVPD maintained an average response time for Priority Two calls of 13 minutes 50 seconds. This did not meet the growth management ordinance threshold standard that requires properly equipped and staffed police units to respond to all Priority Two calls within 12 minutes. The City has implemented measures to improve police response times. These measures range from increasing staffing productivity to technological improvements (City of Chula Vista 2016a).

Thresholds of Significance

The following significance criteria, included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), will determine the significance of police service impact. Impacts to police services would be significant if the proposed project would:

A. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental

impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police protection services?

B. The City's Threshold Standards Policy states that the proposed project would have a significant impact on police services if it would:

   i. Exceed the City's threshold standards to respond to Priority One emergency calls throughout the City (within 7 minutes in 81% of the cases and an average response time to all Priority One calls of 5.5 minutes or less)?

   ii. Exceed the City's threshold standards to respond to Priority Two urgent calls throughout the City (within 7 minutes in 57% of cases and an average response time to all Priority Two calls of 7.5 minutes or less)?

C. Be inconsistent with General Plan objectives and policies regarding police protection thereby resulting in a significant physical impact?

Proposed Project Impact Analysis

A. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police protection services.

The Chula Vista Police Department (CVPD) would provide law enforcement services to the project site. The CVPD currently provides police service to the project from its existing police facility in downtown Chula Vista. Maintaining the current rate of 1.16 sworn police officers per 1,000 population will require adding approximately one sworn officer to support the projected population in Village Four. The City's PFDIF, described previously, would help cover the cost of new or expanding public facilities within the City, including police facilities. The proposed project would be subject to the payment of the fee at the rate in effect at the time building permits are issued. Although additional law enforcement staff are recommended to adequately support the proposed project at buildout, the project would be required to pay the PFDIF, which would be used exclusively for future facility improvements necessary to ensure that the development contributes its fair share of the cost of police facilities and equipment determined to be necessary to adequately accommodate new development in the City. This impact would be potentially significant if these PFDIF mechanisms are not enforced. Therefore, impacts would be **potentially significant** and mitigation is required.

B. The City's EIR Scoping Letter Contents and Thresholds states that the proposed project would have a significant impact on police services if it would:

i. Exceed the City's Threshold standards to respond to Priority One emergency calls throughout the City (within seven minutes and 81% of the cases and an average response time to all Priority One calls of 5.5 minutes of less).

ii. Exceed the City's threshold standards to respond to Priority Two urgent calls throughout the City (within seven minutes in 57% of cases and an average response time to all Priority Two calls of 7.5 minutes or less).

Refer to Threshold A, above. Maintaining the current rate of 1.16 sworn police officers per 1,000 residents would require adding approximately 1 sworn officer to support the projected population in Village Four. Based on current policy, no police substations are required in Village Four. All future development within the project site would comply with applicable Crime Prevention Through Environmental Design (CPTED) and Chula Vista Police Department Standards.

This impact would be potentially significant if the PFDIF payment mechanisms are not enforced. Therefore, impacts would be **potentially significant** and mitigation is required.

C. Be inconsistent with General Plan objectives and policies regarding police protection thereby resulting in a significant physical impact.

City of Chula Vista General Plan

The Chula Vista General Plan recognizes that police services will need to expand as the City's population grows. The Public Facilities and Services Element of the General Plan includes objectives to maintain sufficient levels of police service to protect public safety and property and to provide adequate police protection services to newly developing and redeveloping areas of the City. The proposed project would promote the policies and goals of the General Plan, including maintain sufficient levels of police protection services; provide adequate law enforcement staff; provide adequate police protection to newly developing areas; concurrent construction of public services and new development; protection of life and property and prevention of crime; and site law enforcement facilities in appropriate locations. The following objectives are identified in the General Plan associated with police protection (City of Chula Vista 2005a):

- **Objective PFS 5:** Maintain sufficient levels of fire protection, emergency medical service and police services to protect public safety and property.
- **Objective PFS 6:** Provide adequate fire and police protection services to newly developing and redeveloping areas of the City.

The proposed project would contribute an equitable financial share to the Otay Ranch law enforcement facilities as identified in its PFFP. Thus, impact would be potentially significant if these PFDIF mechanisms are not enforced. Therefore, impacts would be **potentially significant** and mitigation is required.

Otay Ranch GDP

The purpose of the Law Enforcement Facilities section of the Otay Ranch GDP is to establish goals, objectives, policies, standards, and processing requirements for the timely provision of law enforcement facilitates. The goal is prevent the occurrence of crime and protect life, and property. As stated in the Otay Ranch GDP, one police station, located in the EUC is necessary to serve the project at build-out. The following goals and objectives are identified in the Otay Ranch GDP relevant to police protection (City of Chula Vista and County of San Diego 1993):

- **Goal:** Protection of life and property and prevention of crime occurrence.
- **Objective:** Make provisions for criminal justice facilities, including jails, courts, and police facilities adequate to serve the Otay Ranch Project Area.
- **Objective:** Enhance conditions for public safety by utilizing land use and site design techniques to deter criminal activity and promote law enforcement.
- **Objective:** Site law enforcement facilities to appropriate locations in order to serve the population.

The proposed project would contribute an equitable financial share to the Otay Ranch law enforcement facilities as identified in the PFFP, thus impact would be potentially significant if these PFDIF mechanisms are not enforced. Therefore, impacts would be **potentially significant** and mitigation is required.

Level of Significance Prior to Mitigation

Prior to mitigation, the proposed project would have **potentially significant** impacts related to police protection.

Mitigation Measures

MM-PUB-1 Prior to the issuance of each building permit for any residential dwelling units, the Applicant(s) shall pay a Public Facilities Development Impact Fee (PFDIF) in accordance with the fees in effect at the time of building permit issuance and phasing approved in the Public Facilities Finance Plan, unless stated otherwise in a separate development agreement.

Level of Significance After Mitigation

With implementation of **MM-PUB-1**, impacts related to police protection would be less than significant.

5.11.3 Library

Regulatory Framework

Local Level

City of Chula Vista General Plan

The 2005 Chula Vista General Plan recognizes that demand for library facilities will continue to increase as the City's population grows in the eastern areas of the City through new development, and that location is the most important reason residents choose to utilize a particular public library. The General Plan Public Facilities and Services Element includes objectives for the City to provide a library system of facilities and programs that meets the needs of Chula Vista residents of all ages (Objective PFS 11) and to efficiently locate and design library facilities (Objective PFS 12). Additionally, Growth Management Objective GM 1 and Policy GM 1.11 encourage withholding discretionary approvals and subsequent building permits from projects demonstrated to be out of compliance with applicable threshold standards for library services (City of Chula Vista 2005a).

Otay Ranch General Development Plan

The purpose of the Library Facility section of the Otay Ranch GDP is to establish goals, objectives, policies, standards, and processing requirements for the timely provision of library facilities. The Otay Ranch GDP goal is to provide sufficient libraries to meet the information and education needs of Otay Ranch residents. In addition, the Otay Ranch GDP states that a library facility in the EUC is necessary to serve the Otay Ranch at build-out, and would serve as a main library for all residents of Otay Ranch. The Otay Ranch GDP also states that expansion of other libraries may be necessary (City of Chula Vista and County of San Diego 1993).

City of Chula Vista Library Facilities Master Plan

The purpose of the Chula Vista Public Library Facilities Master Plan is to identify ways to improve library service delivery to the community, particularly to residents of eastern Chula Vista. The Master Plan was developed in 1998 to make recommendations for the future development of the Chula Vista Public Library (CVPL) as surrounding areas continue to grow. The recommendations set forth in the Master Plan include the construction of a full service regional library facility east of I-805 as soon as possible, development of the Rancho del Rey

Branch as the next library facility, and planning for a second library facility. Due to the project growth in the Otay Ranch area, the Master Plan states that the EUC "represents an excellent opportunity to establish a library site" (City of Chula Vista 2009).

City of Chula Vista Public Library Strategic Facilities Plan

The CVPL Strategic Facilities Plan is intended as a foundation for the City and the library in planning the future of library facilities in Chula Vista. The CVPL Strategic Facilities Plan includes goals and objectives for implementing the library's vision and mission. These goals include maintaining an excellent and responsive materials collection, ensuring a high quality of public library services through appropriate planning processes, ensuring that library programs and services are accessible to the broadest range of potential users, and increasing the visibility and community awareness of the library, its services, programs, and funding needs (City of Chula Vista 2011a).

Chula Vista Municipal Code Ordinances

CVMC Section 19.80.030, Controlled Residential Growth, is intended to ensure that new development would not degrade existing public services and facilities below acceptable standards for libraries and other public services. The preparation of PFFPs are required in conjunction with the preparation of the SPA Plans for the project to ensure that the development of the project is consistent with the overall goals and policies of the General Plan and would not degrade public services. Similarly, Section 19.09, Growth Management, of the CVMC provides policies and programs that tie the pace of development to the provision of public facilities and improvements. Section 19.09.040D specifically requires "500 square feet (gross) of adequately equipped and staffed library facility per 1,000 population. The City of Chula Vista shall construct 60,000 gross square feet of additional library space, over the June 30, 2000 gross square feet total, in the area east of I-805 by buildout." The analysis of library services provided in this section, along with the PFFPs are intended to ensure funding for any needed expansion of services, while also ensuring that library services will be provided commensurate with development and demand.

Chula Vista Public Facilities Development Impact Fee

In August 1989, the Chula Vista City Council adopted Ordinance No. 2320 establishing a PFDIF, which helps cover the cost of new or expanding public facilities within the City. The facilities are required to support future development within the City, and the fee schedule has been adopted in accordance with Government Code Section 66000. The proposed project would be subject to the payment of the fee at the rate in effect at the time building permits are issued. The PFDIF amount is determined through evaluation of the need for new facilities as it relates to

the level of service demanded by new development, which varies in proportion to the equivalent dwelling unit generated by a specific land use.

The PFDIF addresses the project's proportional impact on capital facilities, such as structures and equipment. It does not address the impact associated with operations and maintenance for those facilities. Public funds such as property taxes, sales taxes, and fees generated by the project would be used to cover the incremental costs associated with providing services. The project would be required to pay the PFDIF, which would be used exclusively for future facility improvements necessary to ensure that the development contributes its fair share of the cost of facilities and equipment determined to be necessary to adequately accommodate new development in the City.

Existing Conditions

The City of Chula Vista operates three library facilities: the Civic Center Branch Library, the South Chula Vista Branch Library and, Otay Ranch Branch Library (Chula Vista Public Library 2016). The Civic Center Branch Library is located at 365 F Street, approximately 7 miles from the project and is the largest library facility within the City, consisting of a two-story, 55,000-square-foot building. It also has a 152-seat auditorium and a 26-seat conference room and serves as a multi-use facility including storage for the Heritage Museum and limited exhibition space. The Civic Center Branch site also offers opportunities for expansion. The Strategic Facilities Plan recommends an additional 60,000 square feet of library space to serve Chula Vista's buildout population. Given the importance of this facility for both core library services and the new strategic service directions, it may be appropriate to consider providing additional capacity at this location. Expanding the Civic Center Branch could also allow the new branch in east Chula Vista to be more appropriately scaled for the population in that part of the City (City of Chula Vista 2011a; CVMC Section 19.09, Growth Management).

The South Chula Vista Branch Library is located at 389 Orange Avenue, approximately five miles from the project and consists of approximately 37,000 square feet. This branch has two conference rooms seating approximately 25 and 50 each, three small study rooms for groups of two or more that may be reserved on site and the Rosemary Lane Galleria which acts as an exhibition space for local artists This library is already a community destination for social and recreational activities – particularly for teens – as well as for literacy and learning. It provides a variety of spaces for library and community programs, cultural events, and recreational activities, as well as gallery space for display of community art and exhibits (City of Chula Vista 2011a; CVMC Section 19.09, Growth Management). The Otay Ranch Branch Library is located at 2015 Birch Road in the Otay Ranch Town Center, approximately one mile from the project and consists of approximately 3,500 square feet and provides a bit of everything: collection materials, computers, seating, and even a group study room.

In addition to the existing libraries described above, the current Library Facilities Master Plan calls for construction of the Rancho del Rey library, which would be approximately 30,000 square feet in size located at the intersection of East H Street and Paseo Ranchero, approximately three miles from the project. However, the Rancho del Rey Library has been delayed indefinitely due to budget constraints (CVMC Section 19.09, Growth Management).

The GMOC threshold standard for libraries is 500 square feet of library space per 1,000 residents. According to the 2016 GMOC Annual Report, the current service ratio for FY 2015 was 379 square feet for every 1,000 residents. Therefore, the City does not current meet the GMOC threshold for libraries.

Thresholds of Significance

The following significance criteria, included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), will determine the significance of a library impact. Impacts to library services would be significant if the proposed project would:

A. Result in substantial adverse physical impact 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 library services?

B. The City's Threshold Standards Policy states that the proposed project would have a significant impact on library services if it would:

    a. Fail to meet the City's threshold standard of 500 gross square feet of library space, adequately equipped and staffed, per 1,000 population?

C. Be inconsistent with General Plan, GDP or other objectives and policies regarding library services thereby resulting in a significant physical impact?

Proposed Project Impact Analysis

A. Result in substantial adverse physical impact 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 library services.

The proposed project would result in increased demand for libraries and may have the potential to require the construction of new or expanded library facilities. The Chula Vista Library Strategic Vision Plan establishes a standard of 500 square feet of adequately equipped and

staffed library facilities per 1,000 residents (City of Chula Vista 2014). The proposed project would generate demand for approximately 579 square feet of additional library facilities within the City. Although the proposed project does not specifically include the development of a library, this demand would be satisfied by participation in the City's Public Facilities Development Impact Program as identified in the PFFP. Thus, impacts would be potentially significant if these PFDIF mechanisms are not enforced. Therefore, impacts would be **potentially significant** and mitigation is required..

B. The City's EIR Scoping Letter Contents and Thresholds states that the proposed project would have a significant impact on library services if it would:

i. Fail to meet the City's threshold standard of 500 gross square feet of library space, adequately equipped and staffed, per 1,000 population.

The proposed project would generate demand for approximately 579 square feet of additional library facilities within the City. Although the proposed project does not specifically include the development of a library, this demand would be satisfied by participation in the City's Public Facilities Development Impact Program as identified in the PFFP. Thus, impacts would be potentially significant if these PFDIF mechanisms are not enforced. Therefore, impacts would be **potentially significant** and mitigation is required..

C. Be inconsistent with General Plan, GDP or other objectives and policies regarding library services thereby resulting in a significant physical impact.

City of Chula Vista General Plan

The 2005 Chula Vista General Plan recognizes that demand for library facilities will continue to increase as the City's population grows in the eastern areas of the City through new development, and that location is the most important reason residents choose to utilize a particular public library. The General Plan Public Facilities and Services Element includes objectives for the City to provide a library system of facilities and programs that meets the needs of Chula Vista residents of all ages and to efficiently locate and design library facilities. The proposed project would promote the policies and goals of the General Plan including: coordinate with the City to provide adequate library facilities to meet the need of new development; construct public facilities concurrently with new development; and properly finance libraries to benefit all residents of Otay Ranch. The following objectives associated with library facilities are identified in the General Plan (City of Chula Vista 2005a):

- **Objective PFS 11:** Provide a library system of facilities and programs that meets the needs of Chula Vista residents of all ages.
- **Objective PFS 11:** Efficiently locate and design library facilities.

- **Objective GM 1:** Concurrent public facilities and services.
- **Objective GM 3:** Create and preserve vital neighborhoods.

The Chula Vista Library Strategic Vision Plan does not identify any library facilities within the project site (City of Chula Vista 2014). As discussed above under Threshold A, no libraries are specifically planned for the project. Therefore, the proposed project would not conflict with the library facilities plan. The proposed project would be consistent with the applicable policies in the General Plan. Impacts would be less than significant.

Otay Ranch GDP

The following goals and objectives are part of the Otay Ranch GDP (City of Chula Vista and County of San Diego 1993):

- **Goal:** Sufficient Libraries to meet the information and education needs of Otay Ranch residents.
- **Objective:** Provide high quality and contemporary library facilities and services, which meet the needs of the entire Otay Ranch Project Area.
- **Objective:** City of Chula Vista: 500-square-feet of adequately equipped and staffed library facilities per 1,000-populations.
- **Objective:** County of San Diego: 350-square-feet (gross) of adequately equipped and staffed regional/area library facilities per 1,000-populations.
- **Objective:** Otay Ranch libraries will be equitably financed by all new development that will benefit from the facilities.

Library facilities are permitted as an ancillary use to any of the many schools immediately adjacent to the project. In addition, all development within the project site is subject to the PFDIF, which is used to fund improvements such as libraries and other public facilities. Thus impacts would be potentially significant if these PFDIF mechanisms are not enforced. Therefore, impacts would be **potentially significant** and mitigation is required.

Level of Significance Prior to Mitigation

Prior to mitigation the proposed project would have potentially significant impacts to library facilities due to increased demand for services.

Mitigation Measures

MM-PUB-1 Prior to the issuance of each building permit for any residential dwelling units, the Applicant(s) shall pay a Public Facilities Development Impact Fee (PFDIF) in accordance with the fees in effect at the time of building permit issuance and phasing approved in the Public Facilities Finance Plan, unless stated otherwise in a separate development agreement.

Level of Significance After Mitigation

With implementation of **MM PUB-1**, impacts to library services as a result of the project would be less than significant.

5.11.4 Schools

Regulatory Framework

State Level

California Senate Bill 50

Two public school districts provide primary and secondary school facilities and services within the City of Chula Vista: The Chula Vista Elementary School District (CVESD) (kindergarten through sixth grade) and the Sweetwater Union High School District (SUHSD) (seventh through 12th grade). Senate Bill 50, enacted in 1998, allows school districts to levy a fee, charge, dedication, or other requirement against any development project within its boundaries for the purpose of funding the construction or reconstruction of school facilities. Pursuant to Government Code Section 65996, the payment of these fees by a developer serves to fully mitigate all potential project impacts on school facilities to less than significant levels.

Proposition 1A

On November 3, 1998, California voters approved Proposition 1A, the Class Size Reduction Kindergarten-University Public Education Facilities Bond Act of 1998. Prior to the passage of Proposition 1A, school districts relied on statutory school fees established by Assembly Bill 2926 ("School Fee Legislation"), which was adopted in 1986, as well as judicial authority (i.e., Mira-Hart-Murrieta court decisions) to mitigate the impacts of new residential development. In a post Proposition 1A environment, the statutory fees provided for in the School Fee Legislation remains in effect and any mitigation requirements or conditions of approval not memorialized in a mitigation agreement, after January 1, 2000 have been replaced by Alternative Fees – sometimes referred to as Level II and Level III Fees. The statutory fee for residential

development is referred to in these circumstances as the Level I Fee (i.e., currently at $2.97 per square foot for unified school districts) (CVESD 2016).

Local Level

City of Chula Vista General Plan

The General Plan recognizes that demand for school facilities will continue to increase as the City's population grows and states that it is the intent of the City to facilitate the efforts of the districts to provide school services. The Public Facilities and Services Element includes objectives to efficiently locate and design school facilities (Objective PFS 10) (City of Chula Vista 2005a).

Otay Ranch General Development Plan

The purpose of the School Facility Section of the Otay Ranch GDP is to establish goals, objectives, policies, and processing requirements to ensure the timely provision of local school facilities. As stated therein, the goals of the Otay Ranch GDP with respect to school facilities is to provide high quality K-12 educational facilities for Otay Ranch residents by coordinated planning of school facilities with the appropriate school district and to coordinate the planning of adult educational facilities with the appropriate district. In addition, the Otay Ranch GDP states that buildout of the Otay Ranch GDP would generate a demand for 13 elementary schools, two middle schools, and two high schools.

The Otay Ranch GDP also includes a list of criteria for siting schools within the individual villages. The siting criteria address site size, location in proximity to residential development and parks and accessibility to all modes of transportation including pedestrian, bicycle and vehicular traffic, topographic and soils considerations, proximity to high-level noise generators, accessibility to utilities and services, and distance to Brown Field. The Otay Ranch GDP notes that while it is unlikely that every site can meet all the criteria, each site should meet most of the listed criteria (City of Chula Vista and County of San Diego 1993).

Chula Vista Municipal Code Growth Ordinance

CVMC Section 19.80.030, Controlled Residential Development, is intended to ensure that new development would not degrade existing public services and facilities below acceptable standards for schools and other public services. The PFFP prepared in conjunction with the preparation of a SPA Plan for a project is intended to ensure development of the project is consistent with the overall goals and policies of the General Plan and would not degrade public services. Similarly, Section 19.09, Growth Management, provides policies and programs that tie the pace of development to the provision of public facilities and improvements. Section 19.09.040.C requires that the City annually provide the two local school districts with a 12- to 18-month development forecast and requests an evaluation from

the districts of their ability to accommodate the forecast and continuing growth. The districts must address the following (City of Chula Vista Municipal Code):

- Amount of current capacity now used or committed
- Ability to absorb forecast growth in affected facilities
- Evaluation of funding and site availability for projected new facilities
- Other relevant information the district(s) desire(s) to communicate to the City and GMOC

The growth forecast and school district response letters are delivered to the GMOC for inclusion in its review. Section 19.09 also requires a PFFP and the demonstration that public services, including schools meet the growth management ordinance quality of life threshold standards. The analysis of school services provided in this section, along with the PFFP to ensure funding for any needed expansion of services, ensure that schools will be provided commensurate with development and demand.

Existing Conditions

Existing and Planned Educational Facilities

The CVESD, established in 1892, is the largest kindergarten through sixth grade (grades K–6) school district in California, and serves approximately 29,200 students in 45 elementary schools with approximately 2,500 employees (both certified and classified) districtwide (CVESD 2016). Kindergarten through third-grade classrooms have a capacity of 23 students (CVESD 2016). The district currently has 45 schools, including seven independent charter schools. An additional elementary school is planned within Village Two. The Village Two elementary school was expected to commence construction in 2011; however, construction has not yet begun and no construction update is available.

Founded in 1920, the Sweetwater District has grown to more than 42,000 students in grades 7 through 12 and more than 32,000 adult learners. The district's 32 campuses are located in the cities of Chula Vista, Imperial Beach, National City and San Diego, including the communities of Bonita, Eastlake, Otay Mesa, San Ysidro and South San Diego. Several middle and high schools are planned or have been recently opened in the area. Olympian High School was opened in 2006 within Village Seven of Otay Ranch, and has a capacity of 2,600 students. A new 7–12 school is planned within Otay Ranch Village Eleven. There is no construction schedule available. Construction of schools within the villages is at the discretion of the school district and not the developer. The school districts will conduct their own environmental analysis through the Department of Education (CDE 2016).

There are six CVESD elementary schools serving Otay Ranch students: Heritage Elementary, McMillin Elementary, Hedencamp Elementary, Veterans Elementary, Wolf Canyon Elementary and Camerena Elementary. Secondary schools serving Otay Ranch include Otay Ranch High School, Olympian High School, Rancho del Rey Middle School, and EastLake Middle School (CDE 2016). Enrollment and capacity in these schools are shown in Table 5.11-4.

Table 5.11-4
Project Area Schools

School	Enrollment	Capacity
Heritage Elementary	874	863
McMillin Elementary	846	845
Hedencamp Elementary	1,083	1,045
Veterans Elementary	910	850
Wolf Canyon Elementary	854	849
Camarena Elementary	1,063	900
Rancho del Rey Middle School	1,746	1,700
Eastlake Middle School	1,679	1,871
Otay Ranch High School	2,581	2,432
Olympian High School	2,519	2,600

Source: CDE 2013, 2016

Thresholds of Significance

The following significance criteria, included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), will determine the significance of a school facility impact. Impacts to schools would be significant if the proposed project would:

A. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for educational facilities services?

B. According to the Otay Ranch GDP, impacts would be significant if the proposed SPA Plan would locate schools:

   i. In areas where disturbing factors such as traffic hazards, airports, or other incompatible land uses are present?

   ii. In areas where they are not integrated into the system of alternative transportation corridors, such as bike lanes, riding and hiking trails, and mass transit?

   iii. Where private elementary and secondary schools are not spaced far enough from public schools and each other to prevent a concentration of school impacts?

iv. Without at least 10 usable acres for an elementary school?

v. Without a central location to residential development?

vi. Adjacent to a street or road which cannot safely accommodate bike, foot, and vehicular traffic?

vii. In areas not adjacent to parks, thereby discouraging joint field and recreation facility uses?

viii. At an unsafe distance from contaminants or toxins in the soil or groundwater from landfills, fuel tanks, agricultural areas, power lines, utility easements, and so on?

ix. Inside of floodplains; on unstable soils; or near fault lines?

C. Be inconsistent with General Plan, GDP, and other objectives and policies regarding school services thereby resulting in a significant physical impact?

Proposed Project Impact Analysis

A. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for educational facilities services.

Based on the number of units projected by the SPA Plan and the negotiated generation rates provided by the Chula Vista Elementary School District and the Sweetwater Union High School District, schools would need to provide educational services for approximately 88 new elementary school students, 29 new middle school students, and 46 new high school students (Atlantis Group 2017).

Elementary Schools

To fulfill the educational need of new elementary school students within the project site, an 11.4-acre elementary school site has been reserved as Parcel S of the Village Eight West SPA. If selected by the Chula Vista Elementary School District, this school site will be large enough to accommodate up to 750 students. The site will be reserved for acquisition by the School District. Construction timing of the school will be determined by the School District. Until such time that the school is completed, students residing within Village Four will attend schools in neighboring villages as determined by the school district.

Middle Schools

To fulfill the educational need of new middle school students within Village Four, a 20.2-acre middle school site has been reserved as Parcel D of the Village Eight West SPA. This school will be large enough to accommodate up to 1,000 students. The site will be reserved for acquisition by the Sweetwater Union High School District. Construction timing of the school will be determined by the School District. Until such time that school is completed, students residing within Village Four will attend schools in neighboring villages as determined by the School District.

High Schools

High School students residing in Village Four would currently be located within the attendance area of Olympian High School located in Village Seven. Enrollment at that school is expected to exceed capacity before Village Four is constructed. The District has planned another high school at the intersection of Eastlake Parkway and Hunter Parkway in Village Eleven.

The project would not generate sufficient students to necessitate construction of new schools. However, two potential school sites are provided within the adjacent Village Eight West SPA to fulfill the demand for education facilities in the area. Impacts associated with the construction of these schools would be analyzed within their respective environmental documents (Village Seven and Village Eight), and any significant environmental impacts would be mitigated to the maximum extent feasible.

Although the proposed project would result in an increase in student generation and the timing of future schools in the project area is not yet determined, the project would be required to pay all required school mitigation fees or enter into an agreement to help finance needed facilities. If the proposed project does not pay the State mandated fees or enter into a school mitigation agreement, which would guarantee construction of the needed school facilities, there would be a **potentially significant** impact to schools.

B. According to the Otay Ranch GDP, impacts would be significant if the proposed SPA Plan would locate schools:

i. In areas where disturbing factors such as traffic hazards, airports, or other incompatible land uses are present.

ii. In areas where they are not integrated into the system of alternative transportation corridors, such as bike lanes, riding and hiking trails, and mass transit.

iii. Where private elementary and secondary schools are not spaced far enough from public schools and each other to prevent a concentration of school impacts.

iv. Without at least 10 usable acres for an elementary school.

v. Without a central location to residential development.

vi. Adjacent to a street or road which cannot safely accommodate bike, foot, and vehicular traffic.

vii. In areas not adjacent to parks, thereby discouraging joint field and recreation facility uses.

viii. At an unsafe distance from contaminants or toxins in the soil or groundwater from landfills, fuel tanks, agricultural areas, power lines, utility easements, and so on.

ix. Inside of floodplains; on unstable soils; or near fault lines.

As previously discussed, the proposed project does not include the construction of any schools and no impact would occur.

C. Be inconsistent with General Plan, GDP, and other objectives and policies regarding school services thereby resulting in a significant physical impact.

City of Chula Vista General Plan

The proposed project would promote the policies and goals of the General Plan, including develop schools that cultivate and educate people of all ages; efficient locate and design school facilities; plan proposed compatible land uses adjacent to schools; site industrial land uses to minimize impacts to schools; and provide high quality K–12 educational facilities to Otay Ranch Residents. The General Plan recognizes that demand for school facilities will continue to increase as the City's population grows and states that it is the intent of the City to facilitate the efforts of the districts to provide school services. The Public Facilities and Services Element includes objectives to efficiently locate and design school facilities. The following objectives associated with school facilities are provided in the General Plan (City of Chula Vista 2005a):

- **Objective PFS 9:** Develop schools that cultivate and educate people of all ages, that meet the needs of the workforce and that serve as community centers.
- **Objective PFS 10:** Efficiently locate and design school facilities.

The project would not generate sufficient students to necessitate construction of schools. Two potential school sites are provided within the adjacent Village Eight West SPA to fulfill the

demand for education facilities in the area. Additionally, adult education facilities can be accommodated in the mixed use and commercial facility sites or as a shared use with the public schools as identified in the Village Eight West SPA. Although the proposed project would result in an increase in student generation and the timing of future schools in the project area is not yet determined, the project would be required to pay all required school mitigation fees or enter into an agreement to help finance needed facilities. If the proposed project does not pay the State mandated fees or enter into a school mitigation agreement, which would guarantee construction of the needed school facilities, there would be a **potentially significant** impact to schools.

Otay Ranch GDP

The purpose of the School Facility section of the Otay Ranch GDP is to establish goals, objectives, policies, and processing requirements to ensure the timely provision of local school facilities. As stated therein, the goals of the Otay Ranch GDP with respect to school facilities is to provide high-quality K–12 educational facilities for Otay Ranch residents by coordinated planning of school facilities with the appropriate school district and to coordinate the planning of adult educational facilities with the appropriate district. The Otay Ranch GDP also includes a list of criteria for siting schools within the individual villages. The siting criteria address site size, location in proximity to residential development and parks and accessibility to all modes of transportation including pedestrian, bicycle and vehicular traffic, topographic and soils considerations, proximity to high-level noise generators, accessibility to utilities and services, and distance to Brown Field. In addition, the Otay Ranch GDP states that buildout of the Otay Ranch GDP would generate a demand for 13 elementary schools, two middle schools, and two high schools. The following goals and objectives are identified in the Otay Ranch GDP relevant to school facilities (City of Chula Vista and County of San Diego 1993):

- **Goal:** Provide high quality, K–12 educational facilities for Otay Ranch residents by coordinated planning of school facilities with the appropriate school district.
- **Goal:** Coordinate the planning of adult educational facilities with appropriate district.
- **Objective:** School facilities shall be provided concurrently with need and integrated with related facility needs, such as childcare, health care, parks, and libraries, where practical.
- **Objective:** Provide school district with 12- to 18-month development plan and 3 to 5-year development forecasts so that they may plan and implement school building and/or allocation programs in a timely manner.

The project would not generate sufficient students to necessitate construction of schools. Two potential school sites are provided within the adjacent Village Eight West SPA, and one potential school site is provided in Village Seven SPA, to fulfill the demand for education facilities in the area. Although the proposed project would result in an increase in student generation and the

timing of future schools in the project area is not yet determined, the project would be required to pay all required school mitigation fees or enter into an agreement to help finance needed facilities. If the proposed project does not pay the State mandated fees or enter into a school mitigation agreement, which would guarantee construction of the needed school facilities, there would be a **potentially significant** impact to schools.

Level of Significance Prior to Mitigation

Prior to mitigation the proposed project would have **potentially significant** impacts associated with school facilities due to the increase in population, which subsequently increases the demand for school facilities.

Mitigation Measures

MM-PUB-2 Prior to the issuance of each building permit for any residential dwelling units, the Applicant(s) shall provide evidence or certification by the Chula Vista Elementary School District (CVSD) that any fee charge, dedication or other requirement levied by the school district has been complied with or that the district has determined the fee, charge, dedication or other requirements do not apply to the construction or that the Applicant has entered into a school mitigation agreement. School Facility Mitigation Fees shall be in accordance with the fees in effect at the time of building permit issuance.

Level of Significance After Mitigation

Requiring payment of the school facility mitigation fees would aid in acquiring the additional resources to provide adequate school facilities necessary to accommodate existing and future residents. Therefore, MM-PUB-6 would reduce potential school impacts to **less than significant** levels.

5.11.5 Parks and Recreation

This subsection describes the existing park, recreation and open space facilities serving the City as well as existing policies that regulate their provision and assesses the potential for related impacts associated with implementation of the proposed project.

Regulatory Framework

Local Level

City of Chula Vista General Plan

The City of Chula Vista's open space and trail network abuts other regional open space areas and trails, including: the Bayshore Bikeway; California Riding and Hiking Trail; Sweetwater Valley

trail system; future OVRP trail system; and the open space preserve in the eastern portion of Otay Ranch. The goals of the General Plan to provide and maintain infrastructure and public services and improve sustainability of the City's natural resources are established in the Public Facilities and Services and Environmental Elements of the General Plan. The Public Facilities and Services Element contains objectives to provide new park and recreation facilities for residents of new development (Objective PFS 15 and PFS 16). The Environmental Element of the General Plan establishes the policy framework for improving sustainability through the responsible stewardship of the City's natural and cultural resources (Objective E.11), including the preservation of open space and development of connecting trails. The City is committed to providing an integrated network of open space areas throughout the City to serve residents, as well as to serve as a regional asset and attractor of visitors. The City of Chula Vista has significant open space areas with a variety of natural resources. The City has taken a multi-track approach to the conservation and management of its open space resources. Additionally, Growth Management Objective GM 1 and Policy GM 1.11 encourage withholding discretionary approvals and subsequent building permits from projects demonstrated to be out of compliance with applicable park threshold standards (City of Chula Vista 2005a).

City of Chula Vista Municipal Code (CVMC) and Growth Management Ordinance

The City of Chula Vista park dedication policies and requirements are contained in CVMC, Section 17.10, Park Lands Dedication Ordinance (PLDO), which establishes requirements for parklands and public facilities, including regulations for the dedication of land and development improvements for park and recreation purposes (CVMC Section 17.10.010); determination of park and recreation requirements (CVMC Section 17.10.020); area to be dedicated (CVMC Section 17.10.040); specifications for park improvements (CVMC Section 17.10,050); criteria for area to be dedicated (CVMC Section 17.10.060); procedures for in lieu fees for land dedication and/or park development improvements (CVMC Section 17.10.070); and other regulations regarding park development and collection and distribution of fees. The Park Land Dedication Ordinance requires the dedication of three acres of parkland per 1,000 people or a combination of land dedication, in-lieu fees, or park development improvements to be offered at the time of Final Map or in the case of a residential development that is not required to submit a Final Map, at the time of the first building permit application.

CVMC Section 19.80.030, Controlled Residential Development, is intended to ensure that development would not degrade existing public services and facilities below acceptable standards for parks and other public services. The preparation of PFFPs is required in conjunction with SPA Plans for the proposed project to ensure that development is consistent with the overall goals and policies of the General Plan and wouldn't degrade public services. Similarly, CVMC Section 19.09, Growth Management, provides policies and programs that tie the pace of development to the provision of public facilities and improvements. CVMC Section

19.09.040E specifically requires "three acres of neighborhood and community park land with appropriate facilities per 1,000 residents east of I-805." This section also requires a PFFP and demonstration that public services, such as parks, meet the Growth Management Ordinance's quality of life threshold standard for parks and recreation.

City of Chula Vista Greenbelt Master Plan

The City of Chula Vista Greenbelt Master Plan provides guidance and continuity for planning open space and constructing and maintaining the Greenbelt Trail. The Greenbelt Master Plan addresses existing and potential trail locations, trail and staging area development standards, maintenance responsibilities and a system of trails and open space that serve as a unifying element in linking other trails within the central areas of the City. The Village Greenbelt Trail segment has been added to the Greenbelt Master Plan as a major trail linkage. This trail presents an opportunity as a multi-use trail that would provide mobility for residents between several villages and connectivity between recreation areas in the project site and future parks along the Greenbelt Trail. According to the City of Chula Vista Greenbelt Maintenance Map, segments of Greenbelt Trail both future and proposed will run through the University Villages project (City of Chula Vista 2003b). The Village Greenbelt Trail is intended to connect active and passive users and provide them with the opportunity to stop and enjoy an enhanced open space paseo.

City of Chula Parks and Recreation Master Plan

The City of Chula Vista Parks and Recreation Master Plan, adopted by City Council in 2002, describes a comprehensive parks and recreation system that serves the community at large through the delivery of a variety of park sites containing a variety of recreational experiences. The Master Plan contains goals and policies that serve as a blueprint for creating a quality park system. The document establishes goals for the creation of a comprehensive parks and recreation system that meet the needs of the public by effectively distributing park types and associated recreation facilities and programs throughout the City (City of Chula Vista 2010).

The City is currently in the process of updating the 2002 Parks and Recreation Master Plan ~~in response to the 2005 General Plan update~~. A draft Park and Recreation Master Plan Update was released for public review in ~~2010~~2017. The draft Park and Recreation Master Plan Update ~~2010~~ 2017 identifies a range of passive and active park elements to serve the residents of the proposed project. The Plan further describes that parkland obligations are to be met in eastern Chula Vista through a "combination of the dedication of land and or payment of in lieu fees and/or credits for construction of facilities consistent with CVMC Section 17.10" (City of Chula Vista ~~2010~~2017). As stated in the document, each park within the system is viewed in the context of the whole park system to insure that it functions properly in providing a balance of recreational

opportunities. The document describes existing and future park sites and as such identifies parks within the Otay Ranch area, including the proposed project.

City of Chula Vista Bikeway Master Plan

The Chula Vista Bikeway Master Plan, originally adopted in 1996 and updated in 2005 and more recently in 2011, identifies existing and proposed bikeway facilities throughout the City. Bicycle systems adjacent to the City are also identified for the purpose of evaluating opportunities for connections to the regional network. The plan supports the integration of land use planning with transportation planning to take into account future land use and population projections and as a means to provide bicycle facilities to help decrease auto dependence. The plan also supports integrated planning efforts as a means to promote opportunities for exercise and recreation, highlighting the interconnection of bikeways with area parks (City of Chula Vista 2011b).

Existing Conditions

According to the Draft Parks and Recreation Master Plan Update, ~~T~~the Chula Vista park system contains ~~67~~ 82 public parks and recreation facility sites, including nine community parks totaling ~~226~~ 237 acres, ~~290~~ 295 acres of neighborhood parks, ~~12~~ 23 acres of urban and mini parks, ~~one~~ 3.4 187 acres of special purpose park, ~~four community centers, one senior center, four gymnasiums, and two swimming pools~~and additional recreation centers totaling approximately ~~560~~ 743 acres (City of Chula Vista ~~2010~~2017). The City currently meets the Growth Management Program's threshold standard of 3 acres of neighborhood and community parkland per 1,000 residents in east Chula Vista.

There are ~~seven~~ nine existing parks located proximate to the proposed project. These parks are Heritage Park and Community Center, Harvest Park, Santa Cora Park, Santa Venetia Park, Winding walk Park, All Seasons Park, Valle Lindo Park, Stylus Park, and Cottonwood Park. Public parks in the City are open to all area citizens. Neighborhood parks generally serve a local adjacent or nearby residential neighborhood, while community parks serve the broader community and provide a greater range of services. Regional and County parks and the Otay Ranch Preserve are also located in eastern Chula Vista and adjacent San Diego County. ~~As of 2004, Chula Vista had over 9,433 undeveloped acres of regional parks, including significant portions of the Sweetwater River Valley, OVRP, and the Otay Reservoirs (City of Chula Vista 2005a).~~

Neighborhood Parks

Following are the nine neighborhood parks within the City (Chula Vista Department of Public Works 2016):

All Season's Park, 1825 Magdalena Avenue. This park encompasses 7.6 acres, facilities include basketball, play area, open green space, shade structure, picnic tables, multipurpose field, restrooms, and parking.

Heritage Park and Community Center, 1381 Palomar Street. This park encompasses 10.17 acres, facilities include an amphitheater, barbeque facilities, basketball courts, an open green space, a park shelter/gazebo, a picnic area, play equipment, recreation center, restrooms, a multi-purpose field, and skateboard park.

Harvest Park, 1550 East Palomar Street. This park encompasses 6.7~~8~~ acres, facilities include barbeque facilities, an open green space/multi-purpose field, a park shelter/gazebo, picnic area, play equipment, restrooms, and a soccer field.

Santa Cora Park, 1365 Santa Cora. This park encompasses 5.~~7~~ 6 acres, facilities include barbeque facilities, a tennis court, a basketball court, an open green space, a picnic area, and play equipment.

Santa Venetia Park, 1500 Magdalena. This park encompasses ~~7.0~~6.7 acres, facilities include picnicking and barbeque facilities, an open green space, a park shelter/gazebo, play equipment, basketball courts, restrooms, a multi-purpose field, and ball field.

Stylus Park, 2025 Stylus Street. This park encompasses 1.97 acres, facilities include a picnic area, dog park, restroom, interactive spray fountain, bocce ball, and open grass areas.

Windingwalk Park, 1675 Exploration Street. This park encompasses ~~7.1~~9.0 acres, facilities include picnicking and barbeque facilities, an open green space, a park shelter/gazebo, play equipment, restrooms, a ball field, a basketball court, and a tennis court.

Cottonwood Park, 1778 East Palomar Street. This park encompasses 6.~~6~~ 7 acres, facilities include barbeque facilities, a ball field, a basketball court, an open green space, a park shelter/gazebo, picnic areas, play equipment, restrooms, and a multi-purpose field.

Valle Lindo Park, 545 Sequoia Street. This park encompasses 4.5 acres, facilities include basketball, play area, open green space, shade structure, and picnic tables.

Regional and County Parks and Otay Ranch Preserve

Following are regional and County of San Diego parks (Chula Vista Recreation 2016):

Otay Valley Regional Park. This park is bisected by the SR-125. The OVRP will ultimately encompass 8,000 acres passing through the jurisdictions of the County of San Diego and cities of San Diego and Chula Vista. The regional park is located in the Multiple Habitat Planning Area of the City of San Diego and the preserve management area of the City of Chula Vista under

each MSCP Subarea Plan and represents one of the major open spaces within southern San Diego County.

Otay Lakes County Park. This park is operated by the County of San Diego Department of Parks and Recreation. The approximately 78-acre park, which provides picnicking, playground, hiking trails, and a native plant/demonstration garden, will ultimately be the eastern gateway/staging area for the OVRP.

Otay Ranch Preserve. This Preserve will contain approximately 11,375-acres, all of which will be included in the MSCP Subregional Preserve. To date, approximately 3,000 acres of the Otay Ranch Preserve has been dedicated to Chula Vista and the County of San Diego. For every acre approved for development in Otay Ranch, 1.188 acres is dedicated to the Otay Ranch Preserve. The land developers contributing to this preserve have established a financing program to ensure funds are available to pay for the active management of the entire preserve system in perpetuity. The Preserve's dedicated conservation lands will connect large areas of open space through a series of wildlife corridors, including connections between large, regional open spaces, such as Otay Reservoir and San Miguel Mountain.

General Plan Year 2030

Under the General Plan forecast assumptions for 2030, the need for additional park and recreation facilities will continue. Future anticipated inventory of parkland, resulting from new residential development is anticipated to meet a majority of facility needs, along with quasi-public sites (schools). Future increases in population resulting from new development in the City will result in demand for new facilities. Projects containing residential dwelling units will contribute parkland and facilities to serve the population resulting from new development. Based upon projected population growth and residential production, parkland development, along with quasi-public facilities should be able to accommodate the recreation facility needs of the City~~A portion of the 2030 demand for organized, practice/ informal baseball fields, tot lots/playgrounds, tennis courts, indoor basketball courts, and swimming pools is anticipated to be unmet, thereby requiring continued reliance on private facilities to meet a portion of overall need~~ (City of Chula Vista ~~2005a~~2017).

Thresholds of Significance

The following significance criteria, included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), will determine the significance of a parks and recreation impact. Impacts to parks, recreation, and open space would be significant if the proposed project would:

A. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

B. Include recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

C. The City's Threshold Standards Policy states that the proposed project would have a significant impact on parks and recreation services if it would:

   i. Fail to meet the City's threshold standard of three acres of neighborhood and community parkland per 1,000 residents?

D. Be inconsistent with General Plan, GDP or other relevant objectives and policies regarding parks thereby resulting in a significant physical impact?

Proposed Project Impact Analysis

A. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

According to the Otay Ranch GDP and the Quimby Act, Village Four is obliged to provide 3 acres of parkland for every 1,000 residents (City of Chula Vista and County of San Diego 1993). Based on a Village Four projected resident population using the Otay Ranch GDP population generation rates of 2.61 persons per multi-family household and 3.52 persons per single family household ~~of 934 persons (2.58 persons per household [pph] for multi-family and 3.33 pph for single-family)~~, approximately 2.94~~8~~-acres of parkland is required by the Otay Ranch GDP.

In Village Four, park obligation addressed through the ~~provision of two pocket parks overlooking Wolf Canyon, on the north side of Main Street, providing excess Preserve Open Space in Village 14, and with the~~ payment of an In-Lieu fee. ~~The overlooks provide residents and visitors the opportunity to picnic and enjoy the view Wolf Canyon. The overlooks include benches, shade structures, and trees and comprise approximately 12,600 square feet or 0.29 acres of the SPA obligation.~~ The Village Four SPA development plan necessitates the conveyance of 68.45 acres of Preserve Open Space. Of that requirement, 17.20 acres would be provided on site with an additional ~~60~~ 51.25 acres provided in Village 14~~; this exceeds the conveyance requirement by 8.75 acres~~. ~~The excess acreage would be conveyed as a contribution toward the SPA's park obligation. In addition to dedicating land for park development, t~~The proposed project would pay the acquisition and development ~~improvement portion of the~~ PLDO in-lieu fee to cover the Village Four park obligation. The project would ~~also~~ be required to pay the recreation portion of the PFDIF which provides for development of major recreational facilities and payment of Park Acquisition Development fees. These ~~contributions cover the Village Four park obligation, and~~ would ensure that the proposed project does not 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. Thus, impacts

would be potentially significant if these PFDIF mechanisms are not enforced. Therefore, impacts would be **potentially significant** and mitigation is required.

B. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

~~As previously discussed, two pocket parks overlooking Wolf Canyon would be constructed as part of the proposed project.~~ Adverse physical effects resulting from the construction of recreation facilities is addressed throughout this EIR, and with incorporation of proposed mitigation measures, impacts would be less than significant.

C. The City's EIR Threshold Standards Policy states that the proposed project would have a significant impact on parks and recreation services if it would:

i. Fail to meet the City's growth management threshold standard for parks and recreation of three acres of neighborhood and community parkland per 1,000.

The Village Four development plan necessitates the conveyance of 68.45 acres of Preserve Open Space. Of that requirement, 17.20 acres would be provided on site, with an additional ~~60~~ 51.25 acres provided in Village 14~~, which exceeds the conveyance requirement by 8.75 acres~~. ~~The excess acreage would be used as a contribution toward the project's park obligation. In addition,~~ ~~e~~Each dwelling unit will pay the current in lieu parkland acquisition fee and the park development fee in effect at the time payment is due according to Chapter 17.10 of the Municipal code~~a facility fee, which includes a fee for parks~~. These contributions cover the Village Four park obligation, and would ensure that the proposed project meets the City's growth management threshold standard for parks and recreation of three acres of neighborhood and community parkland per 1,000. ~~In addition to dedicating land for park development, t~~The proposed project would pay the improvement portion of the PLDO in-lieu fee. The project would also be required to pay the recreation portion of the PFDIF which provides for development of major recreational facilities. Thus, impacts would be potentially significant if these PFDIF mechanisms are not enforced. Therefore, impacts would be **potentially significant** and mitigation is required.

D. Be inconsistent with General Plan, GDP or other relevant objectives and policies regarding parks thereby resulting in a significant physical impact.

Chula Vista General Plan

The proposed project would promote the policies and goals of the General Plan, including provide new park and recreation facilities for future residents; locate and design parks in accordance with the Chula Vista PRMP and PLDO; develop active and passive recreational uses within portions of the Otay Valley Regional Park; improve the City's open space and

trail network; provide diverse recreational opportunities within Otay Ranch; maximize conservation and joint-uses; and co-locate parks and recreational facilities with other compatible public land uses. The following are relevant Objectives of the City's General Plan (City of Chula Vista 2005a):

- **Objective PFS 15:** Provide new park and recreation facilities for future residents of new development, city-wide.
- **Objective PFS 16:** Develop active and passive recreational uses within portions of the Otay Valley Regional Park located within the City of Chula Vista, in accordance with the MSCP.
- **Objective PFS 18:** Allow the appropriate joint-use of school and park facilities.
- **Objective E 11:** Improve Chula Vista's open space and trails network, including the provision of additional internal connections between the various elements of the network.

As previously discussed, the project's contributions cover the Village Four park obligation, and would ensure that the proposed project meets the City's growth management threshold standard for parks and recreation of three acres of neighborhood and community parkland per 1,000. ~~In addition to dedicating land for park development, t~~The proposed project would pay the acquisition and improvement portions of the PLDO in-lieu fee. The project would also be required to pay the recreation portion of the PFDIF which provides for development of major recreational facilities. Thus, impacts would be potentially significant if these PFDIF mechanisms are not enforced. Therefore, impacts would be **potentially significant** and mitigation is required.

Otay Ranch GDP

The following goal is identified in the Otay Ranch GDP to ensure that an adequate amount of open space and recreational acreage is provided for the future residents (City of Chula Vista and County of San Diego 1993):

- **Goal:** Provide diverse park and recreational opportunities within Otay Ranch which meet the recreational, conservation, preservation, cultural and aesthetic needs of project residents of all ages and physical abilities.
- **Objective:** Identify park, recreational and open space opportunities, where appropriate, to serve the South County region and San Diego County as a whole.
- **Objective:** Maximize conservation, joint uses, and access and consider safety in the design of recreational facilities.
- **Objective:** Provide neighborhood and community parks and recreational facilities to serve the recreational needs of local residents.

Contributions to the Otay Ranch Community Park would provide residents of all ages and physical abilities with both active and passive recreational opportunities. In addition, common open space areas are required for all multi-family uses within the project. ~~In addition to dedicating land for park development, t~~The proposed project would pay the acquisition and improvement portions of the PLDO in-lieu fee. The project would also be required to pay the recreation portion of the PFDIF which provides for development of major recreational facilities. Thus impacts would be potentially significant if these PFDIF mechanisms are not enforced. Therefore, impacts would be **potentially significant** and mitigation is required.

Level of Significance Prior to Mitigation

Prior to mitigation, the proposed project would have potentially significant impacts on parks and recreation facilities due to increase in demand for services.

Mitigation Measures

MM-PUB-1 Prior to the issuance of each building permit for any residential dwelling units, the Applicant(s) shall pay a Public Facilities Development Impact Fee (PFDIF) in accordance with the fees in effect at the time of building permit issuance and phasing approved in the Public Facilities Finance Plan, unless stated otherwise in a separate development agreement.

Level of Significance After Mitigation

With implementation of **MM-PUB-1**, impacts to parks and recreation facilities as a result of the project would be less than significant.

5.11.6 Water

Regulatory Framework

State Level

Urban Water Management Planning Act

In 1983, the Legislature enacted the Urban Water Management Planning Act (UWMP Act; California Water Code, Sections 10610–10656), which requires specified urban water suppliers within the state to prepare an Urban Water Management Plan (UWMP) and update it every 5 years. State and local agencies and the public frequently use UWMPs to determine if agencies are planning adequately to reliably meet water demands in various service areas. As such, UWMPs serve as an important element in documenting water supply availability and reliability for purposes of compliance with state laws, Senate Bills 610 and 221, which link water supply sufficiency to

large land-use development project approvals. Urban water suppliers also must prepare UWMPs, pursuant to the UWMP Act, to be eligible for state funding and drought assistance.

The UWMP provides information on water usage, water supply sources, and water reliability planning within a specified water agency service area. It also may provide implementation schedules to meet projected demands over the planning horizon; a description of opportunities for new development of desalinated water; groundwater information (where groundwater is identified as an existing or planned water source); description of water quality over the planning horizon; and identification of water management tools that maximize local resources and minimize imported water supplies. Additionally, the UWMP evaluates the reliability of water supplies within the specified service area. This includes a water supply reliability assessment, water shortage contingency plan, and development of a plan in case of an interruption of water supplies.

The Metropolitan Water District (MWD), San Diego County Water Authority (SDCWA), and the Otay Water District (OWD) all play a role in supplying water to the proposed project. All of these agencies have prepared and updated UWMPs in accordance with the UWMP Act.

Senate Bills 610 and 221

On January 1, 2002, Senate Bill 610 took effect. Senate Bill 610, which was codified in the Water Code beginning with Section 10910, requires the preparation of a water supply assessment for projects within cities and counties that propose to construct 500 or more residential units or the equivalent. Senate Bill 610 stipulates that when environmental review of certain development projects is required, the water agency that is to serve the development must complete the water supply assessment to evaluate water supplies that are or will be available during normal, single-dry, and multiple-dry years during a 20-year projection to meet existing and planned future demands, including the demand associated with a proposed project.

Senate Bill 221, enacted in 2001 and codified in the Water Code, requires a city, county, or local agency to include a condition to any tentative subdivision map that a sufficient water supply shall be available to serve the subdivision. The term "sufficient water supply" is defined as the total water supplies available during normal, single-dry, and multiple-dry years within a 20-year projection that would meet the proposed subdivision project's projected water demand, in addition to existing and planned future water uses, including agricultural and industrial uses, within the specified service area. Senate Bill 221 further requires any verification of "projected" water supplies to be based on entitlement contracts, capital outlay programs and regulatory permits and approvals.

Memorandum of Understanding Regarding Urban Water Conservation in California

The OWD is signatory to the Memorandum of Understanding (MOU) Regarding Urban Water Conservation in California, which created the California Urban Water Conservation Council in 1991 in an effort to reduce California's long-term water demands. Water conservation programs are developed and implemented to reduce the demand on available supply, which is vital to the optimal utilization of a region's water supply resources.

As one of the first signatories to the MOU, OWD has made implementation of best management practices (BMPs) for water conservation the cornerstone of its conservation programs and a key element in its water resource management strategy. As a member of the SDCWA, OWD also benefits from regional programs performed on behalf of its member agencies. The BMPs implemented by OWD and the regional BMPs implemented by SDCWA are addressed in the OWD 2010 UWMP (OWD 2011).

As a signatory to the MOU, OWD is required to submit biannual reports that detail the implementation of current water conservation practices. The OWD voluntarily agreed to implement the fourteen water conservation BMPs beginning in 1992. The OWD submits its report to the California Urban Water Conservation Council every 2 years, and the OWD BMP reports are included in the OWD 2010 UWMP (OWD 2011).

Regional and Local Level

Urban Water Management Plans

The UWMP Act requires that each urban water supplier providing water for municipal purposes, either to more than 3,000 customers, or more than 3,000 af of water annually, must prepare, adopt, and update a UWMP at least once every 5 years on or before December 31, in years ending in five and zero. This applies to MWD, SDCWA, and its member agencies, including OWD, that serve unincorporated San Diego County. The intent of an UWMP is to present information on water supply, water usage/demand, recycled water, and water use efficiency programs in a respective water district's service area. The UWMP also serves as a valuable resource for planners and policy makers over a 25-year time frame.

The UWMP process ensures that water supplies are being planned to meet future growth. UWMPs are developed to manage the uncertainties and variability of multiple supply sources and demands over the long term. Water agencies and districts update their demand and supply estimates based on the most recent San Diego Association of Governments (SANDAG) forecast approximately every 5 years to coincide with preparation of their UWMPs. The most current supply and demand projections are contained in the 2015 UWMPs of MWD, SDCWA, and OWD (MWD 2016a; OWD 2016; SDCWA 2016). SDCWA member districts rely on the

UWMPs and Integrated Resources Plans (IRPs) of MWD (MWD 2016b) and the Regional Water Facilities Master Plan of SDCWA to document supplies available to meet projected demands.

Normal year, single-dry year, and multiple-dry year 2015 UWMP supply and demand assessments for MWD, SDCWA, and OWD are intended to describe the water supply reliability and vulnerability to seasonal or climatic conditions. Normal water years are considered to be years that experience average rainfall for the respective district. Single-dry water years are considered one year drought events. Multiple-dry water years refer to a series of below average rainfall for particular areas (i.e., multiple drought year conditions). Projections for multiple-dry years are made in 5-year increments.

In the 2015 UWMPs, MWD, SDCWA, and all SDCWA member agencies, including OWD, that serve unincorporated San Diego County have determined that adequate water supplies would be available to serve existing service areas under normal year, single dry year, and multiple dry year conditions through the year 2040.

City of Chula Vista General Plan

The Chula Vista General Plan recognizes that, in order to ensure adequate water service, water supplies and facilities need to be maintained and expanded in response to the City's projected population growth. The General Plan includes objectives and policies in the Public Facilities and Services Element that require development to plan for careful use of natural and man-made resources and services, and maximize opportunities for conservation while minimizing waste (Objective LUT 62); and increase efficiencies in water use through use of alternative technologies (Objective PFS 2). Additionally, the Housing Element includes Objective H 2 to promote efficient use of water through adopted standards and incentive-based policies to conserve limited resources and reduce long-term operational costs of housing. Growth Management Objective GM 1 and Policy GM 1.11 encourage withholding discretionary approvals and subsequent building permits from projects demonstrated to be out of compliance with applicable threshold standards for water service (City of Chula Vista 2005a).

In 2005, the City of Chula Vista updated its General Plan and certified the related EIR for the General Plan Update (GPU). In 2013, the City certified a Supplemental EIR (City of Chula Vista 2012a), and approved a General Plan Amendment/General Development Plan Amendment (GPA/GDPA). Both the 2005 GPU EIR (City of Chula Vista 2005c) and the GPA/GDPA Supplemental EIR (City of Chula Vista 2012a) assessed, at the General Plan level, water demands and long-term water supply availability and reliability. In the two General Plan environmental documents, the City concluded that a long-term water supply could not be guaranteed; and, therefore, increases in water demand projected in the General Plan and later Amendment would result in a significant unavoidable impact.

The result of the City's findings is that large-scale proposed development projects within the City must conduct a project-level water supply/demand analysis, accompanied by the required SB 610/SB 221 water supply assessment/verification. Based on this project-level water supply/demand analysis and associated project EIR, the City will then reassess its General Plan-level water supply findings and determinations based on the record before it.

Chula Vista Landscape Water Conservation Ordinance

In response to the new State Water Conservation in Landscaping Act (Assembly Bill 1881), which required cities and counties to adopt landscape water conservation ordinances by January 1, 2010, the City of Chula adopted the Landscape Water Conservation Ordinance (CVMC, Section 20.12) in 2009. This ordinance requires that any new or rehabilitated landscapes be designed using a water budget, to help encourage outdoor water conservation. As a part of the City's permitting process, some projects will be required to complete either a Landscape Documentation Package or a WaterSmart Checklist. In general, the Landscape Documentation Package will be prepared for larger projects that involve installing or changing an existing landscape, while the WaterSmart Checklist is designed for smaller projects. The size of the "landscape area" will determine which of these documents will be required. The landscape area is measured in square feet, and it is an area with outdoor plants, turf and other vegetation that uses water, including any water features either in an area with vegetation or that stand alone (CVMC, Section 20.12).

Otay Water District and Sweetwater Authority Growth Management Oversight Commission

Both the Otay Water District and Sweetwater Authority reported that, despite the State of California's water conservation mandates between June 1, 2015 and February 13, 2016, Chula Vista's water supply is in good shape because customers have been exceeding water conservation goals for several years, in preparation for the drought. (Note: Water Conservation Plans required by Chula Vista's "Growth Management" ordinance for all SPA Plans, Tentative Maps, and major development projects have also had a positive effect on water conservation in the City.)

With ample water in storage, the Otay Water District's water supply is very high—well over what is currently demanded. It continues to pursue a future desalination plant in Rosarito, Mexico, as another source of water, and doing so may provide price stability (City of Chula Vista 2016a).

The Sweetwater Authority has several reliable sources of water, including the Richard Reynolds Groundwater Desalination Facility, which is adding five new wells that will result in double the amount of drinking water when complete (City of Chula Vista 2016a).

City of Chula Vista Growth Management Program

The Chula Vista Growth Management Program goal for water supply is to ensure that adequate supplies of quality water (appropriate for intended uses) are available to Chula Vista. The Growth Management Program has two objectives regarding water supply and distribution: (1) ensure that adequate storage, treatment and transmission facilities are constructed concurrently with planned growth; and (2) ensure that water quality standards are not jeopardized during growth and construction. The growth management threshold standard for water supply and distribution states (City of Chula Vista 2013):

1. The Applicant will request and deliver to the City a service availability letter from the water district for each project.
2. The City shall annually provide to the SDCWA, the Sweetwater Authority and the Otay Municipal Water District a 12- to 18-month development forecast and request an evaluation of their ability to accommodate the forecast and continuing growth. The districts' replies should address the following:
    a. Water availability to the city and planning area, considering both short and long term perspectives;
    b. Amount of current capacity, including storage capacity, now used or committed;
    c. Ability of affected facilities to absorb forecast growth;
    d. Evaluation of funding and site availability for projected new facilities; and
    e. Other relevant information the district(s) desire(s) to communicate to the City and the GMOC. The growth forecast and water district response letters must be provided to the GMOC for inclusion in its review.

The Chula Vista Growth Management Ordinance (CVMC, Section 19.09.050C) requires a Water Conservation Plan (WCP) to be submitted with all SPA Plans. In accordance with the Growth Management Ordinance, a WCP must provide an analysis of the water usage requirements of the project. Chula Vista's multi-faceted Growth Management Ordinance is comprised of and executed through several documents and related regulatory programs, and includes a systematic application of land use regulation and policies, facility and service threshold standards, environmental review, financing mechanisms, and monitoring and enforcement functions. All are designed to ensure that development occurs only when necessary public facilities and services exist, or are provided concurrent with the demands of new development, so that quality of life can be maintained or enhanced.

Existing Conditions

Water service to the proposed project would be provided by OWD. OWD purchases water from SDCWA, which in turn imports water from MWD. The existing and projected water supply and demand for each agency are described below, and are based on approved planning documents.

Regional and Local Water Supply

Metropolitan Water District

The Metropolitan Water District of Southern California (Metropolitan) is a regional wholesaler that delivers water to 26 member public agencies: 14 cities, 11 municipal water districts, and one county water authority (which provides water to more than 19 million people in Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura counties). Metropolitan is governed by a 38-member board of directors who represent their respective member agencies ensuring each member agency is part of the governance of Metropolitan (MWD 2016a).

To supply the more than 300 cities and unincorporated areas in Southern California with reliable and safe water, Metropolitan owns and operates an extensive water system, including the Colorado River Aqueduct, 16 hydroelectric facilities, nine reservoirs, 819 miles of large-scale pipes and five water treatment plants. Four of these treatment plants are among the 10 largest plants in the world. In fact, Metropolitan is the largest distributor of treated drinking water in the United States. The District imports water from the Feather River in Northern California and the Colorado River to supplement local supplies. It also helps its member agencies develop water recycling, storage and other local resource programs to provide additional supplies and conservation programs to reduce regional demands. Metropolitan currently delivers an average of 1.5 billion gallons of water per day to a 5,200-square-mile service area (MWD 2016a).

Metropolitan's primary purpose is to provide a supplemental supply of water for domestic and municipal uses at wholesale rates to its member public agencies. Metropolitan's principal sources of water are the SWP and the Colorado River. Metropolitan's robust planning strategy continues to balance available local and imported water resources and member agencies' demands within Metropolitan's service area. Metropolitan receives water from the SWP through the California Aqueduct and from the Colorado River through the Colorado River Aqueduct (CRA) (MWD 2016a).

Imported Supplies

Colorado River: The Colorado River was Metropolitan's original source of water after Metropolitan's establishment in 1928. Metropolitan has a legal entitlement to receive water from the Colorado River under a permanent service contract with the Secretary of the Interior. The

CRA, which has a capacity of 1.2 MAF a year, is owned and operated by Metropolitan. It transports water from Lake Havasu, at the border of the state of California and Arizona, approximately 242 miles to its terminus at Lake Mathews in Riverside County. Over the years, Metropolitan increased reliable supply from the CRA through programs that it helped fund and implement including: farm and irrigation district conservation programs, improved reservoir system operations, land management programs, and water transfers and exchanges through arrangements with agricultural water districts in southern California, San Diego County Water Authority, and entities in Arizona and Nevada that use Colorado River water, and the U.S. Department of the Interior, Bureau of Reclamation (USBR) (MWD 2016a).

State Water Project: Metropolitan imports water from the SWP, owned by the state of California and operated by the California Department of Water Resources (DWR). This project transports Feather River water stored in and released from Oroville Dam and conveyed through the Bay-Delta, as well as unregulated flows diverted directly from the Bay-Delta south via the California Aqueduct to four delivery points near the northern and eastern boundaries of Metropolitan's service area (MWD 2016a).

In 1960, Metropolitan signed a contract with DWR for SWP water supplies. Metropolitan is one of 29 agencies that have long-term contracts for water service from DWR, and is the largest agency in terms of the number of people it serves (nearly 19 million), the share of SWP water that it has contracted to receive (approximately 46%), and the percentage of total annual payments made to DWR by agencies with State water contracts (approximately 53% in 2015) (MWD 2016a).

Local Supplies

Approximately 50% of the region's water supplies come from resources controlled or operated by local water agencies. These resources include water extracted from local groundwater basins, catchment of local surface water, non-Metropolitan imported water supplied through the Los Angeles Aqueduct, and Colorado River water exchanged for Metropolitan supplies (MWD 2016a).

Groundwater

The groundwater basins that underlie the region provide nearly 35% of the water supply in Southern California. The major groundwater basins provide an annual average supply of approximately 1.35 MAF. Natural recharge of the groundwater basins is supplemented by active recharge of captured stormwater, recycled water, and imported water to support this level of annual production (MWD 2016a).

Estimates indicate that available storage space in the region's groundwater basins in mid-2015 is approximately 4.8 MAF. Successive dry years have resulted in groundwater depletions that will need to be replaced with natural recharge during wet years and active spreading of captured

stormwater, recycled water, and imported water. Groundwater basin managers and water suppliers have taken steps to store water in advance of dry years to soften the potential impact on groundwater aquifers and to maintain reliable local water supplies during dry years (MWD 2016a).

Recycling, Groundwater Recovery, and Seawater Desalination

Recycling and groundwater recovery are local resources that add balance to Southern California's diverse water portfolio. In addition to replenishment groundwater basins described above, water recycling provides extensive treated wastewater for applicable municipal and industrial uses. Common uses of recycled water include landscape irrigation, agricultural irrigation, and commercial and industrial applications. Groundwater recovery employs additional treatment techniques to effectively use degraded groundwater supplies that were previously not considered viable due to high salinity or other contamination (MWD 2016a).

While water recycling and groundwater recovery projects in the Southern California region are primarily developed by local water agencies, many newer projects have been developed with financial incentives provided through Metropolitan's Local Resources Program (LRP). The LRP is a performance-based program that provides incentives to expand water recycling and support recovery of degraded groundwater. In 2015, the regional water production from water recycling and groundwater recovery totaled approximately 530 trillion acre feet (TAF), of which 244 TAF was developed with Metropolitan funding assistance (MWD 2016a).

Seawater desalination represents a significant opportunity to diversify the region's water resource mix with a new, locally-controlled, reliable potable supply. Metropolitan supports seawater desalination to its member agencies by providing technical assistance, regional facilitation of research and information exchanges, and financial incentives through the LRP.

San Diego County Water Authority

The SDCWA service area covers approximately 951,000 acres and encompasses the western third of San Diego County. SDCWA has 24 member agencies, 15 of which provide water to unincorporated areas of San Diego County. SDCWA is responsible for ensuring a safe and reliable water supply to support the region's economy and quality of life for over three million residents. The Water Authority's 24 member agencies purchase water from the Water Authority for retail distribution within their service territories. A 36-member Board of Directors consisting of member agency representatives governs the Water Authority. The member agencies' six cities, five water districts, eight municipal water districts, three irrigation districts, a public utility district, and a federal military reservation have diverse and varying water needs. In terms of land area, the City of San Diego is the largest member agency with 210,726 acres. The smallest is the City of Del Mar, with 1,159 acres. Some member agencies, such as the cities of National City and Del Mar, use water almost entirely for municipal and industrial purposes. Others, including

Valley Center, Rainbow, and Yuima Municipal Water Districts (MWDs), deliver water that is used mostly for agricultural production (SDCWA 2016).

The District was annexed into the SDCWA and Metropolitan Water District of Southern California (Metropolitan) in 1954 for the purpose of securing additional water supplies. The SDCWA is one of 26 member agencies of Metropolitan. The SDCWA is Metropolitan's largest member agency in terms of purchases, having purchased approximately 20% of all the water Metropolitan delivered in fiscal year 2011–2012. To reduce its dependency on Metropolitan and diversify its supplies, the SDCWA in recent years has undertaken several initiatives, including the following (SDCWA 2016):

- **Carlsbad Seawater Desalination Water Purchase Agreement:** To further help diversify regional supplies, the SDCWA has entered into a Water Purchase Agreement under which it agrees to purchase up to 56,000 acre-feet/year of desalinated water from the plant in Carlsbad, operated by an affiliate of Poseidon Resources Inc. The plant began operation in December 2015.
- **Imperial Irrigation District Transfer:** The SDCWA signed a Water Conservation and Transfer Agreement with the Imperial Irrigation District in 1998. Through the transfer agreement, the SDCWA is purchasing water from the Imperial Irrigation District at volumes that will gradually increase year to year, reaching 200,000 acre-feet/year in 2021. The water is physically delivered to San Diego via Metropolitan's Colorado River Aqueduct.
- **All-American and Coachella Canal Lining Conserved Water**: In 2003, as part of the execution of the Quantification Settlement Agreement on the Colorado River, the SDCWA was assigned rights to 77,700 acre-feet/year of conserved water from projects to line the All-American and Coachella Canals. These projects are now complete and the SDCWA is receiving this water. As with the Imperial Irrigation District transfer water, the water is physically delivered to San Diego via Metropolitan's Colorado River Aqueduct.
- **Water Transfer and Banking Programs:** The SDCWA has entered into water transfer and water banking arrangements with Central Valley area agricultural agencies and groundwater storage interests. These projects are designed to make additional water available to the SDCWA during dry-year supply shortages from Metropolitan.

Otay Water District

Otay Water District is located in the southern half of San Diego County and was created in 1956 by a small group of private citizens, ranchers and landowners who were concerned about the declining quality and quantity of water from their rural wells. The District joined the Water Authority as a member agency in the same year. The Water Authority is the agency responsible

for the supply of imported water into the San Diego County through its membership in Metropolitan (OWD 2016).

The District is a California special district authorized under the provisions of the Municipal Water District Law of 1911 and is revenue neutral, i.e., each end user pays their fair share of costs for capital improvements, water acquisition, and the operation and maintenance of facilities. Its elected Board of Directors sets the District ordinances, policies, taxes, and rates for providing wastewater, potable water, and recycled water services. The District's water service area is generally located within the south central portion of San Diego County and includes approximately 126 square miles. The topography of the service area is diverse, consisting of a variety of valleys, hills, mountains, mesas, lakes and rivers. The service area includes both urban and rural development. The major transportation arteries serving the area include State Highway 94 in the north, Interstate 805 in the southwest and the newly constructed State Route 125 to the east. Interstate 905 and State Highway 11 are in the process of being constructed in the Otay Mesa area (OWD 2016).

The District's service area has experienced growth in the past five years, and the service area population is expected to be approximately 285,340 people by 2040. The District serves a wide spectrum of communities including southern El Cajon, La Mesa, Rancho San Diego, Jamul, Spring Valley, Bonita, eastern City of Chula Vista, East Lake, Otay Ranch and Otay Mesa areas. The water purveyors that border the District include Padre Dam Municipal Water District (Padre Dam MWD) on the north, Helix WD on the northwest, and the Sweetwater Authority, and the City of San Diego on the west. The southern boundary of the District is the international border with Mexico (OWD 2016).

Existing Water System

The proposed project would be served by the Central Service Area of OWD. This OWD area is supplied water from Connection Nos. 10 and 12 to the SDCWA aqueduct, which fills 624 Zone reservoirs. Water is then distributed within the 624 Zone and pumped to the 711 Zone storage and distribution systems. The existing potable water facilities located in the vicinity of the project are described below (Appendix J1).

340 Zone

There is a small area west of Village Three that is served by the 340 Zone. This area is fed by a pressure reducing station and includes a piping network that extends to the western boundary of Village Three. The proposed project would not be served by the 340 Zone, but improvements to the 340 Zone will be necessary per the OWD Water Resources Management Plan (Appendix J1).

624 Zone

The 624 Zone has three existing storage reservoirs. The 624-2 Reservoir is located adjacent to the SDCWA aqueduct between Otay Lakes Road and East H Street, has a capacity of 8.0 million gallons, and is supplied by Connection No. 10 to the SDCWA aqueduct. The 624-1 and 624-3 Reservoirs are supplied by Connection No. 12, and have a capacity of 12.4 million gallons and 30 million gallons, respectively. The 624-1 Reservoir is located adjacent to the eastern boundary of Otay Ranch Village Five and is located along EastLake Parkway, just north of Olympic Parkway. There are currently no 624 Zone facilities in the vicinity of the project site (Appendix J1).

711 Zone

There is currently one pump station in the 711 Zone, referred to as the Central Area Pump Station, that is located at the 624-1 Reservoir site adjacent to the eastern boundary of Otay Ranch Village Five. This station pumps water from the 624 Zone system into the 711 Zone distribution system and into two existing 711 Zone reservoirs located in the EastLake Greens development. The 711 Zone Pump Station currently has five pumps (one standby), each rated for 4,000 gallons per minute (gpm), which results in a firm station capacity of 16,000 gpm (Appendix J1).

There are three existing reservoirs in the 711 Zone. Two reservoirs are located at the same site within the EastLake Greens development, and have capacities of 2.8 and 2.2 million gallons for a total of 5.0 million gallons. A 16.0 million gallon reservoir, Reservoir 711-3, was constructed north of the Rolling Hills Ranch project. With construction of this reservoir, OWD has sufficient storage within the 711 Zone to meet the demands from projected development in this zone (Appendix J1).

The major 711 Zone pipelines in the vicinity of the project site include a 20-inch line in EastLake Parkway, a 16-inch line in Hunter Parkway, and 12-inch lines in La Media Road and Magdalena Avenue (Appendix J1).

Recycled Water

Historically, the only source of OWD recycled water has been the Ralph W. Chapman Water Recycling Facility. This facility currently has a rated capacity of 1.3 million gallons per day (mgd) with a maximum production of approximately 1.1 mgd and could be expanded to an ultimate capacity of 2.50 mgd. Typically, summer demands exceed the 1.1 mgd plant capacity. The District has the capability to supplement the recycled water supply with the potable 980 Zone water system, which has facilities in the area. The South Bay Water Treatment Plant has an ultimate rated capacity of 15 mgd and OWD obtained capacity rights to 8.0 mgd of recycled water. This additional source of recycled water will allow OWD to meet existing and future recycled water demands. The OWD has master planned a series of pump stations, reservoirs, and transmission lines to integrate this source of water into the existing recycled water system (Appendix J1).

Storage of the effluent from the Ralph W. Chapman facility is provided by two ponds in the District's Recycled Use Area. The storage ponds have a high water line of approximately 944 feet and 927 feet, respectively, and provide the storage and supply for the 927 Zone distribution system. The 680 Zone distribution system has been supplied by pressure reducing off the 927 Zone system, but ultimately will be supplied by the South Bay Water Reclamation Plant. Conveyance facilities to convey water from the South Bay Treatment Plant to the use areas, including the 680 Zone use areas, are currently being implemented. A 12-inch 680 Zone pipeline has been constructed in Hunte Parkway along the southern boundary of Village Eleven, and an 8-inch 927 Zone pipeline has been constructed in EastLake Parkway to Hunter Parkway (Appendix J1).

Thresholds of Significance

The following criteria, based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.) and City of Chula Vista standards, will determine the significance of the proposed project's water supply impacts. Impacts to water supply services would be significant if the proposed project would:

A. Require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

B. Have insufficient water supplies available to serve the project from existing entitlements and resources, or require new or expanded entitlements?

C. According to the City's Growth Management Ordinance (Chapter 19.09), impacts to potable water would be significant if the proposed project would exceed City threshold standards which seek to ensure that adequate supplies of quality water, appropriate for intended uses, are available. The standards require the following actions:

   i. The applicant must request and deliver to the City service availability letters from the appropriate water district for each project

   ii. The applicant is required to submit a Water Conservation Plan along with the SPA Plan application

   iii. The project plans shall ensure an adequate supply of water on a long-term basis prior to the development of each Otay Ranch SPA

D. Be inconsistent with General Plan, GDP or other relevant objectives and policies regarding water supply thereby resulting in a significant physical impact?

Proposed Project Impact Analysis

A. Require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

The project's proposed on-site water facilities are shown in Figure 5.11-1, Proposed On-site Water Facilities. The project is within the Central Service Area of Otay Water District (OWD). Water service to the project would be supplied from the 624 and 711 pressure zones. To receive potable water service, the project must expand the existing 624 and 711 Zone systems. The majority of development within the project would be served by the 624 Zone. Service to the project would be provided by extending a 16-inch 624 Zone water line from Main Street to the east. A redundant source of 624 Zone water to the project would ultimately be provided by a 16-inch line in Main Street to the west to the proposed Village 3 North system. Since this off-site line to the west, which is tied to the construction of the Main Street bridge timing, is not required to be constructed by the project, a temporary 711/624 Zone pressure reducing station within the project would be required. There are 51 single family residential lots in the southeast corner of the project that would require service from the 711 Zone. These lots are proposed to be served by a connection to the Village 8 West 711 Zone system.. OWD has three existing reservoirs in the 624 Zone. These reservoirs are supplied by OWD Connections 10 and 12 to the San Diego County Water Authority aqueduct. A 711 Zone pump station lifts water from the 624 Zone to the 711 Zone reservoirs. A 16-million gallon 711 Zone reservoir was built in recent years such that OWD has adequate storage to serve the ultimate projected development in this zone (Appendix J1). No additional reservoir storage would be required to supply water to Village Four (Atlantis Group 2017). Therefore, impacts would be less than significant.

B. Have insufficient water supplies available to serve the project from existing entitlements and resources, or require new or expanded entitlements.

Otay Water District would supply potable water and recycled water to the proposed project. As discussed in existing conditions, Otay Water District, as well as Metropolitan Water District, which provides OWD with its water, have sufficient water supplies to serve the proposed project and future buildout of the City (Appendix J1). Additionally, the proposed project created a water conservation plan which sets out water conservation measures, which would be implemented into the planning and design of the SPA Plan.

Domestic water demand for the proposed project is estimated to be 1.09 million gallons per day (mgd). Water usage would be reduced through the use of recycled water within common landscaped areas of the project, as well as through implementation of water conservation measures such as hot water pipe insulation, pressure reducing valves, water efficient dishwashers, dual flush toilets, and clothes washer gray water stub-outs. Hot water pipe insulation involves the insulation of hot water pipes with 1-inch walled pipe insulation and separation of hot and cold water piping. Pressure reducing valves include setting the maximum service pressure to 60 psi which reduces any leakage present and prevents excessive flow of water from all appliances and fixtures. Water efficient dishwashers are dishwashers that carry the Energy Star label, and result in an estimated water savings

of 650 gallons per residential unit. Water efficient landscaping includes compliance with the City's Landscape Conservation Ordinance, which reduces outdoor water use. Dual flush toilets would be installed and is estimated to result in annual water savings of 4,000 gallons per year per residential unit. Additionally, the use of recycled water directly offsets potable water use, making it an important component in the attempt to meet water supply challenges in the region. Village Four is expected to offset potable water usage by an average of 0.14 mgd by using recycled water where feasible. Through the use of recycled water and other water conservation measures, potable water usage is expected to be reduced by 70,856 gallons per day (Appendix J2).

With the use of recycled water and incorporation of water conservation measures, impacts associated with insufficient water supply would be less than significant.

LEGEND

- PROJECT BOUNDARY
- PROPOSED 624 ZONE WATER LINE
- EXISTING 711 ZONE WATER LINE
- PROPOSED 711 ZONE WATER LINE
- P2404 — OWD CIP NUMBER

NOTE: ALL PIPES ARE RECOMMENDED AS 8-INCH UNLESS OTHERWISE NOTED

LA MEDIA ROAD

SR 125

CONNECT TO EXISTING 12" LINE

PROPOSED 711/624 PRESSURE REDUCING STATION

16" P2598

12"

VILLAGE 4 SOUTH BOUNDARY

16" P2404

MAIN STREET

VILLAGE 8 WEST

STUB OUT 16" LINE FOR FUTURE EXTENSION ACROSS BRIDGE

VILLAGE 3 NORTH

FUTURE MAIN STREET BRIDGE

TEMPORARY 711/624 ZONE PR STATION

N

SCALE: 1"=800'

0 800 FEET

SOURCE: DEXTER WILSON ENGINEERING 2017

DUDEK

FIGURE 5.11-1

Proposed On-site Water Facilities

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C. Exceed City threshold standards which seeks to ensure availability of adequate supplies of quality water, appropriate for intended uses. The standards require the applicant to request and deliver to the City service availability letters from the appropriate water district for each project; to submit a Water Conservation Plan along with the SPA Plan application; and such project plans must ensure an adequate supply of water on a long-term basis prior to the development of each Otay Ranch SPA Plan.

Per Senate Bill 610, the proposed project would not necessitate the creation of a water supply assessment as the project does not propose to construct 500 or more residential units.

The City of Chula Vista's Growth Management Ordinance requires all development projects (50 dwelling units or greater) to prepare a Water Conservation Plan at the time of SPA Plan preparation (Chula Vista Municipal Code Section 19.09, Growth Management). The Water Conservation Plan ensures the SPA complies with City threshold standards, which seek to ensure availability of adequate water supplies. Specifically, the project would not exceed water supply standards by incorporating water conservation measures listed in threshold B, and compliance with the City's Landscape Water Conservation Ordinance.

With the use of recycled water and incorporation of water conservation measures, potable water usage would be reduced by 41.9%, and impacts would be less than significant.

D. Be inconsistent with General Plan, GDP or other relevant objectives and policies regarding water supply thereby resulting in a significant physical impact.

City of Chula Vista General Plan

The proposed project would be consistent with General Plan objectives related to water supply because the project includes a Water Conservation Plan that addresses State, federal, and local water conservation requirements, as well as on-site water conservation measures and estimated savings. The Chula Vista General Plan recognizes that, in order to ensure adequate water service, water supplies and facilities need to be maintained and expanded in response to the City's projected population growth. The following objectives are identified in the General Plan associated with water supply (City of Chula Vista 2005a):

- **Objective LUT 62:** Require development to consider and plan for careful use of natural and man-made resources and services and maximize opportunities for conservation while minimizing waste.
- **Objective PFS 2:** Increase efficiencies in water use, wastewater generation and its re-use, and handling of storm water runoff throughout the city through use of alternative technologies.

- **Objective E 3:** Minimize the impacts of growth and development on water resources through the efficient use and conservation of water by residents, businesses, and city government.
- **Objective H 2:** Promote efficient use of water and energy through adopted standards and incentive-based policies to conserve limited resources and reduce long-term operational costs of housing.

Through incorporation of the project's Water Conservation Plan, Village Four would not result in the inefficient use of water. Water usage would be reduced through the use of recycled water within common landscaped areas of the project, as well as through implementation of water conservation measures. Water conservation measures expected to be implemented consist of hot water pipe insulation, pressure reducing valves, water efficient dishwashers, dual flush toilets, and clothes washer gray water stub-outs. Thus, through incorporation of the Water Conservation Plan into the construction and design of Village Four, the proposed project would be consistent with the City of Chula Vista General Plan.

Growth Management Ordinance

The Growth Management Ordinance contains a threshold standard to ensure that the supply of water for existing and future residents is available at a level and quality necessary for its intended use. The following objectives associated with water supply were identified in the Growth Management Ordinance (Chula Vista Municipal Code Section 19.09, Growth Management):

- **Objective GM 1:** Concurrent public facilities and services.
- **Objective GM 3**: Create and preserve vital neighborhoods.

The General Plan includes policies that require detailed forecasting of water demands, updating of threshold standards and monitoring of development activities to impose limits on the rate of development to ensure water is available commensurate with need.

Otay Ranch GDP

The Otay Ranch GDP identifies a number of goals and objectives with the are in place to ensure an adequate supply of water on a long-term basis, and to promote water conservation and increased efficiencies. The following goals are identified in the Otay Ranch GDP relevant to water supply (City of Chula Vista and County of San Diego 1993):

- **Goal:** Ensure an adequate supply of water for build-out of the entire Otay Ranch project area; design the Otay Ranch project area to maximize water conservation.
- **Goal:** Conserve water during and after construction of Otay Ranch.

- **Objective:** Ensure an adequate supply of water on a long-term basis prior to the development of each phase of the Otay Ranch Project Area.
- **Objective:** Ensure infrastructure is constructed concurrently with planned growth, including adequate storage, treatment, and transmission facilities, which are consistent with development phasing goals, objectives and policies, and the Service/Revenue Plan.
- **Objective:** Ensure that water quality within the Otay Ranch Project Area is not compromised, consistent with NPDES Best Management Practices, and the RWQCB Basin Plans.
- **Objective:** Promote water conservation through increased efficiency in essential uses and use of low water demand landscaping.
- **Objective:** Encourage suppliers to adopt a graduated rate structure designed to encourage water conservation.

Water facilities would be phased in conformance with street improvements and sewer facilities. A Water Conservation Plan is incorporated into project design (Appendix J2). Recycled water will be used to irrigate appropriate spaces within open space areas (Appendix J1 and J2). The project would comply with all requirements for landscaping to comply with the City's Landscape Water Conservation Ordinance (CVMC Section 20.12).

Level of Significance Prior to Mitigation

No significant impacts would occur as a result of the proposed project related to water supply. Impacts would be less than significant.

Mitigation Measures

Impacts related to water supply were found to be less than significant.

Level of Significance After Mitigation

No significant impacts would occur as a result of the proposed project related to water supply. Impacts would be less than significant.

5.11.7 Recycled Water

Existing Conditions

The project site is located within the boundaries of the OWD, which is the local agency responsible for providing water service. OWD is a member agency of the San Diego County Water Authority who, in turn, is a member agency of the Metropolitan Water District. The

project site is already within the boundaries of these agencies for water service, but would be required to annex into an OWD Improvement District prior to receiving service.

Current OWD policies regarding new subdivision development requires the use of recycled water where available. The project is in the 680 Zone for recycled water service. The 680 Zone distribution system has been supplied by pressure reducing off the 927 Zone distribution system. Some areas of the project may require private booster pumps on the landscape connections to get adequate pressure to the irrigation systems. The primary source of recycled water to the SPA will be the South Bay Water Reclamation Facility. From this plant, the recycled water system consists of a series of pump stations, transmission piping, and storage reservoirs that provide recycled water to the area. The project may also be required to construct some 927 Zone piping in the eastern corner of the project, but no service from the 927 Zone is proposed (Atlantis Group 2017).

Thresholds of Significance

The following significance criteria, some of which are included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), will determine the significance of a recycled water impact. Impacts to recycled water would be significant if the proposed project would:

A. Require or result in the construction of new recycled water treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects?

B. Be inconsistent with General Plan, GDP or other relevant objectives and policies regarding recycled water thereby resulting in a significant physical impact?

Proposed Project Impact Analysis

A. Require or result in the construction of new recycled water treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.

The project's proposed onsite recycled water facilities are shown in Figure 5.11-2, Proposed Onsite Recycled Water. The largest potential recycled water use areas within the project site include open space slopes and parkway landscaping. Recycled water may also be utilized to irrigate the common areas of the multi-family residential site as well as Community Purpose Facility areas. The existing recycled water system that would serve the project involves the extension of an existing 12-inch recycled water line constructed in La Media Road to the north of the project site. Extension of the existing 12-inch line to the western project boundary would not be constructed by the project. The project would be served by extending the 680 Zone and recycled water system in Main Street. The primary source of supply for the 680 Zone is the 680-

1 Pump Station and the 3.4 MG 680 Zone Reservoir. The slopes at the southeast corner of the site are at elevations that are too high to receive adequate service pressures from the 680 Zone system. These areas would be served by installing a private irrigation pump at the point of connection to the public 680 Zone system. Phased construction of recycled water facilities, based on the OWD approved master plan, would be incorporated into the PFFP and/or subdivision map conditions to assure timely provision of required facilities. The City of Chula Vista is currently evaluating the construction of a new wastewater treatment plant. Additionally, if the City Engineer makes the findings that there is no capacity in the current treatment system, building permits may not be issued. Further, the project would be required to pay fees conforming to the PDIF requirements as outline in the project's PFFP. Thus, impacts would be less than significant (Appendices J1 and J2).

B. Be inconsistent with General Plan, GDP or other relevant objectives and policies regarding recycled thereby resulting in a significant physical impact.

City of Chula Vista General Plan

The General Plan outlines policies associated with recycled water that are in place to promote the use of low water demand landscaping and to facilitate the continued use recycled water in new developments. The following policies are identified in the General Plan (City of Chula Vista 2005a):

- **Policy E 3.2:** Promote the use of low water demand landscaping and drought tolerant plant materials in both existing and new development.
- **Policy E 3.3:** Where safe and feasible, promote and facilitate the continued use of recycled water in new developments, and explore opportunities for the use of recycled water in redevelopment projects.

The project includes a Water Conservation Plan, as required by the Otay Ranch GDP and City Growth Management Ordinance. The Water Conservation Plan identifies measures to conserve water, including water efficient appliances, water-efficient landscaping, and pressure reducing valves. In addition, the proposed project would comply with the Chula Vista Landscape Water Conservation Ordinance (CVMC Section 20.12). Please refer to the Water Conservation Plan for a full listing of water conserving project design features (Appendix J2). The proposed project also incorporates the use of recycled water wherever possible to further reduce use of potable water.

Otay Ranch GDP

The Otay Ranch GDP identifies the following goal related to reclaimed and recycled water within the Otay Ranch region (City of Chula Vista and County of San Diego 1993):

- **Goal:** Design a sewerage system which will produce reclaimed water. Ensure a water distribution system will be designed and constructed to use reclaimed water. Construction

of a "dual system" of water supply will be required for all development where reclaimed water is used.

- **Objective:** Encourage development of public and private recreational uses that could utilize reclaimed water.

As previously discussed, the proposed project includes a Water Conservation Plan, as required by the Otay Ranch GDP and City Growth Management Ordinance. The Water Conservation Plan identifies measures to conserve water, including water efficient appliances, water-efficient landscaping, and pressure reducing valves. The proposed project is consistent with the General Plan and Otay Ranch GDP objectives and policies related to recycled water because the proposed project includes a Water Conservation Plan that requires the use of water efficient landscaping and recycled water for irrigation. Impacts related to plan consistency would be less than significant.

Level of Significance Prior to Mitigation

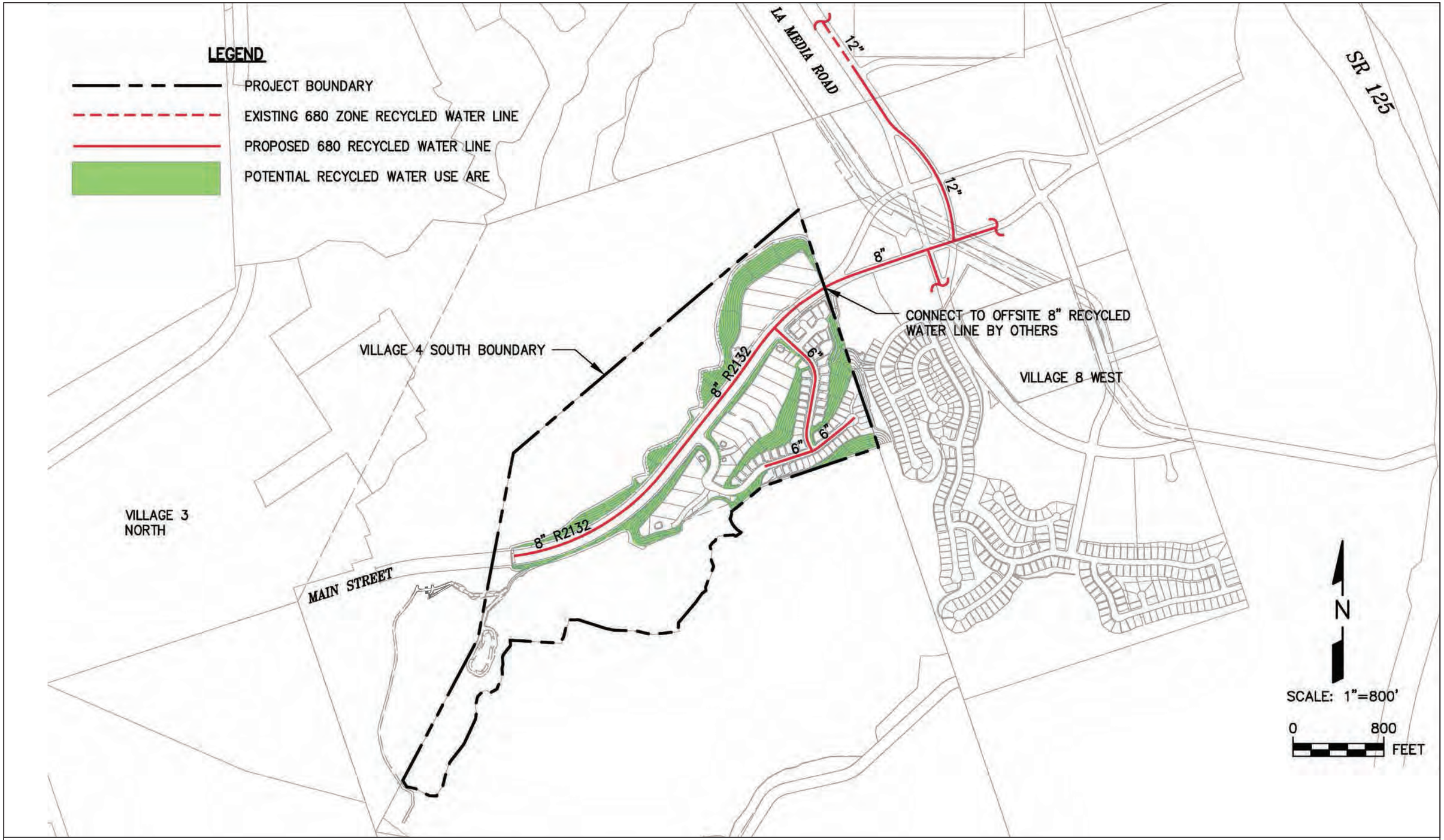
No significant impacts would occur as a result of the proposed project related to recycled water. Impacts would be less than significant.

Mitigation Measures

Impacts related to recycled water were found to be less than significant.

Level of Significance After Mitigation

No significant impacts would occur as a result of the proposed project related to recycled water. Impacts would be less than significant.



SOURCE: DEXTER WILSON ENGINEERING 2017

DUDEK

FIGURE 5.11-2
Proposed On-site Recycled Water

Otay Ranch Village Four SPA Plan Environmental Impact Report

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5.11.8 Sewer

This section of the EIR addresses potential impacts on sewer service and infrastructure resulting from the proposed project. This analysis also describes the proposed sewer facilities that are part of the project.

Regulatory Framework

Local Level

City of Chula Vista General Plan

The City of Chula Vista General Plan recognizes that to ensure adequate and reliable sewer service and facilities, services need to be maintained and expanded to accommodate growth in the City's population. The Chula Vista General Plan includes objectives and policies in the Public Facilities and Services Element that increase efficiencies in wastewater generation and its reuse through use of alternative technologies (Objective PFS 2). Additionally, Growth Management Objective GM 1 and Policy GM 1.11 encourage withholding discretionary approvals and subsequent building permits from projects that are not in compliance with applicable threshold standards for wastewater service (City of Chula Vista 2005a).

City of Chula Vista Wastewater Master Plan

The City of Chula Vista Wastewater Collection System Master Plan (City of Chula Vista 2014) provides a comprehensive review and evaluation of the City of Chula Vista's wastewater collection, conveyance, and treatment capacity requirements under the existing (2012) and ultimate (2050) conditions. Based on findings of the evaluation, the Plan recommends facility improvements and financing alternatives to ensure that aging infrastructure remains serviceable and to allow for the continued build out of the City's General Plan. Currently, wastewater generation within the City of Chula Vista is collected by City-owned facilities and conveyed to connections to METRO conveyance and treatment facilities for treatment and disposal. The City's current capacity at METRO is 20.864 mgd. Future City flow projections based on current growth projections indicate that this capacity may be exceeded within the next 10-15 years. As such, the wastewater generation analysis presented in the Wastewater Master Plan is intended to be used by the City to establish a basis for acquiring future Metro treatment capacity to allow for implementation of the Chula Vista General Plan, as adopted in 2005 and amended in 2012. The City's sewage capacity was not exceeded in 2015 and the 2016 GMOC Annual Report concluded the City would not exceed its sewage capacity until 2027 (City of Chula Vista 2016a).

The Wastewater Master Plan also presents the methodology and findings of the sewer capacity evaluation, including summaries of hydraulic computer model analyses used to present findings

of existing pump station assessments and recommended facility improvements. Sewer system design standards are based on the City's Subdivision Manual, Section 3-300, in which wastewater unit generation rates for use in design of sewer improvements are provided (City of Chula Vista 2012b). Recommended wastewater unit generation rates for use in design of sewer improvements are shown in Table 5.11-5.

Table 5.11-5
Recommended Sewer Design Unit Generation Rates

Land Use	Unit Generation Rate
Residential	80 gallons per day (GPD), or 265 Gallons per EDU
Elementary Schools	15 gallons per capita per day (GPCD)
Junior High / High Schools	20 GPCD
Commercial / Industrial / Church	2,500 GPD/acre
Parks	500 GPD/acre

Source: City of Chula Vista 2012b

Chula Vista Municipal Code Growth Ordinance

Chula Vista Municipal Code Section 19.80.030, Controlled Residential Development, is intended to ensure that new development would not degrade existing public services and facilities below acceptable standards for sewer and other public services and utilities. Preparation of a Public Facilities Financing Plan (PFFP) is required in conjunction with each SPA Plan to ensure that development is consistent with the overall goals and policies of the General Plan and would not degrade existing public services. Similarly, Chula Vista Municipal Code, Section 19.09, Growth Management, provides policies and programs that tie the pace of development to the provision of public facilities and improvements. The Growth Management Oversight Commission (GMOC) is responsible for annually reviewing the growth management program. Information provided to the GMOC must include:

- Amount of current capacity now used or committed;
- Ability of affected facilities to absorb forecast growth;
- Evaluation of funding and site availability for projected new facilities; and
- Other relevant information.

Chula Vista Municipal Code, Section 19.09.040G, requires "that sewage flows and volumes shall not exceed City engineering standards as set forth in the subdivision manual." In addition, the City must annually provide Metro with a 12- to 18-month development forecast and request confirmation that the projection is within the City's purchased capacity rights and an evaluation of Metro's ability to accommodate the forecast and continuing growth.

Chula Vista Municipal Code Section 19.09 also requires a PFFP and the demonstration that utilities, such as sewer systems, meet the GMOC quality of life threshold standards. The analysis of sewer services provided in this section, along with the PFFPs, are intended to ensure funding for any needed expansion of sewer facilities and to confirm that wastewater services will be provided commensurate with development and demand.

City Ordinance 2974

To reimburse the City for the cost to construct the Salt Creek Interceptor, all developments that propose connections to this line are required to pay a development impact fee (Ordinance 2974).

Existing Conditions

There are no existing sewer facilities within the proposed project site.

The City of Chula Vista operates and maintains its own sanitary collection system that connects to the Metro sewerage system for treatment and disposal. The Metro sewerage system treats wastewater from the City of San Diego and 15 other cities and districts, including Chula Vista. The San Diego Metropolitan Sewer Authority regulates the three wastewater treatment plants: (1) Point Loma Wastewater Treatment Plan; (2) Southbay Water Reclamation Plant; and (3) North City Water Reclamation Plant. Currently, the three combined treatment plants have a maximum permitted treatment capacity of 285 mgd of wastewater for the City of San Diego and 15 other participating agencies. All wastewater within Otay Ranch is conveyed to the South Metro Interceptor system west of Interstate 5 (Appendix J3).

Salt Creek Interceptor

The proposed project is within the Salt Creek Sewer basin. The Salt Creek Interceptor was planned, designed and constructed to convey projected development sewer flows in the eastern portions of Chula Vista and unincorporated San Diego County. The Salt Creek Interceptor was constructed in sections, with the majority completed approximately 6 years ago. This Interceptor starts as a 15-inch line in Hunte Parkway within the Rolling Hills Ranch project. From there, the line increases in size as it heads south along Salt Creek. It then turns westerly and follows the Otay River to a point of connection with the City of San Diego Metro Sewer System. At the location where the Salt Creek Interceptor passes south of Village Four, the line is 36 inches (Appendix J3).

Treatment Capacity

All sewage generated within the City of Chula Vista is currently conveyed to the City of San Diego Metro Sewer System for treatment and disposal. The Metro sewer system treats wastewater from the City of San Diego and 15 other cities and districts, including Chula Vista. Flows are conveyed to the

Point Loma Wastewater Treatment plant, which has a maximum daily treatment capacity of 240 mgd and currently treats approximately 175 mgd (Metro Wastewater 2016).

According to the Chula Vista Wastewater Master Plan, Chula Vista would require 5.358 mgd of additional treatment capacity to accommodate City growth as projected in 2005. However, growth projections have been revised since the master plan was prepared. The 2005 General Plan was adopted after preparation of the master plan and amended to accommodate increased development in some areas, including Otay Ranch (City of Chula Vista 2005a, 2005b).

Thresholds of Significance

The following significance criteria, some of which are included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), will determine the significance of a sewer service impact. Significance criteria A–C are from Appendix G of the CEQA Guidelines. Significance criteria D and E are based on City of Chula Vista standards. Impacts to sewer services would be significant if the proposed project would:

A. Result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

B. Require the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects?

C. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

D. According to the City's Growth Management Ordinance (Chapter 19.09), impacts related to wastewater generation would be significant if the proposed project would generate sewage flows and volumes that exceed City Engineering Standards as set forth in the Subdivision Manual adopted by City Council Resolution Number 11175 on February 12, 1983, as amended in 2012?

E. Be inconsistent with General Plan, GDP or other relevant objectives and policies regarding wastewater thereby resulting in a significant physical impact?

Proposed Project Impact Analysis

A. Result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

The project's proposed onsite sewer facilities are shown in Figure 5.11-3, Proposed Onsite Sewer Facilities. All sewage generated within the City of Chula Vista is currently conveyed to

the City of San Diego Metro Sewer System for treatment and disposal. The Metro sewer system has a capacity of 240 mgd and currently treats approximately 180 mgd. The City of Chula Vista has capacity rights of 20.864 mgd in the Metro sewer system, and current flows average at approximately 16.2 mgd (Appendix J3). Table 5.11-6 shows the generation factors used to project the total average daily flows for the proposed project.

Table 5.11-6
Sewer Generation Factors

Land Use Designation	Unit Generation Factor
Single-Family Residential	230 gallons per day/unit
Multi-Family Residential	182 gallons per day/unit
Common Purpose Facility	1,401 gallons per day/acre

Source: Appendix J3

Based on these generation rates, the proposed project is expected to generate approximately 70,188 gpd of sewer flows, with the project peak flow expected to be 0.175 million gallons per day (mgd) (Appendix J3). Projected flows from the 2010 General Plan Update in conjunction with the Bayfront Redevelopment Project and the proposed project, total treatment capacity needed would be approximately 32.548 mgd (Appendix J3). To meet future build out of Chula Vista, the City would need approximately 11.684 mgd of additional capacity, and the City may acquire rights for this additional capacity in the Metro system through negotiations with the City of San Diego. Also, the City of Chula Vista is evaluating the construction of a new wastewater treatment plant. However, if the City Engineer makes the findings that there is no capacity in the sewer treatment system, building permits may not be issued (Appendix J3). Thus, the proposed project would not be constructed unless the San Diego Metro Sewer System has adequate capacity to serve the project, and impacts would be less than significant.

B. Require the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.

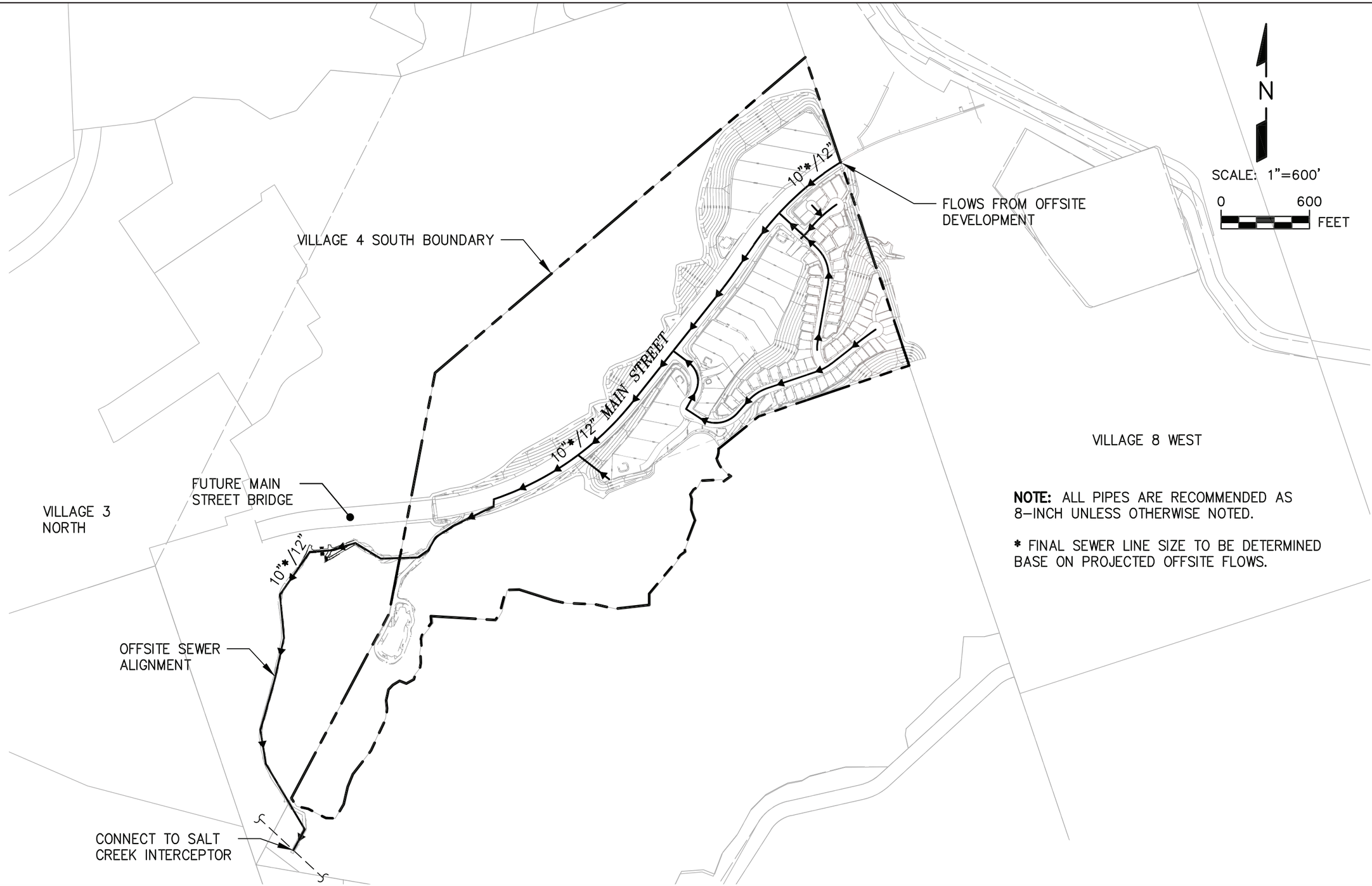
Proposed sewer facility improvements necessary to serve the proposed project were determined adequate to support the proposed project by Dexter Wilson Engineering and the results of the sewer evaluation are provided in Appendix J2 of this EIR. If the City Engineer makes the findings that there is no capacity in the sewer treatment system, building permits may not be issued. Adverse physical effects resulting from the construction of recreation facilities is addressed throughout this EIR, and with incorporation of proposed mitigation measures, impacts would be less than significant.

C. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

As described previously, the proposed project would be served by either the City of San Diego Metro System for sewage treatment at the Point Loma Wastewater Treatment Plant, or a new wastewater treatment plant currently under evaluation by the City of Chula Vista. The Point Loma Wastewater Treatment Plant complies with all wastewater treatment requirements of the San Diego Regional Water Quality Control Board. If the City of Chula Vista constructs a new wastewater treatment plant, it would be designed and constructed to comply with all wastewater treatment requirements of the San Diego Regional Water Quality Control Board (Appendix J2). Therefore, the proposed project would not exceed wastewater treatment requirements of the San Diego Regional Water Quality Control Board and impacts would be less than significant.

D. Generate sewage flows and volumes that exceed City Engineering Standards as set forth in the Subdivision Manual adopted by City Council Resolution Number 11175 on February 12, 1983, as amended in 2012.

Proposed sewer facility improvements necessary to serve the proposed project were determined adequate to support the proposed project by Dexter Wilson Engineering and the results of the sewer evaluation are provided in Appendix J3 of this EIR. The design of the existing and proposed facilities is based on the design criteria found in the City's Subdivision Manual. Since the proposed facilities would be sized to accommodate projected flows based on the City's Subdivision Manual, the proposed project would not generate flows and volumes that exceed the City Engineering Standards in the Subdivision Manual. Additionally, the proposed project would be timed to proceed with the City's acquisition of additional treatment capacity, and building permits would only be issued if the City Engineer determines that adequate sewer capacity exists (Appendix J3). Therefore, impacts would be less than significant.



SOURCE: DEXTER WILSON ENGINEERING 2017

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FIGURE 5.11-3
Proposed On-site Sewer Facilities

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E. Be inconsistent with General Plan, GDP or other relevant objectives and policies regarding wastewater thereby resulting in a significant physical impact.

City of Chula Vista General Plan

The City of Chula Vista General Plan recognizes that to ensure adequate and reliable sewer service and facilities, services need to be maintained and expanded to accommodate growth in the City's population. The Chula Vista General Plan includes objectives and policies in the Public Facilities and Services Element that increase efficiencies in wastewater generation and its reuse through use of alternative technologies. Additionally, Growth Management Objectives encourage withholding discretionary approvals and subsequent building permits from projects that are not in compliance with applicable threshold standards for wastewater service. The following objectives are identified in the General Plan related to sewer service and facilities (City of Chula Vista 2005a):

- **Objective PFS 1:** Ensure adequate and reliable water, sewer, and drainage service and facilities.
- **Objective PFS 2:** Increase efficiencies in water use, wastewater generation and its re-use and handling of stormwater runoff throughout the city through the use of alternative technologies.
- **Objective PFS 4:** Provide long-term wastewater treatment capacity to meet the needs of existing and new development in Chula Vista.

The proposed project is consistent with the General Plan objectives related to sewer service because the proposed project would be timed to proceed with the City's acquisition of additional treatment capacity and building permits will be issued only if the City Engineer has determined that adequate sewer capacity exists per City of Chula Vista Municipal Code Chapter 19.09, Growth Management. The PFFP for the project identifies the appropriate funding mechanisms to support the City's provision of public services, including a future expansion of waste water treatment capacity. The PFFP analyzes the public facilities and services required to implement the project. Additionally, prior to issuance of each building permit, the project applicant would be required to pay the Salt Creek Basin Development Impact Fee at the rate in effect at the time of building permit issuance. Therefore, impacts would be **potentially significant** if these PFFP mechanisms are not enforced and mitigation is required.

Otay Ranch GDP

The Otay Ranch GDP identifies the following goals and objectives related to sewerage collection and disposal systems in order to ensure a healthy and sanitary environment, and to encourage utilization of reclaimed water (City of Chula Vista and County of San Diego 1993):

- **Goal:** Design a sewerage system which will produce reclaimed water. Ensure a water distribution system will be designed and constructed to use reclaimed water. Construction

of a "dual system" of water supply will be required for all development where reclaimed water is used.

- **Goal:** Provide a healthful and sanitary sewerage collection and disposal system for the residents of Otay Ranch and the region, including a system designed and constructed to accommodate the use of reclaimed water.
- **Objective:** The ongoing planning, management and development of sewerage conveyance, treatment, and disposal facilities to adequately meet future demands.
- **Objective:** Assure that wastewater treatment plans are consistent with sewerage master plans.
- **Objective:** Sewage disposal systems should maximize the provision and utilization of reclaimed water.
- **Objective:** Encourage development of public and private recreational uses that could utilize reclaimed water.

Project development would be consistent with the growth anticipated and would not result in a determination by the City of Chula Vista or San Diego Metropolitan Sewer Authority that it has inadequate capacity to serve the project's demand in addition to the providers' existing commitments. Proposed sewer facility improvements necessary to serve the proposed project were determined adequate to support the proposed project by Dexter Wilson Engineering, and the results of the sewer evaluation are provided in Appendix J3 of this EIR. The design of the existing and proposed facilities is based on the design criteria found in the City's Subdivision Manual. Furthermore, the General Plan and Otay Ranch GDP policies require that the City provide adequate wastewater conveyance and treatment services to meet established service standards and give the City Council the discretion to withhold building permits if the standards are not met. Therefore, as demonstrated above, the proposed project would be consistent with applicable Otay Ranch GDP goals and objectives, and impacts related to plan consistency would be less than significant.

Level of Significance Prior to Mitigation

Prior to mitigation, the proposed project would have potentially significant impacts related to sewer services.

Mitigation Measures

MM PUB-3 The Applicant shall finance or install all on-site and off-site sewer facilities required to serve development ~~in each village~~ in accordance with the fees and phasing in the approved PFFP to the satisfaction of the City Engineer. Prior to issuance of each building permit, the Applicant shall pay the Salt Creek Basin Development Impact Fee at the rate in effect at the time of building permit

issuance. If at any time the City Engineer determines that the City of Chula Vista does not have adequate sewer treatment capacity with San Diego Metro, building permits shall not be issued for the project.

Level of Significance After Mitigation

With implementation of **MM-PUB-3**, impacts to sewer services as a result of the proposed project would be less than significant.

5.11.9 Solid Waste Disposal

This section describes solid waste disposal for the project site, and addresses the adequacy of existing facilities to accommodate for solid waste disposal associated with the proposed project.

Regulatory Framework

Federal Level

Integrated Waste Management Act of 1989 (AB 341)

The Integrated Waste Management Act of 1989 requires each city, county, and regional agency to develop a source reduction and recycling element of an integrated waste management plan that includes source reduction, recycling, and composting components. A minimum of a 50% diversion rate of all solid waste from landfill disposal or transformation by January 1, 2000 was required and met. The current policy goal of the state is no less than 75% of solid waste generated be source reduced, recycled, or composted by the year 2020.

State Level

Title 14: Natural Resources – Division 7

Title 24 of the California Code of Regulations regarding Natural Resources sets minimum standards for solid waste handling and disposal, including specific regulations regarding waste tire storage and disposal, hazardous waste disposal facilities, construction and demolition and inert debris transfer/processing, construction and demolition waste and inert debris disposal, transfer/processing operations and facilities, siting and design, operation standards, record keeping, and additional operating requirements for facilities. Additional guidance and requirements for compostable materials handling operations and facilities, asbestos handling and disposal, resource conservation programs, farm and ranch solid waste cleanup and abatement, used oil recycling program, electronic waste recovery and recycling, solid waste cleanup among others are also addressed in Title 14.

Title 27: Environmental Protection – Division 2, Solid Waste

Title 27 of the California Code of Regulations regarding Environmental Protection and Solid Waste set the criteria for all waste management units, facilities, and disposal sites including regulations of the CIWMB and SWRCB. Waste classification, siting, construction standards, water quality monitoring and response programs, operating criteria, daily and immediate cover, handling and equipment, controls, gas monitoring and control, closure and post-closure standards, and financial assurances are all aspects covered in Title 27.

Local Level

Construction and Demolition Debris Recycling Ordinance

Effective July 1, 2008, construction and demolition projects are required to divert their debris from landfill disposal in the City of Chula Vista; 100% of inert materials (i.e., concrete, rock, landscape debris) and a minimum of 50% of all other materials (i.e., Cabinets, carpet, drywall, etc.) shall be recycled and or reused from certain 'covered' projects. Covered projects are those with an approved Waste Management Report and submitted performance deposit. The Construction and Demolition Debris (C&DD) Recycling Ordinance (CVMC Section 8.25.095) is designed as a means of achieving compliance with California Green Building Standards Code (Title 24, Part II, Sections 4.408 and 5.408).

Otay Ranch General Development Plan

The Otay Ranch GDP outlines integrated solid waste management facilities as solutions to impacting the current waste management system through diversion and waste reductions. In order to meet state mandated goals set forth in AB 341, the Otay Ranch GDP requires the simultaneous implementation of multiple systems including: curbside recycling, neighborhood recycling/drop-off centers, a materials recovery facility, composting facilities, a household hazardous waste facility, and landfill utilization (City of Chula Vista and County of San Diego 1993).

City of Chula Vista General Plan

The 2005 Chula Vista General Plan recognizes that the Otay Landfill is anticipated to reach capacity within the next 15 years (2020), requiring closure of the facility (refer to the analysis below regarding specific landfill capacity information). The General Plan forecasts that the future solid waste disposal needs of the City may require the creation of a regional transfer station, where solid waste from individual collection routes would be transferred into large trucks for disposal (City of Chula Vista 2005a). As such, the policies are regional in nature and do not specifically address individual developments.

Existing Conditions

The City of Chula Vista's Public Works Department and Environmental Services Division oversees waste management in the City for residences and businesses in accordance with the goals and policies of the adopted General Plan and State Statues (AB 341). Republic Services (formerly known as Allied Waste Management) currently serves the City of Chula Vista as the sole solid waste and recycling service provider for residential, commercial and industrial customers. The City disposes of solid waste, yard waste, and C&DD at the Otay Landfill, which is anticipated to close in 2028. The City is currently working on further waste diversion plans, in addition to the C&DD Ordinance to help extend the lifespan of the Otay Landfill; the Sycamore Canyon Landfill will be utilized as the City's primary landfill once the Otay Landfill closes. The mixed debris that are required to be recycled per the C&DD Ordinance are processed at one of two C&D facilities in San Diego: the Otay Landfill run by Republic Services and EDCO's C&D facility in Lemon Grove. Both of these C&D facilities are open to the public, as neighboring cities have similar ordinances and solid waste requirements (City of Chula Vista 2014).

In addition, the Environmental Services Division offers bulky item collection, composting, construction and demolition debris, electronic waste, hazardous waste, reuse, sharps waste disposal, special services, universal waste and yard waste programs and services. The City of Chula Vista runs its own household hazardous waste (HHW) program and collection facility to help manage the hazardous waste disposal throughout the City. The hazardous waste disposal facility is part of the City's effort to divert household toxics and hazardous waste from their landfill facilities. Residential composting is encouraged by the City through the availability of composting education and subsidized compost bins. The City is currently working on a food waste pilot program, in efforts to divert up to approximately 25% of the solid waste stream (organics) from their landfills (City of Chula Vista 2014).

Chula Vista's CLEAN business program promotes businesses which implement solid waste reduction measures and practices, as well as energy conservation, water conservation and pollution prevention measures. The City of Chula Vista's Environmental Services Division also manages special events solid waste disposal with the implementation of the Special Events Recycling and Solid Waste Management Plan (City of Chula Vista 2014).

Thresholds of Significance

The following significance criteria, included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), will determine the significance of a solid waste impact. Impacts to solid waste disposal would be significant if the proposed project would:

A. Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs?

B. Not comply with federal, state, and local statutes and regulations relating to solid waste?

Proposed Project Impact Analysis

A. Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.

Solid waste management services for the City of Chula Vista are provided by Allied Waste Management. Solid waste is collected curb-side once a week and transported to the Otay Landfill in the City of Chula Vista. Otay landfill currently has a projected life span of 20-years, and a maximum permitted throughput of 5,830 tons per day (CalRecycle 2016a). Construction of the proposed project would result in a temporary increase in solid waste generation, while operation would result in a long term, permanent, incremental increase in solid waste generation.

Additionally, under the current franchise agreement between the City of Chula Vista and Republic Services, solid waste would be disposed of at the Sycamore Landfill once the Otay Landfill meets its permitted capacity and terminates solid waste services (City of Chula Vista 2012a). The Sycamore Landfill has a remaining capacity of 47,388,428 cubic yards and projected cease operation date of December 2031 (CalRecycle 2016b). As such, solid waste service would continue following closure of the Otay Landfill and permitted capacity would be available to accommodate the proposed project. Impacts would be less than significant.

B. Not comply with federal, state, and local statues and regulations relating to solid waste.

The State of California has mandated the at least 50% of the solid waste generated by a City or County be diverted from landfills. Additionally, the State has set per capita disposal rates of 5.3-pounds per person per day for the City of Chula Vista (Atlantis Group 2017). To maintain these targets, the following programs must be implemented per Chula Vista Municipal Code Sections 8.23, Solid Waste and Recycling Contract or Franchise; 8.24, Solid Waste and Litter; 8.25, Recycling; and 19.58.340, Trash Enclosures:

1. All new construction and demolition projects in the City are required to divert from landfill disposal 100-percent of inert waste, to include asphalt, concrete, bricks, tile, trees, stumps, rocks, and associated vegetation and soils resulting from land clearing, and not less than 50-percent of the remaining waste generated, via reuse or recycling, unless a partial or full diversion exemption has been granted pursuant to CVMC 8.25.095, in which case the diversion requirement shall be the maximum feasible diversion rate established by the Waste Management Report Compliance Official for the project (CVMC 8.25.020(O6)). Contractors will be required to put up a performance deposit and prepare a Waste Management Report Form to ensure that all materials are responsibly

handled. Upon verification that the diversion goals have been met the performance deposit will be refunded (CVMC 8.25.095).

2. The City of Chula Vista's Recycling and Solid Waste Planning Manual, adopted by City Council, provides information for adequate space allocated to recycling and solid waste within individual projects, based upon the type of project and collection service needed. Allied Waste Services/Republic Services is the City of Chula Vista contracted service provider for all commercial, industrial, and residential services within the city limits.
3. Plans are subject to approval by the City Manager or designee, who is the Environmental Services Program Manager in the Public Works Department.
4. Additionally, the City of Chula Vista encourages the use of compost materials to be incorporated into the soil of all new construction projects to improve soil health, water retention, less water run-off, and filtration of water run-off prior to entering storm drains and creeks on the way to San Diego Bay. The yard trimmings collected in Chula Vista are composted at the Otay Landfill and may be available for purchase.

The proposed project would be constructed and operated in compliance with all applicable federal, state, and local statues and regulations relating to solid waste. Thus, impacts would be less than significant.

Level of Significance Prior to Mitigation

No significant impacts would occur as a result of the proposed project related to solid waste. Impacts would be less than significant.

Mitigation Measures

Impacts related to solid waste disposal were found to be less than significant.

Level of Significance After Mitigation

No significant impacts would occur as a result of the proposed project related to solid waste. Impacts would be less than significant.

5.11.10 Energy

Regulatory Framework

State Level

The State of California has implemented several important energy conservation policies applicable to state facilities since 2004. These policies are as follows:

Executive Order S-12-04: This order requests the participation of all state agencies under the authority of the Governor and other entities not under the direct authority of the Governor (including CSU) to institute energy conservation measures that will reduce energy consumption. Additionally the order requests that all state agencies review and assess energy conservation policies currently in place and expand those measures to all applicable facilities.

Executive Order S-20-04: This order requires the state to commit to "aggressive" action to reduce state building energy usage by retrofitting, building, and operating energy and resource efficient buildings, and by taking all cost-effective measures described in the Green Building Action Plan for facilities owned, funded, or leased by the state. Executive Order S-20-04 requests that the CSU system participate in the effort to reduce energy usage.

State Executive Order S-3-05: This order directs the state to reduce greenhouse gas emissions, which are linked to energy efficiency.

Contained within Executive Order S-20-04, the State of California Green Building Action Plan includes the following directives for the operation of future state buildings:

- All state-owned buildings will reduce the volume of energy purchased from the grid, with a goal to reduce energy consumption by at least 20% by 2015 (as compared to a 2003 baseline), by undertaking all cost-effective operation and efficiency measures, as well as on-site renewable energy technologies. Alternatively, buildings that already have taken significant efficiency actions must achieve a minimum efficiency benchmark to be established by the California Energy Commission.
- All occupied state-owned buildings, beginning no later than July 2005 and completed by 2007, shall be benchmarked for energy efficiency, using guidelines established by the California Energy Commission. Building managers of low-rated buildings shall prepare a plan to undertake cost-effective efficiency retrofit projects.
- All state buildings over 50,000 square feet shall be retro-commissioned, and then re-commissioned on a recurring 5-year cycle, or whenever major energy consuming systems or controls are replaced. This will assure that energy and resource consuming equipment is installed and operated at optimal efficiency.
- All state agencies that purchase or operate electrical equipment (such as computers, printers, copiers, refrigerators, and unit conditioners) shall ensure each is Energy Star-rated, where cost effective, and that procurement goals and operating practices minimize energy and resource use and impacts.

California Code of Regulations Title 20 and Title 24

New buildings and major renovations constructed in California are required to comply with the standards contained in Title 20, Energy Building Regulations, and Title 24, Building Energy Efficiency Standards. The standards are updated periodically to allow consideration and possible incorporation of new energy-efficiency technologies and methods. The Energy Commission adopted the 2008 changes to the Building Energy Efficiency Standards for a number of compelling reasons (CEC 2011):

- To provide California with an adequate, reasonably priced, and environmentally sound supply of energy.
- To respond to AB 32, the Global Warming Solutions Act of 2006, that mandates that California must reduce its GHG emissions to 1990 levels by 2020.
- To pursue California energy policy that energy efficiency is the resource of first choice for meeting California's energy needs.
- To act on the findings of California's Integrated Energy Policy Report that Standards are the most cost effective means to achieve energy efficiency, expects the Building Energy Efficiency Standards to continue to be upgraded over time to reduce electricity and peak demand, and recognizes the role of the Standards in reducing energy related to meeting California's water needs and in reducing GHG emissions.
- To meet the West Coast Governors' Global Warming Initiative commitment to include aggressive energy efficiency measures into updates of state building codes.
- To meet the Executive Order in the Green Building Initiative to improve the energy efficiency of non-residential buildings through aggressive standards.

Title 20 contains standards ranging from power plant procedures and siting to energy-efficiency standards for appliances to ensure that reliable energy sources are provided and diversified through energy efficiency and renewable energy resources.

Title 24 contains energy efficiency standards for residential and non-residential buildings based on a state mandate to reduce California's energy demand. Specifically, Title 24 addresses a number of energy efficiency measures that impact energy used for lighting, water heating, heating, and air conditioning, including the energy impact of the building envelope such as windows, doors, skylights, wall/ floor/ ceiling assemblies, attics, and roofs. The 2008 version of Title 24 includes standards that achieve a minimum 15% improvement in energy efficiency over the previous 2005 Title 24 standards. The recently updated 2013 standards will continue to improve upon the current 2008 standards for new construction of, and additions and alterations

to, residential and nonresidential buildings. The 2013 standards have been adopted by the California Energy Commission and will go into effect on July 1, 2014.

California Long-Term Energy Efficiency Strategic Plan

In 2008, the California Energy Commission and the California Public Utilities Commission, working with a broad range of stakeholders, developed the first long-term strategic plan for California's energy efficiency efforts. The Strategic Plan was most recently updated in January 2011. The plan outlines numerous policy and program objectives, including net-zero goals for residential (2020) and (2030) commercial new construction. The Plan seeks to effect substantial and sustained progress towards more efficient technologies and practices in each of the customer end use sectors (e.g., Commercial, Industrial, Residential, Agricultural). Likewise, the Plan describes the market transformation efforts necessary in each of the cross-cutting areas discussed (e.g., Codes and Standards, Workforce Education and Training, Marketing Education and Outreach, and Research and Technology) (CPUC 2011).

Energy Upgrade California

Energy Upgrade California is a statewide energy management initiative designed to help residents and small businesses learn the best ways to take action on energy to save money and be more comfortable at home and at work. This new initiative will help our communities meet our energy efficiency and clean energy goals. Energy Upgrade California is a program of the CPUC in collaboration with the CEC, California counties, cities, nonprofit organizations, and the state's investor-owned utilities. Funding comes from the utilities' ratepayers under the auspices of the CPUC in addition to incremental funding from the DOE. Energy Upgrade California offers a wide variety of incentives and rebates to choose from to help homeowners replace appliances, pool pumps, HVAC systems, hot water heaters, install windows, insulation, and more. Incentives and rebates can help offset the cost of energy efficient products (Energy Upgrade California 2014).

Regional Level

SDG&E 20-Year Resource Plan

In April 2003, San Diego Gas & Electric (SDG&E) filed its 20-year resource plan with the California Public Utilities Commission to outline its resource portfolio to meet future demand. SDG&E's 20-year resource plan offers an analytical basis for the California Public Utilities Commission to use in meeting two related objectives, which together will guide SDG&E in discharging its responsibility to provide safe, reliable electric supply to customers through use of energy efficiency, demand response, renewable and conventional supply technologies. These objectives are (1) to provide policy guidance on a number of issues that will guide future development and procurement of SDG&E's long-term supply and demand resource portfolio and

ensure grid reliability and (2) to identify the likely resource gap that will exist over the planning horizon along with the range of possible variations, with particular emphasis and detail for each of the next 5 years as directed by the CPUC (SDG&E 2016).

Resource gaps that would not be filled by energy conservation and demand response alternatives were planned to be filled by additional transmissions lines from generating systems outside of SDG&E territory, including renewable energy facilities. Using the Balanced Portfolio, SDG&E's 2012 energy mix would be comprised of roughly 14% renewable, 53% natural gas, 14% nuclear, and 19% off-system resources (SDG&E 2016).

Local Level

City of Chula Vista Climate Action Plan

Since 2000, Chula Vista has been implementing a Climate Action Plan to address climate change issues and its impacts on the City. The City's Climate Action Plan is a group of documents including various GHG emission inventories, the original Carbon Dioxide Reduction Plan (2000), Mitigation Strategy Updates (2008), and new Climate Adaptation Strategies (2010). The City's Increased Energy Efficiency Ordinance, Green Building Standards, and Solar Ready Ordinances are products of the Climate Action Plan. Based on available funding, staff has been implementing the 18 climate-related actions and their 57 associated components (City of Chula Vista 2013).

City of Chula Vista Increased Energy Efficiency Code

The Chula Vista City Council has adopted the 2008 State Energy Code (Title 24) with an amendment requiring an increased energy efficiency standard. This amendment went into effect on February 26, 2010, as Section 15.26.030 of the Municipal Code. As required by this amendment, all building permits applied for and submitted on or after this date are subject to these increased energy efficiency standards. The increase in energy efficiency is a percentage above the 2008 Energy Code and is dependent on climate zone and type of development proposed. The designation is as follows:

New residential and nonresidential projects that fall within climate zone 7 must be at least 15% more energy efficient than the 2008 Energy Code. Climate zone 7 encompasses the majority of the City of Chula Vista (Municipal Code Section 15.26.030).

New low-rise residential projects (three-stories or less) that fall within climate zone 10 must be at least 20% more energy efficient than the 2008 Energy Code. New non-residential, high-rise residential or hotel/motel projects that fall within climate zone 10 must be at least 15% more energy efficient than the 2008 Energy Code. Climate zone 10 encompasses the easternmost portion of the City of Chula Vista (Municipal Code Section 15.26.030).

City of Chula Vista Climate Change Working Group – Implementation Plans

The City's Climate Change Working Group is a collaborative effort amongst City residents, community members, businesses, organizations and others who assist in the development of climate-related programs and policies for the City. In 2008, the CCWG reviewed over 90 carbon reduction measures and ultimately chose seven measures to recommend to City Council. The measures, which were designed to reduce or "mitigate" climate change impacts by reducing greenhouse gas emissions within Chula Vista to 20% below 1990 levels, are currently being implemented by multiple City departments. Measures developed include installing alternative energy improvements and implementing energy efficiency upgrades on structures by incentivizing property owners and adopting a City-wide green building program (City of Chula Vista 2016d).

Chula Vista Climate Adaptation Strategies – Implementation Plans

The Climate Adaptation Strategies – Implementation Plans document developed by the Climate Change Working Group includes 11 strategies to adapt Chula Vista to the potential impacts of global climate change, including energy supply. The strategies to reduce energy demand include cool paving, shade trees, and cool roofs. For each strategy, the plans outline specific implementation components, critical steps, costs, and timelines. To limit the necessary staffing and funding required to implement the strategies, the plans were also designed to build upon existing municipal efforts rather than create new, stand-alone policies or programs. Initial implementation of all 11 strategies is intended to be phased in over a 3-year period from plan adoption (City of Chula Vista 2011c).

Chula Vista Green Building Standards

The City of Chula Vista amended the City Municipal Code Ordinance 15.12 pertaining to green building practices to include residential and non-residential remodels and additions. The Code contains Residential Mandatory Measures and Non-Residential Mandatory Measures, and also provides Voluntary Measures that can be used by developers to improve energy efficiency and reduce environmental impacts through design and construction.

San Diego Regional Energy Efficiency Plan/City of Chula Vista Energy Strategy and Action Plan

The San Diego Regional Energy Plan provided policy and program recommendations to achieve energy sustainability and security (SANDAG 1994). The San Diego Regional Energy office worked with SANDAG to update the plan with Energy 2030, the San Diego Regional Energy Strategy. The Regional Energy Strategy is intended to create a vision of how energy will be produced and consumed in the San Diego region in 2030. It also provides an integrated approach

to meeting energy needs and ensures that an adequate supply and distribution of electricity, natural gas and transportation fuels is available (SANDAG 2009).

The City has adopted an energy plan to address long-term energy issues and to protect its residents from unreliable energy supply and volatile prices. The plan, called the Chula Vista Energy Strategy and Action Plan, addresses demand side management, energy efficient and renewable energy outreach programs for businesses and residents, energy acquisition, power generation, and distributed energy resources and legislative actions (City of Chula Vista 2001).

City of Chula Vista Solar Ready Ordinances

CVMC, Section 15.28.015, solar water heater pre-plumbing, and Section 15.24.065, photovoltaic pre-wiring requirements, are referred to as the Solar Ready ordinances. Section 15.28.015 requires all new residential units to include plumbing specifically designed to allow the later installation of a system which utilizes solar energy as the primary means of heating domestic potable water. Section 15.24.065 requires all new residential units to include electrical conduit specifically designed to allow the later installation of a photovoltaic system which utilizes solar energy as a means to provide electricity.

City of Chula Vista General Plan

The Chula Vista General Plan recognizes that to ensure adequate and reliable energy service, efficient energy efforts throughout the City and transitioning to non-fossil fuel alternatives will help to extend limited supplies, reduce the need for expensive new regional power generators and transmission lines, and contribute to Chula Vista's economic sustainability and regional competitiveness. The General Plan includes objectives in the Public Facilities and Services Element to ensure adequate energy supplies throughout Chula Vista (Objective PFS 22) and in the Environmental Element to promote conservation through the efficient use of energy and through the development of local, non-fossil fuel-based renewable sources of energy (Objective E 7) (City of Chula Vista 2005a).

Otay Ranch General Development Plan

Part II, Chapter 10 establishes goals, objectives, and policies to ensure the conservation of significant portions of Otay Ranch's natural environment. Overall, these goals, objectives and policies prevent the wasteful exploitation, destruction, or neglect of resources and encourage the preservation enhancement and management of sensitive resources. Specifically, Section E addresses the overall goal of establishing Otay Ranch as a "showcase" for the efficient utilization of energy resources and the use of renewable energy resources. The objectives address land use patterns and project features to conserve non-renewable energy resources, and the policies

require the preparation of energy conservation plans and call for reducing reliance on the automobile (City of Chula Vista and County of San Diego 1993).

Sectional Planning Area Energy Conservation Plan and Air Quality Improvement Plan

The Otay Ranch GDP requires all SPA Plans to prepare a Non-Renewable Energy Conservation Plan. This Plan identifies measures to reduce the use of non-renewable energy resources through, but not limited to, transportation, building design and use, lighting, recycling, and alternative energy sources. In addition, each SPA Plan with more than 50 units must prepare an Air Quality Improvement Plan (AQIP), consistent with CVMC Section 19.09.050B.

Existing Conditions

Electricity

San Diego Gas & Electric (SDG&E) provides electric services to 3.6 million customers through 1.4 million electric meters and 873,000 natural gas meters throughout a 4,100-square-mile service area in San Diego and Southern Orange County (SDG&E 2016). SDG&E is a subsidiary of Sempra Energy.

SDG&E receives electric power from a variety of sources. According to CPUC 2016 Biennial Renewables Portfolio Standard (RPS) Program Update, 36.4% of SDG&E's power came from eligible renewables, including biomass/waste, geothermal, small hydroelectric, solar, and wind sources (CPUC 2016). This is a large increase from the 15.7% that SDG&E maintained in 2011.

The Overview webpage at the California Energy Almanac, the online database of the California Energy Commission (CEC), states that statewide electricity generation exceeds 200,000 gigawatt-hours each year, with natural gas as the main source for electricity generation, responsible for 60.5% of the total in-state electric generation system power. In addition, the RPS established a goal for California to increase the amount of electricity generated from renewable energy resources to 20% by 2010 and to 33% by 2020. Currently, California's in-state renewable generation is composed of biomass, geothermal, small hydro, wind, and solar generation sites that make up approximately 19.6% of the total in-state generational output (CEC 2014).

Based on recent energy supply and demand projections in California, statewide annual peak demand is projected to grow an average of 890 megawatts (MW) per year for the next decade, or 1.4% annually, while per capita consumption is expected to remain relatively constant at 7,200–7,800 kWh per person (CEC 2007). In San Diego County, the CEC reported an annual electrical consumption of approximately 19.9 billion kWh in total, with 13.1 billion kWh for non-residential use and 6.8 billion kWh for residential use in 2014 (CEC n.d.).

Natural Gas

The system receives gas from SDG&E's regional transmission system (SDG&E 2016).

The CEC reports that SDG&E consumed a total of approximately 139 trillion British thermal units (Btu) of natural gas in 2013, including 20 trillion Btu for commercial buildings, 3.7 trillion Btu for industrial buildings, and 34 trillion Btu for residential use. In San Diego County, total natural gas consumption was approximately 537.8 million Btu in 2013, with 219.5 million Btu for non-residential use and 318.3 million Btu for residential use (California Gas and Electric Utilities 2014).

For the purposes of this analysis, energy consumption is measured in kWh or MMBtu. One million Btu is equivalent to 293.297 kWh.

Thresholds of Significance

Energy conservation and impacts are addressed in Appendix F of the CEQA Guidelines (14 CCR 15000 et seq.), but formal significance thresholds are not provided. The following significance criteria, from City of Chula Vista standards, will determine the significance of an energy impact. Impacts to gas and electric service would be significant if the proposed project would:

A. Increase the demand of energy resources to exceed the City's available supply or cause a need for new and expanded facilities the construction of which would cause significant environmental impacts in order to maintain acceptable service ratios, response times or other performance objectives?

Proposed Project Impact Analysis

A. Increase the demand of energy resources to exceed the City's available supply or cause a need for new and expanded facilities the construction of which would cause significant environmental impacts in order to maintain acceptable service ratios, response times or other performance objectives.

The Chula Vista region's current reliance on fossil fuels provides the majority of non-renewable energy consumption. Fossil fuels are directly consumed in the form of gasoline, diesel fuel, and natural gas and indirectly as electricity generated from these fuels. The goals, objectives, and policies of the Otay Ranch GDP require that any new project identify a plan that assists in a long-range strategy that would increase the conservation of and decrease the consumption of non-renewable energy resources (City of Chula Vista and County of San Diego 1993a).

Electricity

Gas and Electric service are provided by SDG&E, which is the owner and operator of electricity transmission, distribution, and natural gas distribution infrastructure in the County. A new SDG&E substation was recently approved and would be completed prior to the completion of the proposed project (CPUC 2016). The new substation would provide additional energy resources for the City and the proposed project.

Statewide emission reduction measures proposed in the California Air Resources Board's Climate Change Proposed Scoping Plan: A Framework for Change (CARB 2008) include several measures aimed at reducing GHG emissions associated with electricity use (refer to Section 5.12, Global Climate Change, and Appendix E). To partially offset these increased energy needs, the project has incorporated sustainable features into the project design to reduce its electricity use, including water conservation measures identified in the project's Water Conservation Plan (Appendix J2), which would also serve to reduce the amount of electricity needed to supply water to the project site because energy consumption is embodied in the acquisition, treatment and distribution of water resources; therefore, less water consumption yields less energy consumption.

Additionally, as described above, the Otay Ranch GDP requires all SPA plans to prepare a Non-Renewable Energy Conservation Plan (Appendix J2). This Plan identifies measures to reduce the use of non-renewable energy resources through, but not limited to, transportation, building design and use, lighting, recycling, and alternative energy sources which would further reduce energy use within the proposed project.

Moreover, the proposed project would be required to comply with Section 15.26.030 of the City's Municipal Code, which requires that new residential projects that fall within climate zone 7 be at least 15% more energy efficient than the 2008 Energy Code. As such, building design would employ energy efficient measures beyond that required by the Energy Code. Development would also be required to comply with the Chula Vista Solar Ready ordinances, which would encourage the use of solar energy.

The California Green Building Standards, on which the City's Green Building Standards Ordinance of 2009 is based, includes measures for reducing overall energy consumption through water conservation, electricity and natural gas conservation, and building design. Included in these standards is a mandate for 20% less water use than currently required by the state plumbing code. The City's Landscape Water Conservation Ordinance would further reduce water consumption and associated electricity use through the use of drought-tolerant landscaping and water-efficient irrigation systems. Impacts would be less than significant.

Natural Gas

Statewide emission reduction measures proposed in CARB's Scoping Plan (CARB 2008) include measures aimed at reducing GHG emissions associated with natural gas use (refer to Section 5.12 and Appendix E). Additionally, as described above, the Otay Ranch GDP requires all SPA Plans to prepare a Non-Renewable Energy Conservation Plan. This Plan identifies measures to reduce the use of non-renewable energy resources through transportation, building design and use, lighting, recycling, and alternative energy sources, which would further reduce energy use, including that derived from natural gas, within the proposed project.

Moreover, the proposed project would be required to comply with Section 15.26.030 of the City's Municipal Code, which requires that new residential projects that fall within climate zone 7 be at least 15% more energy efficient than the 2008 Energy Code. As such, building design would employ energy efficient measures beyond that required by the Energy Code including those related to natural gas consumption. In addition to maintaining consistency with these goals, policies and adhering to state and local energy efficiency standards, some recommendations made by the Climate Change Working Group's Adaptation Strategies have been incorporated into the SPA Plan. Therefore, no significant impacts would occur due to the increased demand on installation of gas and electric infrastructure and supply to serve the proposed project.

Level of Significance Prior to Mitigation

No significant impacts would occur as a result of the proposed project related to energy demand. Impacts would be less than significant.

Mitigation Measures

Impacts related to energy demand were found to be less than significant.

Level of Significance After Mitigation

No significant impacts would occur as a result of the proposed project related to energy demand. Impacts would be less than significant.

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5.12 CLIMATE CHANGE

This section of the EIR addresses potential impacts to climate change resulting from the proposed Otay Ranch Village Four Sectional Planning Area (SPA) Plan Project (project). The discussion in this section is based on the Air Quality and Greenhouse Gas Emissions Technical Report prepared for the project by Dudek in December 2016. The complete report is contained in Appendix E of this EIR.

5.12.1 Existing Conditions

5.12.1.1 The Greenhouse Effect

The greenhouse effect is the trapping and buildup of heat in the atmosphere (troposphere) near the Earth's surface. The greenhouse effect traps heat in the troposphere through a threefold process as follows: Short-wave radiation emitted by the Sun is absorbed by the Earth, the Earth emits a portion of this energy in the form of long-wave radiation, and GHGs in the upper atmosphere absorb this long-wave radiation and emit it into space and toward the Earth.

The greenhouse effect is a natural process that contributes to regulating the Earth's temperature. Without it, the temperature of the Earth would be about 0 degrees Fahrenheit (°F) (−18 degrees Celsius (°C)) instead of its present 57°F (14°C). If the atmospheric concentrations of GHGs rise, the average temperature of the lower atmosphere will gradually increase. Global climate change concerns are focused on whether human activities are leading to an enhancement of the greenhouse effect.

Greenhouse Gases

GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), O_3, water vapor, hydrofluorocarbons (HFCs), hydrochlorofluorocarbons (HCFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Some GHGs, such as CO_2, CH_4, and N_2O, occur naturally and are emitted to the atmosphere through natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Manufactured GHGs, which have a much greater heat-absorption potential than CO_2, include fluorinated gases, such as HFCs, HCFCs, PFCs, and SF_6, which are associated with certain industrial products and processes. A summary of the most common GHGs and their sources is included in the following text.[1]

Carbon Dioxide. CO_2 is a naturally occurring gas and a by-product of human activities and is the principal anthropogenic GHG that affects the Earth's radiative balance. Natural sources of

[1] The descriptions of GHGs are summarized from the Intergovernmental Panel on Climate Change (IPCC) Second Assessment Report (1995), IPCC Fourth Assessment Report (2007), CARB's Glossary of Terms Used in GHG Inventories (2016a), and EPA's Glossary of Climate Change Terms (2016).

CO_2 include respiration of bacteria, plants, animals, and fungus; evaporation from oceans, volcanic out-gassing; and decomposition of dead organic matter. Human activities that generate CO_2 are from the combustion of coal, oil, natural gas, and wood.

Methane. CH_4 is a flammable gas and is the main component of natural gas. Methane is produced through anaerobic (without oxygen) decomposition of waste in landfills, flooded rice fields, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.

Nitrous Oxide. Sources of N_2O include soil cultivation practices (microbial processes in soil and water), especially the use of commercial and organic fertilizers, manure management, industrial processes (such as in nitric acid production, nylon production, and fossil-fuel-fired power plants), vehicle emissions, and the use of N_2O as a propellant (such as in rockets, racecars, aerosol sprays).

Fluorinated Gases. Fluorinated gases are synthetic, powerful GHGs that are emitted from a variety of industrial processes. Several prevalent fluorinated gases include the following:

- **Hydrofluorocarbons:** HFCs are compounds containing only hydrogen, fluorine, and carbon atoms. HFCs are synthetic chemicals that are used as alternatives to O_3-depleting substances in serving many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are used in manufacturing.
- **Hydrochlorofluorocarbons:** HCFCs are compounds containing hydrogen, fluorine, chlorine, and carbon atoms. HFCs are synthetic chemicals that are used as alternatives to ozone depleting substances (chlorofluorocarbons (CFCs)).
- **Chlorofluorocarbons:** CFCs are synthetic chemicals that have been used as cleaning solvents, refrigerants, and aerosol propellants. CFCs are chemically unreactive in the lower atmosphere (troposphere) and the production of CFCs was prohibited in 1987 due to the chemical destruction of stratospheric O_3.
- **Perfluorocarbons:** PFCs are a group of human-made chemicals composed of carbon and fluorine only. These chemicals were introduced as alternatives, along with HFCs, to the O_3 depleting substances. The two main sources of PFCs are primarily aluminum production and semiconductor manufacturing. Since PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere, these chemicals have long lifetimes, ranging between 10,000 and 50,000 years.
- **Sulfur Hexafluoride:** SF_6 is a colorless gas that is soluble in alcohol and ether and slightly soluble in water. SF_6 is used for insulation in electric power transmission and distribution equipment, semiconductor manufacturing, the magnesium industry, and as a tracer gas for leak detection.

- **Nitrogen trifluoride:** NF_3 is used in the manufacture of a variety of electronics, including semiconductors and flat panel displays.

Black Carbon. Black carbon is a component of fine particulate matter, which has been identified as a leading environmental risk factor for premature death. It is produced from the incomplete combustion of fossil fuels and biomass burning, particularly from older diesel engines and forest fires. Black carbon warms the atmosphere by absorbing solar radiation, influences cloud formation, and darkens the surface of snow and ice, which accelerates heat absorption and melting. Black carbon is a short-lived species that varies spatially, which makes it difficult to quantify the global warming potential. DPM emissions are a major source of black carbon and are also TACs that have been regulated and controlled in California for several decades to protect public health. In relation to declining DPM from CARB's regulations pertaining to diesel engines, diesel fuels, and burning activities, the CARB estimates that annual black carbon emissions in California have reduced by 70% between 1990 and 2010, with 95% control expected by 2020.

Water Vapor. The primary source of water vapor is evaporation from the ocean, with additional vapor generated by sublimation (change from solid to gas) from ice and snow, evaporation from other water bodies, and transpiration from plant leaves. Water vapor is the most important, abundant, and variable GHG in the atmosphere and maintains a climate necessary for life.

Ozone. Tropospheric O_3, which is created by photochemical reactions involving gases from both from natural sources and from human activities, acts as a GHG. Stratospheric O_3, which is created by the interaction between solar ultraviolet radiation and molecular oxygen (O_2), plays a decisive role in the stratospheric radiative balance. Depletion of stratospheric O_3, due to chemical reactions that may be enhanced by climate change, results in an increased ground-level flux of ultraviolet-B radiation.

Aerosols. Aerosols are suspensions of particulate matter in a gas emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light.

Global Warming Potential

Gases in the atmosphere can contribute to climate change both directly and indirectly. Direct effects occur when the gas itself absorbs radiation. Indirect radiative forcing occurs when chemical transformations of the substance produce other GHGs, when a gas influences the atmospheric lifetimes of other gases, and/or when a gas affects atmospheric processes that alter the radiative balance of the Earth (e.g., affect cloud formation or albedo) (EPA 2016).

The Intergovernmental Panel on Climate Change (IPCC) developed the global warming potential (GWP) concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP of a GHG is defined as the ratio of the time-integrated radiative forcing from the instantaneous release of 1 kilogram of a trace substance relative to that of 1 kilogram of a reference gas (IPCC 2014). The reference gas used is CO_2; therefore, GWP-weighted emissions are measured in metric tons of CO_2 equivalent (MT CO_2E).

The current version of the California Emissions Estimator Model (CalEEMod) (version 2016.3.1) assumes that the GWP for CH_4 is 25 (which means that emissions of 1 MT of CH_4 are equivalent to emissions of 25 MT of CO_2), and the GWP for N_2O is 298, based on the IPCC Fourth Assessment Report (IPCC 2007). The GWP values identified in CalEEMod were applied to the project.

Contributions to Greenhouse Gas Emissions

Per the U.S. Environmental Protection Agency's (EPA's) *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2015* (EPA 2017a), total GHG emissions in the United States were approximately 6,586.7 million metric tons (MMT) CO_2E in 2015. The primary GHG emitted by human activities in the United States was CO_2, which represented approximately 82.1% of total GHG emissions (5,411.4 MMT CO_2E) for that year. The largest source of CO_2, and of overall GHG emissions, was fossil-fuel combustion, which accounted for approximately 93.3% of CO_2 emissions in 2015 (5,049.8 MMT CO_2E). Total GHG emissions in the United States have increased by 3.5% from 1990 to 2015, and emissions increased from 2014 to 2015 by 2.3% (153.0 MMT CO_2E). Since 1990, GHG emissions have increased in the United States at an average annual rate of 0.2%; however, overall, net emissions in 2015 were 11.5% below 2005 levels (EPA 2017a).

According to the 2017 GHG inventory data compiled by CARB for the California Greenhouse Gas Inventory for 2000–2015, California emitted 440.36 MMT CO_2E of GHGs in 2015, including emissions resulting from out-of-state electrical generation (CARB 2017a). The primary contributors to GHG emissions in California are transportation, industry, electric power production from both in-state and out-of-state sources, agriculture, and other sources, which include commercial and residential activities. These primary contributors to California's GHG emissions and their relative contributions in 2015 are presented in Table 5.12-1.

Table 5.12-1
GHG Sources in California

Source Category	Annual GHG Emissions (MMT CO_2E)	Percent of Total[a]
Agriculture	164.63	37%
Commercial uses	91.71	21%
Electric power[b]	83.67	19%
Industrial uses	37.92	9%

Table 5.12-1
GHG Sources in California

Source Category	Annual GHG Emissions (MMT CO_2E)	Percent of Total[a]
Recycling and waste	34.65	8%
Residential uses	19.05	4%
Transportation	8.73	2%
High GWP substances	164.63	37%
Totals[c]	**440.36**	**100%**

Source: CARB 2017a.
Notes: Emissions reflect the 2015 California GHG inventory.
MMT CO_2E = million metric tons of carbon dioxide equivalent
[a] Percentage of total has been rounded.
[b] Includes emissions associated with imported electricity, which account for 33.74 MMT CO_2E annually.
[c] Totals may not sum due to rounding.

During the 2000 to 2015 period, per capita GHG emissions in California have continued to drop from a peak in 2001 of 14.0 MT per person to 11.3 MT per person in 2015, representing an 19% decrease. In addition, total GHG emissions in 2015 were 1.5 MMT CO_2E less than 2014 emissions (CARB 2017b).

Potential Effects of Human Activity on Climate Change

Globally, climate change has the potential to affect numerous environmental resources through uncertain impacts related to future air temperatures and precipitation patterns. The 2014 *Intergovernmental Panel on Climate Change Synthesis Report* indicated that warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. Signs that global climate change has occurred include warming of the atmosphere and ocean, diminished amounts of snow and ice have, and rising sea levels (IPCC 2014).

In California, climate change impacts have the potential to affect sea level rise, agriculture, snowpack and water supply, forestry, wildfire risk, public health, and electricity demand and supply (CCCC 2006). The primary effect of global climate change has been a 0.2°C rise in average global tropospheric temperature per decade, determined from meteorological measurements worldwide between 1990 and 2005. Scientific modeling predicts that continued emissions of GHGs at or above current rates would induce more extreme climate changes during the twenty-first century than were observed during the twentieth century. A warming of about 0.2°C (0.36°F) per decade is projected, and there are identifiable signs that global warming could be taking place.

Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. A scientific consensus confirms that climate change is already affecting California.

The average temperatures in California have increased, leading to more extreme hot days and fewer cold nights; shifts in the water cycle have been observed, with less winter precipitation falling as snow, and both snowmelt and rainwater running off earlier in the year; sea levels have risen; and wildland fires are becoming more frequent and intense due to dry seasons that start earlier and end later (CAT 2010).

An increase in annual average temperature is a reasonably foreseeable effect of climate change. Observed changes over the last several decades across the western United States reveal clear signals of climate change. Statewide average temperatures increased by about 1.7°F from 1895 to 2011, and warming has been greatest in the Sierra Nevada (CCCC 2012). By 2050, California is projected to warm by approximately 2.7°F above 2000 averages, a threefold increase in the rate of warming over the last century. By 2100, average temperatures could increase by 4.1°F to 8.6°F, depending on emissions levels. Springtime warming—a critical influence on snowmelt—will be particularly pronounced. Summer temperatures will rise more than winter temperatures, and the increases will be greater in inland California, compared to the coast. Heat waves will be more frequent, hotter, and longer. There will be fewer extremely cold nights (CCCC 2012). A decline of Sierra snowpack, which accounts for approximately half of the surface water storage in California, by 30% to as much as 90% is predicted over the next 100 years (CAT 2006).

Model projections for precipitation over California continue to show the Mediterranean pattern of wet winters and dry summers with seasonal, year-to-year, and decade-to-decade variability. For the first time, however, several of the improved climate models shift toward drier conditions by the mid-to-late 21st century in Central and, most notably, Southern California. By late-century, all projections show drying, and half of them suggest 30-year average precipitation will decline by more than 10% below the historical average (CCCC 2012).

A summary of current and future climate change impacts to resource areas in California, as discussed in the *Safeguarding California: Reducing Climate Risk* (CNRA 2014), is provided in the following text.

Agriculture. The impacts of climate change on the agricultural sector are far more severe than the typical variability in weather and precipitation patterns that occur year to year. Some of the specific challenges faced by the agricultural sector and farmers include more drastic and unpredictable precipitation and weather patterns; extreme weather events that range from severe flooding to extreme drought, to destructive storm events; significant shifts in water availably and water quality; changes in pollinator lifecycles; temperature fluctuations, including extreme heat stress and decreased chill hours; increased risks from invasive species and weeds, agricultural pests and plant diseases; and disruptions to the transportation and energy infrastructure supporting agricultural production. These challenges and associated short-term and long-term impacts can have both positive and negative effects on agricultural production. Nonetheless, it is predicted that

current crop and livestock production will suffer long-term negative effects resulting in a substantial decrease in the agricultural sector if not managed or mitigated (CNRA 2014).

Biodiversity and Habitat. The state's extensive biodiversity stems from its varied climate and assorted landscapes, which have resulted in numerous habitats where species have evolved and adapted over time. Specific climate change challenges to biodiversity and habitat include species migration in response to climatic changes, range shift, and novel combinations of species; pathogens, parasites and disease; invasive species; extinction risks; changes in the timing of seasonal life-cycle events; food web disruptions; and threshold effects (i.e., a change in the ecosystem that results in a "tipping point" beyond which irreversible damage or loss has occurs). Habitat restoration, conservation, and resource management across California and through collaborative efforts amongst public, private and nonprofit agencies has assisted in the effort to fight climate change impacts on biodiversity and habitat. One of the key measures in these efforts is ensuring species' ability to relocate as temperature and water availability fluctuate as a result of climate change, based on geographic region (CNRA 2014).

Energy. The energy sector provides California residents with a supply of reliable and affordable energy through a complex integrated system. Specific climate change challenges for the energy sector include temperature, fluctuating precipitation patterns, increasing extreme weather events and sea level rise. Increasing temperatures and reduced snowpack negatively impact the availability of a steady flow of snowmelt to hydroelectric reservoirs. Higher temperatures also reduce the capacity of thermal power plants since power plant cooling is less efficient at higher ambient temperatures. Natural gas infrastructure in coastal California is threatened by sea level rise and extreme storm events (CNRA 2014).

Forestry. Forests occupy approximately 33% of California's 100 million acres and provide key benefits such as wildlife habitat, absorption of CO_2, renewable energy and building materials. The most significant climate change related risk to forests is accelerated risk of wildfire and more frequent and severe droughts. Droughts have resulted in more large scale mortalities and combined with increasing temperatures have led to an overall increase in wildfire risks. Increased wildfire intensity subsequently increases public safety risks, property damage, fire suppression and emergency response costs, watershed and water quality impacts and vegetation conversions. These factors contribute to decreased forest growth, geographic shifts in tree distribution, loss of fish and wildlife habitat and decreased carbon absorption. Climate change may result in increased establishment of non-native species, particularly in rangelands where invasive species are already a problem. Invasive species may be able to exploit temperature or precipitation changes, or quickly occupy areas denuded by fire, insect mortality or other climate change effects on vegetation (CNRA 2014).

Ocean and Coastal Ecosystems and Resources. Sea level rise, changing ocean conditions and other climate change stressors are likely to exacerbate long-standing challenges related to ocean and coastal ecosystems in addition to threatening people and infrastructure located along the California coastline and in coastal communities. Sea level rise in addition to more frequent and severe coastal storms and erosion are threatening vital infrastructure such as roads, bridges, power plants, ports and airports, gasoline pipes, and emergency facilities, as well as negatively impacting the coastal recreational assets such as beaches and tidal wetlands. Water quality and ocean acidification threaten the abundance of seafood and other plant and wildlife habitats throughout California and globally (CNRA 2014).

Public Health. Climate change can impact public health through various environmental changes and is the largest threat to human health in the twenty-first century. Changes in precipitation patterns affect public health primarily through potential for altered water supplies, and extreme events such as heat, floods, droughts, and wildfires. Increased frequency, intensity and duration of extreme heat and heat waves is likely to increase the risk of mortality due to heat related illness as well as exacerbate existing chronic health conditions. Other extreme weather events are likely to negatively impact air quality and increase or intensify respiratory illness such as asthma and allergies. Additional health impacts that may be impacted by climate change include cardiovascular disease, vector-borne diseases, mental health impacts, and malnutrition injuries. Increased frequency of these ailments is likely to subsequently increase the direct risk of injury and/or mortality (CNRA 2014).

Transportation. Residents of California rely on airports, seaports, public transportation and an extensive roadway network to gain access to destinations, goods and services. While the transportation industry is a source of GHG emissions it is also vulnerable to climate change risks. Particularly, sea level rise and erosion threaten many coastal California roadways, airports, seaports, transit systems, bridge supports, and energy and fueling infrastructure. Increasing temperatures and extended periods of extreme heat threaten the integrity of the roadways and rail lines. High temperatures cause the road surfaces to expand which leads to increased pressure and pavement buckling. High temperatures can also cause rail breakages, which could lead to train derailment. Other forms of extreme weather events, such as extreme storm events, can negatively impact infrastructure which can impair movement of peoples and goods, or potentially block evacuation routes and emergency access roads. Increased wildfires, flooding, erosion risks, landslides, mudslides, and rockslides can all profoundly impact the transportation system and pose a serious risk to public safety (CNRA 2014).

Water. Water resources in California support residences, plants, wildlife, farmland, landscapes and ecosystems and bring trillions of dollars in economic activity. Climate change could seriously impact the timing, form, amount of precipitation, runoff patterns, and frequency and severity of precipitation events. Higher temperatures reduce the amount of snowpack and lead to

earlier snowmelt, which can impact water supply availability, natural ecosystems and winter recreation. Water supply availability during the intense dry summer months is heavily dependent on the snowpack accumulated during the winter time. Increased risk of flooding has a variety of public health concerns including water quality, public safety, property damage, displacement and post-disaster mental health problems. Prolonged and intensified droughts can also negatively groundwater reserves and result in increased overdraft and subsidence. Droughts can also negatively impact agriculture and farmland throughout the state. The higher risk of wildfires can lead to increased erosion, which can negatively impact watersheds and result in poor water quality. Water temperatures are also prone to increase, which can negatively impact wildlife that rely on a specific range of temperatures for suitable habitat (CNRA 2014).

5.12.1.2 Regulatory Setting

Federal

Massachusetts vs. EPA. On April 2, 2007, in *Massachusetts v. EPA*, the United States Supreme Court directed the EPA Administrator to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the EPA Administrator is required to follow the language of Section 202(a) of the federal Clean Air Act. On December 7, 2009, the Administrator signed a final rule with the following two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act:

- The Administrator found that elevated concentrations of GHGs—CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the "endangerment finding."
- The Administrator further found the combined emissions of GHGs—CO_2, CH_4, N_2O, and HFCs—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is referred to as the "cause or contribute finding."

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the Clean Air Act.

Energy Independence and Security Act of 2007. On December 19, 2007, President George W. Bush signed the Energy Independence and Security Act of 2007. Among other key measures, the Act would do the following, which would aid in the reduction of national GHG emissions (EPA 2007):

1. Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.

2. Set a target of 35 miles per gallon (mpg) for the combined fleet of cars and light trucks by model year 2020 and direct NHTSA to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
3. Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

Federal Vehicle Standards. In response to the U.S. Supreme Court ruling discussed previously, the Bush Administration issued Executive Order 13432 in 2007 directing the EPA, the Department of Transportation (DOT), and the Department of Energy (DOE) to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the National Highway Traffic Safety Administration (NHTSA) issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011, and in 2010, the EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

In 2010, President Obama issued a memorandum directing the DOT, DOE, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams/mile of CO_2 in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon (mpg) if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021, and NHTSA intends to set standards for model years 2022–2025 in a future rulemaking. On January 12, 2017, the EPA finalized its decision to maintain the current greenhouse (GHG) emissions standards for model years 2022–2025 cars and light trucks (EPA 2017b).

In addition to the regulations applicable to cars and light-duty trucks described previously, in 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6%–23% over the 2010 baselines.

In August 2016, the EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans and all types of sizes of buses

and work trucks. The final standards are expected to lower CO_2 emissions by approximately 1.1 billion MT and reduce oil consumption by up to two billion barrels over the lifetime of the vehicles sold under the program (EPA and NHTSA 2016).

U.N. Framework Convention on Climate Change Pledge. On March 31, 2015, the State Department submitted the U.S. target to cut net GHG emissions to the United Nations Framework Convention on Climate Change. The submission, referred to as an Intended Nationally Determined Contribution, is a formal statement of the U.S. target, announced in China last year, to reduce our emissions by 26%–28% below 2005 levels by 2025, and to make best efforts to reduce by 28% (C2ES 2016). The target reflects a planning process that examined opportunities under existing regulatory authorities to reduce emissions in 2025 of all GHGs from all sources in every economic sector. Several U.S. laws, as well as existing and proposed regulations thereunder, are relevant to the implementation of the U.S. target, including the Clean Air Act (42 U.S.C. 7401 et seq.), the Energy Policy Act (42 U.S.C. 13201 et seq.), and the Energy Independence and Security Act (42 U.S.C. 17001 et seq.).

Clean Power Plan and New Source Performance Standards for Electric Generating Units. On October 23, 2015, EPA published a final rule (effective December 22, 2015) establishing the Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (80 FR 64510–64660), also known as the Clean Power Plan. These guidelines prescribe how states must develop plans to reduce GHG emissions from existing fossil-fuel-fired electric generating units. The guidelines establish CO_2 emission performance rates representing the best system of emission reduction for two subcategories of existing fossil-fuel-fired electric generating units: (1) fossil-fuel-fired electric utility steam-generating units, and (2) stationary combustion turbines. Concurrently, EPA published a final rule (effective October 23, 2015) establishing Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units (80 FR 64661–65120). The rule prescribes CO_2 emission standards for newly constructed, modified, and reconstructed affected fossil-fuel-fired electric utility generating units. Implementation of the Clean Power Plan has been stayed by the U.S. Supreme Court pending resolution of several lawsuits.

State

The statewide GHG emissions regulatory framework is summarized below by category: state climate change targets, building energy, renewable energy and energy procurement, mobile sources, solid waste, water, and other state regulations and goals. The following text describes executive orders (EO), assembly bills (AB), senate bills (SB), and other regulations and plans that would directly or indirectly reduce GHG emissions.

State Climate Change Targets

EO S-3-05. EO S-3-05 (June 2005) established California's GHG emissions reduction targets and laid out responsibilities among the state agencies for implementing the EO and for reporting on progress toward the targets. This EO established the following targets:

- By 2010, reduce GHG emissions to 2000 levels
- By 2020, reduce GHG emissions to 1990 levels
- By 2050, reduce GHG emissions to 80% below 1990 levels

EO S-3-05 also directed the California Environmental Protection Agency to report biannually on progress made toward meeting the GHG targets and the impacts to California due to global warming, including impacts to water supply, public health, agriculture, the coastline, and forestry. The Climate Action Team was formed, which subsequently issued reports from 2006 to 2010 (CAT 2016).

AB 32 and CARB's Climate Change Scoping Plan. In furtherance of the goals established in EO S-3-05, the legislature enacted AB 32 (Núñez and Pavley), the California Global Warming Solutions Act of 2006 (September 27, 2006). AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020, representing a reduction of approximately 15% below emissions expected under a "business-as-usual" (BAU) scenario (i.e., those emissions that would occur in 2020, absent GHG-reducing laws and regulations).

CARB has been assigned responsibility for carrying out and developing the programs and requirements necessary to achieve the goals of AB 32. Under AB 32, CARB must adopt regulations requiring the reporting and verification of statewide GHG emissions. This program will be used to monitor and enforce compliance with the established standards. CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 also authorized CARB to adopt market-based compliance mechanisms to meet the specified requirements. Finally, CARB is ultimately responsible for monitoring compliance and enforcing any rule, regulation, order, emission limitation, emission reduction measure, or market-based compliance mechanism adopted. These efforts target GHG emission reductions from cars and trucks, electricity production, fuels, and other sources. The full implementation of AB 32 will help mitigate risks associated with climate change while improving energy efficiency, expanding the use of renewable energy resources and cleaner transportation, and reducing waste.

One specific requirement of AB 32 is for CARB to prepare a "scoping plan" for achieving the maximum technologically feasible and cost-effective GHG emission reductions by 2020 (Health and Safety Code, Section 38561(a)), and to update the plan at least once every 5 years. In 2008,

CARB approved the first scoping plan. The *Climate Change Scoping Plan: A Framework for Change* (Scoping Plan) included a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the state's long-range climate objectives. The key elements of the Scoping Plan include the following (CARB 2008):

1. Expanding and strengthening existing energy efficiency programs as well as building and appliance standards
2. Achieving a statewide renewable energy mix of 33%
3. Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85% of California's GHG emissions
4. Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets
5. Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard
6. Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation

In the Scoping Plan, CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of approximately 28.5% from the otherwise projected 2020 BAU emissions level. For example, in further explaining CARB's BAU methodology, CARB assumed that all new electricity generation would be supplied by natural gas plants, no further regulatory action would impact vehicle fuel efficiency, and building energy efficiency codes would be held at 2005 standards.

In the 2011 Final Supplement to the Scoping Plan's Functional Equivalent Document, CARB revised its estimates of the projected 2020 emissions level in light of the economic recession and the availability of updated information about GHG reduction regulations. Based on the new economic data, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of 21.7% (down from 28.5%) from the BAU conditions. When the 2020 emissions level projection also was updated to account for newly implemented regulatory measures, including Pavley I (model years 2009–2016) and the Renewable Portfolio Standard (12% to 20%), CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of 16% (down from 28.5%) from the BAU conditions.

Most recently, in 2014, CARB adopted the *First Update to the Climate Change Scoping Plan: Building on the Framework* (First Update; CARB 2014). The stated purpose of the First Update is to "highlight California's success to date in reducing its GHG emissions and lay the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80% below 1990 levels by 2050." The First Update found that California is on track to meet the 2020 emissions reduction mandate established by AB 32, and noted that California could reduce emissions further by 2030 to levels squarely in line with those needed to stay on track to reduce emissions to 80% below 1990 levels by 2050 if the state realizes the expected benefits of existing policy goals.

In the First Update, CARB identified "six key focus areas comprising major components of the state's economy to evaluate and describe the larger transformative actions that will be needed to meet the state's more expansive emission reduction needs by 2050" (CARB 2014). Those six areas are (1) energy, (2) transportation (vehicles/equipment, sustainable communities, housing, fuels, and infrastructure), (3) agriculture, (4) water, (5) waste management, and (6) natural and working lands. The First Update identifies key recommended actions for each sector that will facilitate achievement of Executive Order S-3-05's 2050 reduction goal.

Based on CARB's research efforts presented in the First Update, CARB has a "strong sense of the mix of technologies needed to reduce emissions through 2050." Those technologies include energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings and industrial machinery; decarbonizing electricity and fuel supplies; and, the rapid market penetration of efficient and clean energy technologies.

As part of the First Update, CARB recalculated the state's 1990 emissions level using more recent GWPs identified by the IPCC. Using the recalculated 1990 emissions level (431 MMT CO_2E) and the revised 2020 emissions level projection identified in the 2011 Final Supplement, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of approximately 15.3% (instead of 28.5% or 16%) from the BAU conditions. The update also recommends that a statewide mid-term target and mid-term and long-term sector targets be established toward meeting the 2050 goal established by EO S-3-05 (i.e., reduce California's GHG emissions to 80% below 1990 levels), although no specific recommendations are made.

In January 2017, CARB released the *2017 Climate Change Scoping Plan Update* (2030 Scoping Plan) for public review and comment (CARB 2017b). The 2030 Scoping Plan builds on the successful framework established in the initial Scoping Plan and First Update, while identifying new, technologically feasible and cost-effective strategies that will serve as the framework to achieve the 2030 GHG target and define the state's climate change priorities to 2030 and beyond. The strategies' "known commitments" include implementing renewable energy and energy efficiency (including the mandates of SB 350), increased stringency of the Low Carbon Fuel

Standard (LCFS), measures identified in the Mobile Source and Freight Strategies, measures identified in the proposed Short-Lived Climate Pollutant Plan, and increased stringency of SB 375 targets. To fill the gap in additional reductions needed to achieve the 2030 target, it recommends continuing the Cap-and-Trade Program and a measure to reduce GHGs from refineries by 20%.

For local governments, the 2030 Scoping Plan replaced the initial Scoping Plan's 15% reduction goal with a recommendation to aim for a community-wide goal of no more than 6 MT CO_2E per capita by 2030 and no more than 2 MT CO_2E per capita by 2050, which are consistent with the state's long-term goals. These goals are also consistent with the Under 2 MOU and the Paris Agreement, which are developed around the scientifically based levels necessary to limit global warming below two degrees Celsius. The 2030 Scoping Plan recognized the benefits of local government GHG planning (e.g., through climate action plans (CAPs)) and provide more information regarding tools CARB is working on to support those efforts. It also recognizes the CEQA streamlining provisions for project level review where there is a legally adequate CAP.[2]

The Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32, SB 32 and the EOs and establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. A project is considered consistent with the statutes and EOs if it meets the general policies in reducing GHG emissions in order to facilitate the achievement of the state's goals and does not impede attainment of those goals. As discussed in several cases, a given project need not be in perfect conformity with each and every planning policy or goals to be consistent. A project would be consistent, if it will further the objectives and not obstruct their attainment.

SB 32 and AB 197. SB 32 and AB 197 (enacted in 2016) are companion bills that set a new statewide GHG reduction target; make changes to CARB's membership, and increase legislative oversight of CARB's climate change-based activities; and expand dissemination of GHG and other air quality-related emissions data to enhance transparency and accountability. SB 32 codified the 2030 emissions reduction goal of Executive Order B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40% below 1990 levels by 2030. AB 197 established the Joint Legislative Committee on Climate Change Policies, consisting of at least three members of the Senate and three members of the Assembly, in order to provide ongoing oversight over implementation of the state's climate policies. AB 197 also added two members of the Legislature to CARB as nonvoting members; requires CARB to make available and update (at least annually via its website) emissions data for GHGs, criteria air pollutants, and TACs

2 *Sierra Club v. County of Napa* (2004) 121 Cal.App.4th 1490; *San Francisco Tomorrow et al. v. City and County of San Francisco* (2015) 229 Cal.App.4th 498; *San Franciscans Upholding the Downtown Specific Plan v. City & County of San Francisco* (2002) 102 Cal.App.4th 656; *Sequoyah Hills Homeowners Assn. V. City of Oakland* (1993) 23 Cal.App.4th 704, 719.

from reporting facilities; and, requires CARB to identify specific information for GHG emissions reduction measures when updating the scoping plan.

CARB's Regulations for the Mandatory Reporting of Greenhouse Gas Emissions. CARB's Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (17 CCR 95100–95157) incorporated by reference certain requirements that EPA promulgated in its Final Rule on Mandatory Reporting of Greenhouse Gases (Title 40, Code of Federal Regulations (CFR), Part 98). Specifically, Section 95100(c) of the Mandatory Reporting Regulation incorporated those requirements that EPA promulgated in the Federal Register on October 30, 2009, July 12, 2010, September 22, 2010, October 28, 2010, November 30, 2010, December 17, 2010, and April 25, 2011. In general, entities subject to the Mandatory Reporting Regulation that emit over 10,000 MT CO_2E per year are required to report annual GHGs through the California Electronic GHG Reporting Tool. Certain sectors, such as refineries and cement plants, are required to report regardless of emission levels. Entities that emit more than the 25,000 MT CO_2E per year threshold are required to have their GHG emission report verified by a CARB-accredited third-party.

EO B-18-12. EO B-18-12 (April 2012) directs state agencies, departments, and other entities under the governor's executive authority to take action to reduce entity-wide GHG emissions by at least 10% by 2015 and 20% by 2020, as measured against a 2010 baseline. EO B-18-12 also established goals for existing state buildings for reducing grid-based energy purchases and water use.

EO B-30-15. EO B-30-15 (April 2015) identified an interim GHG reduction target in support of targets previously identified under EO S-3-05 and AB 32. EO B-30-15 set an interim target goal of reducing GHG emissions to 40% below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80% below 1990 levels by 2050 as set forth in S-3-05. To facilitate achievement of this goal, EO B-30-15 calls for an update to CARB's Scoping Plan to express the 2030 target in terms of MMT CO_2E. The EO also calls for state agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets.

CARB's Short-Lived Climate Pollutant Reduction Strategy — SB 605 and SB 1383. SB 605 (September 2014) required CARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants in the state no later than January 1, 2016. As defined in the statute, short-lived climate pollutant means "an agent that has a relatively short lifetime in the atmosphere, from a few days to a few decades, and a warming influence on the climate that is more potent than that of carbon dioxide" (SB 605). SB 605, however, does not prescribe specific compounds as short-lived climate pollutants or add to the list of GHGs regulated under AB 32. In developing the strategy, the CARB must complete an inventory of sources and emissions of short-lived climate pollutants in the state based on available data, identify research needs to address any data gaps, identify existing and potential new control measures to reduce emissions,

and prioritize the development of new measures for short-lived climate pollutants that offer co-benefits by improving water quality or reducing other criteria air pollutants that impact community health and benefit disadvantaged communities. The *Proposed Short-Lived Climate Pollution Reduction Strategy* released by CARB in April 2016 focuses on CH_4, black carbon, and fluorinated gases, particularly HFCs, as important short-lived climate pollutants (CARB 2016c). The strategy recognizes emission reduction efforts implemented under AB 32 (e.g., refrigerant management programs) and other regulatory programs (e.g., in-use diesel engines, solid waste diversion) along with additional measures to be developed.

Governor Brown signed SB 1383 (Lara) in September 2016. This bill requires CARB to approve and implement a strategy to decrease emissions of short-lived climate pollutants to achieve a reduction in CH_4 by 40%, HFCs by 40%, and anthropogenic black carbon by 50% below 2013 levels by 2030. In response to SB 1383, CARB revised the SLCP Strategy and adopted the *Final Short-Lived Climate Pollutant Reduction Strategy* in March 2017 (CARB 2016c).

Building Energy

Title 24, Part 6. Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. While not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically establishes Building Energy Efficiency Standards that are designed to ensure new and existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. The California Energy Commission (CEC) is required by law to adopt standards every 3 years that are cost effective for homeowners over the 30-year lifespan of a building. These standards are updated to consider and incorporate new energy efficient technologies and construction methods. As a result, these standards save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants, and help preserve the environment.

The 2016 Title 24 building energy efficiency standards, which became effective on January 1, 2017, will further reduce energy used and associated GHG emissions. In general, single-family homes built to the 2016 standards are anticipated to use about 28% less energy for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards, and nonresidential buildings built to the 2016 standards will use an estimated 5% less energy than those built to the 2013 standards (CEC 2015). The proposed project is required to comply with 2016 Title 24 standards because its building construction phase would commence after January 1, 2017.

Title 24, Part 11. In addition to the CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as CALGreen, and establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design

of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential and state-owned buildings and schools and hospitals. The CALGreen 2016 standards became effective on January 1, 2017. The mandatory standards require the following (24 CCR Part 11):

- Mandatory reduction in indoor water use through compliance with specified flow rates for plumbing fixtures and fittings
- Mandatory reduction in outdoor water use through compliance with a local water efficient landscaping ordinance or the California Department of Water Resources' Model Water Efficient Landscape Ordinance
- 65% of construction and demolition waste must be diverted from landfills
- Mandatory inspections of energy systems to ensure optimal working efficiency
- Inclusion of electric vehicle charging stations or designated spaces capable of supporting future charging stations
- Low-pollutant emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards

The CALGreen standards also include voluntary efficiency measures that are provided at two separate tiers and implemented at the discretion of local agencies and applicants. CALGreen's Tier 1 standards call for a 15% improvement in energy requirements, stricter water conservation, 65% diversion of construction and demolition waste, 10% recycled content in building materials, 20% permeable paving, 20% cement reduction, and cool/solar-reflective roofs. CALGreen's more rigorous Tier 2 standards call for a 30% improvement in energy requirements, stricter water conservation, 65% diversion of nonhazardous construction and demolition waste, 15% recycled content in building materials, 30% permeable paving, 25% cement reduction, and cool/solar-reflective roofs.

The California Public Utilities Commission (CPUC), CEC, and CARB also have a shared, established goal of achieving zero net energy for new construction in California. The key policy timelines include: (1) all new residential construction in California will be zero net energy by 2020, and (2) all new commercial construction in California will be zero net energy by 2030.[3]

[3] See CPUC's California's Zero Net Energy Policies and Initiatives (Sept. 18, 2013) (http://www.cpuc.ca.gov/NR/rdonlyres/C27FC108-A1FD-4D67-AA59- 7EA82011B257/0/3.pdf). It is expected that achievement of the zero net energy goal will occur via revisions to the Title 24 standards.

Title 20. Title 20 of the California Code of Regulations requires manufacturers of appliances to meet state and federal standards for energy and water efficiency. Performance of appliances must be certified through the CEC to demonstrate compliance with standards. New appliances regulated under Title 20 include refrigerators, refrigerator-freezers, and freezers; room air conditioners and room air-conditioning heat pumps; central air conditioners; spot air conditioners; vented gas space heaters; gas pool heaters; plumbing fittings and plumbing fixtures; fluorescent lamp ballasts; lamps; emergency lighting; traffic signal modules; dishwaters; clothes washers and dryers; cooking products; electric motors; low voltage dry-type distribution transformers; power supplies; televisions and consumer audio and video equipment; and battery charger systems. Title 20 presents protocols for testing for each type of appliance covered under the regulations and appliances must meet the standards for energy performance, energy design, water performance, and water design. Title 20 contains the following three types of standards for appliances: federal and state standards for federally regulated appliances, state standards for federally regulated appliances, and state standards for non-federally regulated appliances.

Mobile Sources

AB 1493. In a response to the transportation sector accounting for more than half of California's CO_2 emissions, AB 1493 (Pavley) was enacted in July 2002. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles that are primarily used for noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. When fully phased in, the near-term (2009–2012) standards will result in a reduction of about 22% in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013–2016) standards will result in a reduction of about 30%.

EO S-1-07. Issued on January 18, 2007, EO S-1-07 sets a declining Low Carbon Fuel Standard for GHG emissions measured in CO_2E grams per unit of fuel energy sold in California. The target of the Low Carbon Fuel Standard is to reduce the carbon intensity of California passenger vehicle fuels by at least 10% by 2020. The carbon intensity measures the amount of GHG emissions in the lifecycle of a fuel, including extraction/feedstock production, processing, transportation, and final consumption, per unit of energy delivered. CARB adopted the implementing regulation in April 2009. The regulation is expected to increase the production of biofuels, including those from alternative sources, such as algae, wood, and agricultural waste. In addition, the Low Carbon Fuel Standard would drive the availability of plug-in hybrid, battery electric, and fuel-cell power motor vehicles. The Low Carbon Fuel Standard is anticipated to lead to the replacement of 20% of the fuel used in motor vehicles with alternative fuels by 2020.

SB 375. SB 375 (Steinberg) (September 2008) addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans, was enacted into law. SB 375 required CARB to adopt regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035. Regional metropolitan planning organizations are then responsible for preparing a Sustainable Communities Strategy within their Regional Transportation Plan. The goal of the Sustainable Communities Strategy is to establish a forecasted development pattern for the region that, after considering transportation measures and policies, will achieve, if feasible, the GHG reduction targets. If a Sustainable Communities Strategy is unable to achieve the GHG reduction target, a metropolitan planning organization must prepare an Alternative Planning Strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

Pursuant to Government Code Section 65080(b)(2)(K), a sustainable communities strategy does not: (i) regulate the use of land; (ii) supersede the land use authority of cities and counties; or (iii) require that a city's or county's land use policies and regulations, including those in a general plan, be consistent with it. Nonetheless, SB 375 makes regional and local planning agencies responsible for developing those strategies as part of the federally required metropolitan transportation planning process and the state-mandated housing element process.

In 2010, CARB adopted the SB 375 targets for the regional metropolitan planning organizations. The targets for SANDAG are a 7% reduction in emissions per capita by 2020 and a 13% reduction by 2035.

SANDAG completed and adopted its *2050 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS) in October 2011. In November 2011, CARB, by resolution, accepted SANDAG's GHG emissions quantification analysis and determination that, if implemented, the SCS would achieve CARB's 2020 and 2035 GHG emissions reduction targets for the region.

After SANDAG's 2050 RTP/SCS was adopted, a lawsuit was filed by the Cleveland National Forest Foundation and others. In November 2014, Division One of the Fourth District Court of Appeal issued its decision in *Cleveland National Forest Foundation v. SANDAG*, Case No. D063288. In its decision, the Fourth District held that SANDAG abused its discretion when it certified the environmental impact report (EIR) for the 2050 RTP/SCS because it did not adequately analyze and mitigate GHG emission levels after year 2020. The 2050 RTP/SCS EIR complied with CARB's AB 32–related GHG reduction target through 2020, but the EIR found that plan-related emissions would substantially increase after 2020 and through 2050. The majority of the Fourth District in the *Cleveland National* decision found SANDAG's EIR deficient because, although the EIR used three significance thresholds authorized by CEQA Guidelines, Section 15064.4(b), it did not assess the 2050 RTP/SCS's consistency with the 2050 GHG emissions goal

identified in Executive Order S-03-05, which the majority construed as "state climate policy." The Fourth District did not require the set aside of SANDAG's 2050 RTP/SCS itself.

SANDAG recently adopted the next iteration of its RTP/SCS in accordance with statutorily mandated timelines. More specifically, in October 2015, SANDAG adopted *San Diego Forward: The Regional Plan*. Like the 2050 RTP/SCS, this planning document meets CARB's 2020 and 2035 reduction targets for the region (SANDAG 2015).

Advanced Clean Cars Program. In January 2012, CARB approved the Advanced Clean Cars program, a new emissions-control program for model years 2015 through 2025. The program combines the control of smog- and soot-causing pollutants and GHG emissions into a single coordinated package. The package includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars (CARB 2012). To improve air quality, CARB has implemented new emission standards to reduce smog-forming emissions beginning with 2015 model year vehicles. It is estimated that in 2025 cars will emit 75% less smog-forming pollution than the average new car sold today. To reduce GHG emissions, CARB, in conjunction with the EPA and the NHTSA, has adopted new GHG standards for model year 2017 to 2025 vehicles; the new standards are estimated to reduce GHG emissions by 34% in 2025. The zero-emission vehicle program will act as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of zero-emission vehicles and plug-in hybrid electric vehicles in the 2018 to 2025 model years. The Clean Fuels Outlet regulation will ensure that fuels such as electricity and hydrogen are available to meet the fueling needs of the new advanced technology vehicles as they come to the market.

EO B-16-12. EO B-16-12 (March 2012) directs state entities under the Governor's direction and control to support and facilitate development and distribution of zero-emission vehicles. This EO also sets a long-term target of reaching 1.5 million zero-emission vehicles on California's roadways by 2025. On a statewide basis, EO B-16-12 also establishes a GHG emissions reduction target from the transportation sector equaling 80% less than 1990 levels by 2050.

Renewable Energy and Energy Procurement

SB 1078. SB 1078 (Sher) (September 2002) established the Renewable Portfolio Standard (RPS) program, which requires an annual increase in renewable generation by the utilities equivalent to at least 1% of sales, with an aggregate goal of 20% by 2017. This goal was subsequently accelerated by SB 107, requiring utilities to obtain 20% of their power from renewable sources by 2010.

SB 1368. In September 2006, Governor Schwarzenegger signed SB 1368, which requires the CEC to develop and adopt regulations for GHG emission performance standards for the long-term procurement of electricity by local publicly owned utilities. These standards must be

consistent with the standards adopted by the CPUC. This effort will help protect energy customers from financial risks associated with investments in carbon-intensive generation by allowing new capital investments in power plants whose GHG emissions are as low as or lower than new combined-cycle natural gas plants by requiring imported electricity to meet GHG performance standards in California and by requiring that the standards be developed and adopted in a public process.

EO S-14-08. EO S-14-08 (November 2008) focuses on the contribution of renewable energy sources to meet the electrical needs of California while reducing the GHG emissions from the electrical sector. This EO requires that all retail suppliers of electricity in California serve 33% of their load with renewable energy by 2020. Furthermore, the EO directs state agencies to take appropriate actions to facilitate reaching this target. The CNRA, through collaboration with the CEC and California Department of Fish and Wildlife (formerly the California Department of Fish and Game), is directed to lead this effort. Pursuant to a Memorandum of Understanding between the CEC and California Department of Fish and Wildlife regarding creating the Renewable Energy Action Team, these agencies will create a "one-stop" process for permitting renewable energy power plants.

EO S-21-09. EO S-21-09 (September 2009) directed CARB to adopt a regulation consistent with the goal of EO S-14-08 by July 31, 2010. CARB is further directed to work with the CPUC and CEC to ensure that the regulation builds upon the RPS program and is applicable to investor-owned utilities, publicly owned utilities, direct access providers, and community choice providers. Under this order, CARB is to give the highest priority to those renewable resources that provide the greatest environmental benefits with the least environmental costs and impacts on public health and can be developed the most quickly in support of reliable, efficient, cost-effective electricity system operations. On September 23, 2010, CARB adopted regulations to implement a Renewable Electricity Standard, which would achieve the goal of the EO with the following intermediate and final goals: 20% for 2012–2014, 24% for 2015–2017, 28% for 2018–2019, and 33% for 2020 and beyond. Under the regulation, wind; solar; geothermal; small hydroelectric; biomass; ocean wave, thermal, and tidal; landfill and digester gas; and biodiesel would be considered sources of renewable energy. The regulation would apply to investor-owned utilities and public (municipal) utilities.

SB X1 2. SB X1 2 (April 2011) expanded the RPS by establishing a goal of 20% of the total electricity sold to retail customers in California per year by December 31, 2013, and 33% by December 31, 2020, and in subsequent years. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 megawatts or less, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and that meets other specified requirements with respect to its location. In addition to the retail sellers covered

by SB 107, SB X1 2 adds local, publicly owned electric utilities to the RPS. By January 1, 2012, the CPUC is required to establish the quantity of electricity products from eligible renewable energy resources to be procured by retail sellers to achieve targets of 20% by December 31, 2013; 25% by December 31, 2016; and 33% by December 31, 2020. The statute also requires that the governing boards for local, publicly owned electric utilities establish the same targets, and the governing boards would be responsible for ensuring compliance with these targets. The CPUC will be responsible for enforcement of the RPS for retail sellers, while the CEC and CARB will enforce the requirements for local publicly owned electric utilities.

SB 350. SB 350 (October 2015) expands the RPS by establishing a goal of 50% of the total electricity sold to retail customers in California per year by December 31, 2030. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses on which an energy-efficiency program is focused) of retail customers through energy conservation and efficiency. The bill also requires the CPUC, in consultation with the CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal. SB 350 also provides for the transformation of the California Independent System Operator into a regional organization to promote the development of regional electricity transmission markets in the western states and to improve the access of consumers served by the California Independent System Operator to those markets, pursuant to a specified process.

Water

EO B-29-15. In response to the ongoing drought in California, EO B-29-15 (April 2015) set a goal of achieving a statewide reduction in potable urban water usage of 25% relative to water use in 2013. The term of the EO extended through February 28, 2016, although many of the directives have become permanent water-efficiency standards and requirements. The EO includes specific directives that set strict limits on water usage in the state. In response to EO B-29-15, the California Department of Water Resources has modified and adopted a revised version of the Model Water Efficient Landscape Ordinance that, among other changes, significantly increases the requirements for landscape water use efficiency and broadens its applicability to include new development projects with smaller landscape areas.

Solid Waste

AB 939 and AB 341. In 1989, AB 939, known as the Integrated Waste Management Act (California Public Resources Code Section 40000 et seq.), was passed because of the increase in waste stream and the decrease in landfill capacity. The statute established the California Integrated Waste Management Board, which oversees a disposal reporting system. AB 939 mandated a reduction of waste being disposed where jurisdictions were required to meet

diversion goals of all solid waste through source reduction, recycling, and composting activities of 25% by 1995 and 50% by the year 2000.

AB 341 (Chapter 476, Statutes of 2011 (Chesbro)) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the state that not less than 75% of solid waste generated be source-reduced, recycled, or composted by the year 2020, and annually thereafter. In addition, AB 341 required the California Department of Resources Recycling and Recovery (CalRecycle) to develop strategies to achieve the state's policy goal. CalRecycle conducted several general stakeholder workshops and several focused workshops and in August 2015 published a discussion document titled *AB 341 Report to the Legislature*, which identifies five priority strategies that CalRecycle believes would assist the state in reaching the 75% goal by 2020, legislative and regulatory recommendations, and an evaluation of program effectiveness.

Increasing the amount of commercial solid waste that is recycled, reused, or composted will reduce GHG emissions primarily by (1) reducing the energy requirements associated with the extraction, harvest, and processing of raw materials; and (2) using recyclable materials that require less energy than raw materials to manufacture finished products (CalRecycle 2015). Increased diversion of organic materials (green and food waste) will also reduce GHG emissions (CO_2 and CH_4) resulting from decomposition in landfills by redirecting this material to processes that use the solid waste material to produce vehicle fuels, heat, electricity, or compost.

Other State Regulations and Goals

EO S-13-08. EO Order S-13-08 (November 2008) is intended to hasten California's response to the impacts of global climate change, particularly sea-level rise. It directs state agencies to take specified actions to assess and plan for such impacts. It directs the CNRA, in cooperation with the California Department of Water Resources, CEC, California's coastal management agencies, and the Ocean Protection Council, to request that the National Academy of Sciences prepare a Sea Level Rise Assessment Report by December 1, 2010. The Ocean Protection Council, California Department of Water Resources, and CEC, in cooperation with other state agencies, are required to conduct a public workshop to gather information relevant to the Sea Level Rise Assessment Report. The Business, Transportation, and Housing Agency was ordered to assess within 90 days of issuance of the EO the vulnerability of the state's transportation systems to sea-level rise. The Governor's Office of Planning and Research and the CNRA are required to provide land use planning guidance related to sea-level rise and other climate change impacts. The EO also required the other state agencies to develop adaptation strategies by June 9, 2009, to respond to the impacts of global climate change that are predicted to occur over the next 50 to 100 years. A discussion draft adaptation strategies report was released in August 2009, and the final *2009 California Climate Adaptation Strategy* report was issued in December 2009 (CNRA 2009). An update to the 2009 report, *Safeguarding California: Reducing Climate Risk*, was

issued in July 2014 (CNRA 2014). To assess the state's vulnerability, the report summarizes key climate change impacts to the state for the following areas: agriculture, biodiversity and habitat, emergency management, energy, forestry, ocean and coastal ecosystems and resources, public health, transportation, and water.

2015 State of the State Address. In January 2015, Governor Brown in his inaugural address and annual report to the Legislature established supplementary goals which would further reduce GHG emissions over the next 15 years. These goals include an increase in California's renewable energy portfolio from 33% to 50%, a reduction in vehicle petroleum use for cars and trucks by up to 50%, measures to double the efficiency of existing buildings, and decreasing emissions associated with heating fuels.

2016 State of the State Address. In his January 2016 address, Governor Brown established a statewide goal to bring per capita GHG emission down to 2 tons per person, which reflects the goal of the Global Climate Leadership Memorandum of Understanding (Under 2 MOU; OPR 2016) to limit global warming to less than 2°C by 2050. The Under 2 MOU agreement pursues emission reductions of 80% to 95% below 1990 levels by 2050 and/or reach a per capita annual emissions goal of less than two metric tons by 2050. A total of 135 jurisdictions representing 32 countries and 6 continents, including California, have signed or endorsed the Under 2 MOU (OPR 2016).

Local

City of Chula Vista

ICLEI Local Governments for Sustainability. In 1992, the City of Chula Vista participated in the Cities for Climate Protection Program, which was aimed at developing municipal action plans for the reduction of GHGs. This program was sponsored and developed by the International Council of Environmental Initiatives (ICLEI) and the United Nations Environment Program in response to the United Nations Framework Convention on Climate Change, while recognizing that all local planning and development has direct consequences on energy consumption and cities exercise key powers over urban infrastructure, including neighborhood design, and over transportation infrastructure such as roads, streets, pedestrian areas, bicycle lanes and public transport.

Chula Vista Carbon Dioxide (CO_2) Reduction Plan. Each participant in the ICLEI program was to create local policy measures to ensure multiple benefits to the City and at the same time identify a carbon reduction goal through the implementation of those measures. The carbon reduction goal was to fit within the realm of international climate treaty reduction goals.

In its CO_2 Reduction Plan, developed in 1996 and officially adopted in 2000, Chula Vista committed to lowering its CO_2 emissions by diversifying its transportation system and using

energy more efficiently in all sectors. To focus efforts in this direction, Chula Vista adopted the international CO_2 reduction goal of returning to pre-1990 levels by 2010. To achieve this goal, eight actions were identified, which when fully implemented, were anticipated to save 100,000 tons of CO_2 each year.

As a result of the 2005 GHG Emissions Inventory Report, in May 2007, staff reported to City Council that citywide GHG emissions had increased by 35% (mainly due to residential growth) from 1990 to 2005, while emissions on a per capita basis and from municipal operations decreased by 17% and 18%, respectively. The City Council directed staff to convene a climate change working group to develop recommendations to reduce the community's GHGs in order to meet the City's 2010 GHG emissions reduction targets.

As a result of the 2012 GHG Emissions Inventory Report, staff reported to City Council that citywide GHG levels are 1,011,481 MT CO_2E. Compared to 2005, Chula Vista's citywide GHG emissions have increased by 8%. However, 2012 per capita emissions are approximately 5% below 2005 levels and 33% below 1990 levels. Unlike the last two inventories, 2009 & 2010, there was a slight increase in citywide energy consumption over the last couple years due most likely to local economic recovery. As with past inventories, community transportation activity has continued increasing with 2012 VMT about 29% higher than in 2005. In order to reach the current community emissions reduction goal of 20% below 1990 emission levels, the City will have to reduce its GHG emissions by more than 359,332 MT CO_2E (35%); however, statewide initiatives are expected to help achieve some of these reductions by 2020.

Climate Change Working Group. The Climate Change Working Group (CCWG), which is composed of residents, businesses, and community organization representatives, helps the city in developing climate-related programs and policies. In 2008, the group reviewed over 90 carbon reduction measures and ultimately chose seven measures to recommend for adoption to the City Council, which the council subsequently adopted. The measures were designed to reduce or mitigate climate change impacts by reducing GHG emissions within Chula Vista to 20% below 1990 levels, in keeping with its CO_2 Reduction Plan and United Nations Framework Convention on Climate Change goals.

In October 2009, the City Council directed the group to evaluate how the City could adapt to potential climate change impacts. The group met throughout 2011 to develop recommendations based on the City's vulnerabilities and risks to climate change. In May 2011, the group adopted the Climate Adaptation Strategies – Implementation Plans, described below; and in 2014, the group released the 2014 Climate Action Plan Update – Recommendations, described below.

Chula Vista Climate Adaptation Strategies – Implementation Plans. The Climate Adaptation Strategies – Implementation Plans document developed by the CCWG includes eleven strategies to

facilitate Chula Vista's adaptation to the potential impacts of global climate change related to energy and water supply, public health, wildfires, ecosystem management, coastal infrastructure, and local economy sectors. The strategies include cool paving, shade trees, cool roofs, local water supply and reuse, storm water pollution prevention and reuse, education and wildfires, extreme heat plans, open space management, wetlands preservation, sea level rise and land development codes, and green economy. For each strategy, the plans outline specific implementation components, critical steps, costs, and timelines. In order to limit the necessary staffing and funding required to implement the strategies, the plans were also designed to build upon existing municipal efforts rather than create new, stand-alone policies or programs. Initial implementation of all eleven strategies were phased over a three-year period after adoption of the plan in 2011.

Chula Vista Climate Protection Measures. On July 10, 2008, the City Council adopted implementation plans for seven climate protection measures to reduce GHG emissions to 20% below 1990 levels by 2012. The implementation plans outline the detailed strategy for initiating, funding, and tracking the following measures:

1. ***Clean Vehicle Replacement Policy for City Fleet:*** When City fleet vehicles are retired, they will be replaced through the purchase or lease of alternative fuel or hybrid substitutes. In addition, the City fleet will begin to pursue installing new fuel tanks to allow heavy-duty vehicles to convert to biodiesel fuel immediately.
2. ***Clean Vehicle Replacement Policy for City-Contracted Fleets:*** As contracts for City-contracted fleet services (such as transit buses, trash haulers and street sweeper trucks) are renewed, the City will encourage contractors to replace their vehicles with alternative fuel or hybrid substitutes through the contract bid process. In addition, the City will pursue implementing two hydrogen vehicle demonstration projects.
3. ***Business Energy Evaluations:*** Businesses with storefronts or offices need to participate in a no cost energy assessment of their facilities to help identify opportunities for them to reduce monthly energy costs. The business assessment will be integrated into the existing business licensing process and codified through a new municipal ordinance.
4. ***Green Building Standard:*** Chula Vista will implement a citywide, mandatory green building standard for new residential and non-residential construction projects and major renovations. The standard includes four components: 1) adopting a citywide Green Building Standard, 2) adopting a citywide Enhanced Energy Efficiency Standard, 3) launching a Green Building Awareness program for builders, permit applicants and the general public, and 4) develop design guidelines for sustainable development.
5. ***Solar and Energy Efficiency Conversion Program:*** The City will create a community program to provide residents and businesses a streamlined, cost effective opportunity to implement energy efficiency improvements and to install solar/renewable energy systems

on their properties. The City will develop a funding mechanism to allow program participants to voluntarily choose to place the improvement costs on their property's tax rolls, thereby avoiding large upfront capital costs. In addition, the program will promote vocational training, local manufacturing, and retail sales opportunities for environmental products and services. To help stimulate the private-sector renewable market and lower the cost for installing renewable energy systems on new homes, the City will require all new residential buildings to include pre-wiring and pre-plumbing for solar photovoltaic and solar hot water systems, respectively.

6. ***Smart Growth Around Trolley Stations:*** The City will continue to implement the smart growth design principles, which promote mixed-use and walkable and transit-friendly development, particularly in and around the E, H, and Palomar trolley stations. These principles were emphasized in the revised Chula Vista General Plan and the Urban Core Specific Plan. In particular, the City will initiate site planning, design studies and specific area plan development to further support smart growth development that complements GHG reductions.
7. ***Turf Lawn Conversion Program:*** The City will create a community program to provide residents and businesses a streamlined, cost-effective opportunity to replace their turf lawns with water-saving landscaping and irrigation systems. Some municipal turf lawn areas (such as medians, fire stations and non-recreational park areas) will also be converted to act as public demonstration sites and to reduce monthly water costs. The City will establish the model for water-wise landscaping for new development through an update of the Chula Vista Municipal Landscape Ordinance and Water Conservation Plan (WCP) guidelines.

Chula Vista Climate Protection Measures – 2013 Progress Report. Since 2000, Chula Vista has been implementing a "Climate Action Plan" (CO_2 Reduction Plan) to address the threat of climate change to the local community. This original plan has been revised to incorporate new climate mitigation (2008) and adaptation (2011) measures to strengthen the City's climate action efforts and to facilitate the numerous community co-benefits such as utility savings, better air quality, reduced traffic congestion, local economic development, and improved quality of life. Based on available funding, staff has been implementing the 18 climate-related actions and their 57 associated components. Overall, 70% of the components have been successfully completed and/or are being implemented on an ongoing basis, which represents a 7% increase since the last reporting period. Another 26% are still being actively pursued, while only two components remain on-hold (City of Chula Vista 2013).

2014 Climate Action Plan Update – Recommendations by the Climate Change Working Group. The CCWG has been evaluating new opportunities to help reach the Chula Vista Climate Action Plan's GHG gas reduction goal of 30% below 2005 levels. As such, they have identified the following 12 action areas that could generate up to 166,000 metric tons in

reductions by 2020, while improving local air quality, generating utility savings, reducing traffic congestion, and promoting a healthier community (City of Chula Vista 2014):

Water Conservation & Reuse – Estimated Annual GHG Reductions = 6,000 MT CO_2E

1. Water Education & Enforcement
    - Expand education and enforcement (through fines) targeting landscape water waste.
2. Water Efficiency Upgrades
    - Use sewer ratepayer funds to incentivize indoor water conservation and provide on-bill financing opportunities.
    - Update the City's Landscape Water Conservation Ordinance to promote more water-wise landscaping designs.
    - Require water-savings retrofits in existing buildings at a specific point in time (not point of sale).
3. Water Reuse Plan & System Installations
    - Develop a Water Reuse Master Plan to maximize the use of storm water, recycled water (such as indoor commercial use), and onsite water reclamation.
    - Promote graywater through a Laundry-to-Landscape installation program and by simplifying complex systems' permit review.

Waste Reduction - Estimated Annual GHG Reductions = 32,000 MT CO_2e

4. Zero Waste Plan
    - Develop a Zero Waste Plan (with special emphasis on zero waste events, business certifications, and building deconstruction) to supplement statewide green waste, recycling, and plastic bag ban efforts.

Renewable & Efficient Energy – Estimated Annual GHG Reductions = 32,000 MT CO_2e

5. Energy Education & Enforcement
    - Expand education targeting key community segments (i.e., do-it-yourself (DIY) and Millennials) and facilitating energy performance disclosure (i.e., Green Leases and Home Energy Ratings).

- Leverage the building inspection process to distribute energy-related information and to deter unpermitted, low performing energy improvements.

6. Clean Energy Sources
    - Incorporate solar photovoltaic into all new residential and commercial buildings (on a project level basis).
    - Provide more grid-delivered clean energy (up to 100%) through Community Choice Aggregation or other mechanism.
7. Energy Efficiency Upgrades
    - Expand the City's "cool roof" standards to include re-roofs and western areas.
    - Streamline the permit process for energy-saving improvements by offering bundled and over-the-counter options.
    - Facilitate more energy upgrades in the community through tax breaks, rebates, and more local energy efficiency programming.
    - Require energy-savings retrofits in existing buildings at a specific point in time (not at point of sale).
8. Robust Urban Forests
    - Plant more shade trees to save energy, address heat island issues, and improve air quality.

Smart Growth & Transportation – Estimated Annual GHG Reductions = 49,000 MT CO_2e

9. Complete Streets & Neighborhoods
    - Incorporate "Complete Streets" principles into the Bicycle and Pedestrian Master Plans and Capital Improvement Program.
    - Encourage higher density and mixed-use development in Smart Growth areas, especially around trolley stations and other transit nodes.
    - Synchronize traffic signals to help ensure efficient traffic flow.
10. Flexible Parking Requirements
    - Allow flexibility in meeting parking requirements by incorporating bike facilities, transit access/passes, and other Transportation Demand Management offerings.

11. Alternative Fuel Vehicle Readiness
    - Support the installation of more local alternative fueling stations and designate preferred parking for alternative fuel vehicles.
    - Design all new residential and commercial buildings to be "Electric Vehicle Ready."
12. Multi-Modal Options
    - Amend the Growth Management Ordinance to include considerations for alternative transportation options and to de-emphasize vehicular level of service.
    - Expand bike-sharing, car-sharing, and other "last mile" transportation options, especially in eastern areas.

Chula Vista Green Building Standards. Consistent with Measure 4 of the Chula Vista Climate Protection Measures, the City Council adopted the Green Building Standards (GBS) Ordinance (Ordinance No. 3140) on October 6, 2009, which became effective November 5, 2009. The GBS ordinance includes standards for energy efficiency, pollutant controls, interior moisture control, improved indoor air quality and exhaust, indoor water conservation, storm water management, and construction waste reduction and recycling.

Building permit applications are required to indicate on project construction plans and specifications the GBS measures that comply with the ordinance. Prior to final building approval or issuance of a certificate of occupancy, the Building Official reviews the information submitted by the applicant and determines whether the applicant has constructed the project in accordance with the permitted plans and documents, and whether the plans are in compliance with the GBS. In 2013, Chula Vista adopted the Green Building Code (CalGreen) for Residential and Non-residential development effective January 1, 2014.

Chapter 15.12 Green Building Standards. Title 24, Part 11, was adopted as the green building code of the City of Chula Vista for enhancing the design and construction of buildings, building additions and alterations through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices, excepting such portions as are hereinafter deleted, modified, or amended.

Chula Vista Increased Energy Efficiency Standards. On January 26, 2010, the City Council adopted the Increased Energy Efficiency Standards Ordinance (Ordinance No. 3149). This ordinance became effective February 26, 2010 as Section 15.26 of the municipal code. Permit applications are required to comply with these energy efficiency standards.

Chula Vista Municipal Code (CVMC) Section 15.26.030 requires permit applications to comply with increased energy efficiency standards that achieve 15 to 20% greater efficiency than the requirements of the Title 24 2008 standards, depending on climate zone. The City falls within two climate zones, Zone 7 and Zone 10. The project site is within Zone 7. For Zone 7, the code requires:

- All new low-rise residential building or additions, remodels or alterations to existing low-rise residential buildings where the additions, remodels or alterations are greater than 1,000 square feet of conditional floor area, shall use at least 15% less energy than the 2008 Title 24 Building Energy Efficiency Standards allow; and
- All new non-residential, high-rise residential or hotel/motel buildings, or additions, remodels or alterations to existing non-residential, high-rise residential or hotel/motel buildings where the additions, remodels or alterations are greater than 10,000 square feet of conditioned floor area, shall use at least 15% less energy than the 2008 Title 24 Building Energy Efficiency Standards.
- No city building permit shall be issued unless the permit application demonstrates to the Building Official compliance with the requirements of Section 15.26.030. Compliance is to be demonstrated based on a performance approach, using a CEC-approved energy compliance software program, as specified in the Title 24 2008 Building Energy Efficiency Standards.

In 2013, Chula Vista adopted the Energy Code for Residential and Non-Residential development, effective July 1, 2014. Energy Efficiency measures adopted by the CVMC are as follows:

- ***Section 15.26.010 - California Energy Code***. The California Energy Code is adopted as the energy code of the City of Chula Vista for the purpose of regulating building design and construction standards to increase efficiency in the use of energy for new residential and nonresidential buildings.
- ***Section 15.26.020 – Outdoor Lighting Zones***. The City has adopted an outdoor lighting zones map amending state default lighting zones as applied to certain areas of the City. The location of outdoor lighting zones in the City are per the adopted Outdoor Lighting Zones Map, dated September 2, 2005, and kept on file with the City Planning and Building Department.
- ***Section 15.28.015 Solar Water Heater Pre-plumbing (specific to Chula Vista)***. All new residential units shall include plumbing specifically designed to allow the later installation of a system which utilizes solar energy as the primary means of heating domestic potable water. No building permit shall be issued unless the requirements of this section and the Chula Vista Solar Water Heater Pre-Plumbing Installation Requirements are incorporated into the approved building plans.

- ***Section 15.24.065 Pre-wiring for Photovoltaic (specific to Chula Vista)***. All new residential units shall include electrical conduit specifically designed to allow the later installation of a photovoltaic (PV) system which utilizes solar energy as a means to provide electricity. No building permit shall be issued unless the requirements of this section and the Chula Vista Photovoltaic Pre-Wiring Installation Requirements are incorporated into the approved building plans.
- ***Section 15.28.020 Residential Graywater Stub-out (specific to Chula Vista)***. All new detached single-family dwellings and duplexes shall include a single-source clothes washer graywater outlet and an outside stub-out to allow the later installation of a clothes washer graywater irrigation system that complies with the requirements of Section 1602.1.1 of the 2013 California Plumbing Code. The outlet and stub-out shall be installed in accordance with the Chula Vista Clothes Washer Graywater Pre-Plumbing and Stub-Out for New Residential Construction or an equivalent alternate method and/or material approved by the Building Official.

City of Chula Vista Mandatory Construction and Demolition Debris Recycling Ordinance. Section 8.25.095 of the CVMC requires that 90% of inert materials and a minimum of 50% of all other materials be recycled and/or reused from certain covered projects. Covered projects include the following:

- Any project requiring a permit for demolition or construction, which has a project valuation of $20,000 or more.
- Housing subdivision construction or demolition and/or any sequenced development will be considered a project in its entirety and not a series of individual projects.
- Tenant improvements greater than 1,000 square feet but less than 10,000 square feet and individual single-family home construction, remodel, addition or renovation, shall submit a Waste Management Report only (no deposit required).
- All City projects.

Covered projects must submit a waste management plan to the Chula Vista Public Works Department, Environmental Services Division, which must be reviewed and approved prior to the issuance of a demolition or building permit. The waste management plan will indicate how the applicant will recycle and/or reuse 90% of inert materials and at least 50% of the remaining construction and demolition debris generated from the project.

City of Chula Vista Clean Transportation Energy Roadmap (2012). The Clean Transportation Energy Roadmap ("Roadmap") can serve as a resource for the City of Chula Vista as it continues to promote clean transportation measures, both in its municipal operations

and in the community. The Roadmap identifies petroleum reduction measures and tools, specific to the City, that generally result in cost savings and benefits to the environment, including:

- An assessment of alternative fuel vehicles and fuel availability for the City's vehicle fleet.
- Commuter programs, including vanpools, carpools, and teleworking that the City could promote to its employees.
- Online tools to establish a baseline of petroleum consumed and GHGs emitted from employee commutes, as well as annual tracking tools.
- Smart growth and active transportation policies that enhance local walking and biking options.
- Outreach materials on Clean Transportation programs that can be shared with local residents, schools, and businesses.

The Roadmap also recognizes the significant steps that the City has taken already. Since 2000, Chula Vista has been implementing a "Climate Action Plan" (CO_2 Reduction Plan) that includes measures to reduce energy and fuel use at municipal facilities and throughout the community.

City of Chula Vista General Plan. The City of Chula Vista General Plan (City of Chula Vista 2005) includes various policies related to reducing GHG emissions (both directly and indirectly). Applicable policies include the following:

Land Use and Transportation Element

- **Policy LUT-23.1:** Encourage the use of bicycles and walking as alternatives to driving.
- **Policy LUT-23.2:** Foster the development of a system of inter-connecting bicycle routes throughout the City and region.
- **Policy LUT-23.5:** Provide linkages between bicycle facilities that utilize circulation element alignments and open space corridors.
- **Policy LUT-23.8:** Provide and maintain a safe and efficient system of sidewalks, trails, and pedestrian crossings.
- **Policy LUT-23.14:** Require new development projects to provide internal bikeway systems with connections to the citywide bicycle networks.

Environmental Element

- **Policy E-6.1:** Encourage compact development featuring a mix of uses that locate residential areas within reasonable walking distance to jobs, services, and transit.

- **Policy E-6.5:** Ensure that plans developed to meet the City's energy demand use the least polluting strategies, wherever practical. Conservation, clean renewables, and clean distributed generation should be considered as part of the City's energy plan, along with larger natural gas-fired plants.
- **Policy E-6.7:** Encourage innovative energy conservation practices and air quality improvements in new development and redevelopment projects consistent with the City's Air Quality Improvement Plan Guidelines or its equivalent, pursuant to the City's Growth Management Program.
- **Policy E-6.8:** Support the use of alternative fuel transit, City fleet and private vehicles in Chula Vista.
- **Policy E-7.1:** Promote development of regulations and building design standards that maximize energy efficiency through appropriate site and building design and through the use of energy-efficient materials, equipment, and appliances.
- **Policy E-7.6:** Encourage the construction and operation of green buildings, considering such programs as the Leadership in Energy and Environmental Design (LEED) Green Building Rating System.
- **Policy E-7.8:** Ensure that residential and non-residential construction complies with all applicable City of Chula Vista energy efficiency measures and other green building measures that are in effect at the time of discretionary permit review and approval or building permit issuance, whichever is applicable.
- **Policy E-8.1:** Promote efforts to reduce waste, minimize the need for additional landfills, and provide economically and environmentally sound resource recovery, management, and disposal facilities.
- **Policy E-8.3:** Implement source reduction strategies, including curbside recycling, use of small collection facilities for recycling, and composting.

5.12.2 Thresholds of Significance

Would the proposed project:

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

B. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Neither the State of California nor the SDAPCD has adopted emission-based thresholds of significance for GHG emissions under CEQA.

OPR's Technical Advisory titled *CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review* states that "public agencies are encouraged but not required to adopt thresholds of significance for environmental impacts. Even in the absence of clearly defined thresholds for GHG emissions, the law requires that such emissions from CEQA projects must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact" (OPR 2008). Furthermore, the advisory document states that "in the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a 'significant impact,' individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice" (OPR 2008).

Several lead agencies in California have adopted a screening threshold as recommended by the CAPCOA Report, *CEQA and Climate Change – Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act,* which proposes a screening-level threshold of 900 MT CO_2E to evaluate whether a project must conduct further analysis.

As the proposed project exceeds the 900 MT CO_2E screen threshold recommended by CAPCOA, this analysis compares the per capita GHG emissions of the proposed project with the efficiency metric calculated by the City. The City currently proposes an efficiency threshold based on a per capita emissions limit. The total emissions from a given project are summed and divided by the project's service population to determine emissions per person and are then compared to the efficiency threshold. Efficiency thresholds have been proposed by various agencies and air districts. The Bay Area Air Quality Management District (BAAQMD) and South Coast Air Quality Management District (SCAQMD) developed an efficiency threshold of 6.6 MT CO_2E per service population (SP) per year (yr) for plan level developments. The BAAQMD suggested a project level efficiency threshold of 4.6 MT CO_2E per SP, while the SCAQMD suggested a project level efficiency threshold of 4.8 MT CO_2E per SP. For this analysis, a more localized efficiency threshold was developed based on the City's population and GHG emissions goal for 2020.

The localized efficiency threshold for year 2020 was calculated by using the City's 1990 emissions inventory which GHG emissions by the City should achieve by 2020, divided by the City's 2020 population.

Based on the data provided in the City's Greenhouse Gas Emissions Inventory, the City's 1990 GHG emissions inventory totals approximately 847,166 MT CO_2E. Series 13 model from October 2013 developed by SANDAG was used to estimate the City's service population in 2020, which was estimated at 370,126. This results in an efficiency threshold of 1.3 MT CO_2E per SP, which was used to determine significance of the proposed project GHG emissions.

5.12.3 Impacts

A. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

Construction Impacts

Construction of the proposed project would result in GHG emissions, which are primarily associated with use of off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles. GHG emissions associated with temporary construction activity were quantified using CalEEMod. A detailed depiction of the construction schedule—including information regarding phasing, equipment utilized during each phase, haul trucks, vendor trucks, and worker vehicles—is included in Appendix E.

Table 5.12-2 shows the estimated annual GHG construction emissions associated with the proposed project.

Table 5.12-2
Estimated Annual Construction Greenhouse Gas Emissions

Activity	CO_2	CH_4	N_2O	CO_2E
	Metric Tons per Year			
2018				
Construction Activities	2,210.63	0.33	0.00	2,218.94
Rock Crushing	—	—	—	1,978.00
2019				
Construction Activities	1,093.29	0.11	0.00	1,096.02
Total	**3,303.92**	**0.44**	**0.00**	**5,292.96**

Notes: See Appendix E for detailed results.
MT = metric tons; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2E = carbon dioxide equivalent

Construction GHG Emissions were amortized over the expected life of the proposed project, which is defined as 30 years. Estimated amortized project-generated construction emissions would be approximately 176 MT CO_2E over the 30-year project life and are added to its annual operational GHG emissions for comparison to the proposed threshold since there is no established GHG threshold for construction which is discussed in the operational emissions analysis below.

Operational Impacts

Operation of the proposed project would result in GHG emissions from vehicular traffic, area sources (e.g., natural gas combustion and landscaping), electrical generation, water supply, and solid waste as described below.

Vehicular Traffic

The proposed project would generate GHG emissions through the vehicular traffic generated by the proposed project. GHG emissions associated with project-generated daily traffic were estimated using CalEEMod and were based on the proposed project's traffic report prepared by Fehr and Peers, which anticipates that the proposed project would result in a total of 2,950 trips per day[4] and an average trip length of 4.82 miles which would result in a daily VMT of 14,219 miles after the extension of Main Street (Appendix D).

CalEEMod default data, including temperature, trip characteristics, variable start information, and emissions factors were conservatively used for the model inputs (Appendix E).

The proposed project would also provide pedestrian and bicycle infrastructure along Main Street and within the project site. These signals, bicycle lanes, and planned sidewalks and crosswalks will connect the residential community to activity centers such as the Town Center planned in Village Eight West and the community park planned west of La Media Road at Santa Luna as well as transit service planned along La Media Road and Main Street. However, no bicycle lanes will be provided within the project site as the roads are designed to be low volume, low speed streets.

Area Sources

In addition to estimating mobile source emissions, CalEEMod was also used to estimate emissions from project area sources, including natural gas combustion for hearths and appliances, and landscape maintenance. Natural gas usage for the proposed project was based upon the CalEEMod default usage rates. The default CalEEMod hearth value was updated to reflect that the proposed project does not include wood burning fireplaces. The default value for wood burning fireplaces was equally distributed into both natural gas and no fireplaces.

Electrical Generation

The generation of electricity through combustion of fossil fuels typically results in emissions of CO_2 and to a smaller extent CH_4 and N_2O. Annual electricity emissions were estimated using the reported CO_2 emissions per kilowatt-hour for SDG&E as utilized in CalEEMod. Energy efficiency assumptions utilized in CalEEMod Version 2016.3.1 is based on 2013 Title 24 standards. The 2016 Title 24 standards went into effect on January 1, 2017 and will be

[4] Notably, there is a slight discrepancy between the trip generation in the TIA and what is included in the CalEEMod outputs. The traffic analysis was based on older project plans and assumed a total of 75 single-family dwelling units and 275 apartments with 2,950 daily trip generation, whereas the current project plans include a reduction of single-family dwelling units to 73 and an increase in apartments to 277 with a daily trip generation of 2,946. The criteria air pollutant and GHG emissions analysis uses the trip rates and trip lengths described in the TIA, but updated the land use assumptions to match the revised project description.

implemented as part of the proposed project. The 2016 Title 24 standards require residential projects are 28% more efficient than the 2013 Title 24 standards for lighting, heating, cooling, ventilation, and water heating (CEC 2015).

Additionally, the proposed project scenario also takes into account the procurement of renewable energy by SDG&E to meet the required 33% RPS by 2020 (CEC 2017).

Solid Waste

The proposed project would generate solid waste, and therefore, result in CO_2E emissions associated with landfill off-gassing. Solid waste generation was derived from the CalEEMod default rates for the proposed land uses and emission estimates associated with solid waste were estimated using CalEEMod. It was assumed that under the proposed project scenario, there would be a 75% reduction of waste disposed which is based on the proposed project meeting the State's goal of achieving 75% waste diversion from landfills by 2020 established in Assembly Bill 341.

Water Supply and Wastewater

Water supplied to the proposed project requires the use of electricity. Accordingly, the supply, conveyance, treatment, and distribution of water would indirectly result in GHG emissions through use of electricity. The proposed project was assumed to use potable water for indoor use and recycled (i.e., reclaimed) water for outdoor use. For the project scenario, as provided in Appendix J2 of this EIR, the Water Conservation Plan (Dexter Wilson Engineering, Inc. 2016) demonstrates that the proposed project would reduce water consumption by approximately 42% compared with the baseline water usage. The baseline scenario does not take into account water conservation features and estimates the proposed project's water usage as 169,163 gallons per day. Water reduction features for the proposed single family and multifamily residential land uses are estimated in the proposed project's Water Conservation Plan.

Table 5.12-3 shows the operational GHG emissions associated with the proposed project.

Table 5.12-3
Estimated Annual Operational Greenhouse Gas Emissions

Emission Source	CO_2	CH_4	N_2O	CO_2E
	Metric Tons per Year			
Area	4.25	0.00	0.00	4.34
Energy	630.96	0.03	0.01	634.16
Mobile	1,970.88	0.12	0.00	1,973.81
Solid Waste	10.81	0.64	0.00	26.79
Water and Wastewater	109.59	0.02	0.01	115.43

Table 5.12-3
Estimated Annual Operational Greenhouse Gas Emissions

Emission Source	CO_2	CH_4	N_2O	CO_2E
	Metric Tons per Year			
Amortized Construction Emissions	—	—	—	176.43
Total	**2,993.85**	**1.96**	**0.04**	**3,226.70**
Project Service Population	**—**	**—**	**—**	**958~~6~~**
Service Person/Per Capita GHG Efficiency	**—**	**—**	**—**	**3.4**

Source: See Appendix E for detailed results.
Notes: Project emissions includes a reduction of mobile emissions by 10% to account for LCFS, which is not included within CalEEMod, compliance with 2016 Title 24 standards, meeting 33% RPS, incorporation of water conservation features and use of 100% reclaimed water for outdoor use, 75% diversion rate per AB 341, improving the pedestrian network (approximately a 2% reduction in VMT), and providing traffic calming measures (approximately a 0.5% reduction in VMT).
CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2E = carbon dioxide equivalent

As shown in Table 5.12-3, the proposed project would result in 3,227 MT CO_2E per year. Based on the City's General Plan, a household size of 3.33 persons per single-family unit and 2.58 persons per multi-family unit was used to calculate the proposed project service population. With a service population of 958 persons, the proposed project would result in per capita GHG emissions of approximately 3.4 MT CO_2E per SP.

Implementation of mitigation measure MM-GHG-1 would minimize GHG emissions associated with project operations. However, approximately 61% of the project's annual GHG emissions are from mobile sources as provided in Table 5.12-3 above. Consequently, to reduce GHG emissions to a less than significant level, the project would need to reduce mobile emissions by approximately 62% to reduce the amount of GHG emissions generated by the proposed project.

Because the proposed project's service population-based emissions would be more than the City's proposed efficiency metric of 1.3 MT CO_2E per SP, GHG emissions would be considered **significant and unavoidable**.

B. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The City of Chula Vista has developed a number of strategies and plans aimed at improving air quality while also addressing global climate change. In November 2002, Chula Vista adopted the CO_2 Reduction Plan to lower the community's major GHG emissions, strengthen the local economy, and improve the global environment. The proposed project would be compliant with all applicable action measures proposed within the Reduction Plan as shown in Table 5.12-4. In 2008, the City's CCWG composed of residents, businesses, and community representatives completed adopted the established seven additional measures as a part of the Climate Mitigation Plan, which built on the previous Reduction Plan. In order for the City to meet their 2010 GHG

reduction targets, the mitigation measures included an analysis of each measure's funding needs, financing options, timeline, and performance criteria. Of the mitigation measures proposed in the Climate Mitigation Plan, most were applicable towards the City reducing GHG emissions. However, several of the mitigation measures would be applicable to the project, including a requirement for new development to comply with the green building standard, implemented as an ordinance addition, and for projects to meet outdoor water conservation requirements. In 2011, the City completed its Climate Adaptation Strategies, which included an additional 11 strategies to be phased in over the three following years. These strategies were developed to address climate change in relation to energy and water supply, public health, wildfires, ecosystem management, coastal infrastructure, and the economy. Most of the measures proposed within the Climate Adaptation Strategies require that the City evaluate the municipal code to address climate change issues. Therefore, most are not directly applicable to the proposed project. In summary, the proposed project would not conflict with any of the measures developed by the City which would reduce GHG emissions.

Table 5.12-4
Compliance with Chula Vista CO_2-Reduction Plan

Action Measure	Project/Community Design Features	Describe How Project Design Will Implement CO_2 Reduction Action Measures
Measure 6 (Enhanced Pedestrian connections to Transit): Installation of walkways and crossings between bus stops and surrounding land uses.	Class II bicycle lanes in each direction and a buffered five foot pedestrian walkway on each side of the roadway on Main Street; 5 to 6 foot buffered pedestrian sidewalks on Village internal roadways and joint on-street parking/bicycle lanes in each direction on parkway residential roadways.	The project will implement the design features which will enhance the pedestrian connection to transit stops and will provide bicycle access via Class II bicycle lanes along both sides of Main Street located within the SPA Plan area and the planned local and Rapid Bus stops on Main Street.
Measure 7 (Increased Housing Density near Transit): General increase in land use and zoning designations to reach an average of at least 14-18 dwelling units per net acre within ¼ mile of major transit facilities.	High Density multi-family residential in neighborhoods of 11 to 18 dwelling units per acre.	The increased density on the project site is within ¼ mile of the planned local bus stop which is expected to be completed by 2018.

Table 5.12-4
Compliance with Chula Vista CO_2-Reduction Plan

Action Measure	Project/Community Design Features	Describe How Project Design Will Implement CO_2 Reduction Action Measures
Measure 8 (Site Design with Transit Orientation): Placement of buildings and circulation routes to emphasize transit rather than auto access; also includes bus turn-outs and other transit stop amenities.	Village 4 North SPA Transit Plan / Centrally-located local bus stop at Village Core; P.C. District Regulations – building setbacks.	The site design is located adjacent to a centrally located mixed use core (Village Eight to the east) with a transit stop accessible to most residents. The project will provide for pedestrian-scaled building frontages to encourage walking. Local bus stop shelters will be all-weather and provide seating.
Measure 9 (Increased Land Use Mix): Provide a greater dispersion/variety of land uses such as siting of neighborhood commercial uses in residential areas and inclusion of housing in commercial and light industrial areas.	Mixed Use Village Core in proximity to site.	The Village Core (Village Eight to the east) located adjacent to the project site provides a mix of uses including office, commercial and park uses in a residential area, consistent with Measure 9.
Measure 10 (Reduced Commercial Parking Requirements): Lower parking space requirements; allowance for shared lots and shared parking; allowance for on-street spaces.	On street parking on Village internal roadways.	The project includes on-street parking spaces throughout the Village internal roadways and nearby Village Core which reduces the need for large, paved parking lots.
Measure 11 (Site Design with Pedestrian/bicycle Orientation): Placement of buildings and circulation routes to emphasize pedestrian and bicycle access without excluding autos; includes pedestrian benches, bike paths, and bike racks.	P.C. District Regulations – building setbacks.	The building setback requirements in the PC District Regulations and Village Design Plan policies will provide for pedestrian-scaled building frontages to encourage walking and bicycling. Bike racks will be provided at parks as well as at the nearby elementary school and the mixed use commercial/retail center in the Village Core which is located in Village Eight adjacent to the proposed project to the east. Garages are discouraged in fronts of homes.

Table 5.12-4
Compliance with Chula Vista CO_2-Reduction Plan

Action Measure	Project/Community Design Features	Describe How Project Design Will Implement CO_2 Reduction Action Measures
Measure 12 (Bicycle Integration with Transit and Employment): Provide storage at major transit stops and employment areas. Encourage employers to provide showers at the place of employment near major transit nodes.	P.C. District Regulations – Bicycle storage	The P.C. District Regulations include requirements for bicycle storage and shower/changing facilities in nearby businesses such that future residents within the proposed project may bike to work.
Measure 13 (Bike Lanes, paths, and Routes): Continued implementation of the City's bicycle master plan. Emphasis is to be given to separate bike paths as opposed to striping bike lanes on streets.	Class II bicycle lanes in each direction and a buffered five foot pedestrian walkway on each side of the roadway on Main Street; 5 to 6 foot buffered pedestrian sidewalks on Village internal roadways and joint on-street parking/bicycle lanes in each direction on parkway residential roadways.	The project will provide bicycle access via Class II bicycle lanes along both sides of Main Street.
Measure 14 (Energy Efficient Landscaping): Installation of shade trees for new single-family homes as part of an overall city-wide tree planting effort to reduce ambient temperatures, smog formation, energy use, and CO_2.	Otay Ranch Street Tree Program.	The Village 4 street sections provide for landscaped parkways with street trees. The Water Conservation Plan identifies appropriate trees, which are water efficient.
Measure 15 (Solar Pool Heating): Mandatory building code requirement for solar heating of new pools or optional motorized insulated pool cover.	Compliance with Municipal Code	Any installation of a pool will comply with the City's Municipal Code. Additionally, MM-GHG-1 proposed requires that all pools are equipped with active solar water heating systems.
Measure 16 (Traffic Signal & System Upgrades): Provide high-efficiency LED lamps or similar as approved by the City Engineer.	Compliance with City Program	All traffic signals will comply with the requirements of the City's Traffic Signal Program.
Measure 18 (Energy Efficient Building Recognition Program): Reducing CO_2 emissions by applying building standards that exceed current Title 24 Energy Code requirements.	Compliance with Municipal Code	All new construction will comply with the Municipal Code requirement to exceed Title 24 by 15%.

Table 5.12-4
Compliance with Chula Vista CO_2-Reduction Plan

Action Measure	Project/Community Design Features	Describe How Project Design Will Implement CO_2 Reduction Action Measures
Measure 20 (Increased Employment Density Near Transit): General increase in land-use and zoning designations to focus employment-generating land-uses within ¼ mile of major transit stops throughout the City.	Nearby Mixed-use Commercial/Retail and Office adjacent to local bus stop.	The project site is located immediately adjacent to a commercial/retail and office center in the Village Core (Village Eight to the east) near the planned future local bus stop.

Source: City of Chula Vista 2000.
Notes: The first five measures are not included are intended for municipalities.

In 2014, the CCWG, comprised of residents, business, education, non-profit, and utility representatives evaluated new opportunities to help the City of Chula Vista reach a GHG reduction goal of 30% below 2005 levels. As a result, 12 action areas were identified which could generate up to 166,000 MT CO_2E in reductions by 2020. Notably, these actions are mainly focused on the community, since the City has already adopted a Sustainability Plan to address emissions from municipal buildings and fleet. Most of the measures within the 12 action areas may not be applicable to the proposed project. However, the proposed project would meet several of the Renewable and Efficient Energy and Smart Growth and Transportation measures such as planting trees in addressing heat island issues, designing residential buildings to be capable of supporting electric vehicles, and by incorporating bike facilities.

The proposed project would promote walkability and use of public transportation, which would serve to reduce GHG impacts. In addition, the General Plan contains the following policies which are applicable to the proposed project that would reduce emissions in the following categories:

- Motor vehicle emissions, through encouraging infill development and increasing pedestrian, transit, and bicycle usage: LUT-23.1, LUT-23.2, LUT-23.5, LUT-23.8, LUT-23.14, and E-6.1.
- Electricity and natural gas emissions through energy efficiency and green building: E-6.5, E-6.7, E-6.8, E-7.1, E-7.6, and E-7.8.
- Waste: E-8.1 and E-8.3.

As seen above, most of the applicable policies applicable to the proposed project are transportation based. Some of the notable policies which the proposed project would meet

include promoting alternative methods of transportation, i.e. use of bicycles and pedestrian walkways and meeting the City's energy efficiency standards and other green building measures.

The Climate Change Scoping Plan, approved by CARB on December 12, 2008, provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. As such, the Scoping Plan is not directly applicable to specific private projects. The Final Statement of Reasons for the amendments to the CEQA Guidelines reiterates the statement in the Initial Statement of Reasons that "[t]he Scoping Plan may not be appropriate for use in determining the significance of individual projects because it is conceptual at this stage and relies on the future development of regulations to implement the strategies identified in the Scoping Plan" (CNRA 2009). Under the Scoping Plan, however, there are several state regulatory measures aimed at the identification and reduction of GHG emissions. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy usage, high-GWP GHGs in consumer products) and changes to the vehicle fleet (hybrid, electric, and more fuel-efficient vehicles) and associated fuels, among others that are not directly applicable to the proposed project. Table 5.12-5 highlights measures that have been, or will be, developed under the Scoping Plan and the proposed project's consistency with those applicable measures. To the extent that these regulations are applicable to the proposed project, its inhabitants, or uses, the proposed project would comply will all regulations adopted in furtherance of the Scoping Plan to the extent required by law.

Table 5.12-5
Project Consistency with Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Project Consistency
Transportation Sector		
Advanced Clean Cars	T-1	The project's residents would purchase vehicles in compliance with CARB vehicle standards that are in effect at the time of vehicle purchase.
Low Carbon Fuel Standard	T-2	Motor vehicles driven by the project's residents would use compliant fuels.
Regional Transportation-Related GHG Targets	T-3	The project's design is oriented around providing higher density residential land uses near transportation hubs. The project's location near mass transit services (Metropolitan Transit System)would reduce dependence on passenger vehicle trips and shorter trip lengths, which would reduce GHG emissions.

Table 5.12-5
Project Consistency with Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Project Consistency
Vehicle Efficiency Measures 1. Tire Pressure 2. Fuel Efficiency Tire Program 3. Low-Friction Oil 4. Solar-Reflective Automotive Paint and Window Glazing	T-4	Motor vehicles driven by the project's residents would maintain proper tire pressure when their vehicles are serviced. The project's residents would replace tires in compliance with CARB vehicle standards that are in effect at the time of vehicle or tire purchase. Motor vehicles driven by the project's residents would use low-friction oils when their vehicles are serviced. The project's residents would purchase vehicles in compliance with CARB vehicle standards that are in effect at the time of vehicle purchase.
Ship Electrification at Ports (Shore Power)	T-5	Not applicable.
Electricity and Natural Gas Sector		
Energy Efficiency Measures (Electricity)	E-1	The project will comply with current Title 24, Part 6, of the California Code of Regulations energy efficiency standards for electrical appliances and other devices at the time of building construction.
Energy Efficiency (Natural Gas)	CR-1	The project will comply with current Title 24, Part 6, of the California Code of Regulations energy efficiency standards for natural gas appliances and other devices at the time of building construction.
Solar Water Heating (California Solar Initiative Thermal Program)	CR-2	The project would allow for active solar energy systems and promotes renewable energy technologies.
Renewable Portfolios Standard (33% by 2020)	E-3	The electricity used by the project will benefit from reduced GHG emissions resulting from increased use of renewable energy sources.
SB 1 Million Solar Roofs (California Solar Initiative, New Solar Home Partnership, Public Utility Programs) and Earlier Solar Programs	E-4	This measure is to increase solar throughout California, which is being done by various electricity providers and existing solar programs. The project would allow for the use of solar.
Water Sector		
Water Use Efficiency	W-1	The project would use 100% reclaimed water for outdoor water use. Additionally, the project would incorporate water efficient fixtures and implement water efficient irrigation.
Water Recycling	W-2	The project would use 100% reclaimed water for outdoor water use.
Reuse Urban Runoff	W-4	The project would use 100% reclaimed water for outdoor water use.
Renewable Energy Production	W-5	The proposed project would incorporate water conservation features such as installation of hot water pipe insulation, pressure reducing valves, and water efficient fixtures, in order to reduce water consumption and increase recycled water use.

Table 5.12-5
Project Consistency with Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Project Consistency
Green Buildings		
1. State Green Building Initiative: Leading the Way with State Buildings (Greening New and Existing State Buildings)	GB-1	The project would be required to be constructed in compliance with state or local green building standards in effect at the time of building construction.
2. Green Building Standards Code (Greening New Public Schools, Residential and Commercial Buildings)	GB-1	The project would meet green building standards that are in effect at the time of design and construction.
3. Beyond Code: Voluntary Programs at the Local Level (Greening New Public Schools, Residential and Commercial Buildings)	GB-1	The project would be required to be constructed in compliance with local green building standards in effect at the time of building construction.
Recycling and Waste Management Sector		
Mandatory Commercial Recycling	RW-3	During both construction and operation of the project, the project would comply with all state regulations related to solid waste generation, storage, and disposal, including the California Integrated Waste Management Act, as amended. During construction, all wastes would be recycled to the maximum extent possible.
High GWP Gases Sector		
Motor Vehicle Air Conditioning Systems: Reduction of Refrigerant Emissions from Non-Professional Servicing	H-1	The project's residents would be prohibited from performing air conditioning repairs and would be required to use professional servicing to the extent feasible.
Limit High GWP Use in Consumer Products	H-4	The project's residents would use consumer products that would comply with the regulations that are in effect at the time of manufacture.
Air Conditioning Refrigerant Leak Test During Vehicle Smog Check	H-5	Motor vehicles driven by the project's residents would comply with the leak test requirements during smog checks.

Source: CARB 2014.
Notes: CARB = California Air Resources Board; CCR = California Code of Regulations; GHG = greenhouse gas; GWP = global warming potential; LEED = Leadership in Energy and Environmental Design; SB = Senate Bill; SF6 = sulfur hexafluoride

Based on the analysis in Table 5.12-5, the proposed project would be consistent with the applicable strategies and measures in the Scoping Plan.

At the regional level, SANDAG adopted *San Diego Forward: The Regional Plan*. While the RTP/SCS does not regulate land use or supersede the exercise of land use authority by SANDAG's member jurisdictions (i.e., the City), the RTP/SCS is a relevant regional reference document for purposes of evaluating the intersection of land use and transportation patterns and the corresponding GHG emissions. The RTP/SCS is not directly applicable to the project because the underlying purpose of the RTP/SCS is to provide direction and guidance on future regional growth (i.e., the location of new residential and non-residential land uses) and transportation patterns throughout the City and greater San Diego County, as stipulated under SB 375. CARB has

recognized that the approved RTP/SCS is consistent with SB 375 (CARB 2015). The proposed project would develop residential land uses that are more walkable, transit-oriented, and compact. As provided in the TIA, the VMT estimated for the proposed project was derived using a select zone analysis from the SANDAG Series 11 traffic forecast model. To determine the average trip length, the total VMT calculated for the proposed project (14,219 miles) was divided by the total number of vehicle trips (2,950). With Main Street fully constructed, the average daily trip rate for the proposed project would be 4.82 miles, which is less than the regional average trip length of 5.8 miles. Therefore, the proposed project would not conflict with the applicable policy objectives of the 2050 RTP/SCS.

Regarding consistency with SB 32 (goal of reducing GHG emissions to 40% below 1990 levels by 2030) and EO S-3-05 (goal of reducing GHG emissions to 80% below 1990 levels by 2050), there are no established protocols or thresholds of significance for future year analysis at a local and statewide level. However because, project-generated GHG emissions would exceed the efficiency metric of 1.3 MT CO_2E per SP, the proposed project would potentially conflict with the state's ability to meet future GHG reductions. Since the specific path to compliance for the state with regards to the long-term goals will likely require development of technology or other changes that are not currently known or available, specific additional mitigation measures for the proposed project would be speculative and cannot be identified at this time.

Based on the preceding considerations, the proposed project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. While mitigation measure MM-GHG-1 would help reduce GHG emissions of the proposed project, but many measures are not quantifiable and/or the extent to which some measures that may be developed in the future would apply to the project is unknown. The proposed project's GHG emissions would therefore result in a **significant and unavoidable** impact.

5.12.4 Level of Significance Prior to Mitigation

The proposed project would result in potentially significant GHG emissions impacts.

5.12.5 Mitigation Measures

MM-GHG-1 Greenhouse Gas Emissions Reduction Measures. The following greenhouse gas (GHG) emissions reduction measures shall be implemented:

- Use of 100% reclaimed water for outdoor water use (project design feature)
- Prior to the issuance of a Building Permit, the floor plans and/or exterior elevations submitted in conjunction with the Building Permit application shall

show use of low flow water fixtures such as low flow toilets, faucets, showers, etc. (project design feature)

- Use of low speed vehicles (LSV) as alternative modes of travel between the Otay Ranch Villages (project design feature)
- Multi-family residential uses to provide preferential parking for carpool, shared, electric, and hydrogen vehicles. Single-family uses to include wiring for at least one electric car charging station.
- Exceed Title 24 Building Energy Efficiency Standards by 15%.
- Equip the pool(s) and spa(s) with active solar water heating systems.
- Use of energy efficient lighting for all street, parking, and area lighting associated with the proposed project, including all on-site and off-site lighting.
- Implement energy-efficient design practices such as high-performance glazing, Energy Star compliant systems and appliances, radiant heat roof barriers, insulation on all pipes, programmable thermostats, solar access, and sealed ducts.
- Use native species and drought tolerant species for a minimum of 50% of the ornamental plant palette in non-turf areas for to minimize water demand.
- Ensure recycling of construction debris and waste through administration by an on-site recycling coordinator and presence of recycling/separation areas.

5.12.6 Level of Significance After Mitigation

Implementation of MM-GHG-1 would reduce GHG emissions associated with project operations. The emission reductions associated with measures listed in MM-GHG-1 have been quantified in CalEEMod to the extent feasible. Implementation of mitigation measure MM-GHG-1 would reduce GHG emissions associated with project operations. However, approximately 80% of the proposed project's annual GHG emissions are from mobile sources. Consequently, to reduce GHG emissions to a less than significant level, the proposed project would need to reduce mobile GHG emissions by approximately 61% to reduce the amount of GHG emissions generated by the proposed project below the efficiency metric of 1.3 MT CO_2E. Therefore the proposed project's GHG contribution would remain cumulatively considerable and is **significant and unavoidable**.

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5.13 HOUSING AND POPULATION

This section of the EIR discusses the existing population and housing conditions in the City of Chula Vista (City), and addresses the proposed Otay Ranch Village Four Sectional Planning Area (SPA) Plan Project's (project) impacts on housing and population growth. Changes in population, employment, and housing demand are social and economic effects, not environmental effects. According to CEQA, these effects should be considered in an EIR only to the extent that they would create adverse impacts on the physical environment. According to Section 15382 of the CEQA Guidelines, "[a]n economic or social change by itself shall not be considered a significant effect on the environment" (14 CCR 15000 et seq.).

5.13.1 Existing Conditions

5.13.1.1 Regulatory Framework

Regional

San Diego Forward: The Regional Plan

The San Diego Forward: Regional Plan, combines the region's two most important existing planning documents: the Regional Comprehensive Plan (RCP), and the Regional Transportation Plan (SANDAG 2011a) and its Sustainable Communities Strategy (RTP/SCS). The RCP, adopted in 2004, laid out key principles for managing the region's growth while preserving natural resources and limiting urban sprawl. The plan covers policy areas including urban form, transportation, housing, healthy environment, economic prosperity, public facilities, our borders, and social equity (SANDAG 2004). These policy areas were addressed in the 2050 Regional Transportation Plan and its Sustainable Communities Strategy (2050 RTP/SCS), and are now fully integrated into San Diego Forward: The Regional Plan (SANDAG 2015a).

The San Diego Association of Governments (SANDAG) estimates future population, housing, land use, and economic growth throughout San Diego County and in individual cities, including Chula Vista. On October 15, 2013, the Series 13: 2050 Regional Growth Forecast was accepted by the SANDAG Board of Directors for planning purposes. This forecast serves as the foundation for San Diego Forward: The Regional Plan and other planning documents across the region. SANDAG projects the region's population will grow by nearly 1 million people by 2050. This forecast is consistent with previous expectations although future growth rates have been reduced due to increased domestic migration out of the region. The growth in population will drive job growth and housing demand within the region, adding nearly 500,000 jobs and more than 330,000 housing units by 2050 (SANDAG 2013).

As shown in Table 5.13-1, the SANDAG Series 13 Regional Growth Forecast for 2050 predicts population, housing, and employment for the San Diego Region, as well as for the City of Chula Vista, for 2012 through 2050.

Table 5.13-1
San Diego Region vs. City of Chula Vista Population, Housing, and Employment Forecast

Planning Area	Year 2012	Year 2020	Year 2035	Year 2050	Increase	Percent Change
Population						
City of Chula Vista	249,382	287,173	326,625	345,586	96,204	38.6%
San Diego Region*	3,143,429	3,435,713	3,853,698	4,068,759	973,446	31.4%
Housing						
City of Chula Vista	79,225	89,176	101,188	108,273	29,048	36.7%
San Diego Region	1,165,818	1,249,684	1,394,783	1,491,935	326,117	28%
Employment						
City of Chula Vista	65,340	82,953	93,552	114,550	49,210	75.3%
San Diego Region	1,450,913	1,624,124	1,769,938	1,911,405	287,281	19.8%

Sources: SANDAG 2013, 2015b
* The San Diego Region includes both incorporated and unincorporated areas of the region.

Regional Housing Needs Assessment

According to SANDAG's 2050 Cities/Counties Forecast, Chula Vista is expected to gain 92,454 new residents and 28,755 new households (SANDAG 2015b). Furthermore, SANDAG, through its Regional Housing Needs Allocation, estimated that based on anticipated economic from January 1, 2010 through December 31, 2020, the City would experience a demand for 12,125 new housing units, of which 6,303 new housing units affordable to low and very low income households and 2,220 new housing units for moderate income households. The City of Chula Vista anticipates that much of the new construction will result from building out the master-planned communities in the East Planning Area, such as Otay Ranch, infill development, and mixed-use development (SANDAG 2011b).

To encourage the development of adequate housing to meet the needs of low and moderate-income households and to further geographic and community balance, the City's adopted Housing Element provides for a Balanced Communities Policy, requiring 10% affordable housing for low-[1] and moderate-[2] income households within developments of 50 or more

[1] Low-income households are households of persons who claim primary residency at the same unit with combined incomes that are greater than 50%, but not more than 80% of the Area Median Income (AMI) for the San Diego area based on household size as determined annually by the U.S. Department of Housing and Urban Development (HUD). Household size is calculated by the number of persons residing at the same unit as their primary residency.

[2] Moderate income households are households of persons who claim primary residency at the same unit with combined incomes between 80% to 120% of the AMI for the San Diego area based on household size as determined annually by HUD. Household size is calculated by the number of persons residing at the same unit as their primary residency.

residential units. This inclusionary housing program will serve as only one component of the City's overall housing strategy and will complement other affordable housing efforts, including preservation of existing assisted housing, development of new assisted housing with public subsidies, first-time homebuyer assistance, and rehabilitation loans for low income homeowners. The City does find that such an inclusionary housing policy is beneficial to increasing the supply of housing affordable to households of lower and moderate income incomes and to meet the City's regional share of housing needs given the demographics of the community and its needs, past housing production performance, and the existing opportunities and constraints as detailed in its Housing Element (SANDAG 2011b).

Local

Chula Vista General Plan

The City of Chula Vista General Plan divides the City into four planning areas: (1) the Southwest Planning Area, (2) the Northwest Planning Area, (3) the East Planning Area, and (4) the Bayfront Planning Area (City of Chula Vista 2005).

Under the General Plan's Land Use and Transportation Element, population for Chula Vista is projected to increase by 101,600 persons, from 222,300 in 2004 to 323,900 in 2030 (City of Chula Vista 2005). Projected growth in the City is summarized in Table 5.13-2. The General Plan's projected population exceeds the SANDAG 2050 Regional Forecast for 2030 by 34,922 persons. As shown in Table 5.13-2, the General Plan anticipates the population in the incorporated portion of the East Planning Area to increase by 58,990 persons, from 98,710 in 2004 to 157,700 in 2030. The project site is within the East (incorporated area) planning area.

Table 5.13-2
Chula Vista Projected Population in 2030

Planning Area	Year 2004	Year 2030	Increase
Bayfront	0	4,860	4,860
Southwest	53,560	72,401	18,841
Northwest	56,930	89,090	32,160
East (incorporated area)	98,710	209,256	110,546
East (unincorporated area)	13,100	25,937	12,837
Total	**222,300**	**401,544**	**179,244**

Source: City of Chula Vista 2005.

The Chula Vista General Plan incorporates a Housing Element (adopted April 23, 2013) that identifies strategies to expand housing opportunities for the City's various economic segments. Under the Housing Element, the provision of new housing opportunities within mixed use areas and at higher density levels, particularly transit focus areas, is encouraged. A primary

issue of the Housing Element is the shortfall of housing, particularly affordable housing, in Chula Vista and the region. To address this issue, the Housing Element requires residential developments with 50 or more dwelling units provide 10% of total units for low- and moderate-income households, with at least half of those (5%) designated for low-income households (City of Chula Vista 2013).

Goals and policies listed in the General Plan encourage the provision of a wide range of housing choices by location, type of unit, and price level, in particular the establishment of permanent affordable housing for low and moderate-income households. General Plan goals and polices ensure the availability of housing opportunities to persons regardless of race, color, ancestry, national origin, religion, sex, disability, marital status, and familial status, source of income or sexual orientation and support efforts to increase homeownership rates to build individual wealth (City of Chula Vista 2013).

Otay Ranch General Development Plan

The Otay Ranch General Development Plan (GDP) established a 5-year objective that requires each village to proportionately assist the City to meet or exceed its 5-year regional allocation as described in the Chula Vista Housing Element. The Otay Ranch GDP requires that prior to or concurrent with the approval of a SPA plan, a housing plan shall be approved that addresses the type and location of housing to be provided pursuant to the regional share allocation. Polices identified in the Otay Ranch GDP encourage each village to offer a variety of housing types, densities, and prices to enable affordability while addressing issues such as energy and water conservation, air quality improvements and recycling. Policies also encourage housing opportunities for very-low, low, and moderate-income households to promote a balanced community (City of Chula Vista and County of San Diego 1993).

The Otay Ranch GDP establishes a maximum residential buildout for all villages and planning areas within Otay Ranch. The maximum Otay Ranch GDP buildout for the proposed project is provided in Table 5.13-3. Through previous planning efforts, the proposed project site was allocated a total of 350 single-family dwelling units, at a density of 4.2 dwelling units (DU) per acre. The Otay Ranch GDP accounted for a maximum population of approximately 1,141 people as a result of the proposed project (City of Chula Vista and County of San Diego 1993).

Table 5.13-3
Existing Otay Ranch GDP Planned Residential for Village Four

Residential Land Use	Total Units	Density (Dwelling Units per Acre)	Approximate Population
Single-Family	350	4.2	1,141

Source: City of Chula Vista and County of San Diego 1993

5.13.1.2 Existing Setting

Otay Ranch lies within the East Planning Area of the City, as identified in the City's General Plan (City of Chula Vista 2005). The proposed project is a component of the Otay Ranch GDP, which organizes the Otay Ranch into 20 villages or planning areas. The approximately 165.93-acre project site is located within the Otay Valley Parcel of the Otay Ranch. The project site is composed of a portion of Village Four owned by Otay Valley Quarry LLC. The entire Village Four site as identified in the Otay Ranch GDP is composed of approximately 528 acres and was intended to be a lower-density village compared to surrounding villages due to its scenic location near Rock Mountain and limited area, being bound by the Otay River Valley and Wolf Canyon (City of Chula Vista and County of San Diego 1993).

Historically, the Otay Valley Parcel, including the project site, has been used for ranching, grazing, dry farming, and truck farming activities (City of Chula Vista 2014). Village Four currently consists of vacant and undeveloped land, with a number of dirt roads traversing the site. No former or current residential uses are located within the project site.

5.13.2 Thresholds of Significance

The following significance criteria, included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), will determine the significance of a housing and population impact. Impacts to housing and population would be significant if the proposed project would:

A. Induce substantial population growth in an area, either directly (i.e., by proposing new homes and businesses) or indirectly (i.e., through extension of roads or other infrastructure)?

B. Displace substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere?

C. Be inconsistent with General Plan, Otay Ranch GDP, and other objectives and policies regarding housing and population thereby resulting in a significant physical impact?

The following impact analysis is based on the overall unit counts within the proposed land use plans for Village Four.

5.13.3 Impacts

A. Induce substantial population growth in an area, either directly (i.e., by proposing new homes and businesses) or indirectly (i.e., through extension of roads or other infrastructure).

As described above in Section 5.13.1.1, the City of Chula Vista General Plan has planned for the population of the entire City to grow by 101,600 persons between 2004 and 2030; from 222,300 to

323,900 people. A majority of this growth (58,990 persons) is planned in the East Planning Area, where the project site is located. The General Plan's projected population exceeds the SANDAG 2050 Regional Forecast for the year 2030 by 34,922 persons (City of Chula Vista 2013).

As seen in Table 5.13-4, the project proposes 350 residential units. Based on the City's household coefficient of 3.33 persons per single-family residential unit, and 2.58 persons per multi-family residential unit (City of Chula Vista 2013), the proposed project is expected to generate a buildout population of approximately 958 people.

Table 5.13-4
Otay Ranch GDP Planned Residential for Village Four

Residential Land Use	Planning Area	Total Units	Approximate Population
Single-Family (low-medium density)	R-1	73	243.9
Multi-Family (medium-high density)	R-2	160	412.8
Multi-Family (high density)	R-3	117	301.86
	Total	**350**	**957.8**

Source: City of Chula Vista and County of San Diego 1993

As outlined in Table 5.13-3, above, the Otay Ranch GDP allocated the project site 350 residential units, with a planned population increase of 1,141 persons (City of Chula Vista and County of San Diego 1993). Although the proposed project would directly contribute to population growth in the area as compared to existing conditions; the proposed project would not exceed the planned population growth or maximum unit count accounted for in the Otay Ranch GDP, and thus, would not result in substantial population growth.

Improvements to transportation, utilities, and public service infrastructure as part of the proposed project would help alleviate existing infrastructure deficiencies and accommodate planned growth, but would not result in a significant amount of unplanned growth to the area. Additionally, the proposed project would be in compliance with the City of Chula Vista Growth Management Ordinance (GMO), and established "quality of life" threshold standards (Chula Vista Municipal Code Section 19.09, Growth Management).

Therefore, development of the proposed project would not result in substantial direct or indirect impacts to population growth in the area, and impacts would be **less than significant**.

B. Displace substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere.

No existing or former residential uses occupy the project site. As such, the proposed project would not displace any existing households or people, or necessitate the construction of replacement housing elsewhere. No impact would occur.

C. Be inconsistent with General Plan, Otay Ranch GDP, and other objectives and policies regarding housing and population thereby resulting in a significant physical impact.

Consistent with the City's General Plan Housing Element and Otay Ranch GDP goals, objectives, and policies, the proposed project would provide a wide variety of housing types, including affordable housing. Proposed housing includes apartments, townhomes, condominiums, small lot single-family, and conventional single-family residential. Additionally, the proposed project would contain a variety of housing types ranging in density from low-medium to high. The variety of housing types would accommodate families, singles, and those with special housing needs, including the handicapped and the elderly. The proposed project is required to meet all State of California accessibility requirements for people with disabilities, and fair housing practices would be employed in the sale, rental, and advertising of all units.

As discussed under Threshold A, the proposed project would be consistent with the maximum residential unit count and population buildout for Village Four set forth by the General Plan and Otay Ranch GDP. Additionally, as discussed in Threshold B, the proposed project would be consistent with the City of Chula Vista Housing Element, Guidelines to the Balanced Communities Policy, and the Otay Ranch GDP with the incorporation of an Affordable Housing Program Implementation Plan. Therefore, as the proposed project would be consistent with the applicable objectives and policies included in both the General Plan and Otay Ranch GDP, impacts are determined to be **less than significant**.

5.13.4 Level of Significance Prior to Mitigation

The proposed project would not exceed the maximum residential buildout anticipated in the Otay Ranch GDP, would not displace any existing households or people, or necessitate the construction of replacement housing elsewhere, and would be consistent with the policies of the General Plan and Otay Ranch GDP regarding housing and population; therefore, the proposed project would result in less than significant impacts.

5.13.5 Mitigation Measures

Impacts to population and housing would be **less than significant**; therefore, no mitigation is required.

5.13.6 Level of Significance After Mitigation

Impacts to population and housing would be **less than significant**; therefore, no mitigation is required.

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5.14 PALEONTOLOGICAL RESOURCES

This section of the EIR addresses potential impacts to paleontological resources resulting from the proposed Otay Ranch Village Four Sectional Planning Area (SPA) Plan Project (project). The discussion in this section is based on the Paleontological Resources Review prepared for the project by Dudek in September 2016. The complete report is contained in Appendix K of this EIR.

5.14.1 Existing Conditions

5.14.1.1 Regulatory Framework

California Environmental Quality Act

The California Environmental Quality Act (CEQA) is the principal statute governing environmental review of projects occurring in the state. CEQA requires lead agencies to determine if a proposed project would have a significant effect on archeological resources (Public Resources Code Sections 21000 et seq.). Paleontological resources are also afforded protection by environmental legislation under CEQA. Appendix G (part V) of the CEQA Guidelines provides guidance relative to significant impacts on paleontological resources and states, "a project will normally result in a significant impact on the environment if it will … disrupt or adversely affect a paleontological resource or site or unique geologic feature, except as part of a scientific study." The City of Chula Vista assesses and mitigates the potential impacts of private development and public facilities and infrastructure to paleontological resources pursuant to the provisions of CEQA. Pursuant to Section 15065 of the CEQA Guidelines, a lead agency must find that a project may have a significant effect on the environment where the project has the potential to eliminate important examples of the major periods of California prehistory, which includes the destruction of significant paleontological resources.

California Public Resources Code

Section 5097.5 of the Public Resources Code specifies that any unauthorized removal of paleontological remains is a misdemeanor. Further, the California Penal Code Section 622.5 sets the penalties for damage or removal of paleontological resources.

Local Level

The City of Chula Vista General Plan

The City of Chula Vista includes protections for paleontological resources in the General Plan. The Environmental Element includes objectives to protect important paleontological resources

and support and encourage public education and awareness of such resources (Objective E 10). Additional policies include the following (City of Chula Vista 2005):

- **Policy E 10.1:** Continue to assess and mitigate the potential impacts of private development and public facilities and infrastructure to paleontological resources in accordance with the California Environmental Quality Act.
- **Policy E 10.2:** Support and encourage public education and awareness of local paleontological resources, including the establishment of museums and educational opportunities accessible to the public.

5.14.1.2 Existing Setting

The project site is relatively undeveloped. The majority of the project site is mapped as Oligocene-age Otay Formation (approximately 29 million years old) overlying early Cretaceous-age (approximately 120–130 million years old) Santiago Peak Volcanics bedrock (Artim and Pickney 1973; Deméré 1988; Herzig and Kimbrough 1991; Tan and Kennedy 2002; Todd et al. 2004; Walsh and Deméré 1991) (see the Geological Map in Appendix K of this EIR). According to the County of San Diego Guidelines for Determining Significance, Paleontological Resources (County of San Diego 2007; Deméré and Walsh 1993), and the records search results received from the San Diego Natural History Museum on August 29, 2016, the Oligocene-age deposits have a moderate to high potential to yield paleontological resources (i.e., moderate to high resource importance), and Cretaceous-age bedrock has a no potential to yield paleontological resources (McComas 2016).

According to the records search conducted at the San Diego Natural History Museum, 39 paleontological localities are documented within a 1-mile radius of the project site (McComas 2016; Appendix K). A large number of these localities (17) are documented nearby from the same geological units that occur beneath portions of the project site; specifically, the Oligocene-age Otay Formation. These sedimentary deposits have the potential to yield scientifically significant vertebrate fossils.

5.14.2 Thresholds of Significance

Would the proposed project:

A. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

B. Be inconsistent with General Plan paleontological policies thereby resulting in a significant physical impact?

5.14.3 Impacts

A. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

The Otay Formation has yielded fossil localities during development for nearby construction projects (e.g., SR-125 Toll Road and Otay Ranch Village 7) (McComas 2016). These terrestrial deposits typically contain extinct vertebrate taxa and other fauna characteristic of the Arikareean North American Land Mammal Age. Although no vertebrate fossils are documented within the project site, the undeveloped nature of the site and the depositional environment of the gritstone and sandstone-mudstone members would be conducive to preserve such remains. Prehistoric vertebrates recovered from the Otay Formation in this region include reptiles (e.g., tortoises, lizards, and snakes), birds, and mammals (e.g., shrews, rodents, rabbits, dogs, foxes, nimravids, rhinoceros, camels, mouse-deer, and oreodonts) (Deméré 1988; Korth 1994; McComas 2016; Walsh and Deméré 1991). There is also the potential to impact mapped, moderate-sensitivity deposits within the Mission Valley Formation and unnamed Quaternary terrace deposits located at the southernmost extent of the project site. Excavation within these formations would represent a **potentially significant impact**, and mitigation would be required. As required by mitigation measure (MM) PAL-1, if encountered during construction, the Mission Valley Formation and Quaternary terrace deposits would require part-time paleontological monitoring, in addition to the full-time monitoring conducted during any excavations within the Otay Formation.

A paleontological resources mitigation program is required for excavation within moderate to high sensitivity geological units (e.g., Otay Formation, Mission Valley, and Pleistocene age terrace deposits), as described in MM-PAL-1. Excavation within lower-sensitivity units (e.g., Holocene age alluvium and Santiago Peak Volcanics) would not result in significant impacts to paleontological resources.

B. Be inconsistent with General Plan paleontological policies thereby resulting in a significant physical impact.

The Chula Vista General Plan Environmental Element contains Objective E 10 and Policies E 10.1 and E 10.2 (City of Chula Vista 2005), as described in Section 5.14.1.1. As described under Threshold A, the potential impacts to paleontological resources are disclosed within this EIR, and mitigation (MM-PAL-1) is incorporated as necessary, consistent with Objective E 10 and Policy E 10.1. As required by MM-PAL-1, any significant paleontological resources encountered during construction would be deposited into a scientific institution with paleontological collections, such as the San Diego Natural History Museum, consistent with Objective E 10 and

Policy E 10.2. Therefore, the proposed project would be consistent with Chula Vista General Plan paleontological policies, and impacts would be less than significant.

5.14.4 Level of Significance Prior to Mitigation

Implementation (construction) of the proposed project would result in impacts to paleontological resources. Impacts would be **potentially significant** prior to mitigation.

5.14.5 Mitigation Measures

MM-PAL-1 Prior to the issuance of grading permits, the project applicant shall provide written confirmation to the City of Chula Vista that a qualified paleontologist has been retained to carry out an appropriate mitigation program (a qualified paleontologist is defined as an individual with an M.S. or Ph.D. in paleontology or geology who is familiar with paleontological procedures and techniques). A pre-grade meeting shall be held among the paleontologist and the grading and excavation contractors.

A paleontological monitor shall be on site at all times during the original cutting of previously undisturbed sediments of highly sensitive geologic formations (i.e., Otay Formation and Quaternary alluvial and terrace deposits) to inspect cuts for contained fossils (a paleontological monitor is defined as an individual who has experience in the collection and salvage of fossil materials). The paleontological monitor shall work under the direction of a qualified paleontologist. The monitor shall be on site on at least a half-time basis during the original cutting of previously undisturbed sediments of moderately sensitive geologic formations (e.g., unnamed river terrace deposits and the Mission Valley Formation) to inspect cuts for contained fossils. However, neither of these rock units have been mapped within the project site, and are, therefore, not anticipated to be impacted during construction.

The monitor shall be on site on at least a quarter-time basis during the original cutting of previously undisturbed sediments of low-sensitivity geologic formations (e.g., Lindavista Formation and Santiago Peak Volcanics [metasedimentary portion only]) to inspect cuts for contained fossils. However, these deposits have not been mapped within the project site, and are, therefore, not anticipated to be impacted during construction. The monitor shall periodically (every several weeks) inspect original cuts in deposits with an unknown resource sensitivity (i.e., Quaternary alluvium).

In the event that fossils are discovered in unknown, low, or moderately sensitive formations, the applicant shall increase the per-day field monitoring time. If fossils are not discovered and at the discretion of the City of Chula Vista's Deputy City Manager/Development Services Director or her/his designee, monitoring shall be reduced. A paleontological monitor is not needed during grading of rocks with no resource sensitivity (i.e., Santiago Peak Volcanics, metavolcanic portion).

When fossils are discovered, the paleontologist (or paleontological monitor) shall recover them. In most cases, this fossil salvage can be completed in a short period of time. However, some fossil specimens (such as a complete whale skeleton) may require an extended salvage time. In these instances, the paleontologist (or paleontological monitor) shall be allowed to temporarily direct, divert, or halt grading to allow recovery of fossil remains in a timely manner. Because of the potential for the recovery of small fossil remains such as isolated mammal teeth, it may be necessary in certain instances and at the discretion of the paleontological monitor to set up a screen-washing operation on the site.

Prepared fossils, along with copies of all pertinent field notes, photos, and maps, shall be deposited in a scientific institution with paleontological collections, such as the San Diego Natural History Museum. A final summary report shall be completed. This report shall include discussions of the methods used, stratigraphy exposed, fossils collected, and significance of recovered fossils.

5.14.6 Level of Significance After Mitigation

With the incorporation of **MM-PAL-1**, potentially significant impacts to paleontological resources would be reduced to a level below significance.

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CHAPTER 6
CUMULATIVE IMPACTS

6.1 INTRODUCTION

Although the environmental effects of an individual project may not be significant when that project is considered independently, the combined effects of several projects may be significant when considered collectively. Such impacts are referred to as "cumulative impacts." Section 15355 of the CEQA Guidelines defines cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Section 15130 of the CEQA Guidelines provides guidance for analyzing significant cumulative impacts in an EIR. According to this section of the CEQA Guidelines, the discussion of cumulative impacts "need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by standards of practicality and reasonableness." The discussion should also focus only on significant effects resulting from a project's incremental effects and the effects of other projects. According to Section 15130(a)(1), "an EIR should not discuss impacts which do not result in part from the project evaluated in the EIR."

Cumulative impacts can occur from the interactive effects of a single project. For example, the combination of noise and dust generated during construction activities can be additive and can have a greater impact than either noise or dust alone. However, substantial cumulative impacts more often result from the combined effect of past, present, and future projects located in proximity to the project under review. Therefore, it is important for a cumulative impacts analysis to be viewed over time and in conjunction with other related past, present, and reasonably foreseeable future developments whose impacts might compound or interrelate with those of the project under review.

6.2 METHODOLOGY

According to Section 15130(b) of the CEQA Guidelines, cumulative impact analysis may be conducted and presented by either of two methods: (1) a list of past, present, and probable activities producing related or cumulative impacts, or (2) a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document that has been adopted or certified that described or evaluated regional or area-wide conditions contributing to the cumulative impact. Other than for air quality, greenhouse gas emissions, noise, and transportation/traffic, the cumulative list approach has been used in the cumulative analysis presented in this chapter, as discussed below. Air quality, greenhouse gas emissions, noise, and transportation/traffic cumulative impacts were evaluated using the summary of projections method because impacts can only be analyzed on a broad, area-wide scope, and in a cumulative context. Table 6-1 describes the geographic scope of the cumulative impact analyses.

Table 6-1
Geographic Scope of Cumulative Impact Analyses

Topic	Geographic Scope of Cumulative Impact Analyses
Land Use/ Planning	Incompatibilities with adjacent land uses are generally site specific; therefore, the geographic context for the analysis of cumulative impacts relative to adjacent land use incompatibilities includes the area surrounding the project site. The geographic context for the analysis of cumulative impacts relative to physical division of an established community is generally site specific.
Aesthetics	The cumulative study area associated with aesthetics impacts is the viewshed of Village Three North and Portion of Village Four, Village Eight East, and Village Ten, which is geographic area from which a proposed project is likely to be seen, based on topography and land use patterns. The cumulative study area for light and glare is the City of Chula Vista. The cumulative study area for steep slopes is Otay Ranch.
Transportation/ Traffic	The cumulative study area associated with traffic and level of service standards, traffic hazards, alternative transportation, and emergency access is the study area for the project-specific traffic impact analysis (Appendix D). Impacts related to aircraft traffic are generally specific and limited to the area within 2 miles of a specific airport.
Air Quality	The geographic scope of cumulative impact analysis for criteria air pollutants, sensitive receptors, and air quality plans is the San Diego Air Basin. Impacts relative to objectionable odors are limited to the area immediately surrounding the odor source and are not cumulative in nature because the air emissions that cause odors disperse beyond the sources of the odor.
Noise	The area of cumulative impact that would be considered for the noise and vibration cumulative analysis would be only those cumulative projects within the immediate vicinity of Village Three North and Portion of Village Four, Village Eight East, and Village Ten. Exposure to aircraft noise is also a localized impact and the area of cumulative impact that would be considered for aircraft impacts would be only those projects located within 2 miles of Brown Field.
Biological Resources	The geographic scope of cumulative impact analysis for biological resources includes the Chula Vista Multiple Species Conservation Program Subarea Plan area.
Cultural and Paleontological Resources	The geographic context for the analysis of cumulative impacts to archaeological resources, historic resources, paleontological resources, and human remains includes the San Diego region, which has a similar archaeological, ethnohistoric, historic, and prehistoric setting as the project site.
Geology and Soils	The geographic context for the analysis of cumulative impacts relative to soil erosion encompasses the Otay River watersheds directly downstream from the project site. Impacts relative to seismic hazards and other geologic/soil conditions (i.e., fault rupture, groundshaking, ground failure, liquefaction/ collapse, landslides, lateral spreading, subsidence, and expansive soils) and septic systems are generally site specific.
Public Services	The City of Chula Vista is the geographic scope of cumulative impacts for public services.
Global Climate Change	Due to the nature of assessment of greenhouse gas emissions and the effects of climate change, impacts can currently only be analyzed from a cumulative context; therefore, the geographic scope for the cumulative analysis of greenhouse gas emissions and their effect on climate change is the global atmosphere.
Hydrology/ Water Quality	The geographic context for the analysis of cumulative impacts relative to water quality standards and alteration of drainage patters encompasses the portions of the Otay River watershed directly downstream from the project site. Impacts relative to mudflows, dam inundation, tsunamis, seiches, and flood hazard areas are generally specific to a project site.
Hazards and Hazardous Materials	The geographic context for the analysis of cumulative impacts relative to the transport, use and disposal of hazardous materials, and associated accidental releases, encompasses the roadways and freeways used by vehicles transporting hazardous materials to and from the project sites. The geographic context for the analysis of cumulative impacts relative to wildland fires and emergency response and evacuation plans is the City of Chula Vista. Impacts relative to listed hazardous materials sites and airport hazards are generally specific to the project site.
Housing and Population	The City of Chula Vista is the geographic scope of cumulative impacts to housing and population.
Public Utilities	The City of Chula Vista is the geographic scope of cumulative impacts to public utilities.

6.3 CUMULATIVE PROJECTS

6.3.1 Land Development

Other than air quality, greenhouse gas emissions, noise, and transportation/traffic, cumulative impacts for all other environmental issue areas are based on a list of projects within the proposed Otay Ranch Village Four Sectional Planning Area (SPA) Plan Project's (project) study area that either have applications submitted or approved, are under construction, or have recently been completed. The cumulative projects identified in the study area are listed in Table 6-2 and shown on Figure 6-1.

Table 6-2
Cumulative Projects

Project #	Name	Location	Description	Status
1	University Villages	Otay Ranch	This project proposes 6,897 homes and associated village land uses on approximately 755 acres and includes roughly 620 acres of Open Space Preserve for a total project area of approximately 1,375 acres.	Approved
2	Village Eight West	Otay Ranch	621 single-family dwelling units, 1,429 multi-family dwelling units, 300,000 square feet of commercial land use, 5.8 acres of community purpose facilities, 31.6 acres dedicated to school property, 27.9 acres of parkland.	Approved
3	Village Nine	Otay Ranch	266 Single-family dwelling units, 3,734 Multi-family dwelling units, 1,500,000 square feet of commercial land use, 5.0 acres of community purpose facilities, 19.8 acres dedicated to school property, 27.5 acres of parkland, 85.0 acres of Industrial/Research Technology Park, and 50.0 acres for future University site.	In environmental review, Draft EIR circulated for public review
4	Village Two	Otay Ranch	Approved: (1) 240 acres total, 1,839 dwelling units, 8.5 acres of mixed-use commercial land use, 12.5 acres dedicated to commercial land use, 60.7 acres dedicated to industrial, park, and community purpose facilities; (2) 160 acres total, 1,144 dwelling units. Proposed: In addition to the approved Village Two project there is currently a proposal to add1,552 residential units, an elementary school, parkland, and CPF facilities. The project may also include additional park and CPF facilities which partially or wholly satisfy the requirements generated by proposed residential and hotel development on the Otay Ranch PA-12 site.	Approved
5	Otay Ranch Planning Area 12 (PA-12)	Otay Ranch	Zone change on approximately 17.6 acres of land from the current freeway commercial zone to 15.9 acres of residential (High – 18 to 30 dwelling units per acre) and 1.0 acre of public park. Residential units would include a mix of one-, two-, and three-bedroom units for a total of 448 units. Commercial space would decrease from the originally proposed PA-12 project from 347,000 square feet to approximately 279,000 square feet. Approximately 554 on-site parking spaces and 136 garage parking spaces would be provided on site.	Approved

Table 6-2
Cumulative Projects

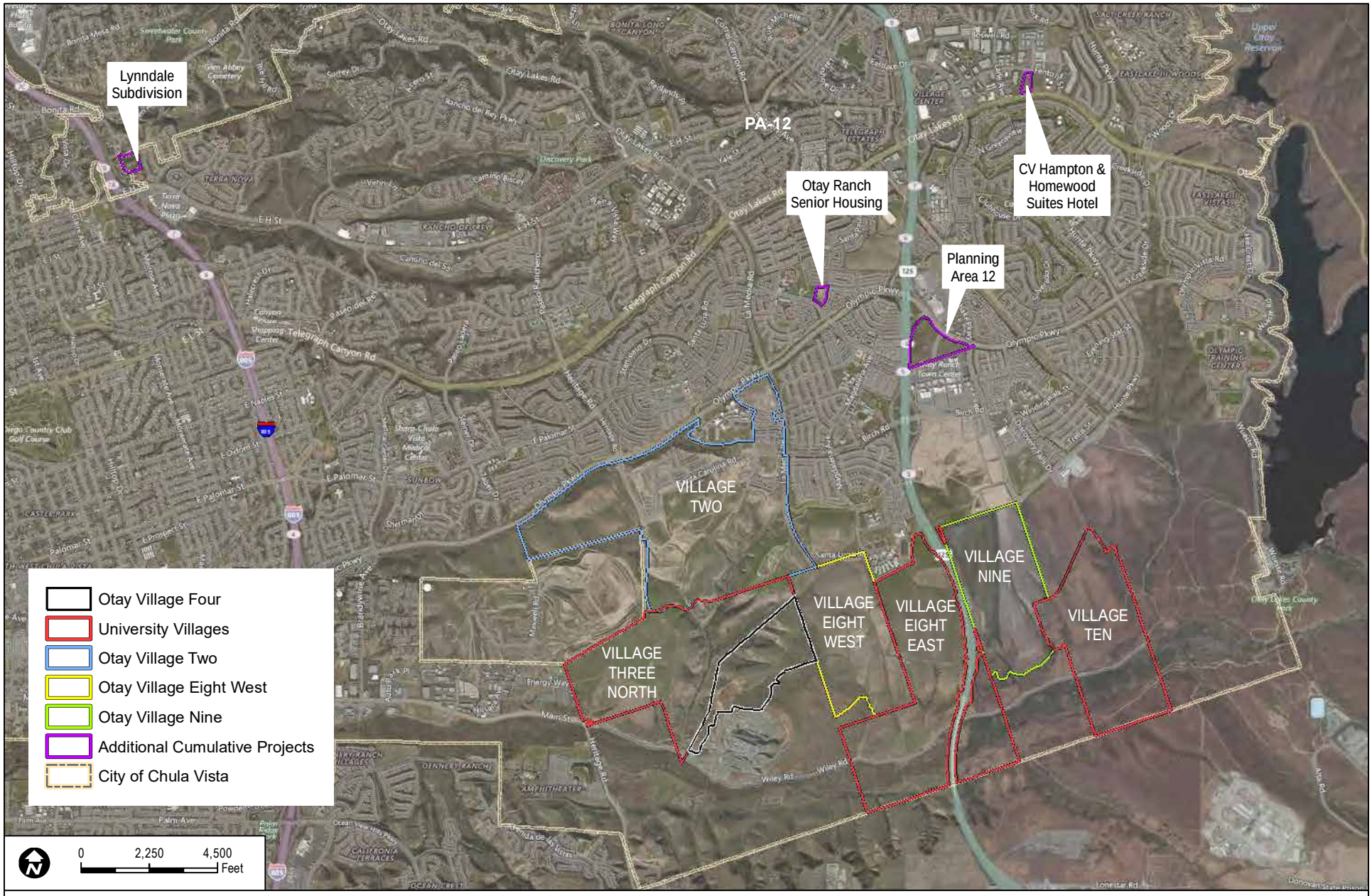
Project #	Name	Location	Description	Status
6	Otay Ranch Senior Care Facility	Otay Ranch Sectional Planning Area One, Village Five, CPF-5 site	Two-story building with 111 senior living units. The building will have a kitchen area, dining room, lounges, multi-purpose room, fitness area, beauty shop, clinic area, theater, game room, and other lifestyle rooms.	Approved
7	Hampton Inn and Homewood Suites Hotel	2424 Fenton Street	4-story, 131,220-square foot Hampton Inn and Homewood Suites Hotel with 205 guest rooms, including a meeting room, a pool and an outdoor recreation area on a 3.88-acre site	Approved
8	Lynndale Subdivision	Assessor's Parcel Number 592-100-4900	14 unit single family subdivision	Approved

6.3.2 Adopted Plans

From a regional approach, the cumulative analysis relies on the Regional Comprehensive Plan; General Development Plan (GDP); the Chula Vista General Plan; and other regional planning documents, including the Multiple Species Conservation Program (MSCP) Subarea Plan and Regional Air Quality Strategy (RAQS) in accordance with CEQA Section 15130(b)(1)(B).

6.4 CUMULATIVE IMPACT ANALYSIS

The discussion below evaluates the potential for the proposed project to contribute to an adverse cumulative impact on the environment. For issues addressed in this Draft EIR, the thresholds used to determine significance are those presented in each of the sections of Chapter 5, Environmental Analysis. For issues in which project impacts were determined to be less than significant during the preliminary environmental review process, the thresholds consist of the questions posed for that respective issue in Appendix G of the CEQA Guidelines. For each resource area, an introductory statement is made regarding what would amount to a significant cumulative impact in that resource area. Discussion is then presented regarding the potential for the identified cumulative projects to result in such a cumulative impact, followed by discussion of whether the project's contribution to any cumulative impact would be cumulatively considerable.



AERIAL SOURCE: BING MAPPING SERVICE

DUDEK

FIGURE 6-1

Cumulative Projects

Otay Ranch Village Four SPA Plan Environmental Impact Report

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6.4.1 Land Use, Planning, and Zoning

Significant adverse cumulative land use impacts would result from projects that contribute to development that is inconsistent with applicable plans or incompatible with existing or planned uses or planned addition of incompatible uses.

As described in Section 5.1, Land Use, Planning, and Zoning, the proposed project would not physically divide an established community. The proposed project would also be consistent with the City of Chula Vista General Plan, Otay Ranch GDP, City of Chula Vista Zoning Code, Parkland Dedication Ordinance, Parks and Recreation Master Plan, Otay Valley Regional Park Concept Plan, Airport Land Use Compatibility Plan – Brown Field, Growth Management Ordinance, Tentative Map requirements, and Greenbelt Master Plan. The proposed project would establish transit- and pedestrian-oriented development by developing higher-density housing near future transit stops and connecting pedestrians to Village Eight West. Additionally, the proposed project's amendments to the GDP would ensure no conflicts with an adopted plan, policy, or regulation governing land use.

The cumulative projects listed in Table 6-2 would all include similar project features, design standards, and balance of land uses. Additionally, all cumulative projects would be subject to similar criteria as the proposed project, which would ensure compliance with existing applicable land use plans with jurisdiction over the project site. Analysis of individual projects as they are submitted to the City of Chula Vista (City) will ensure compatibility with applicable plans and policies. Since all current and future projects would be analyzed for compatibility and compliance with land use regulations, the proposed project would not result in a cumulatively considerable impact.

The Chula Vista MSCP Subarea Plan and the Otay Ranch Resource Management Plan (RMP) are the applicable natural resource plans for the project and cumulative projects. The project would comply with the requirements of the Chula Vista MSCP Subarea Plan and the Otay Ranch RMP. Therefore, impacts to applicable habitat conservation plan or natural community habitat conservation plans would be less than significant.

The cumulative projects would be required to demonstrate compliance with the MSCP Subarea Plan and the RMP as part of project approval. Therefore, cumulative land use impacts associated with potential conflicts with HCPs or Natural Community Conservation Plans would be less than significant.

6.4.2 Landform Alteration/Aesthetics

As described in Section 5.2, Landform Alteration/Aesthetics, development of the proposed project would alter the visual quality of the project site. Scenic resources, such as Wolf Canyon,

would remain intact and visible from the future residential communities and scenic corridors; however, development of the project site would change the undeveloped, open and natural character of the on-site rolling hills to urbanized areas. This alteration in the visual character and quality of the site, combined with cumulative project development, is considered cumulatively considerable, when looking at Otay Ranch as a whole. However, the project's SPA Plan establishes compatible design guidelines including landscape design for roadways, parks, and other common use areas and architectural guidelines for all residences and structures. These guidelines would ensure consistent development standards throughout the project that would be consistent with nearby Villages and reduce degradation of the existing visual character or quality of the site and its surroundings.

The list of cumulative projects in Table 6-2 consists of primarily new residential projects similar in size, scale and scope to the proposed project. Although the visual quality or character would be impacted as a result of the proposed project and cumulative projects, none of the projects would substantially degrade a scenic resource or unique topographic feature or result in a substantial impediment to scenic views provided such development is consistent with planned land uses in the vicinity of the project and with General Plan development and design guidelines. Some cumulative projects would be located within already developed areas, as opposed to conversion of large areas of undeveloped land to developed uses. However, the proposed project, in combination with the cumulative projects, would contribute to a cumulative loss of views of natural open space. Therefore, due to the cumulative permanent conversion of the existing rural setting that characterizes Otay Ranch to an urban/built up setting, the project, in combination with planning future development, would result in a cumulatively considerable contribution to a cumulative impact.

Development in the vicinity of the project site include sources of nighttime lighting in the form of interior and exterior security lighting and parking, architectural highlighting, and landscape lighting. In addition, automobile headlights streetlights and stoplights along the roadway network contribute to ambient nighttime lighting levels on the project site. Development of the proposed project would contribute new sources of light to the surrounding area. The project includes lighting performance standards to minimize the proposed projects contribution to nighttime lighting and light sources. Lighting would be consistent with lighting standards prevalent in urbanized areas would adhere to all applicable City ordinances and standards. Also, compliance with the City and state energy conservation measures currently in place would limit the amount of unnecessary interior illumination during evening and nighttime hours. Therefore, in combination with all other cumulative projects, the proposed project would not considerably contribute to lighting and glare.

6.4.3 Biological Resources

Cumulative impacts consider the potential regional effects of a project and how a project may affect an ecosystem or one of its members beyond the project limits and on a regional scale. The Otay Ranch Program EIR analyzed the existing conditions, potential impacts, and mitigation measures related to biological resources for the entire Otay Ranch area, including the project site, which consists of approximately 23,000 acres in the County of San Diego, the City of Chula Vista, and the City of San Diego. The Otay Ranch Program EIR identified significant unavoidable impacts to biological resources in Otay Ranch due to loss of raptor foraging habitat (County of San Diego and City of Chula Vista 1993). Subsequent to the certification of the Program EIR and adoption of the Otay GDP, the City adopted the Chula Vista MSCP Subarea Plan, which is described in more detail in Section 5.3 of this EIR. The MSCP planning program provided for mitigation of impacts on sensitive species and their habitats on a regional basis (City of Chula Vista 2003). Such mitigation was not available at the time the Otay Ranch Program EIR was certified.

The proposed project, in combination with cumulative projects, would also result in the loss sensitive vegetation communities, which would be mitigated with conveyance of Preserve lands as required by the Otay Ranch RMP. Temporary construction areas would be revegetated with native vegetation. Additional wetlands mitigation is also expected as conditions of wetlands permits. The loss of sensitive plant species and vegetation communities would be mitigated through the conveyance of a specified number of acres of land to the City for every developed acre impacted, along with habitat restoration at appropriate ratios, pursuant to the Otay Ranch RMP (City of Chula Vista and County of San Diego 1996). This conveyance program, coupled with the maritime succulent scrub restoration program, would adequately conserve a greater or equal amount of special-status vegetation types within Otay Ranch. Implementation of these measures and consistency with the Chula Vista Subarea Plan and Otay Ranch RMP would mitigate cumulative biological impacts to MSCP Covered Species and their associated habitats. Similarly, University Villages, Village Eight West, Village Nine, and Village Two would all be developed in compliance with the MSCP Subarea Plan and Otay Ranch RMP, which would reduce impacts associated with development of these villages. The cumulative projects would be required to demonstrate compliance with the MSCP Subarea Plan and the RMP as part of project approval. Therefore, the proposed project, in combination with development of these villages, would not result in a cumulatively considerable contribution to biological impacts.

Implementation of the proposed project, in combination with cumulative projects, would contribute to the cumulative loss of biological resources within Otay Ranch and the City of Chula Vista Subarea. Compliance with the Subarea Plan conditions for coverage, the Otay Ranch RMP, and conveyance of compensatory mitigation lands to the Preserve Owner Manager and compensatory wetland mitigation required by state and federal wetlands permitting agencies

would ensure long-term sustainability of Covered Species and their associated habitats. Both the RMP and the City of Chula Vista MSCP Subarea Plan provide consideration for and mitigation of cumulative impacts to biological resources (City of Chula Vista 2003; City of Chula Vista and County of San Diego 1996).

6.4.4 Cultural Resources

A cumulative impact, in terms of cultural resources, refers to the mounting aggregate effect upon cultural resources due to modern or recent historic land use, such as residential development, and natural processes, such as erosion, that result from human acts. The issue that must be explored in a cumulative impact analysis is the aggregate loss of information and the loss of recognized cultural landmarks and vestiges of a community's cultural history.

Many projects in the area have centered on residential development, although other projects have included a transmission line, a commercial quarry, cell towers, planning studies, and public service infrastructure that involve sewer and water lines. Collectively, these projects reflect the eastward expansion of planned residential communities in Chula Vista and the need for improved and additional infrastructure. In addition to modern development, much of the area has been previously disturbed by agriculture activities, including plowing, disking, and grazing, including the project site. Nearly all of the land in the vicinity of the project site has been surveyed for cultural resources, and several archaeological sites located within this survey area have been identified, tested, and evaluated for significance.

Given the loss of prehistoric resources from pasts projects, especially habitation sites and temporary camps in the generally vicinity and on the Otay Mesa in combined with the previous impacts of roads, plowing, and erosion, the proposed project is considered to contribute to a cumulative impact on prehistoric cultural resources, since it represents the continued destruction of cultural resources.

Mitigation can be implemented to reduce impacts of the proposed project by ensuring the scientific recovery, study, documentation, and curation of significant sites to be impacted. Important information about prehistory would not be lost through a well-planned and executed mitigation program that documents and gathers all data from these non-replaceable and non-renewable resources. While any individual project may avoid or mitigate the direct loss of a specific resource, the effect is considerable when considered cumulatively. Although the actions of the proposed project would be mitigated through data recovery, curation, and reporting, the proposed project's contribution to a cumulatively considerable impact would not be reduced to a less-than-significant level. Therefore, the cumulative impact on cultural resources would be cumulatively considerable.

6.4.5 Transportation, Circulation, and Access

A cumulative traffic impact analysis was conducted for the proposed project as part of the Traffic Impact Analysis (TIA), which is provided as Appendix D to this EIR. The TIA used the University Village Traffic Impact Analysis Report for future year cumulative scenarios and is incorporated by reference herein (Chen Ryan 2014). This cumulative analysis estimated cumulative impacts on the studied roadway system (intersections and street segments) and analyzed whether the proposed project's contribution would be significant (or, for purposes of this analysis, cumulatively considerable). The following intersections and roadway segments would be cumulatively impacted by the proposed project:

Existing Plus Project

- Olympic Parkway/I-805 Southbound (SB) Ramps (PM peak) – significant cumulative impact
- Olympic Parkway/I-805 Northbound (NB) Ramps (AM peak) – significant cumulative impact
- Olympic Parkway/Brandywine Avenue (PM peak) – significant cumulative impact
- Olympic Parkway: Brandywine Avenue to Oleander Avenue– significant cumulative impact
- Olympic Parkway: Oleander Avenue to Heritage Road– significant cumulative impact

Mid-Term (2020)

- I-805 SB Ramps/Olympic Pkwy (AM/PM peak) – significant cumulative impact
- I-805 NB Ramps Olympic Pkwy (AM/PM peak) – significant cumulative impact
- Olympic Pkwy/Brandywine Ave (AM/PM peak) – significant cumulative impact
- Olympic Pkwy/Heritage Road (AM peak) – significant cumulative impact
- Olympic Parkway: I-805 SB Ramps to I-805 NB Ramps – significant cumulative impact
- Olympic Parkway: I-805 NB Ramps to Oleander Avenue – significant cumulative impact
- Olympic Parkway: Oleander Avenue to Brandywine Avenue – significant cumulative impact
- Olympic Parkway: Brandywine Avenue to Heritage Road – significant cumulative impact

Long-Term (2030)

- I-805 SB Ramps/Olympic Pkwy (PM peak) – significant cumulative impact
- I-805 NB Ramps/Olympic Pkwy (AM peak) – significant cumulative impact
- Olympic Parkway: I-805 NB Ramps to Oleander Avenue – significant cumulative impact

As described in Section 5.5, Transportation, Circulation, and Access, all cumulative impacts would be mitigated to a level below significance with the exception of cumulative impacts to Caltrans facilities.

6.4.6 Air Quality

In analyzing cumulative impacts from the proposed project, the analysis must specifically evaluate a project's contribution to the cumulative increase in pollutants for which the San Diego Air Basin (SDAB) is designated as nonattainment for selected air pollutants under California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS). If the proposed project does not exceed thresholds and is determined to have less than significant project-specific impacts, it may still contribute to a significant cumulative impact on air quality if the emissions from the project, in combination with the emissions from other proposed or reasonably foreseeable future projects, are in excess of established thresholds. However, the project would only be considered to have a significant cumulative impact if the project's contribution accounts for a significant proportion of the cumulative total emissions (i.e., it represents a "cumulatively considerable contribution" to the cumulative air quality impact).

Additionally, for the SDAB, the RAQS serves as the long-term regional air quality planning document for the purpose of assessing cumulative operational emissions in the basin to ensure the SDAB continues to make progress toward NAAQS- and CAAQS-attainment status. As such, cumulative projects located in the San Diego region would have the potential to result in a cumulative impact to air quality if, in combination, they would conflict with or obstruct implementation of the RAQS. Similarly, individual projects that are inconsistent with the regional planning documents upon which the RAQS are based would have the potential to result in cumulative operational impacts if they represent development and population increases beyond regional projections.

As described in Section 5.6, Air Quality, of this EIR, the SDAB has been designated as a federal nonattainment area for ozone (O_3) and a state nonattainment area for O_3 and particulate matter (PM_{10} and $PM_{2.5}$). PM_{10} and $PM_{2.5}$ emissions associated with construction generally result in near-field impacts. The nonattainment status is the result of cumulative emissions from all sources of these air pollutants and their precursors within the SDAB. Construction would be short term and temporary. Once construction is completed, construction-related emissions would cease. As described in Section 5.6, Air Quality, operational emissions generated by the proposed project would not exceed the significance thresholds for VOC, NO_x, carbon monoxide (CO), SO_x, PM_{10}, or $PM_{2.5}$, and would not cause a significant impact. As such, the proposed project would result in less-than-significant impacts to air quality relative to operational emissions.

Regarding long-term cumulative operational emissions in relation to consistency with local air quality plans, the SIP and RAQS serve as the primary air quality planning documents for the state and SDAB, respectively. The SIP and RAQS rely on SANDAG growth projections based on population, vehicle trends, and land use plans developed by the cities and the County of San Diego as part of the development of their general plans. Therefore, projects that propose development that is consistent with the growth anticipated by local plans would be consistent with the SIP and RAQS and would not be considered to result in cumulatively considerable impacts from operational emissions. The proposed project would be consistent with the existing zoning and land use designation for the site, and would not result in significant regional growth that is not accounted for within the RAQS. Additionally, the proposed project is consistent with the existing use for the site; thus, at a regional level, it would be consistent with the underlying growth forecasts in the SIP and RAQS. As a result, the proposed project would not result in a cumulatively considerable contribution to regional O_3 concentrations or other criteria pollutant emissions. Cumulative impacts would be less than significant.

Construction of cumulative projects simultaneously with the proposed project would result in a temporary addition of pollutants to the local airshed caused by soil disturbance and hauling activities, fugitive dust emissions, and combustion pollutants from on-site construction equipment, as well as from off-site trucks hauling construction materials and worker vehicular trips. Fugitive dust (PM_{10} and $PM_{2.5}$) emissions would primarily result from site preparation activities. NO_x and CO emissions would primarily result from the use of construction equipment and motor vehicles, the latter of which would generally be dispersed over a large area where the vehicles are traveling. The closest cumulative projects to be constructed in the vicinity of the project site are Village Three to the west, and Village Eight West and Village Eight East located immediately east of the site. Village Two is also located to the north and is currently under construction. Construction of these villages would employ similar construction practices, equipment fleets, and construction schedules as the proposed project; therefore, the potential exists for various construction phases of these projects to occur concurrently, resulting in cumulatively considerable air emissions.

As described in Section 5.6, the emissions of NO_x and CO would exceed the applicable significance threshold levels during construction. To reduce NO_x and CO emissions, mitigation measures MM-AQ-1 through MM-AQ-3 would be implemented. Following implementation of mitigation, emissions would not be reduced to a level below the City's significance thresholds. As such, effects regarding NO_x and CO emissions during construction activities would be significant and unavoidable. Additionally, emissions of PM_{10}, $PM_{2.5}$, NO_x, and/or VOCs generated during project construction would be primarily localized to the proposed project site. Moreover, the proposed project would be required to comply with SDAPCD Rule 55 regarding fugitive dust emissions. Although emissions would be below the thresholds at the project level, generation of these criteria pollutant emissions when combined with other cumulative projects, particularly those

occurring simultaneously during various construction periods of the proposed project, could potentially result in a temporary significant cumulative impact to air quality. Mitigation measures MM-AQ-1 and MM-AQ-2 would be implemented to reduce fugitive dust emissions.

Should other projects occur in the vicinity of the proposed project, significant effects related to NO_x and CO emissions would be further intensified due to exhaust emissions from construction equipment, worker vehicles (resulting in increased NO_x and CO emissions) and truck trips associated with material deliveries and on-site hauling activities. While construction would be short-term and temporary in nature occurring over an approximate 22-month period, the proposed project's temporary cumulative construction effects relative to NO_x and CO emissions would be significant and unavoidable following project-specific mitigation when considered in combination with reasonably foreseeable future projects under the cumulative scenario.

Regarding operational emissions, the proposed project would not result in an increase in land use intensity or an increase in vehicle trips that has not been anticipated in local air quality plans; therefore, the proposed project would be consistent at a regional level with the underlying growth forecasts, development, and associated vehicle trips as anticipated in the RAQS. Therefore, because the proposed project would not exceed the growth projections in the RAQS, impacts associated with project operations would not be cumulatively considerable.

6.4.7 Hazards and Risk of Upset

Cumulative impacts related to hazards and hazardous materials would result from projects that combine to increase exposure to hazards and hazardous materials. As discussed in Section 5.7, Hazards and Risk of Upset, the proposed project would have less-than-significant impacts with mitigation incorporated. Past, current, and reasonably foreseeable commercial projects in the region would result in the use and transport of incrementally more oils, greases, and petroleum products for operation purposes. Although these could be subject to accidental spillage, there is no quantifiable cumulative effect, since accidents are indiscriminate events, not related or contributory to one another. Provided that individual projects adhere to current laws governing storage, transportation, and handling of hazardous materials, no significant cumulative hazards or threats to human health and safety are anticipated. Furthermore, since the project site was historically used for agricultural purposes, in the event that contaminated soils are encountered during grading and excavation, it could result in increased health risks to construction workers, future residents, and potentially impact water quality. Prior to major grading, the proposed development would be required to further test soils for contamination. Remediation may be required that would involve the removal of top soil and disposing of it. A majority of cumulative projects listed in Table 6-2 would also take place in Otay Ranch on lands that were historically used for agriculture. Therefore, potential soil contamination could create a similar hazard to public health during grading and excavation. These lands would also be required to further analyze soils and mitigate any potentially

significant hazards. Therefore, with additional testing and compliance with applicable mitigation measures the proposed project would not be cumulatively considerable.

Given the climatic, vegetation, and topographic characteristics of the project site, along with the fire history and fire behavior modeling results discussed in the Fire Protection Plan (FPP) (Appendix F), post-development, the project site would be potentially vulnerable to wildfire encroaching or spotting into the retained open space fuels. Since these fuels would be preserved adjacent to the development areas, fire-protection design features have been included in the development of the proposed project. The cumulative projects are also in the same surrounding area and would be vulnerable to wildfires as well. Development of the proposed project would include ignition resistant materials per the latest Chula Vista Fire and Building Codes. Structure protection would be complemented by a system of improved water availability, capacity, and delivery; fire department access; monitored defensible space/fuel modification; interior fire sprinkler systems in all structures and monitored interior sprinklers in applicable structures; and other components that would provide properly equipped and maintained structures with a high level of fire ignition resistance. Implementation of the FPPs would reduce wildland fire risk to less than significant. Cumulative projects would also be required to implement similar fire safety features and structure protection features to reduce impacts. Preparation of FPPs would further reduce cumulative project impacts.

6.4.8 Noise

Potential cumulative impacts on noise would result when projects combine to generate noise levels in excess of the City of Chula Vista Ordinance standards, either during construction or operation. Project-generated construction noise would pose a potentially significant impact on noise-sensitive receptors if construction hour limitations are not imposed. As discussed in Section 5.8, Noise, with distribution of project-generated trips onto the area roadway network off site, the noise attributable to project contributed trips versus regional traffic becomes largely indistinguishable. Over time, as development continues in Otay Ranch, the ambient noise level would increase as traffic volumes increase and a general increase in urban activities and human presence occurs.

Noise effects of the project would, for the most part, be confined to the project site and were evaluated on a project-specific basis. Long-term on-site activities associated with the project would not have a regional effect upon community noise levels (see Section 5.8), and therefore need not be considered in combination with approved or proposed projects in the region. The one exception is the project's contribution to traffic-related noise levels, which extend beyond the site boundaries, and which must be considered in the context of proposed projects in the region. The project's contribution to cumulatively significant noise impacts is presented in Table 6-3. The methodology again uses the TNM model to compare the resulting noise levels from Year 2030 with and without project traffic volumes.

Table 6-3
Project Contribution to Off-Site Traffic Noise – Year 2030
(Off-Site Traffic Noise Level Increase)

Roadway (segment)	Rcvr #	CNEL (dBA)		
		Year 2030	*Year 2030 + Project*	*dBA Change*
La Media Road Olympic Parkway to Santa Venetia Street	R1	57	58	1
La Media Road Santa Venetia Street to Birch Road	R2	59	59	0
La Media Road Birch Road to Santa Luna Street	R3	58	58	0
La Media Road Birch Road to Main Street	R4	57	58	1

Sources: Section 5.8 and Appendix G

As seen in Table 6-3, the project's contribution to cumulative noise levels would be limited; a 1 dBA increase at most (see Appendix G), which by itself is not a discernible increase. Additionally as shown in Table 6-3, the proposed project would not result in any modeled receivers to exceed the City's 65 dBA CNEL noise standard for residential land uses (see Appendix G). Therefore, the project's contribution to increased noise levels would not be cumulatively considerable.

6.4.9 Water Quality and Hydrology

Cumulative water quality impacts result from projects that combine to either pollute or increase the turbidity of water. Cumulative hydrology impacts also result from projects combining to alter the course of surface water flow or to increase flood hazards in a particular area, either through diverting floodways or constructing structures within the floodways. As stated in Section 5.9, Water Quality and Hydrology, during construction and operation, the proposed project has the potential to violate water quality standards. However, compliance with the Chula Vista Storm Water Management and Discharge Control Ordinance, the City of Chula Vista Subdivision Manual, Design and Construction Standards of the City of Chula Vista, San Diego Area Regional Standard Drawings, and Standard Specifications for Public Works Construction, as well as the preparation of site-specific Storm Water Pollution Prevention Plans (SWPPPs) and the project-specific drainage and hydrology reports (Appendices H1 and H2), impacts would remain below a level of significance. Furthermore, because all surrounding projects are regulated under the same City and Regional Water Quality Control Board standards, they too would be required to attenuate all drainage on site (to maintain pre development flow quantities) and to incorporate water quality design features to prevent cumulative impacts to local drainage systems or water quality. Therefore, the proposed project would not contribute to a cumulatively considerable impact related to water quality.

Landform grading for the proposed project, in combination with cumulative projects identified in Table 6-2, would be incorporated to mimic existing conditions on the sites where the proposed

grading ties into or daylights with the existing terrain. It is intended that the stormwater from the manufactured slopes would sheet flow and follow existing drainage patterns (Appendices H1 and H2). Cumulative projects would also be required to take into consideration similar grading modifications to reduce stormwater runoff and erosion; therefore, impacts would not be cumulatively considerable.

6.4.10 Geology and Soils

Potential cumulative impacts on geology and soils would result from projects that combine to create geologic hazards, including unstable geologic conditions, or substantially contribute to coastal erosion. Most geology and soil hazards associated with development on surrounding projects would be site-specific and can be mitigated on a project-by-project basis. Such hazards include exposure of people or structures to rupture of an earthquake fault, liquefaction, landslides, unstable geologic units, and expansive soils. Individual project mitigation for these hazards would ensure that there are no residual cumulative impacts. Proper engineering design, utilization of standard construction practices, adherence to the erosion control standards established by the City's Grading Ordinance, implementation of best management practices (BMPs) required by the SWPPP, and implementation of the recommendations found in the Geotechnical Investigation Report (Appendix I) would ensure that the potential for geological impacts resulting from the project would be less than significant. Since geologic hazards are site-specific and not cumulative, the proposed project would not have a cumulatively considerable impact.

Excavation and ground-disturbing activities during construction of the proposed project and cumulative projects could potentially leave loose soil exposed to the erosive forces of rainfall and high winds, which would increase the potential for soil erosion and loss of topsoil. Adequate drainage on project sites is critical in reducing potential soil erosion or the loss of topsoil. The cumulative project sites should be graded and maintained such that surface drainage is directed away from structures in accordance with the most recent building code or other applicable standards. In addition, surface drainage should be directed away from the top of slopes into swales or other controlled drainage devices. Earth-disturbing activities associated with construction would be temporary and in compliance with the General Construction Permit and BMPs outlined in the SWPPP; therefore, cumulative impacts related to soil erosion and the loss of topsoil would be less than significant. Furthermore, implementation of BMPs and proposed drainage facilities would ensure that cumulative impacts related to soil erosion and the loss of topsoil would be less than significant.

6.4.11 Public Services and Utilities

Cumulative impacts on public services, including fire and police protection, parks, schools, and libraries, would result when projects combine to increase demand on services such that additional services must be constructed or provided. As with public services, cumulative impacts to utilities and services systems would result when projects combine to increase demand for utilities and service systems such that additional facilities must be provided or expanded. This would usually result from incremental addition of people occupying an area or incremental construction of new or larger buildings requiring public services provision. The SPA Plans implemented in Otay Ranch, including the proposed project, include development standards that would apply to all future build-out of the planning area and specifically include development elements and/or policies and measures to ensure that adequate public facilities and utilities such as fire, emergency medical services, law enforcement, schools, parks, water, and wastewater are provided in conjunction with build-out of the development. Specific to water, each SPA Plan is required to prepared a water conservation plan to minimize use of water. Additionally, if the City Engineer finds that there is not adequate sewer capacity, building permits issuance would halt until adequate capacity is attained. By requiring the proposed project to pay a Public Facilities Development Impact Fee (PFDIF) prior to the issuance of each building permit, cumulative impacts related to public services and utilities would be less than significant.

Total permitted capacity at the Otay Landfill is approximately 62.4 million cubic yards, and the landfill has a remaining capacity of 53%, or 33.1 million cubic yards. The 2005 General Plan Update EIR (City of Chula Vista 2005a) concluded that there is sufficient capacity within the Otay Landfill to accommodate project solid waste generated anticipated under the General Plan Update, which includes development of Village Four. The Otay Landfill is scheduled to close in 2028; however, under the current franchise agreement between the City of Chula Vista and Republic Services, solid waste would be disposed of at the Sycamore Landfill once the Otay Landfill meets its permitted capacity and terminates solid waste services. As such, solid waste service would continue following closure of the Otay Landfill and permitted capacity would be available to accommodate the proposed project and cumulative projects. Waste collection for proposed and planned land uses would be provided by the City of Chula Vista under its contract agreement with Republic Services. The waste collection procedures and programs for all planned and proposed developments would be required to comply with the municipal requirements for recycling and collection of solid waste, including provision for litter control for public events. All planned and proposed projects would be required to be consistent with all applicable statutes and regulations, and would therefore not have cumulatively considerable impacts with respect to solid waste collection and management.

Implementation of the proposed project and cumulative development in the surrounding area would result in an increased energy demand at full buildout. A significant cumulative impact to

energy resources would result if demand exceeds the City's available supply and new or expanded facilities are required. As discussed in Section 5.11, Public Services and Utilities, the proposed project and other cumulative projects are required to meet the mandatory energy standards of the Chula Vista Energy Code, current California Code of Regulations Title 24, Part 6 California Energy Code, and Part 11 California Green Building Standards. Compliance with these policies and other energy reduction strategies would ensure that energy use as a result of development would not be wasteful, inefficient, or unnecessary. Additionally, the proposed project includes a non-renewable energy plan that incorporates project design measures to minimize energy use.

San Diego Gas & Electric has indicated that without an increased import capacity, including a new substation within the Otay Ranch area, future energy needs could not be ensured. The new substation would be located in the Eastern Urban Center, south of the east end of Hunte Parkway. Construction of the substation is expected to begin in late 2014 and was expected to be placed in service in late 2015 (SDG&E 2013). The California Public Utilities Commission approved construction of this substation, known as the Salt Creek Substation, in 2016, with construction expected to be complete in late 2018, prior to completion of the proposed project (CPUC 2016). As such, infrastructure for the continued long-term delivery of energy to the Otay Ranch area would be in place prior to the completion of the project, and would be in place for full buildout of Otay Ranch. The 120-megavolt amperes substation would provide infrastructure necessary to provide power to buildout of Otay Ranch (CPUC 2016), but would not generate electricity or guarantee that adequate supply would be available. Therefore, because no assurance can be made that long-term energy would be supplied to the site and other planned sites, at full buildout and beyond, impacts would be cumulatively considerable.

6.4.12 Climate Change

Greenhouse gas (GHG) emissions and their contribution to climate change are widely recognized as a global problem, and California has acknowledged this phenomenon as a state concern. Assembly Bill 32, passed by state legislature in 2006, states in part that "global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California." Climate change is a global phenomenon and as such, the analysis of the proposed project's impacts to climate change is cumulative in nature. As discussed in Section 5.12, Climate Change, with a service population of 958 persons, the proposed project would result in per-capita GHG emissions of approximately 3.4 metric tons (MT) carbon dioxide equivalent (CO_2E) per service population per year. Implementation of MM-GHG-1 would minimize GHG emissions associated with project operations. However, approximately 61% of the project's annual GHG emissions would be from mobile sources (see Section 5.12). Consequently, to reduce GHG emissions to a less-than-significant level, the project would need to reduce mobile emissions by approximately 61% to reduce the amount of GHG emissions generated by the

proposed project (see Section 5.12). Because the proposed project's service population-based emissions would be more than the City's proposed efficiency metric of 1.3 MT CO_2E per service population per year, GHG emissions would be significant.

6.4.13 Housing and Population

The proposed project would directly contribute to population growth in the City of Chula Vista. The proposed project would develop 350 residential dwelling units, composed of 73 low- to medium-density single-family units, 160 medium- to high-density multi-family units, and 117 high-density multi-family units. The proposed project would directly contribute to population growth in the area through the development of these dwelling units. Based on the City's household coefficient of 3.33 persons per single-family unit and 2.58 persons per multi-family unit (City of Chula Vista 2005b), the proposed project is expected to generate a buildout population of approximately ~~959~~ 958 persons. Through previous Otay Ranch GDP planning efforts, the project site was allocated 350 residential units, resulting in a planned built-out population increase of approximately 1,141 persons (City of Chula Vista and County of San Diego 1993). Although the proposed project would include a different unit count mix, it would not exceed the planned population growth or maximum unit count accounted for in the GDP. The project would be consistent with long-term planned development and growth of the Otay Ranch area, and would not result in a cumulative impact.

6.4.14 Paleontological Resources

Potential for impacting paleontological resources vary from site to site and are dependent on specific excavation requirements for each project. The proposed project has the potential to encounter paleontologically sensitive soils and formations during project excavation. Incorporation of mitigation would ensure proper handling and recordation of any paleontological resources encountered (see Section 5.14), and all cumulative projects with potential to encounter paleontological resources would be subject to similar requirements. Therefore, the project would not result in a cumulatively considerable impact.

CHAPTER 7
GROWTH INDUCEMENT

Section 15126.2(d) of the CEQA Guidelines mandates that the growth-inducing nature of a proposed project be discussed. This CEQA Guideline states that the growth inducing analysis is intended to address the potential for the project to "foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment." Further, the CEQA Appendix G Checklist (Population and Housing) mandates that a CEQA document speak to a project's likelihood to induce substantial population growth in an area, either directly (for example, by proposing new homes or businesses) or indirectly (for example, through extension of roads or other infrastructure).

A project may be distinguished as either facilitating planned growth or inducing unplanned growth. Facilitating growth is relating to the establishment of direct employment, population, or housing growth that would occur within a project site. Inducing growth is related to lowering or removing barriers to growth or by creating an amenity or facility that attracts new population/economic activity. For purposes of this EIR analysis, a significant growth-inducement impact would occur if the project, and all associated infrastructure improvements, directly or indirectly removes obstacles to growth such that the induced growth would significantly burden existing community services or the environment, or cause a demand for a General Plan Amendment.

This chapter contains a discussion of the growth-inducing factors related to the proposed Otay Ranch Village Four Sectional Planning Area (SPA) Plan Project (project) and as defined under CEQA Guidelines Section 15162.2(d). A project is defined as growth inducing when it directly or indirectly:

1. Fosters population growth;
2. Fosters economic growth;
3. Includes the construction of additional housing in the surrounding environment;
4. Removes obstacles to population growth;
5. Taxes existing community service facilities, requiring construction of new facilities that could cause significant environmental effects; and/or
6. Encourages or facilitates other activities that could significantly affect the environments, either individually or cumulatively.

It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

7.1 GROWTH INDUCEMENT DUE TO POPULATION GROWTH

The proposed project would directly contribute to population growth in the City of Chula Vista (City). The proposed project would develop 350 residential dwelling units composed of 73 low- to medium-density single-family units, 160 medium- to high-density multi-family units, and 117 high-density multi-family units. The proposed project would directly contribute to population growth in the area through the development of these dwelling units, which include a mix of single-family and multi-family units. Based on the City's household coefficient of 3.33 persons per single-family unit and 2.58 persons per multi-family unit (City of Chula Vista 2005), the proposed project is expected to generate a buildout population of approximately 958 persons. Through previous Otay Ranch General Development Plan (GDP) planning efforts, the project area was allocated 350 residential units, resulting in a planned built-out population increase of approximately 1,141 persons (City of Chula Vista and County of San Diego 1993). Although the proposed project includes a different unit count mix compared to the GDP, it would not exceed the planned population growth or maximum unit count accounted for in the GDP.

The San Diego Forward: Regional Plan (SANDAG 2015) combines the region's two most important existing planning documents: the Regional Comprehensive Plan (RCP) and the Regional Transportation Plan and its Sustainable Communities Strategy (RTP/SCS). The RCP, adopted in 2004, laid out key principles for managing the region's growth while preserving natural resources and limiting urban sprawl. The plan covers policy areas including urban form, transportation, housing, healthy environment, economic prosperity, public facilities, our borders, and social equity (SANDAG 2004). These policy areas were addressed in the 2050 Regional Transportation Plan and its Sustainable Communities Strategy (2050 RTP/SCS) (SANDAG 2011), and are now fully integrated into San Diego Forward. As part of the regional planning effort for San Diego Forward, the San Diego Association of Governments (SANDAG) solicited input from the City for projects that were in the planning phases. The proposed project was among the list of projects provided to SANDAG, and, thus, growth forecasts associated with San Diego Forward include population growth resulting from the proposed project.

Furthermore, the City of Chula Vista Growth Management Program, outlined in the Chula Vista Municipal Code Chapter 19.09, Growth Management, calls for directing growth in and around the City in an orderly fashion, to avoid "leapfrog" development, to protect and preserve the City's amenities, and to guide growth in a general west to east direction. The proposed project fosters a development pattern that promotes orderly growth and prevents urban sprawl by connecting to Village Eight West. The proposed project would promote synergistic uses between surrounding villages that would balance activities, services, and facilities with employment, housing, transit, and commercial opportunities. Additionally, the proposed project would contribute open space through conveyance to the Otay Ranch Preserve area, Chula Vista Multiple Species Conservation Program (MSCP) Subarea, and Otay Valley Regional Park. The project site's edge would be consistent with

the Otay Ranch Resource Management Plan and Chula Vista MSCP Subarea Plan, providing a "soft" transition to Wolf Canyon and Otay Valley Regional Park.

The project would not facilitate growth in an area of the City that has not been planned for residential growth or that was projected to remain vacant. Therefore, although the proposed project would result in direct population growth, it was accounted for in local and regional plans.

7.2 GROWTH INDUCEMENT DUE TO ECONOMIC GROWTH

An increase in population would foster economic growth by increasing demand for regional and local goods and services. It is expected that future residents would demand a variety of goods and services, some of which may be provided by the future commercial uses established within the surrounding villages. The proposed project would not provide services on site, and, thus, would not generate direct employment opportunities for residents.

The proposed project would primarily be composed of a residential development around Rock Mountain. Because of the unique scenic value of Rock Mountain, this area would contain a greater proportion of low-density development and open space. The proposed project's location and limited area prevent it from fully functioning as an urban village. Due to the lower-density character of the proposed project and its relatively small area in comparison to surrounding Otay Ranch Villages, it is likely that the proposed project would relate closely to Villages Seven and Eight, relying on these villages' retail, employment opportunities, and other services. Specifically, one objective of the proposed project is to promote synergistic uses between the project site and Village Eight West and the University/Regional Technology Park to balance employment, retail, educational activities, services, housing, and public facilities.

As the project proposes development of 350 residences, a community purpose facility, and designation of open space and open space Preserve, the project is not expected to result in substantial growth inducement associated with economic growth.

7.3 GROWTH INDUCEMENT DUE TO ADDITIONAL HOUSING

Through previous Otay Ranch GDP planning efforts, the project was allocated 350 residential units, resulting in a planned built-out population increase of approximately 1,141 persons. As outlined above, the proposed project would include development of 350 residential dwelling units, resulting in a population increase of approximately 958 persons. The proposed project would not exceed the maximum residential buildout for Village Four set forth by the Otay Ranch GDP, and would be consistent with the housing policies contained in the City's General Plan and Otay Ranch GDP.

7.4 GROWTH INDUCEMENT DUE TO REMOVAL OF OBSTACLES

Improvements to transportation, utilities, and public service infrastructure as part of the proposed project would help alleviate existing infrastructure deficiencies and accommodate planned growth, but would not result in a significant amount of unplanned growth to the area.

These improvements would not open up new areas to development because on-site infrastructure would be sized to serve the project site and to provide an extension of Main Street to accommodate connections to Village Eight and Village Three. Approximately 11.68 acres of the project site would be used for roadway and circulation right-of-way, which includes an approximately 2-mile eastern extension of Main Street to provide primary circulation through the project site and to provide connection to the surrounding existing and planned regional circulation network. Main Street would include a raised median, three travel lanes in each direction, Class II bicycle lanes in each direction, and a buffered 5-foot-wide pedestrian walkway on each side of the roadway. Direct pedestrian links would extend through the proposed project site into Village Eight West, and future connections would be provided to Village Three via Main Street. In addition to the extension of Main Street, four internal village streets (Streets "A," "B," "C," and "D") are proposed.

In relation to utilities, water service to the proposed project would be served by the Otay Water District. A water system would be installed in accordance with the standards of the Otay Water District, and would be maintained and operated by the Otay Water District. Sewer service for the proposed project would be provided by the City and be connected to City sewers. The proposed project sewer would extend approximately 0.5 mile southwest from Main Street. All utilities would be underground, and easements would be provided as necessary. The proposed storm drain system and layout, shown in Figure 4-13 in Chapter 4 of this EIR, would be designed to address peak flows and to integrate features needed to comply with the City's Standard Urban Stormwater Mitigation Plan requirements for water quality. The proposed storm drain system would be designed to prevent the co-mingling of treated flows with untreated runoff. A water quality basin with accommodating storm drain lines and an off-site sewer main would be constructed south of Main Street on the southwest portion of the site. The proposed storm drain would extend approximately 0.5 mile southwest from Main Street. Dry utilities would be extended underground throughout the project site, primarily within streets and other public easements. Telephone, cable television, and internet service would be provided by companies such as Cox Communications, Time Warner, and AT&T. Gas and electric services would be provided by San Diego Gas and Electric.

Public services such as schools, and police and fire services would be provided by existing and planned surrounding facilities.

Infrastructure would not provide surplus capacity that would allow for additional, unplanned development. Public Facilities Financing Plans (PFFPs) are included with each SPA Plan to

ensure that public utilities would be provided concurrently with development. The proposed project would not provide surplus infrastructure capacity that would induce growth in surrounding areas, but would, rather, help accommodate the continued population influx in eastern Chula Vista over the next several decades. Therefore, the proposed project would not result in growth inducement due to the removal of obstacles.

7.5 TAXATION OF EXISTING PUBLIC FACILITIES AND SERVICES

As described in Section 5.13, Housing and Population, the proposed project would be in compliance with the City of Chula Vista Growth Management Ordinance (GMO) and established "quality of life" threshold standards. The Growth Management Oversight Commission is charged with reviewing the GMO annually to ensure compliance and make recommendations, as necessary. The GMO requires PFFPs for every SPA Plan. A PFFP is required in conjunction with the preparation of a SPA Plan to ensure that development of the proposed project is consistent with the overall goals and policies of the General Plan, and would not degrade public services. The PFFP provides a complete description of all public facilities included within the boundaries of the SPA Plan area, including phasing and financing of infrastructure. The PFFPs ensure that development of the SPA Plan would not adversely impact the City's quality of life standards by requiring public facilities and services be provided concurrent with demand. Therefore, compliance with the regulations listed above would ensure that development of the proposed project would not tax existing public facilities and services.

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CHAPTER 8
SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

8.1 IRREVERSIBLE ENVIRONMENTAL CHANGES

CEQA Guidelines Section 15126.2(c) indicates that:

> "[U]ses of non-renewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or non-use thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified."

Implementation of the Otay Ranch Village Four Sectional Planning Area (SPA) Plan Project (project) would involve consumption of limited, slowly renewable, and non-renewable resources. This consumption would occur during the construction phase of the project and would continue throughout its operational lifetime. The project would require a commitment of resources that would include (1) building materials, (2) fuel and operational materials/resources, and (3) the transportation of goods and people to and from the project site.

Construction of the project would require the consumption of resources that are not renewable or that may renew so slowly as to be considered non-renewable. These resources would include the following construction supplies: certain types of lumber and other forest products; aggregate materials used in concrete and asphalt such as sand, gravel, and stone; metals such as steel, copper, and lead; petrochemical construction materials such as plastics; water; and fossil fuels such as gasoline and oil.

The resources that would be committed during operation of the project would include water for drinking and bathing, and fossil fuels for electricity, natural gas, and transportation. Fossil fuels would represent the primary energy source associated with construction and ongoing operation of the project, and the existing, finite supplies of these natural resources would be incrementally reduced. However, the project includes a Non-Renewable Energy Conservation Plan that identifies feasible methods to reduce the consumption of non-renewable energy resources. Additionally, the project includes a Water Conservation Plan that includes mandatory water reduction measures for residential and non-residential land uses.

The project would involve an unquantifiable, but limited, use of potentially hazardous materials typical of residential uses, including cleaning solvents, and fertilizers and pesticides for

landscaping. These materials would be contained, stored, and used on site in accordance with manufacturers' instructions, and applicable standards and regulations. Compliance with regulations would serve to protect against a significant and irreversible environmental change that could result from the accidental release of hazardous materials.

The proposed project site has been historically used for agricultural. Development within the project site would contribute to the incremental and cumulative loss of agricultural lands (Farmland of Local Importance and Grazing Land). This would be an irreversible consequence of converting the proposed project site to urban uses. However, this site has been planned as part of the Otay Ranch General Development Plan (GDP) to serve as a series of urban villages to provide single-family and multi-family residential units, village cores containing commercial uses, parks (neighborhood and regional), community-purpose facility uses, schools, affordable housing, and potential transit stops (City of Chula Vista and County of San Diego 1993). No additional loss of agricultural land would occur beyond what was planned for in the Otay Ranch GDP.

CHAPTER 9
EFFECTS FOUND NOT TO BE SIGNIFICANT

Section 15128 of the California Environmental Quality Act (CEQA) Guidelines requires that an Environmental Impact Report (EIR) briefly describe potential environmental effects that were determined not to be significant and therefore were not discussed in detail in the EIR. The environmental issues discussed below are not considered significant for the proposed Otay Ranch Village Four Sectional Planning Area (SPA) Plan Project (project), and the reasons for the conclusion of non-significance are discussed below.

9.1 AGRICULTURE AND FORESTRY RESOURCES

Historical agricultural uses within the project site included farming, and cattle and sheep ranching. Crop production was limited to the "dry farming" of hay and grains due to the lack of water (Atlantis Group 2017). Currently, the project site is not actively being used for crop production or cattle grazing activities. The Development Code for the project site permits crop farming, tree farming, and nursery production as permitted interim uses in any zone, provided the area in which the use would occur has not been subdivided or plotted into any parcels less than 1 acre. Any associated buildings, including farm buildings, packing sheds, and nursery greenhouses, are subject to a Conditional Use Permit. Cattle grazing activities are not permitted on the project site (Atlantis Group 2017). Additionally, as shown in Figure 9-1, the project site contains lands designated by the Department of Conservation as "Farmland of Local Importance" and "Grazing Land" (California Department of Conservation 2014). However, the City of Chula Vista (City) does not have the site designated or zoned for agricultural uses (City of Chula Vista 2005; City of Chula Vista and County of San Diego 1993). The project is consistent with the City's intended and planned use for the site, which includes residential land uses (City of Chula Vista 2005; City of Chula Vista and County of San Diego 1993). This demonstrates that the City is no longer planning for future agricultural uses on this site. Therefore, impacts would be less than significant.

9.2 MINERAL RESOURCES

As shown in Figure 9-2, the project site contains Mineral Resource Zone (MRZ) 2 and MRZ 3 areas, with the land identified as MRZ 2 in the south, closest to the off-site quarry (California Department of Conservation 1996). MRZ 2 is defined as areas within which significant mineral resources are known to occur, and MRZ 3 is defined as areas that contain mineral deposits, the significance of which cannot be determined with available data (California Department of Conservation 1996). The adopted General Plan land use designations in the MRZ-2 and MRZ-3 zones that would be impacted by the proposed project are not currently designated for extractive uses, but rather for residential, park and recreation, and open space (City of Chula Vista 2005). This demonstrates that the City would not allow or plan for mining operations as future use in

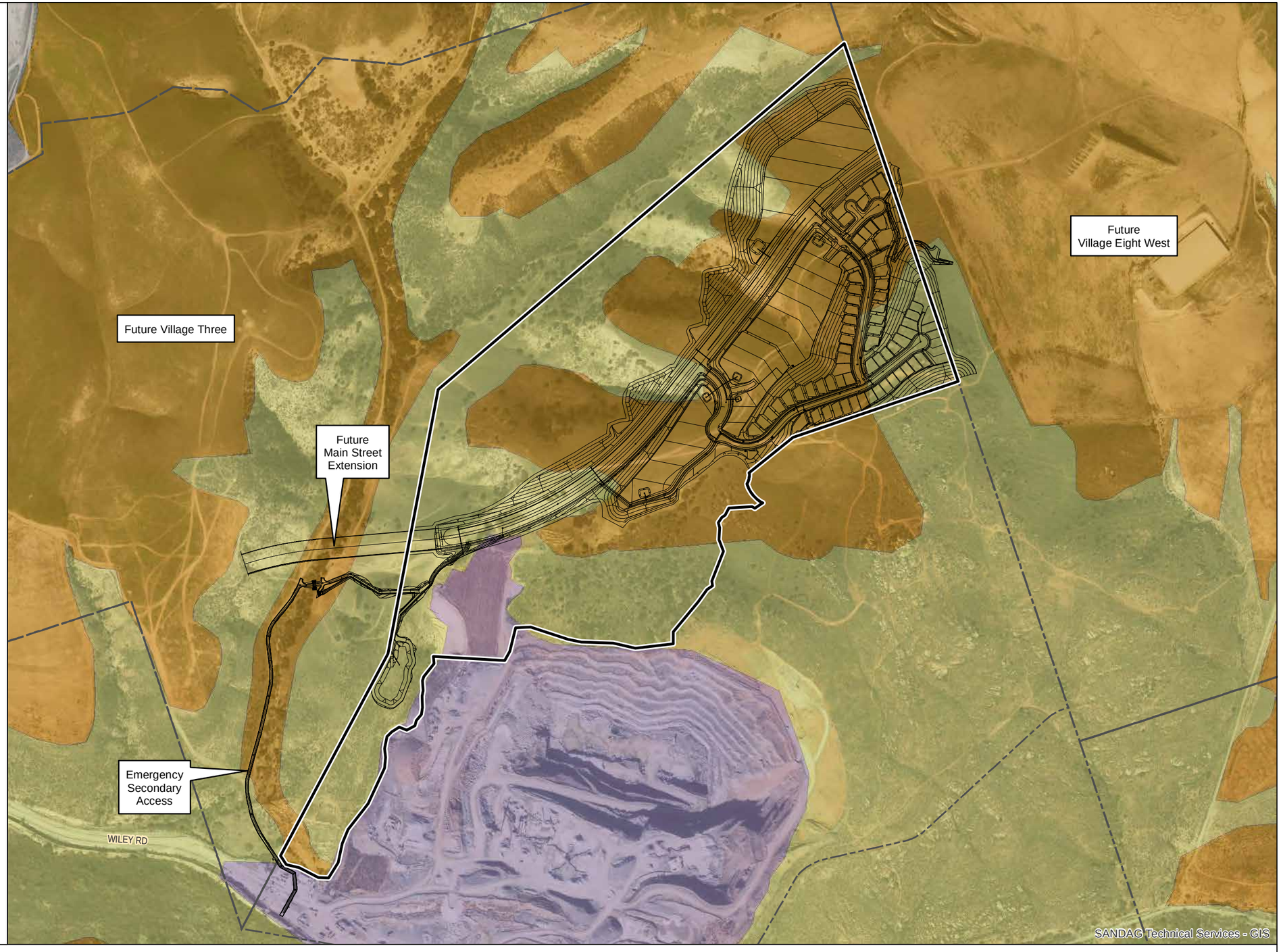
these areas. Additionally, excess excavated soil would be hauled to the Vulcan Enterprises Quarry adjacent to the project site. Further, although not proposed as part of the project at this time, the on-site resources could still be made available. As such, there would be no loss of availability of this regionally valuable aggregate resource. Given these factors, although the proposed project would be located on MRZ-2 and MRZ-3 land, it would not result in the loss of availability of a known mineral resource. As such, impacts would be less than significant.

Village Four TM Boundary

California Department of Conservation FMMP

Farmland Mapping and Monitoring Program Type

- Farmland of Local Importance
- Grazing
- Urban and Built Up Land
- Other Land



0 300 600 1,200 Feet

SOURCE: AERIAL-SANDAG IMAGERY 2014; FARMLAND-CA DEPT. OF CONSERVATION 2012

DUDEK

FIGURE 9-1

Agricultural Land

Otay Ranch Village Four SPA Plan Environmental Impact Report

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Village Four TM Boundary

Mineral Resources Zones

Zone 2

Zone 3



0 300 600 1,200 Feet

SOURCE: AERIAL-SANDAG IMAGERY 2014; MINERALS-SANDAG 2012

DUDEK

FIGURE 9-2

Mineral Resources

Otay Ranch Village Four SPA Plan Environmental Impact Report

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CHAPTER 10
PROJECT ALTERNATIVES

10.1 INTRODUCTION

Pursuant to the CEQA Guidelines, EIRs are required to "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives" (14 CCR 15126.6(a)). This EIR "must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation" (14 CCR 15126.6(a)). The alternatives discussion is required even if these alternatives "would impede to some degree the attainment of the project objectives, or would be more costly" (14 CCR 15126.6(b)).

The inclusion of an alternative in an EIR does not constitute definitive evidence that the alternative is in fact "feasible." The final decision regarding the feasibility of alternatives lies with the decision maker for a given project who must make the necessary findings addressing the potential feasibility of reducing the severity of significant environmental effects (California Public Resources Code, Section 21081; see also 14 CCR 15091).

10.2 PROJECT OBJECTIVES

Following are the objectives of the proposed Otay Ranch Village Four Sectional Planning Area (SPA) Plan Project (project):

1. Establish a pedestrian-oriented village designed to complement and support the neighboring Village Eight West land uses; reduce reliance on the automobile; and promote multimodal transportation, including walking and the use of bicycles, buses, and regional transit.
2. Promote synergistic uses between Village Four and Village Eight West and the University/Regional Technology Park to balance employment, retail, and educational activities, as well as services, housing, and public facilities.
3. Implement the goals, objectives, and policies of the Chula Vista General Plan; the Multiple Species Conservation Program (MSCP) Subarea Plan; the Otay Ranch General Development Plan; the Otay Ranch Phase 1 and Phase 2 Resource Management Plan; the Otay Ranch Facility Implementation Plan; the Otay Ranch Village Phasing Plan; and the Otay Ranch Service/Revenue Plan.
4. Implement the City of Chula Vista's Growth Management Ordinance to ensure that public facilities are provided in a timely manner and financed by the parties creating the demand for, and benefiting from, the improvements.

5. Foster development patterns that promote orderly growth and prevent urban sprawl.
6. Develop, maintain, and enhance a sense of community identity that complements Village Eight West.
7. Accentuate the relationship of the land use plan with its natural setting and the physical character of the region, and promote effective management of natural resources by concentrating development into less sensitive areas while preserving large contiguous open space areas with sensitive resources.
8. Establish multi-use trail linkages to the Chula Vista Greenbelt, consistent with the Greenbelt Master Plan and Otay Valley Regional Park Concept Plan.
9. Add to the creation of a unique Otay Ranch image and identity that differentiates Otay Ranch from other communities.
10. Establish a land use and facility plan that ensures the viability of the SPA Plan area in consideration of existing and anticipated economic conditions.
11. Provide a wide variety of housing options, including affordable housing, to City residents, future students, and faculty of the planned 4-year university and employees of the Regional Technology Park, Village Eight West, and Village Nine Town Center.

10.3 ALTERNATIVES UNDER CONSIDERATION

This chapter discusses alternatives to the proposed project, including the No Project/No Build Alternative. The No Project/No Build Alternative is a required element of an EIR pursuant to Section 15126.6(e) of the CEQA Guidelines that examines the environmental effects that would occur if the project were not to proceed. The alternatives addressed in this chapter are listed below, followed by a more detailed discussion of each:

1. No Project/No Build Alternative
2. Reduced Development Alternative

10.4 ALTERNATIVES IMPACT SUMMARY

10.4.1 No Project (No Build) Alternative

CEQA Guidelines Section 15126.6 requires the inclusion of a No Project/No Build Alternative to be analyzed. Under the No Build Alternative, no development would occur on the project site. Accordingly, the site characteristics of this alternate would be equivalent to the existing conditions for each category analyzed in Chapter 5 of this EIR. Although no development would occur, surrounding land uses and villages would continue to be built-out.

Comparison to Proposed Project

Land Use

Under the No Project/No Build Alternative, the project site would remain in its current condition and no development would occur. The No Project/No Build Alternative would conflict with surrounding land uses because the development of other villages in the area would continue and no connectivity (i.e., construction of Main Street to La Media Road) between them would be provided. The No Project/No Build Alternative would also conflict with the General Plan and the Otay Ranch General Development Plan (GDP) because it would not implement the development envisioned for the project site. Increased impacts to land use would occur as a result of the No Project/No Build Alternative.

Landforms and Aesthetics

The No Build Alternative would not result in any changes to the existing visual character, views, or lighting and glare. The site would remain as vacant and undeveloped land. Therefore, visual impacts would be reduced under the No Project/No Build Alternative.

Biological Resources

The No Project/No Build Alternative would not result in the conveyance of open space to the Otay Ranch and MSCP Preserve, nor would it allow for development that would contribute to the ongoing management and maintenance of the Preserve system. The No Project/No Build Alternative would not result in any impacts to special-status plant or wildlife species, riparian habitat, or other sensitive natural communities. The No Project/No Build Alternative would not result in any direct impacts to biological resources since there would be no construction involved. Overall, impacts to biological resources would be reduced under the No Project/No Build Alternative.

Cultural Resources

The No Project/No Build Alternative would not result in excavation of soils that may contain significant cultural resources; therefore, impacts to cultural resources would be reduced under the No Project/No Build Alternative.

Transportation, Circulation, and Access

The No Project/No Build Alternative would not generate any new traffic that would affect the local roadway network. However, without the Main Street segment within the project site, a planned major east/west roadway would not be completed, which could create long-term cumulative traffic impacts under the No Project/No Build Alternative. Without the

regional connections that would be provided by the proposed project, future growth in the surrounding villages would be concentrated on fewer roadways. Significant and unavoidable cumulative impacts would be avoided. Therefore, impacts would be increased compared to the proposed project.

Air Quality

There would be no direct construction or operational air quality impacts associated with the No Project/No Build Alternative, since the site would remain in its current state and no construction would occur. Impacts related to sensitive receptors would be reduced because no new potential toxic air contaminant sources or sensitive receptors would be developed. Therefore, impacts to air quality would be reduced under the No Project/No Build Alternative.

Hazards and Risk of Upset

As no construction would occur, the No Project/No Build Alternative would not result in an increase in potential hazards or release of hazardous materials associated with construction equipment. Similarly, the No Project/No Build Alternative would not introduce future residents to potential hazards or hazardous materials during operation, including wildfires, since no development would occur. Therefore, impacts to hazards would be reduced under the No Project/No Build Alternative.

Noise

The No Project/No Build Alternative would not result in any construction-related noise since no construction would occur. The No Project/No Build Alternative would not contribute to an increase in ambient noise levels. The No Project/No Build Alternative would avoid impacts related to excessive noise levels compared to the proposed project because no new noise sources or sensitive receptors would be developed, and no traffic would be generated on the project site. However, because regional connections through the project site would not be constructed under the No Project/No Build Alternative, off-site noise impacts could increase, as traffic would divert to other roadways. Overall, impacts to noise would be reduced under the No Project/No Build Alternative.

Water Quality and Hydrology

The No Project/No Build Alternative would not result in any direct impacts related to hydrology and water quality since no construction would occur and there would be no increase in runoff from the site. No construction or development activities would take place that could generate potential pollutants; therefore, impacts to water quality and hydrology would be reduced under the No Project/No Build Alternative.

Geology and Soils

Under the No Project/No Build Alternative, no additional people or structures would be exposed to ground rupture or strong seismic shaking since the site would remain in its current state. The No Project/No Build Alternative would also avoid potentially significant impacts related to erosion and other geologic hazards. Impacts to geology and soils would be reduced under the No Project/No Build Alternative.

Public Services and Utilities

Under the No Project/No Build Alternative there would be no increase in demand for public services or utilities. Impacts to public services and utilities would be reduced under the No Project/No Build Alternative.

Climate Change

There would be no direct construction or operational greenhouse gas emission impacts associated with the No Project/No Build Alternative since the site would remain in its current state and no development would occur. Significant and unavoidable impacts to climate change would be avoided. Impacts would be reduced under the No Project/No Build Alternative.

Housing and Population

No impacts related to population growth would occur under this alternative because no residential or economic growth would occur and no infrastructure would be developed; however, the lack of housing concurrent with needs as shown in San Diego Association of Governments (SANDAG) forecasts and in the Growth Management Plan would result in a potentially significant impact. As a result, the No Project/No Build Alternative would conflict with the General Plan and Otay Ranch GDP housing and population policies that plan for growth in the area. Therefore, increased impacts for housing and population as a result of this alternative would occur compared to the proposed project.

Paleontological Resources

The No Project/No Build Alternative would not result in excavation of soils that may contain significant paleontological resources; therefore, impacts to paleontological resources would be reduced under the No Project/No Build Alternative.

Relation to Project Objectives

The No Project/No Build Alternative would not meet any of the project objects.

10.4.2 Reduced Development Alternative

The Reduced Development Alternative would include the development of 61 single family residential units, south of Main Street, in a similar location as the proposed single family residential units of the project. This number of units was chosen because it would lower GHG emissions of this alternative to below the threshold of significance. This alternative would still include the Community Purpose Facilities and Open Space as proposed under the project, however, it is assumed that all areas not to be developed as residential would now be left as Open Space. The Main Street extension would still occur in the future separate of this alternative, as with the proposed project.

Comparison to Proposed Project

Land Use, Planning and Zoning

As indicated in Section 5.1 Land Use, Planning, and Zoning, implementation of the proposed project would have less than significant impacts related to land use. Under this alternative, the potential for land use related impacts on the proposed project site would be the same as the proposed project as community divisions, conflicts with applicable land use plans, and conflicts with applicable habitat conservation plans or natural community conservation plans would not occur. This alternative would also conflict with the General Plan and the Otay Ranch General Development Plan (GDP) because it would not implement the density envisioned for the project site because fewer units would be developed. When compared to the proposed project, the Reduced Density Alternative would result in increased impacts relating to of land use.

Landforms and Aesthetics

The Reduced Development Alternative would result in a reduced number of residential units developed, thus reducing the acreage being disturbed. As such, landform alternation would be reduced when compared to the proposed project. Although, the change from the existing broad open space to an urban environment would alter the existing visual character of the project site, implementation of the Reduced Development Alternative would result in result in urban character consistent with the General Plan and Otay Ranch GDP and the surrounding existing and planned land uses, similar to the proposed project. Therefore, the Reduced Density Alternative would result in similar impacts as the proposed project relating to landforms and aesthetics and would still result in a significant and unavoidable impact to landform alteration.

Biological Resources

The proposed project would result in both direct and indirect impacts to special status species, jurisdiction resources, and the Preserve. With the incorporation of mitigation measures, all

potentially significant impacts would be reduced to a less than significant level. The Reduced Development Alternative would require less area of the project site to be developed. Additionally, a reduced construction schedule and smaller induced population would result in reduced indirect edge effects to biological resources, specifically in the Preserve. Therefore, this alternative would result in overall reduction of direct and indirect impacts to biological resources on the project site.

Cultural Resources

The construction and operation of the Reduced Development Alternative would not cause a substantial change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5. Although the Reduced Development Alternative would disturb less land than the proposed project, the Reduced Density Alternative still has the potential to impact archaeological resources or human remains, and would require the same mitigation as the proposed project. Therefore, compared to the proposed project, the Reduced Density Alternative would result in similar impacts as the proposed project regarding cultural resources.

Transportation, Circulation, and Access

The Reduced Development Alternative would result in fewer residential units developed, thus would create a smaller demand on the existing traffic load and capacity, and a smaller increase in project generated traffic. The Reduced Development Alternative would not result in a change in air traffic patterns, or substantially increase hazards due to a design feature. The Reduced Development Alternative would result in a smaller demand on traffic load, and, when compared to the proposed project, would result in reduced impacts.

Air Quality

The Reduced Development Alternative would require a smaller area of the project site to be graded, blasted, and developed. As such, construction emissions would be substantially reduced when compared to the proposed project for the development of 61 residential units instead of 350 residential units. Similarly, operational emissions due to project generated trips would be substantially reduced when compared to the project. Therefore, overall air quality impacts would be reduced under this alternative when compared to the proposed project.

Hazards and Risk of Upset

As discussed in Section 5.7 Hazards and Risk of Upset, the proposed project would have less than significant impacts related to hazards and hazardous materials. Under this alternative, the potential for hazards and hazardous materials related impacts on the proposed project site would be similar to the proposed project as the project land use and location would remain the same.

Construction and operation of this alternative would use similar chemicals and would required reduced quantities of hazardous materials when compared to the proposed project. Additionally, this alternative would be required to prepare a fire protection plan and be fully consistent with all applicable fire code requirements. When compared to the proposed project, the Reduced Density Alternative would result in the similar hazards and hazardous materials impacts.

Noise

Construction of this alternative would require a shorter schedule resulting in overall fewer noise generating construction equipment and less required blasting. As discussed under air quality and traffic, this alternative would result in substantially less project generated traffic. Therefore, during operation of the alternative, on- and off-site generated traffic noise would be reduced. However, it is assumed that the Main Street bridge would still be constructed separate from this alternative, similar to the proposed project. Because the surrounding Otay Ranch villages would still be developed under this alternative, future pass through traffic would still result in an increase in ambient noise within Village Four, likely requiring similar operation noise attenuation mitigation under this alternative. With consideration for both construction and operation, the Reduced Development Alternative would result in reduced noise impacts when compared to the proposed project.

Water Quality and Hydrology

As identified in Section 5.9 Water Quality and Hydrology, the proposed project would have less than significant impacts regarding hydrology and water quality on the proposed project site. Under this alternative, the potential for hydrology and water quality related impacts on the proposed project site would be reduced because less land would be altered from the existing and undeveloped condition. When compared to the proposed project, the Reduced Development Alternative would result in reduced impacts to water quality and hydrology.

Geology and Soils

As indicated in Section 5.10 Geology and Soils, the proposed project would require mitigation to reduce potential impacts associated with expansive and compressible soils to less than significant. Under this alternative, the potential of geological impacts on the proposed project site would be the similar. However, mitigation to reduce potential impacts associated with expansive and compressible soils would still be required under this alternative. When compared to the proposed project, the Reduced Development Alternative would result in a similar level of impacts to geology and soils.

Public Services and Utilities

As identified in Section 5.11 Public Services and Utilities, prior to mitigation, the proposed project would have potentially significant impacts on public services due to the increase in demand for service. Mitigation in the form of payment of fees would reduce impacts to public services and facilities to a level less than significant. Under this alternative, the potential for public services related impacts on the proposed project site would still occur. However, because the induced population would be smaller than the proposed project, the increase in demand would be reduced under this alternative. When compared to the proposed project, the Reduced Development Alternative would result in reduced public services and utilities impacts.

Climate Change

As identified in Section 5.12 Climate Change, the proposed project would result in potentially significant GHG emissions impacts. Even with incorporation of mitigation, impacts would remain significant and unavoidable. The Reduced Development Alternative would reduce the GHG emissions below the City's threshold, avoiding the project's significant and unavoidable impact.

Housing and Population

As discussed in Section 5.13 Housing and Population, from the proposed project would have less than significant impacts related to population and housing. This alternative would result in the construction of 61 residences in comparison to the 350 residences under the proposed project. This alternative would introduce fewer residences than planned for Village Four under the Otay Ranch GDP, resulting in a reduced induced growth in the area. However, the Reduced Development Alternative would conflict with the General Plan and Otay Ranch GDP housing and population policies that plan for growth in the area. The Reduced Development Alternative would result in greater impacts to housing and population when compared to the proposed project.

Paleontological Resources

The proposed project would result in potentially significant impacts to paleontological resources and would require mitigation. However, with implementation of identified mitigation measures and compliance with required plans, policies, and programs; the proposed project would have less than significant impacts to paleontological resources. Under this alternative, potential impacts to paleontological resources would be unchanged. Although the Reduced Development Alternative would disrupt less on the project site, the potential to impact paleontological resources would still remain. When compared to the proposed project, the Reduced Development Alternative would result in similar impacts to paleontological resources.

Relation to Project Objectives

The Reduced Development Alternative would meet most of the project objectives, with the exception of Objectives 10 and 11.

10.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The No Project Alternative would result in the least environmental impacts and would be the environmentally superior alternative. However, Section 15126.6(e)(2) of the CEQA Guidelines states that if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives. In this case, the environmentally superior alternative is the Reduced Development Alternative. The Reduced Development Alternative most of the proposed project objectives, but to a lesser degree than the proposed project while reducing impacts resulting from greater population growth of the proposed project. The project's impacts are compared to each alternative's impacts in Table 10-1.

Table 10-1
Alternatives Impact Summary

Environmental Issue	Proposed Project Impacts Prior to Mitigation	Proposed Project Impacts with Mitigation	No Project/No Build Alternative	Reduced Development Alternative
Land Use	LTS	LTS	▲	▲
Landform and Aesthetics	SU	SU	▼	▼
Biological Resources	S	LTS	▼	▼
Cultural Resources	S	LTS	▼	▼
Transportation, Circulation, and Access	SU	SU	▼	▼
Air Quality	SU	SU	▼	▼
Hazards and Risk of Upset	S	LTS	▼	▼
Noise	S	LTS	▼	▼
Water Quality and Hydrology	LTS	LTS	▼	▼
Geology and Soils	S	LTS	▼	▼
Public Services and Utilities	S	LTS	▼	▼
Climate Change	SU	SU	▼	▼
Housing and Population	LTS	LTS	▲	▲
Paleontological Resources	S	LTS	▼	▼
Meet Project Objectives	Yes	Yes	No	Yes

▲ Alternative is likely to result in greater impacts to issue when compared to proposed project.
— Alternative is likely to result in similar impacts to issue when compared to proposed project.
▼ Alternative is likely to result in reduced impacts to issue when compared to proposed project.

LTS = Less than significant impact.
S = Significant impact.
SU = Significant and unavoidable impact.

CHAPTER 11
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