

DRAFT

**Biological Resources Technical Report
for the
Otay Ranch Village 14 and Planning Areas 16/19
Land Exchange Alternative
San Diego County, California**

Lead Agency:

**County of San Diego
Planning and Development Services
PDS2016-SP-16-002
5510 Overland Avenue
San Diego, California 92123
Contact: Kimberly Davis**

Project Applicant:

**Jackson Pendo Development
2245 San Diego Avenue, No. 223
San Diego, California 92110
Contact: Liz Jackson**

Prepared by:

DUDEK
605 Third Street
Encinitas, California 92024



FEBRUARY 2018

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

TABLE OF CONTENTS

<u>Section</u>	<u>Page No.</u>
ACRONYMS AND ABBREVIATIONS.....	XV
SUMMARY	XVII
1 INTRODUCTION.....	1
1.1 Purpose of the Report.....	1
1.2 Project Location and Description.....	1
1.3 Project Terminology and Definitions.....	13
2 APPLICABLE REGULATIONS	19
2.1 Federal.....	19
2.1.1 Federal Endangered Species Act	19
2.1.2 Migratory Bird Treaty Act	20
2.1.3 Clean Water Act.....	20
2.1.4 Bald and Golden Eagle Protection Act	25
2.2 State.....	26
2.2.1 California Endangered Species Act	26
2.2.2 California Fish and Game Code.....	27
2.2.3 Porter–Cologne Water Quality Control Act	28
2.2.4 California Environmental Quality Act.....	28
2.3 Regional	29
2.3.1 San Diego County General Plan and Community and Subregional Plans.....	29
2.3.2 Multiple Species Conservation Program	29
2.3.3 County of San Diego MSCP Subarea Plan	30
2.3.4 County of San Diego MSCP Implementing Agreement.....	31
2.3.5 Otay Ranch Resource Management Plan Phase I and II.....	32
2.4 Local	34
2.4.1 City of San Diego MSCP Subarea Plan	34
2.4.2 Chula Vista MSCP Subarea Plan	35
3 SURVEY METHODOLOGIES	41
3.1 Literature Review.....	41
3.2 Field Reconnaissance.....	42
3.2.1 Resource Mapping	49
3.2.2 Plants and Wildlife.....	49
3.2.3 Jurisdictional Delineation	50

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

TABLE OF CONTENTS (CONTINUED)

<u>Section</u>	<u>Page No.</u>
3.3 Focused Surveys for Sensitive Biological Resources	51
3.3.1 Focused Surveys and Habitat Assessment for Special-Status Plants	52
3.3.2 Quino Checkerspot Butterfly Habitat Assessment and Focused Survey	52
3.3.3 Coastal California Gnatcatcher Surveys	57
3.3.4 Burrowing Owl Habitat Assessment and Focused Surveys	57
3.3.5 Golden Eagle Foraging and Nesting Habitat Assessment	59
3.3.6 Arroyo Toad Habitat Assessment	60
3.3.7 Hermes Copper Butterfly Habitat Assessment and Focused Survey	61
3.3.8 San Diego and Riverside Fairy Shrimp Surveys	77
3.3.9 Western Spadefoot	79
3.4 Survey Limitations	80
4 ENVIRONMENTAL SETTING (EXISTING CONDITIONS)	103
4.1 Site Description	103
4.2 Habitat Types/Vegetation Communities	104
4.3 Floral Diversity	181
4.4 Wildlife Diversity	181
4.4.1 Reptiles and Amphibians	182
4.4.2 Birds	182
4.4.3 Mammals	182
4.4.4 Invertebrates	183
4.4.5 Fish	183
4.5 Sensitive Plant Species	184
4.5.1 County List A and B Species	186
4.5.2 County List C and D Species	189
4.6 Sensitive Wildlife Species	192
4.6.1 County Group 1 Species and/or SSC Species	193
4.6.2 County Group 2 Species	347
4.7 Jurisdictional Aquatic Resources	352
4.8 Habitat Connectivity and Wildlife Corridors	354
5 PROJECT EFFECTS	361
5.1 Riparian Habitat or Sensitive Vegetation Communities	362
5.1.1 Direct Impacts to Riparian Habitat or Sensitive Vegetation Communities	362

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

TABLE OF CONTENTS (CONTINUED)

<u>Section</u>	<u>Page No.</u>
5.1.2 Indirect Impacts to Vegetation Communities	436
5.2 Special-Status Plant Species	439
5.2.1 Direct Impacts to Special-Status Plant Species	439
5.2.2 Indirect Impacts to Special-Status Plant Species	445
5.3 Sensitive Wildlife Species	445
5.3.1 Direct Impacts to Special-Status Wildlife Species	445
5.3.2 Indirect Impacts to Special-Status Wildlife Species	474
5.4 Jurisdictional Aquatic Resources	477
5.4.1 Direct Impacts to Jurisdictional Aquatic Resources	477
5.4.2 Indirect Impacts to Jurisdictional Aquatic Resources	480
5.5 Habitat Connectivity and Wildlife Corridors	481
5.5.1 Direct Impacts to Habitat Connectivity and Wildlife Corridors	481
5.5.2 Indirect Impacts to Habitat Connectivity and Wildlife Corridors	486
6 SPECIAL-STATUS SPECIES	495
6.1 Guidelines for the Determination of Significance	495
6.2 Analysis of Project Effects	497
6.2.1 Project Effects Relevant to Guideline 4.1.A (Federally Listed and State-Listed Species)	497
6.2.2 Project Effects Relevant to Guideline 4.1.B (County-Designated Special-Status Species)	502
6.2.3 Project Effects Relevant to Guideline 4.1.C (County-Designated Special-Status Species)	509
6.2.4 Project Effects Relevant to Guideline 4.1.D (Arroyo Toad)	514
6.2.5 Project Effects Relevant to Guideline 4.1.E (Golden Eagle)	514
6.2.6 Project Effects Relevant to Guideline 4.1.F (Raptor Foraging Habitat)	515
6.2.7 Project Effects Relevant to Guideline 4.1.G (Core Wildlife Area)	515
6.2.8 Project Effects Relevant to Guideline 4.1.H (Indirect Impacts)	516
6.2.9 Project Effects Relevant to Guideline 4.1.I (Burrowing Owl)	517
6.2.10 Project Effects Relevant to Guideline 4.1.J (Cactus Wren)	518
6.2.11 Project Effects Relevant to Guideline 4.1.K (Hermes Copper Butterfly)	518
6.2.12 Project Effects Relevant to Guideline 4.1.L (Sensitive Bird Nesting)	518

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

TABLE OF CONTENTS (CONTINUED)

<u>Section</u>	<u>Page No.</u>
6.3 Cumulative Impact Analysis.....	519
6.3.1 Cumulative Analysis for Quino Checkerspot Butterfly.....	520
6.3.2 Cumulative Analysis for Hermes Copper Butterfly.....	522
6.3.3 Cumulative Analysis for Golden Eagle	523
6.4 Mitigation Measures and Design Considerations	531
6.5 Conclusions.....	542
6.5.1 Sensitive Plant Species	542
6.5.2 Sensitive Wildlife Species	544
7 RIPARIAN HABITAT OR SENSITIVE NATURAL COMMUNITY.....	547
7.1 Guidelines for the Determination of Significance	547
7.2 Analysis of Project Effects.....	549
7.2.1 Project Effects Relevant to Guideline 4.2.A (Impacts to Sensitive Habitat).....	549
7.2.2 Project Effects Relevant to Guideline 4.2.B (Impacts to Wetlands and Riparian Habitats)	554
7.2.3 Project Effects Relevant to Guideline 4.2.C (Impacts to Groundwater Table)	556
7.2.4 Project Effects Relevant to Guideline 4.2.D (Indirect Impacts to Sensitive Habitat).....	556
7.2.5 Project Effects Relevant to Guideline 4.2.E (RPO Buffers)	557
7.3 Cumulative Impact Analysis.....	557
7.4 Mitigation Measures and Design Considerations	557
7.5 Conclusions.....	559
8 JURISDICTIONAL WETLANDS AND WATERWAYS	563
8.1 Guidelines for the Determination of Significance	563
8.2 Analysis of Project Effects.....	563
8.2.1 Project Effects Relevant to Guideline 4.3 (Federally Protected Wetlands)	563
8.3 Cumulative Impact Analysis.....	563
8.4 Mitigation Measures and Design Considerations	563
8.5 Conclusions.....	564
9 WILDLIFE MOVEMENT AND NURSERY SITES	565
9.1 Guidelines for the Determination of Significance	565

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

TABLE OF CONTENTS (CONTINUED)

<u>Section</u>	<u>Page No.</u>
9.2 Analysis of Project Effects.....	566
9.2.1 Project Effects Relevant to Guideline 4.4.A (Wildlife Access to Key Habitat Areas)	566
9.2.2 Project Effects Relevant to Guideline 4.4.B (Connectivity Between Blocks of Habitat)	567
9.2.3 Project Effects Relevant to Guideline 4.4.C (Creation of Unnatural Movement Corridors).....	567
9.2.4 Project Effects Relevant to Guideline 4.4.D (Noise and Lighting Impacts to Wildlife Corridors).....	568
9.2.5 Project Effects Relevant to Guideline 4.4.E (Width of Wildlife Corridors)	568
9.2.6 Project Effects Relevant to Guideline 4.4.F (Visual Continuity within Wildlife Corridors)	570
9.3 Cumulative Impact Analysis	570
9.4 Mitigation Measures and Design Considerations	571
9.5 Conclusions	571
10 LOCAL POLICIES, ORDINANCES, AND ADOPTED PLANS	573
10.1 Guidelines for the Determination of Significance	573
10.2 Analysis of Project Effects.....	574
10.2.1 Project Effects Relevant to Guideline 4.5.A (Coastal Sage Scrub Habitat Loss).....	574
10.2.2 Project Effects Relevant to Guideline 4.5.B (NCCP Planning).....	574
10.2.3 Project Effects Relevant to Guideline 4.5.C (RPO Wetlands).....	575
10.2.4 Project Effects Relevant to Guideline 4.5.D (Coastal Sage Scrub)	576
10.2.5 Project Effects Relevant to Guideline 4.5.E (Regional Planning Efforts).....	576
10.2.6 Project Effects Relevant to Guideline 4.5.F (Biological Mitigation Ordinance).....	588
10.2.7 Project Effects Relevant to Guideline 4.5.G (Connectivity between Areas of High Habitat Value)	589
10.2.8 Project Effects Relevant to Guideline 4.5.H (Movement Corridors Defined in the BMO)	590
10.2.9 Project Effects Relevant to Guideline 4.5.I (Narrow Endemics).....	590
10.2.10 Project Effects Relevant to Guideline 4.5.J (Listed Species)	590

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

TABLE OF CONTENTS (CONTINUED)

<u>Section</u>	<u>Page No.</u>
10.2.11 Project Effects Relevant to Guideline 4.5.K (Migratory Birds)	591
10.2.12 Project Effects Relevant to Guideline 4.5.L (Eagles)	591
10.3 Cumulative Impact Analysis	591
10.4 Mitigation Measures and Design Considerations	591
10.5 Conclusions	591
11 SUMMARY OF PROJECT IMPACTS AND MITIGATION	593
12 REFERENCES.....	601
13 LIST OF PREPARERES AND PERSONS AND ORGANIZATIONS CONTACTED	619

APPENDICES

A	Proposed Boundary Adjustment Equivalency Analysis for Otay Ranch Village 14 and Planning Areas 16 and 19 and Proposed Land Exchange Functional Equivalency Analysis for Otay Ranch Village 14 and Planning Areas 16 and 19
B	Addendum to Final EIR No. 91-03 for Salt Creek Ranch Sectional Planning Area Plan; City of Chula Vista's Final Map 14756A and Letter Agreement between USFWS, CDFW, City of Chula Vista and Pacific Bay Homes dated July 19, 2001
C	Golden Eagle Reference Documents
D	2015 and 2016 Quino Checkerspot Butterfly Survey Reports (HELIX)
E	Coastal California Gnatcatcher Survey Reports
F	Fairy Shrimp Survey Reports
G	List of Plant Species Observed
H	List of Wildlife Species Observed
I-1	Special-Status Plant Species Detected or Potentially Occurring in the Land Exchange Area
I-2	Special-Status Plant Species with Low Potential or Not Expected to Occur in the Land Exchange Area
J-1	Special-Status Wildlife Species Detected or Potentially Occurring in the Land Exchange Area
J-2	Special-Status Wildlife Species Not Expected or Rarely Occurring in the Land Exchange Area
K	Land Exchange Alternative Otay Ranch RMP and MSCP Preserve Status Report

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

TABLE OF CONTENTS (CONTINUED)

Page No.

FIGURES

1-1	Regional Map.....	3
1-2	Vicinity Map	5
1-3	Project Area Ownership.....	7
1-4	Proctor Valley Site Utilization Plan.....	11
1-5	Land Exchange and Boundary Adjustment	15
2-1	Regional Planning Context	21
2-2	Critical Habitat.....	23
3-1a	2015 Quino Checkerspot Butterfly Survey Area	63
3-1b	2016 Quino Checkerspot Butterfly Survey Area	65
3-2	California Gnatcatcher Survey Area and Results	67
3-3	Burrowing Owl Survey Area	69
3-4	Arroyo Toad Habitat Assessment	71
3-5a	Hermes Copper Survey Area	73
3-5b	Hermes Copper Survey Area	75
3-6a	Fairy Shrimp Survey Area and Results.....	83
3-6b	Fairy Shrimp Survey Area and Results.....	85
3-6c	Fairy Shrimp Survey Area and Results.....	87
3-6d	Fairy Shrimp Survey Area and Results.....	89
3-6e	Fairy Shrimp Survey Area and Results.....	91
3-6f	Fairy Shrimp Survey Area and Results.....	93
3-6g	Fairy Shrimp Survey Area and Results.....	95
3-6h	Fairy Shrimp Survey Area and Results.....	97
3-6i	Fairy Shrimp Survey Area and Results.....	99
3-7	Western Spadefoot Survey Areas	101
4-1	Biological Resources – Legend	109
4-1a	Biological Resources	111
4-1b	Biological Resources	113
4-1c	Biological Resources	115
4-1d	Biological Resources	117
4-1e	Biological Resources	119
4-1f	Biological Resources	121
4-1g	Biological Resources	123

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

TABLE OF CONTENTS (CONTINUED)

	<u>Page No.</u>
4-1h Biological Resources	125
4-1i Biological Resources	127
4-1j Biological Resources	129
4-1k Biological Resources	131
4-1l Biological Resources	133
4-1m Biological Resources	135
4-1n Biological Resources	137
4-1o Biological Resources	139
4-1p Biological Resources	141
4-1q Biological Resources	143
4-1r Biological Resources	145
4-1s Biological Resources	147
4-1t Biological Resources	149
4-1u Biological Resources	151
4-1v Biological Resources	153
4-1w Biological Resources	155
4-1x Biological Resources	157
4-1y Biological Resources	159
4-1z Biological Resources	161
4-1aa Biological Resources	163
4-1bb Biological Resources	165
4-1cc Biological Resources	167
4-1dd Biological Resources	169
4-1ee Biological Resources	171
4-1ff Biological Resources	173
4-2a 2016 Quino Host Plant Mapping and Historical Locations	213
4-2b 2016 Quino Host Plant Mapping and Historical Locations	215
4-2c 2016 Quino Host Plant Mapping and Historical Locations	217
4-2d 2016 Quino Host Plant Mapping and Historical Locations	219
4-2e 2016 Quino Host Plant Mapping and Historical Locations	221
4-2f 2016 Quino Host Plant Mapping and Historical Locations	223
4-2g 2016 Quino Host Plant Mapping and Historical Locations	225
4-2h 2016 Quino Host Plant Mapping and Historical Locations	227
4-2i 2016 Quino Host Plant Mapping and Historical Locations	229

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

TABLE OF CONTENTS (CONTINUED)

	<u>Page No.</u>
4-2j	2016 Quino Host Plant Mapping and Historical Locations231
4-2k	2016 Quino Host Plant Mapping and Historical Locations233
4-2l	2016 Quino Host Plant Mapping and Historical Locations235
4-2m	2016 Quino Host Plant Mapping and Historical Locations237
4-2n	2016 Quino Host Plant Mapping and Historical Locations239
4-2o	2016 Quino Host Plant Mapping and Historical Locations241
4-2p	2016 Quino Host Plant Mapping and Historical Locations243
4-2q	2016 Quino Host Plant Mapping and Historical Locations245
4-2r	2016 Quino Host Plant Mapping and Historical Locations247
4-2s	2016 Quino Host Plant Mapping and Historical Locations249
4-2t	2016 Quino Host Plant Mapping and Historical Locations251
4-2u	2016 Quino Host Plant Mapping and Historical Locations253
4-2v	2016 Quino Host Plant Mapping and Historical Locations255
4-2w	2016 Quino Host Plant Mapping and Historical Locations257
4-2x	2016 Quino Host Plant Mapping and Historical Locations259
4-2y	2016 Quino Host Plant Mapping and Historical Locations261
4-2z	2016 Quino Host Plant Mapping and Historical Locations263
4-2aa	2016 Quino Host Plant Mapping and Historical Locations265
4-2bb	2016 Quino Host Plant Mapping and Historical Locations267
4-2cc	2016 Quino Host Plant Mapping and Historical Locations269
4-2dd	2016 Quino Host Plant Mapping and Historical Locations271
4-2ee	2016 Quino Host Plant Mapping and Historical Locations273
4-2ff	2016 Quino Host Plant Mapping and Historical Locations275
4-3a	2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations277
4-3b	2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations279
4-3c	2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations281
4-3d	2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations283
4-3e	2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations285

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

TABLE OF CONTENTS (CONTINUED)

	<u>Page No.</u>
4-3f 2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations	287
4-3g 2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations	289
4-3h 2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations	291
4-3i 2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations	293
4-3j 2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations	295
4-3k 2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations	297
4-3l 2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations	299
4-3m 2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations	301
4-3n 2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations	303
4-3o 2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations	305
4-3p 2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations	307
4-3q 2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations	309
4-3r 2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations	311
4-3s 2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations	313
4-3t 2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations	315
4-3u 2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations	317
4-3v 2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations	319

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

TABLE OF CONTENTS (CONTINUED)

	<u>Page No.</u>
4-3w 2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations	321
4-3x 2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations	323
4-3y 2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations	325
4-3z 2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations	327
4-3aa 2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations	329
4-3bb 2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations	331
4-3cc 2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations	333
4-3dd 2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations	335
4-3ee 2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations	337
4-3ff 2015 Quino Host Plant Mapping, Potential Resource Areas, and Historical Locations	339
4-4 Biological Resources Core Area	357
4-5 Habitat Linkages/Movement Corridors Post Land Exchange and Boundary Line Adjustment	359
5-1 Impacts to Biological Resources – Legend	367
5-1a Impacts to Biological Resources	369
5-1b Impacts to Biological Resources	371
5-1c Impacts to Biological Resources	373
5-1d Impacts to Biological Resources	375
5-1e Impacts to Biological Resources	377
5-1f Impacts to Biological Resources	379
5-1g Impacts to Biological Resources	381
5-1h Impacts to Biological Resources	383
5-1i Impacts to Biological Resources	385
5-1j Impacts to Biological Resources	387

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

TABLE OF CONTENTS (CONTINUED)

	<u>Page No.</u>
5-1k Impacts to Biological Resources.....	389
5-1l Impacts to Biological Resources.....	391
5-1m Impacts to Biological Resources.....	393
5-1n Impacts to Biological Resources.....	395
5-1o Impacts to Biological Resources.....	397
5-1p Impacts to Biological Resources.....	399
5-1q Impacts to Biological Resources.....	401
5-1r Impacts to Biological Resources.....	403
5-1s Impacts to Biological Resources.....	405
5-1t Impacts to Biological Resources.....	407
5-1u Impacts to Biological Resources.....	409
5-1v Impacts to Biological Resources.....	411
5-1w Impacts to Biological Resources.....	413
5-1x Impacts to Biological Resources.....	415
5-1y Impacts to Biological Resources.....	417
5-1z Impacts to Biological Resources.....	419
5-1aa Impacts to Biological Resources.....	421
5-1bb Impacts to Biological Resources.....	423
5-1cc Impacts to Biological Resources.....	425
5-1dd Impacts to Biological Resources.....	427
5-1ee Impacts to Biological Resources.....	429
5-1ff Impacts to Biological Resources.....	431
5-2 Impacts to Critical Habitat	443
5-3 Habitat Linkages/Movement Corridors Post Land Exchange and Boundary Line Adjustment.....	489
5-4 Wildlife Crossings	491
5-5 Wildlife Crossings	493
6-1 Preservation of Documented QCB Sightings in County Subarea Plan.....	527
6-2 Cumulative Analysis	529

TABLES

1-1 Proposed Land Use Plan	9
3-1 Schedule of Surveys.....	43
4-1 Vegetation Communities and Land Cover Types in the Land Exchange Area	105

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

TABLE OF CONTENTS (CONTINUED)

	<u>Page No.</u>
4-2 Vegetation Communities and Land Cover Types by Off-Site Improvement Area (acres)	106
4-3 Coastal California Gnatcatcher Locations and Populations within the Survey Area	198
4-4 ACOE/RWQCB/CDFW Jurisdictional Aquatic Resources within the Land Exchange Area (Acres and Linear Feet)	353
5-1a Impacts to Vegetation Communities and Land Cover Types within Off-Site Improvement Areas (Acres)	363
5-1b Additional Impacts to Vegetation Communities and Land Cover Types for the Proctor Valley Road North Option (Acres)	364
5-2 Impacts to Vegetation Communities and Land Cover Types within the Land Exchange Area (Acres)	433
5-3 Summary of Direct Impacts to Special-Status Plant Species	441
5-4 Permanent Impacts to Special-Status Wildlife Species Present within the Land Exchange Area or with High Potential to Occur	448
5-5 MSCP Defined Golden Eagle Suitable Foraging Habitat within the Land Exchange Area	470
5-6 MSCP Defined Golden Eagle Suitable Foraging Habitat within the Land Exchange Area by Applicant Ownership Before the Proposed Land Exchange and Boundary Adjustment (acres)	471
5-7 Impacts to Off-Site ACOE/RWQCB/CDFW Jurisdictional Aquatic Resources by Jurisdiction (Acres)	478
5-8 Permanent Impacts to ACOE/RWQCB/CDFW Jurisdictional Aquatic Resources within the Village 14 Development Footprint (Acres)	479
6-1 Summary of Impacts to Sensitive Plants	505
6-2 Summary of Impacts to County List D Plant Species	509
7-1 Mitigation Requirements for Permanent Impacts to City of San Diego (Cornerstone Lands)	551
10-1 Improvements to Proctor Valley Road MSCP County Subarea Plan Consistency Analysis	578
10-2 Summary of Siting Criteria for City of San Diego Off-Site Portion of Proctor Valley Road and Associated Utilities	582
10-3 Summary of Facilities Siting Criteria for City of Chula Vista Off-Site Portion of Proctor Valley Road and Associated Utilities	587

**Biological Resources Technical Report for the Otay Ranch
Village 14 and Planning Areas 16/19 Land Exchange Alternative**

TABLE OF CONTENTS (CONTINUED)

	<u>Page No.</u>
11-1 Summary of Impacts and Mitigation for Special-Status Species, Vegetation Communities, and Jurisdictional Areas	593

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

ACRONYMS AND ABBREVIATIONS

Acronym and Abbreviation	Definition
ACOE	U.S. Army Corps of Engineers
amsl	above mean sea level
BCC	U.S. Fish and Wildlife Service Bird of Conservation Concern
BLM	U.S. Bureau of Land Management
BMO	Biological Mitigation Ordinance
BMP	best management practice
BRCA	Biological Resource Core Area
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CSC	California special concern species
dBA	A-weighted decibel
EIR	environmental impact report
FE	federally listed as endangered
FP	fully protected
FT	federally listed as threatened
GIS	geographic information system
GPS	Global Positioning System
HLIT	Habitat Loss and Incidental Take
LBZ	Limited Building Zone
L_{eq}	equivalent sound level
MBTA	Migratory Bird Treaty Act
MHPA	Multiple Habitat Planning Area
MMRP	Mitigation, Monitoring, and Reporting Program
MSCP	Multiple Species Conservation Program
PCA	Pest Control Adviser
PCE	primary constituent element
POM	Preserve Owner/Manager
RMP	Otay Ranch Resource Management Plan
ROW	right-of-way
RPW	relatively permanent waters of the United States
RWQCB	Regional Water Quality Control Board
SE	state listed as endangered
SR	state rare
SR-94	State Route 94
SRP	Otay Ranch General Development Plan/Otay Subregional Plan
Subarea Plan	County of San Diego Multiple Species Conservation Plan Subarea Plan

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

Acronym and Abbreviation	Definition
SWPPP	Stormwater Pollution Prevention Plan
TNW	traditional navigable waters of the United States
USFWS	U.S. Fish and Wildlife Service

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

SUMMARY

The Otay Ranch Village 14 and Planning Areas 16/19 – Land Exchange EIR Alternative (Land Exchange Alternative) would implement a portion of the Otay Ranch City of Chula Vista General Development Plan/County of San Diego Otay Subregional Plan, Volume II (Otay Ranch GDP/SRP), which identifies and coordinates land use patterns, objectives, and goals for the Otay Ranch community. The Otay Ranch GDP/SRP organized development in a series of villages and planning areas with varying character and densities (City of Chula Vista and County of San Diego 1993a). The Land Exchange Alternative is composed of parcels within the planned Village 14 and within Planning Areas 16/19. The Otay Ranch GDP/SRP designates the parcels within these planning areas for residential development and Otay Ranch Resource Management Plan (RMP) Preserve.

The Land Exchange Alternative proposes a General Plan Amendment and zone change for state-owned land within Planning Areas 16/19. The General Plan Amendment and zone change are intended to replace the current development and land use designations that allow development for those limited to open space and conservation purposes, thereby ensuring that the land in question remains undeveloped in perpetuity. The Land Exchange Alternative consists of Village 14 and Planning Areas 16/19 and totals 2,387.7 acres. The proposed development would occur on approximately 601.7 acres with an additional 56.6 acres of off-site impacts. Off-site impacts are largely related to improvements of Proctor Valley Road. The Land Exchange Alternative would preserve 965.2 acres, which would contribute to the existing state-owned Rancho Jamul Ecological Preserve resulting in the creation of 1,757 acres of contiguous Preserve lands.

The Land Exchange Area, including associated off-site impact areas (related to Proctor Valley Road), is located on portions of lands within the jurisdiction of several planning documents that address biological resources: the County of San Diego Multiple Species Conservation Program (MSCP) Subarea Plan, the Otay Ranch RMP, the City of Chula Vista MSCP Subarea Plan, and the City of San Diego Cornerstone Lands.

Biological surveys conducted in 2014, 2015, 2016, and 2017 included vegetation mapping; a jurisdictional delineation; focused rare plant surveys; habitat assessments and focused surveys for Quino checkerspot butterfly (*Euphydryas editha quino*), Hermes copper butterfly (*Lycaena hermes*), and vernal pool branchiopods; and focused surveys for burrowing owl (*Athene cunicularia*), coastal California gnatcatcher (*Polioptila californica californica*), and western spadefoot (*Spea hammondi*). A habitat assessment was conducted for arroyo toad (*Anaxyrus californicus*); however, no focused survey was deemed necessary. Dudek biologists also reviewed the Land Exchange Area in conjunction with planning documents to determine whether the Land Exchange Alternative's impacts on golden eagle (*Aquila chrysaetos*) would be

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

consistent with those anticipated in the MSCP County of San Diego Subarea Plan. As part of its golden eagle analysis, Dudek consulted raptor specialists at H.T. Harvey & Associates.

A total of 14 sensitive vegetation communities occur within the Land Exchange Area, which include granitic chamise chaparral, granitic southern mixed chaparral, Diegan coastal sage scrub, Diegan coastal sage scrub-*Baccharis* dominated, coast live oak woodland, non-native grassland, alkali seep, cismontane alkali marsh, mulefat scrub, coastal and valley freshwater marsh, open water, southern coast live oak riparian forest, southern willow scrub, and unvegetated channel. There are 2,341 acres of sensitive vegetation communities within the Land Exchange Area. Based on a jurisdictional delineation, there are 16.08 acres of resources under the jurisdiction of the Army Corps of Engineers (ACOE), Regional Water Quality Control Board (RWQCB) and California Department of Fish and Wildlife (CDFW). Approximately 1.59 acres of those resources are located within off-site improvement areas.

Focused rare plant surveys recorded 22 special-status plants, including one federally or state-listed plant: Otay tarplant (*Deinandra conjugens*). Forty-nine additional rare plants have a moderate or high potential to occur in the Land Exchange Area. Land Exchange Alternative surveys recorded 27 special-status wildlife species, including two federally and state-listed species (coastal California gnatcatcher and San Diego fairy shrimp (*Branchinecta sandiegonensis*)) and one fully protected species (golden eagle). An additional 24 special-status wildlife species have potential to occur in the Land Exchange Area.

Development of the Land Exchange Alternative would result in potentially significant direct or indirect effects to special-status plant species, special-status wildlife species, wildlife movement, special-status vegetation communities, and jurisdictional resources. Most of these impacts, however, have been or would be mitigated by virtue of the applicant's participation in the MSCP Plan.

In addition, the Land Exchange Alternative would result in potential significant direct impacts to foraging or breeding habitat, wildlife movement, and avian species protected under the Migratory Bird Treaty Act. These impacts also have been or would be mitigated, in whole or in part, by the applicant's participation in the MSCP Plan. Impacts not covered under the MSCP Plan would be addressed by other mitigation measures, as described in this report.

The mitigation for the Land Exchange Alternative is governed by the terms of the Otay Ranch RMP and includes conveyance of Preserve land at a ratio of 1.188 for a total of 654.5 acres. The Land Exchange Alternative shall convey 403.9 acres within Village 14 and 276.3 acres within Planning Areas 16/19 for a total of 680.2 acres of conveyance. This is 25.7 acres above the required conveyance acreage. An additional 278 acres of Preserve lands shall be exchanged to the state to create a 1,757-acre Preserve. A Land Exchange Agreement will establish take authorized hardline development and Preserve boundaries for the entire Land Exchange

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

Alternative. Specific mitigation related to special-status plants and wildlife species, and jurisdictional resources have also been incorporated into the Land Exchange Alternative. If adopted and implemented, these mitigation measures would reduce the Land Exchange Alternative's impacts on biological resources to less than significant. In addition, the Land Exchange Alternative's impacts on local policies, ordinances, and adopted plans would be less than significant.

**Biological Resources Technical Report for the Otay Ranch
Village 14 and Planning Areas 16/19 Land Exchange Alternative**

INTENTIONALLY LEFT BLANK

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

1 INTRODUCTION

1.1 Purpose of the Report

This purpose of this biological resources report is to provide the following items: (1) describe the existing conditions of biological resources within the Land Exchange Area in terms of vegetation, jurisdictional resources, flora, wildlife, and wildlife habitats; (2) discuss potential impacts to biological resources that would result from development of the property and describe those impacts in terms of biological significance in view of federal, state, and local laws and policies; and (3) recommend mitigation measures for potential impacts to sensitive biological resources, if necessary. Recommendations will follow federal, state, and local rules and regulations, including the California Environmental Quality Act (CEQA); the County of San Diego's (County) *Guidelines for Determining Significance and Report Format and Contents Requirements* (County of San Diego 2010a); the County's *Report Format and Contents Requirements* (County of San Diego 2010b); the County's Resource Protection Ordinance (County of San Diego 2007); and various planning documents, including the Multiple Species Conservation Program (MSCP) Plan, County of San Diego MSCP Subarea Plan, City of Chula Vista MSCP Subarea Plan, City of San Diego MSCP Subarea Plan, the Otay Ranch Resource Management Plan (RMP), and the Otay Ranch City of Chula Vista General Development Plan/County of San Diego Otay Subregional Plan Volume II (Otay Ranch GDP/SRP).

1.2 Project Location and Description

The Land Exchange Alternative is part of the overall Otay Ranch, an approximately 23,000-acre master-planned community in southern San Diego County that is designed as a series of villages and planning areas. The Land Exchange Alternative is located within Otay Ranch in unincorporated southwestern San Diego County (County) (Figure 1-1, Regional Map, and Figure 1-2, Vicinity Map). In 1993, the County of San Diego, in cooperation with the City of Chula Vista, adopted the Otay Ranch GDP/SRP (City of Chula Vista and County of San Diego 1993a). The Otay Ranch GDP/SRP plans land use in Otay Ranch and designates parcels for residential development or open space, including parcels that are part of the Land Exchange Alternative. These parcels include land in Village 14 and Planning Areas 16/19.

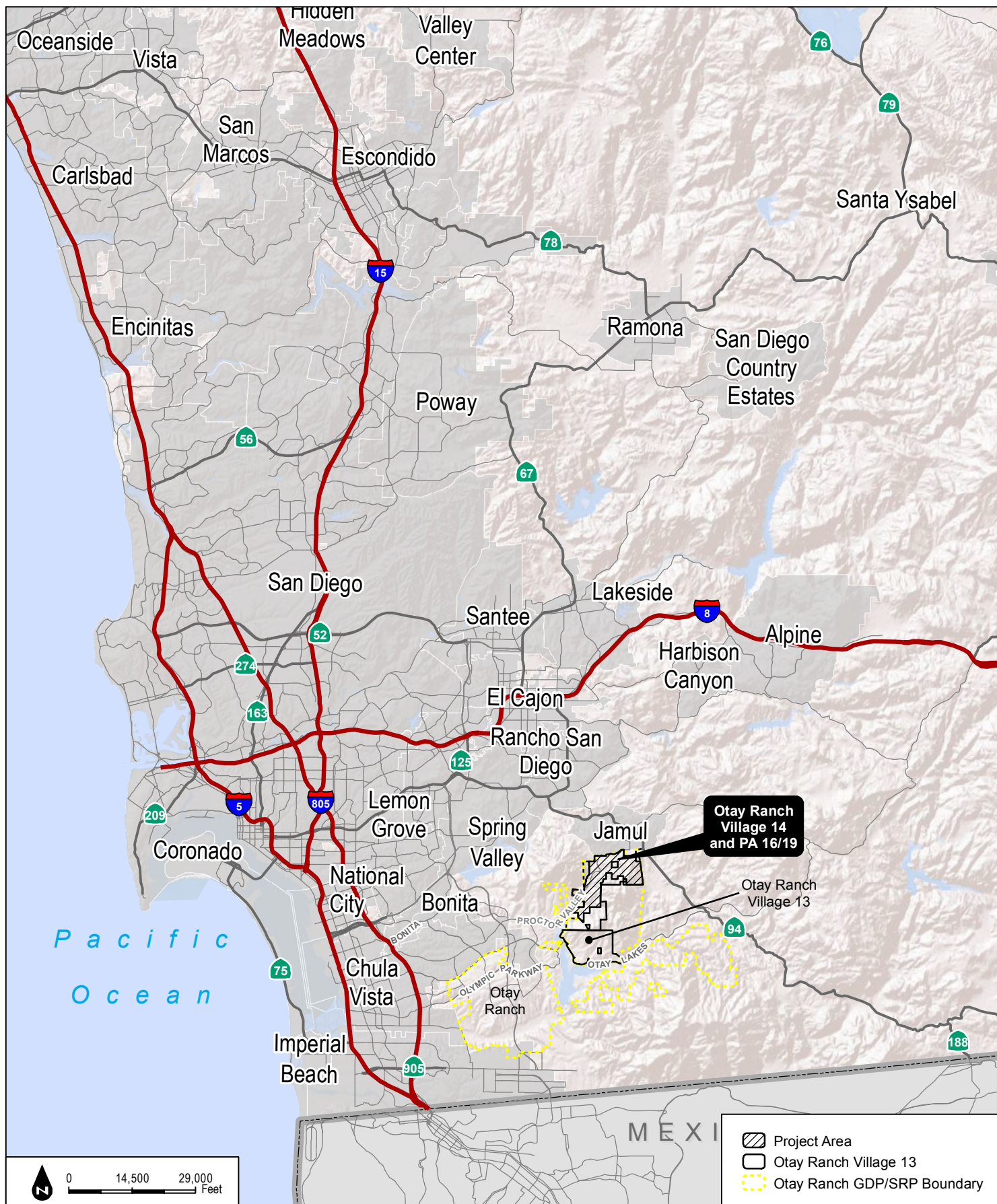
A portion of Village 14 and the entirety of Planning Areas 16/19 are part of a proposed property exchange between the Land Exchange Alternative applicant and the State of California. The land exchange would eliminate approved development within Planning Areas 16/19 in areas composed of rural land in the northeastern portions of Otay Ranch, and would allow for concentrated development in Village 14, closer to existing urban developed areas. Thus, the Land Exchange Alternative includes all of Village 14, with the exception of 124 acres owned by

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

the state, and all of Planning Areas 16/19. The “Inverted L” is excluded from Land Exchange Alternative, since it is not owned by the applicant and is in the City of Chula Vista. The “Inverted L” property is owned by Otay Water District and the U.S. Fish and Wildlife Service (USFWS). The Land Exchange Alternative would also include a General Plan Amendment and zone change for CDFW-owned land within Planning Areas 16/19. The General Plan Amendment and zone change are intended to replace the land use designations that currently allow development with land use designations that allow for open space and conservation, thereby ensuring that the subject land remains undeveloped in perpetuity. These various components of residential and commercial uses in Village 14, designated open space in Village 14 and Planning Areas 16/19, and the General Plan Amendment and zone change on the state-owned parcels compose the Land Exchange Alternative.

The Land Exchange Alternative encompasses 2,387.7 acres, including approximately 1,002.6 acres within Otay Ranch Village 14, 1,344.8 acres within Planning Areas 16/19, and 40.2 acres of off-site improvements. Development within the Land Exchange Area would occur on approximately 601.7 acres within Village 14, and the remainder would be designated as Otay Ranch RMP Preserve. Additional development would occur off site on approximately 56.6 acres, including 16.4 acres in Planning Areas 16/19.

The majority of the Land Exchange Area is within the jurisdictional boundaries of the Otay Ranch GDP/SRP area, with the exception of the 40.2 acres of the 56.6 acres of off-site improvement areas. Approximately 16.4 acres of off-site improvement area is associated with Proctor Valley Road North but is within Otay Ranch lands and therefore within the jurisdictional boundaries of the Otay Ranch GDP/SRP. The remaining 40.2-acre off-site improvement area lies within the jurisdictional boundaries of the City of San Diego’s property ownership of the “Cornerstone Lands” (33.8 acres), the City of Chula Vista’s MSCP Subarea Plan (5.3 acres), private lands (0.8 acres), and County of San Diego road easement (0.3 acres) (Figure 1-3, Project Area Ownership). Impacts to areas outside of Village 14 and Planning Areas 16/19 are required for improvements and realignment of the existing Proctor Valley Road. In addition, the County is contemplating increasing the right-of-way width for Proctor Valley Road North from 40 feet to approximately 48 feet. This would provide for two dedicated bike lanes, one on each side of the road. Increasing the right-of-way width would result in an additional 0.9 acres of impacts to Otay Ranch RMP Preserve.



SOURCE: Hunsaker 2017; County of San Diego 1997

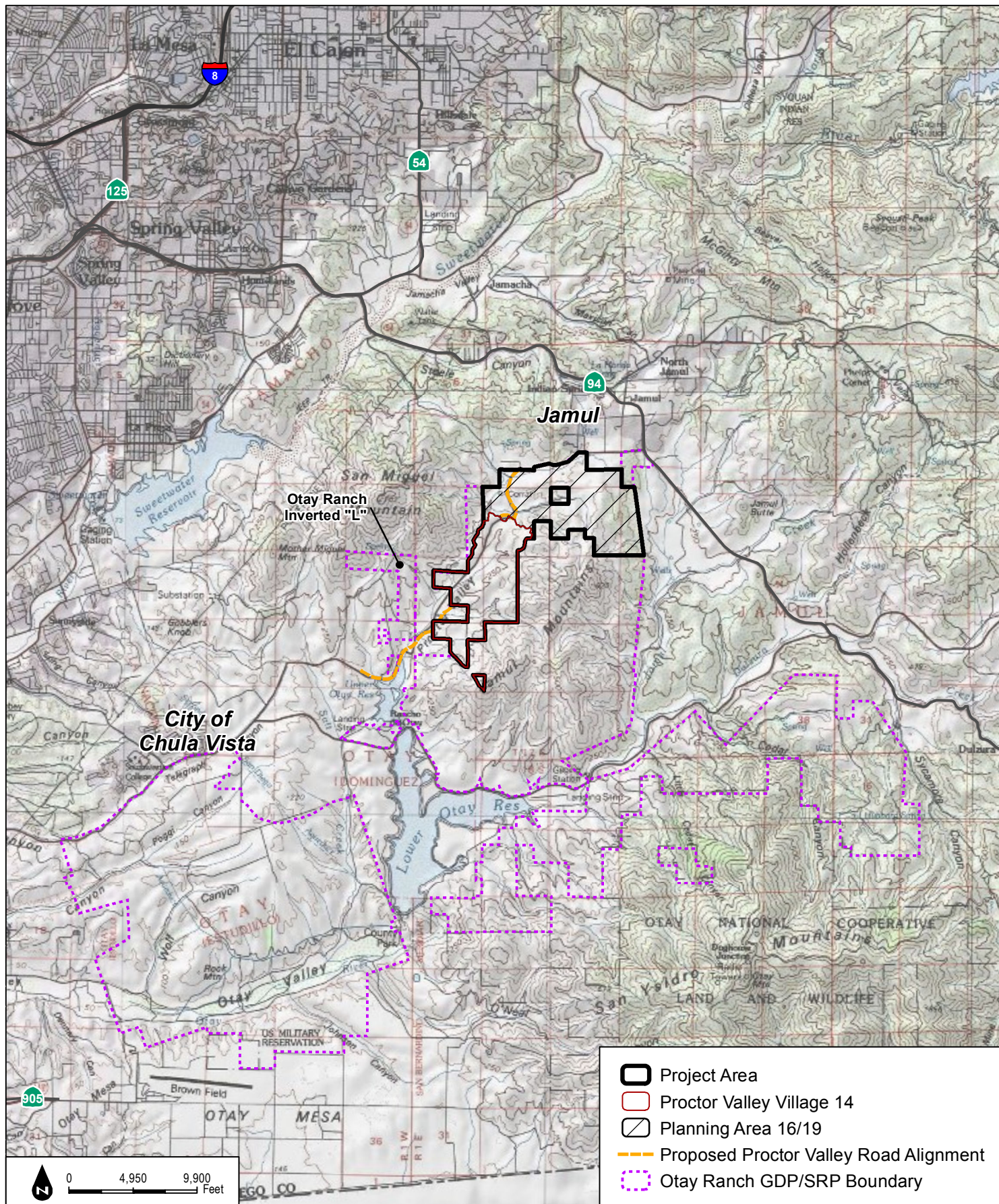
FIGURE 1-1
Regional Map

Otay Ranch Village 14 and Planning Area 16/19 - Land Exchange Alternative

DUDEK

**Biological Resources Technical Report for the Otay Ranch
Village 14 and Planning Areas 16/19 Land Exchange Alternative**

INTENTIONALLY LEFT BLANK



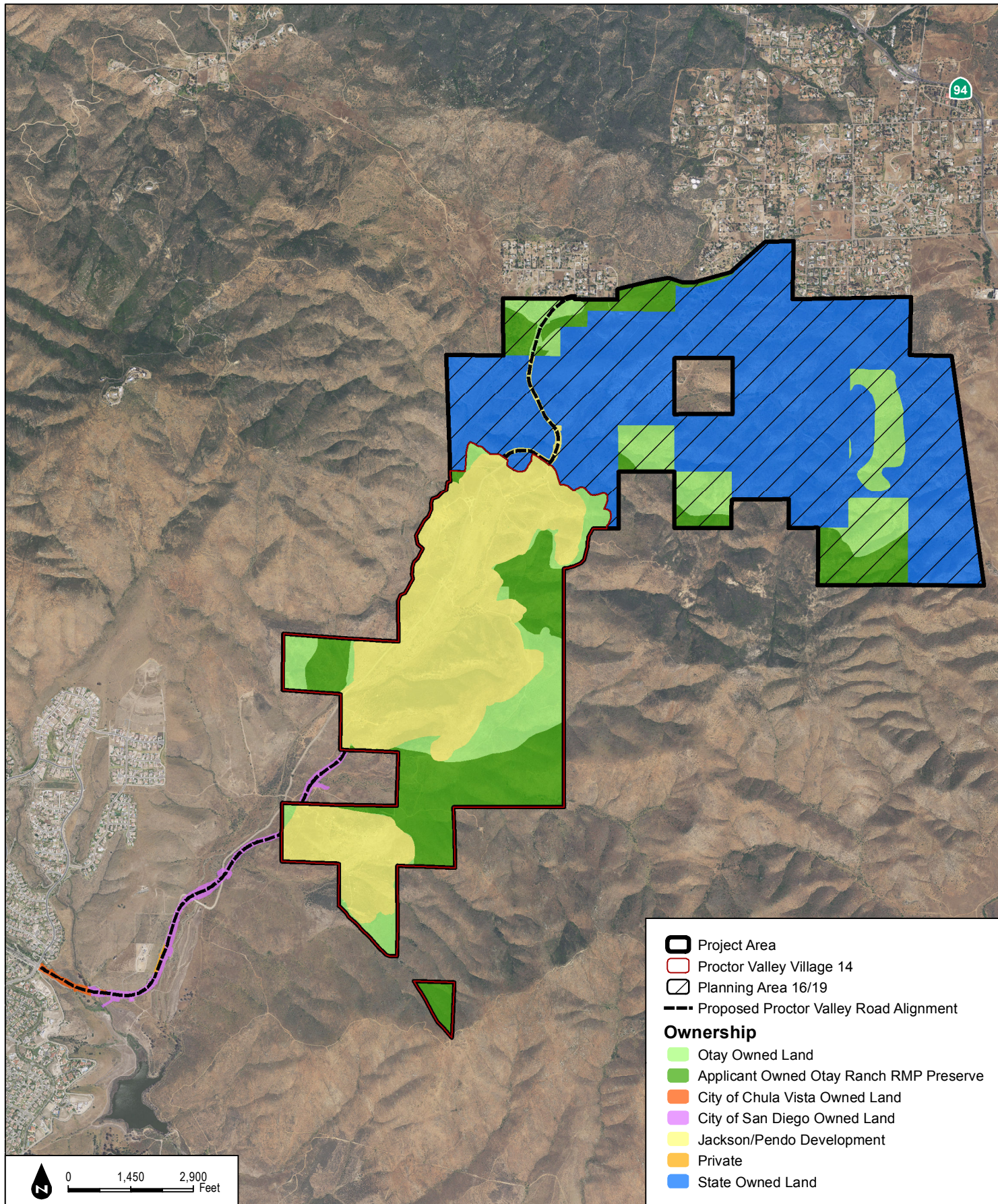
SOURCE: USGS 7.5-minute Quadrangle; Hunsaker 2017; County of San Diego 1997

FIGURE 1-2
Vicinity Map

Otay Ranch Village 14 and Planning Area 16/19 - Land Exchange Alternative

**Biological Resources Technical Report for the Otay Ranch
Village 14 and Planning Areas 16/19 Land Exchange Alternative**

INTENTIONALLY LEFT BLANK



**Biological Resources Technical Report for the Otay Ranch
Village 14 and Planning Areas 16/19 Land Exchange Alternative**

INTENTIONALLY LEFT BLANK

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

Regional Planning Context

The Otay Ranch RMP is a component of the Otay Ranch GDP/SRP and establishes the mechanism by which property owners are to mitigate impacts related to the overall Otay Ranch implementation, including biological impacts. The RMP also provides for the conservation and management of the entire 11,375-acre Otay Ranch RMP Preserve (City of Chula Vista and County of San Diego 1993b). Otay Ranch is also located within the boundaries of the MSCP Plan, which is a comprehensive multijurisdictional habitat conservation planning program for the southwestern portion of San Diego County (MSCP 1998). Local jurisdictions and special districts implement their respective portions of the MSCP Plan through Subarea Plans. The Land Exchange Area, except for some off-site improvements, is located within the South County Segment of the County of San Diego's MSCP Subarea Plan (County of San Diego 2010c). Implementation of the Proposed Project would result in conveyance of 776.8 acres to the Otay Ranch RMP Preserve. Implementation of the Land Exchange Alternative would result in conveyance of 654.5 acres to the Otay Ranch RMP Preserve. The MSCP Plan and Otay Ranch RMP are discussed in more detail in Section 2.3.

Proposed Land Uses

The Land Exchange Alternative's proposed land uses are set forth in Table 1-1 and shown in Figure 1-4, Proctor Valley Site Utilization Plan. The proposed land uses consist of single-family neighborhoods, a multiple-use residential and commercial neighborhood, an elementary school site, a site for public safety facilities, open space, Otay Ranch Preserve land, and park and recreational uses.

The Land Exchange Alternative includes approximately 511.2 acres designated for 1,530 homes. Of these, 123 would be multi-family homes and mixed-use units. The remainder would consist of 1,407 single-family homes, including 283 single-family age-restricted residences. The age-restricted neighborhoods would be gated, as would four of the single-family neighborhoods situated on the largest lots. Ultimately, the Land Exchange Alternative proposes 18 neighborhoods with approximate densities ranging from 1.5 to 15.0 dwelling units per acre.

Table 1-1
Proposed Land Use Plan

Land Use	Acres	Units
<i>Otay Ranch Village 14</i>		
Single-Family Residential	503.1	1,407
Multi-Family Residential (townhomes)	4.6	69
Mixed-Use ^a	3.5	54

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

**Table 1-1
Proposed Land Use Plan**

Land Use	Acres	Units
<i>Residential Subtotal^b</i>	511.2	1,530
Public Parks	13.5	N/A
Private Parks	6.9	N/A
Public Safety Site	2.3	N/A
Elementary School	8.3	N/A
Private HOA Open Space ^c	33.4	N/A
Circulation ^d	23.1	N/A
<i>Non-Residential Subtotal</i>	87.5	N/A
Preserve	403.9	N/A
<i>Village 14 Subtotal</i>	1,002.6	1,530
<i>Planning Areas 16/19</i>		
Project-Applicant-Owned Preserve	113.5	N/A
Otay Ranch RMP/MSCP Preserve – Boundary Adjustment ^e	162.8	N/A
Exchange to State for Preserve	278.0	N/A
Existing State Ownership (portion)	774.1	N/A
Circulation ^f	16.4	N/A
<i>Planning Areas 16/19 Subtotal</i>	1,344.8	N/A
Land Exchange Alternative Grand Total	2,347.4	1,530
<i>Off-Site Land Exchange Alternative Components</i>		
North PVR – County Easement	0.3	N/A
North PVR – within Planning Areas 16/19 ^f	(16.4)	N/A
South PVR – within City of Chula Vista	5.3	N/A
South PVR – within City of SD/County of SD	26.6	N/A
South PVR – within Private Lands	0.8	N/A
Central PVR – within City of SD/County of SD	7.2	N/A
Total Off-Site	40.2 (56.6)	N/A

HOA = homeowner's association; PVR = Proctor Valley Road; SD = San Diego; N/A = not applicable

^a Mixed-use acreage includes 15,000 square feet of commercial use.

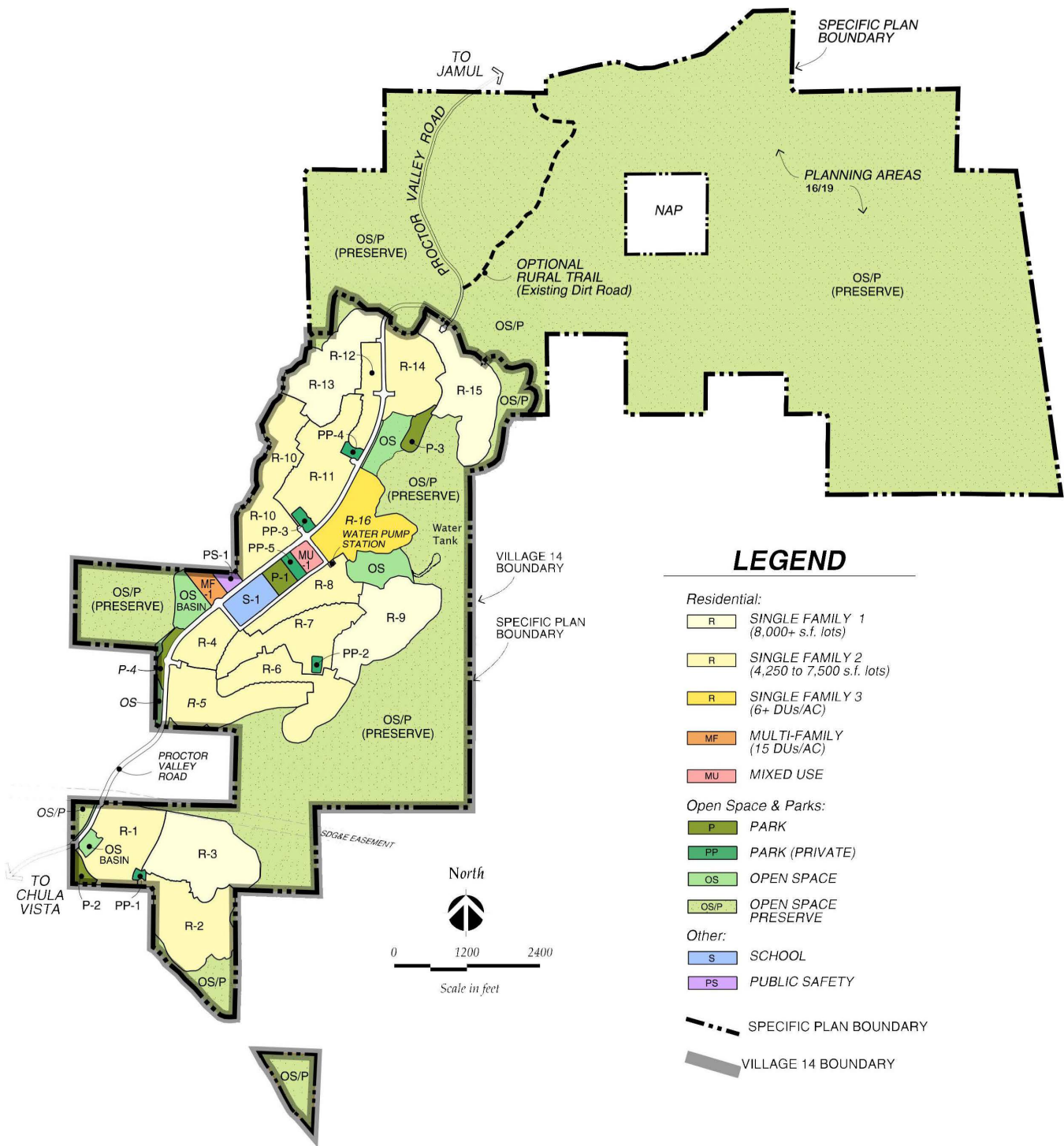
^b Residential acreage includes 151.6 acres of fuel modification and internal open space slopes and 2.6 acres of private pocket parks.

^c Open Space included 11.3 acres of basins and HOA open space lots not included in the residential acreage.

^d Proctor Valley Road is on site in Village 14 only.

^e The total amount of Preserve within Planning Areas 16/19 as a result of the boundary adjustment is 169.8. However a portion is utilized for construction of Proctor Valley Road north and is included under circulation.

^f A portion of Proctor Valley Road north in Planning Area 16 is in the Otay Ranch RMP Preserve. To avoid double counting, the off-site calculations are noted in parentheses.



**Biological Resources Technical Report for the Otay Ranch
Village 14 and Planning Areas 16/19 Land Exchange Alternative**

INTENTIONALLY LEFT BLANK

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

Village 14 in the Land Exchange Area is planned around a Village Core centrally located in the heart of the village. Higher-density residential uses would be adjacent to the Village Core with single-family residential radiating out in decreasing density. The Village Core is composed of the neighborhood center, which includes an 8-acre elementary school, a 4-acre village green (public park), a 3-acre mixed-use site with up to 15,000 square feet of commercial/retail uses and 54 multi-family homes, and a 2-acre Village Square Community Facility. The Village Core would also include a 2-acre public safety site for a fire station and satellite sheriff's facility and 69 multi-family townhomes located adjacent to the public safety site.

The Land Exchange Alternative is designed around an active lifestyle and wellness recreation theme and includes an extensive park and recreation system including four public parks totaling 13 acres. The remaining private recreation facilities include three private swim clubs, a senior activity center, the Village Square Community Facility and numerous pocket parks totaling approximately 9 acres. Approximately 4.6 miles of Community Pathway are proposed on Proctor Valley Road. Approximately 3 miles of Park-to-Park Loop connect to the regional pathway. The Land Exchange Alternative also includes two Preserve trail options and a perimeter trail option. The two Preserve trail options are located within existing disturbed trails. The Land Exchange Alternative would retain these portions of trails in their existing conditions. No improvements to these trails are contemplated. The perimeter trail is located within the Development Footprint.

After implementing the proposed land exchange agreement, MSCP/RMP Preserve boundary adjustment, and General Plan Amendment, the Land Exchange Alternative would include 1,748.7 acres of MSCP and Otay Ranch RMP Preserve, including 403.9 acres in Village 14 and 1,344.8 acres in Planning Areas 16/19. Approximately 5.6 acres of Otay Ranch RMP Preserve in Planning Areas 16/19 include the northern end of Proctor Valley (i.e., Proctor Valley North). Within Village 14, 3 acres within the Otay Ranch RMP Preserve will be impacted by the placement of a water tank. Both of these features are allowable uses within the Otay Ranch RMP Preserve and, therefore, are still considered Otay Ranch RMP Preserve lands.

1.3 Project Terminology and Definitions

The following describes the major components and characteristics of the Land Exchange Alternative.

Land Exchange Alternative

The Land Exchange Alternative reflects the applicant's ownership within Village 14 and Planning Areas 16/19, as well as CDFW's ownership in Village 14 and Planning Areas 16/19, which remains approved for development per the County's General Plan and the Otay Ranch GDP/SRP. In addition, there is an area of Village 14 commonly known as the "Inverted L" (see Figure 1-2), which is excluded from the Land Exchange Alternative because it is not owned by

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

the applicant. It was acquired by USFWS and the Otay Water District for conservation purposes and is located in the City of Chula Vista.

The Land Exchange Alternative would limit development to Village 14 and convert the majority of development approved by the Otay Ranch GDP/SRP in Planning Areas 16/19 to Preserve land that would be managed either by the POM or state. The Land Exchange Alternative would include a land exchange agreement with the State of California and a simultaneous boundary adjustment to the MSCP and Otay Ranch RMP Preserve systems (Figure 1-5, Land Exchange and Boundary Adjustment).

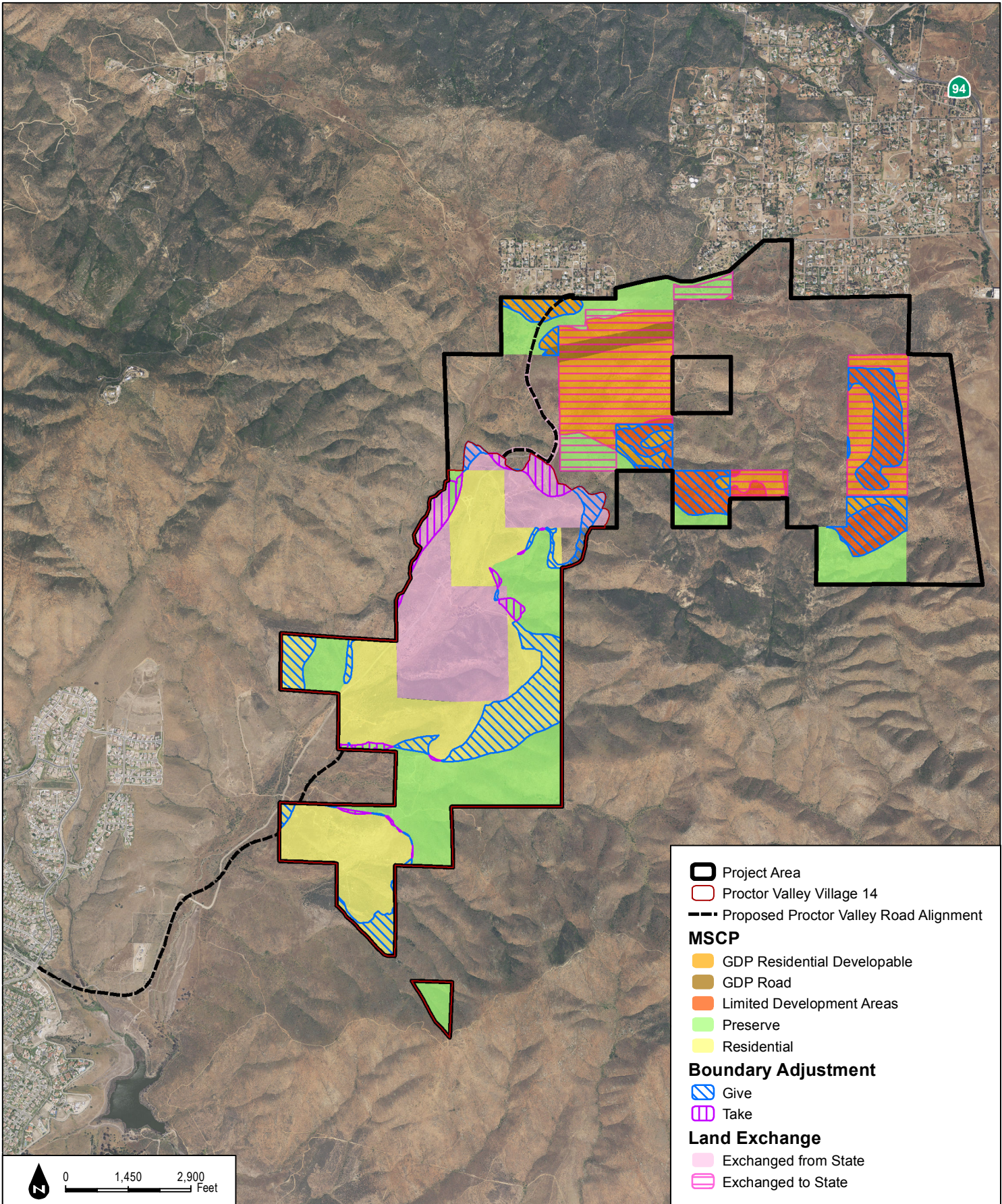
Specifically, the Land Exchange Alternative proposes the following:

- Exchange 278 acres owned by the state in Village 14 for 278 acres owned by the applicant in Planning Area 16.
- Change MSCP/Otay Ranch RMP Preserve boundaries via a boundary adjustment where approximately 169.8 acres of designated development in Planning Areas 16/19 would be converted to Otay Ranch RMP Preserve, and 142.3 acres of designated development in Village 14 would be converted to Otay Ranch RMP Preserve. In addition, 43.6 acres of designated Otay Ranch RMP Preserve in Village 14 would be converted to development. The boundary adjustment would result in a net increase in Preserve of 268.5 acres.

The Land Exchange Alternative land plan is depicted in Figure 1-4. The Land Exchange Alternative would include a Specific Plan, General Plan Amendments, EIR, Rezone, Tentative Map, Otay Ranch RMP Amendment, and MSCP County Subarea Plan Boundary Adjustment. The full details of the land exchange and boundary adjustment are provided in Appendix A, Proposed Boundary Adjustment Equivalency Analysis for Otay Ranch Village 14 and Planning Areas 16/19 and Proposed Land Exchange Functional Equivalency Analysis for Otay Ranch Village 14 and Planning Areas 16/19.

Land Exchange Alternative Project Area

The Land Exchange Alternative Project Area (Land Exchange Area) is land within the applicant's ownership located within Otay Ranch Village 14 and Planning Areas 16/19, in addition to off-site improvement areas for infrastructure, as well as areas within Village 14 and Planning Areas 16/19 currently owned by the state. The total Land Exchange Area covers approximately 2,387.7 acres. Within the Land Exchange Area, there is 1,002.6 acres in Village 14 and 1,344.8 acres in Planning Areas 16/19; the remaining 40.2 acres is located outside of Otay Ranch.



SOURCE: NAIP 2016; Hunsaker 2017; SANGIS 2017

FIGURE 1-5

Land Exchange and Boundary Adjustment

Otay Ranch Village 14 and Planning Area 16/19 - Land Exchange Alternative

**Biological Resources Technical Report for the Otay Ranch
Village 14 and Planning Areas 16/19 Land Exchange Alternative**

INTENTIONALLY LEFT BLANK

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

Boundary Line Adjustment

If a project's proposed footprint changes and needs to encroach into the MSCP Preserve, the project applicant must seek and obtain an MSCP Preserve "boundary adjustment" from the County. A boundary adjustment to the MSCP Preserve would require concurrence from the Wildlife Agencies (i.e., USFWS and CDFW). The County may only approve a boundary adjustment if the project applicant dedicates additional land to the MSCP Preserve that is equal in size and biological value to that removed from the Preserve and placed within the proposed development (MSCP Section 5.4.2). In addition to the land exchange between the applicant and CDFW, the Land Exchange Alternative proposes to change the MSCP Preserve boundary, which would result in a net increase in Preserve of 268.5 acres (see Appendix A).

Village 14 Development Footprint

The "Village 14 Development Footprint" consists of areas where there would be either permanent or temporary ground disturbance. In addition, areas of open space that would be managed by a homeowner's association (HOA) (private HOA open space) are included in the Village 14 Development Footprint. The Village 14 Development Footprint would include all on-site development within Village 14, off-site improvements, and impacts resulting from infrastructure and other allowable uses within the MSCP Preserve, per Section 1.9.3 of the County of San Diego MSCP Subarea Plan. The Village 14 Development Footprint would also include all areas of fuel modification.

Otay Ranch RMP Preserve

The Otay Ranch RMP Preserve includes areas defined as Preserve in the County of San Diego MSCP Subarea Plan Implementing Agreement, which defines the County's required contribution to the MSCP Preserve. As described in Section 1.2, Project Location and Description, the Otay Ranch RMP provides for the conservation and management of the entire 11,375-acre Otay Ranch RMP Preserve. The Implementing Agreement states that the required mitigation for Otay Ranch includes "protection of the areas identified as preserved in the boundaries of the Otay Ranch project including approximately 11,375 acres" of the Otay Ranch RMP Preserve. Therefore, the Otay Ranch RMP Preserve is a subset of the MSCP Preserve. The portion of the Land Exchange Alternative's land use designated as Otay Ranch RMP Preserve is, therefore, referred to as the "Otay Ranch RMP Preserve," which includes 403.9 acres in Village 14 and 283.3 acres in Planning Areas 16/19, for a total of 687.2 acres.

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

Off-Site Improvement Areas

Off-site improvements would result in 56.6 acres of both temporary and permanent impacts. Off-site improvements consist of the following: wet and dry utilities, drainage facilities, and trails along Proctor Valley Road; an off-site sewer pump station in the southern reach of Proctor Valley Road; and off-site sewer facilities to connect to the Salt Creek Interceptor. Improvements to Proctor Valley Road would include Proctor Valley Road South (0.25 miles of which are in the City of Chula Vista and 1.2 miles in City of San Diego Cornerstone Lands), Proctor Valley Road Central (0.3 miles in City of San Diego Cornerstone Lands), and Proctor Valley Road North (1 mile located between the community of Jamul and the Village 14 Development Footprint). Proctor Valley Road Central and South are proposed to be improved and classified as a two-lane-with-median light collector with a width ranging from 68 to 74 feet, plus an additional 20-foot-wide fuel modification/construction easement on each side. Proctor Valley Road North is a two-lane interim road with a paved width of 28 feet in a 40-foot-wide right-of-way. Improvements in the off-site areas would include wet and dry utilities and a Community Pathway. Off-site facilities within Proctor Valley Road would include those typically installed in or near the roadways, including wet and dry utilities, sewer pump station, drainage, landscaping, culverts, and trails. Proctor Valley Road is an approved County General Plan Mobility Element road (County of San Diego 2011a), and an approved facility in the MSCP County of San Diego Subarea Plan (County of San Diego 1997), City of San Diego MSCP Subarea Plan (City of San Diego 1997), and City of Chula Vista Subarea Plan (City of Chula Vista 2003).

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

2 APPLICABLE REGULATIONS

The Land Exchange Alternative is located within the boundaries of MSCP Plan. The MSCP is a multijurisdictional habitat conservation planning program, which involves USFWS, CDFW, the County of San Diego, the City of San Diego, the City of Chula Vista, and other local jurisdictions and special districts (Figure 2-1, Regional Planning Context). Refer to Section 2.3 for more information regarding the MSCP.

In addition, USFWS has designated critical habitat for certain species in the area that are listed as endangered or threatened under the federal Endangered Species Act (FESA). These designations influence whether, and to what extent, development is permitted, and what mitigation measures would be required to address impacts to sensitive resources. Regional resource planning has mainly been conducted through the Otay Ranch GDP/SRP and Otay Ranch RMP processes, as well as the multi-jurisdictional MSCP process. These plans are important to the evaluation of impacts to biological resources because the loss of resources is anticipated by these plans and compensated for through the assemblage of MSCP Preserve Lands to conserve Covered Species.

2.1 Federal

2.1.1 Federal Endangered Species Act

FESA (16 U.S.C. 1531 et seq.) is implemented by USFWS through a program that identifies and provides for protection of various species of fish, wildlife, and plants deemed to be in danger of or threatened with extinction. As part of this regulatory act, FESA provides for designation of critical habitat, defined in FESA Section 3(5)(A) as specific areas within the geographical range occupied by a species where physical or biological features “essential to the conservation of the species” are found and that “may require special management considerations or protection.” Critical habitat may also include areas outside the current geographical area occupied by the species that are nonetheless “essential for the conservation of the species.”

Critical habitat for four species exists within the Land Exchange Area, including off-site improvement areas: coastal California gnatcatcher (*Poliophtila californica californica*), the Quino checkerspot butterfly (*Euphydryas editha quino*), Otay tarplant (*Deinandra conjugens*), and spreading navarretia (*Navarretia fossalis*). The Land Exchange Area includes 23 acres of coastal California gnatcatcher critical habitat; 1,580.5 acres of Quino checkerspot butterfly critical habitat, 49.3 acres of Otay tarplant critical habitat, and 72.4 acres of spreading navarretia critical habitat. Figure 2-2, Critical Habitat, shows the location of critical habitat within the Land Exchange Area.

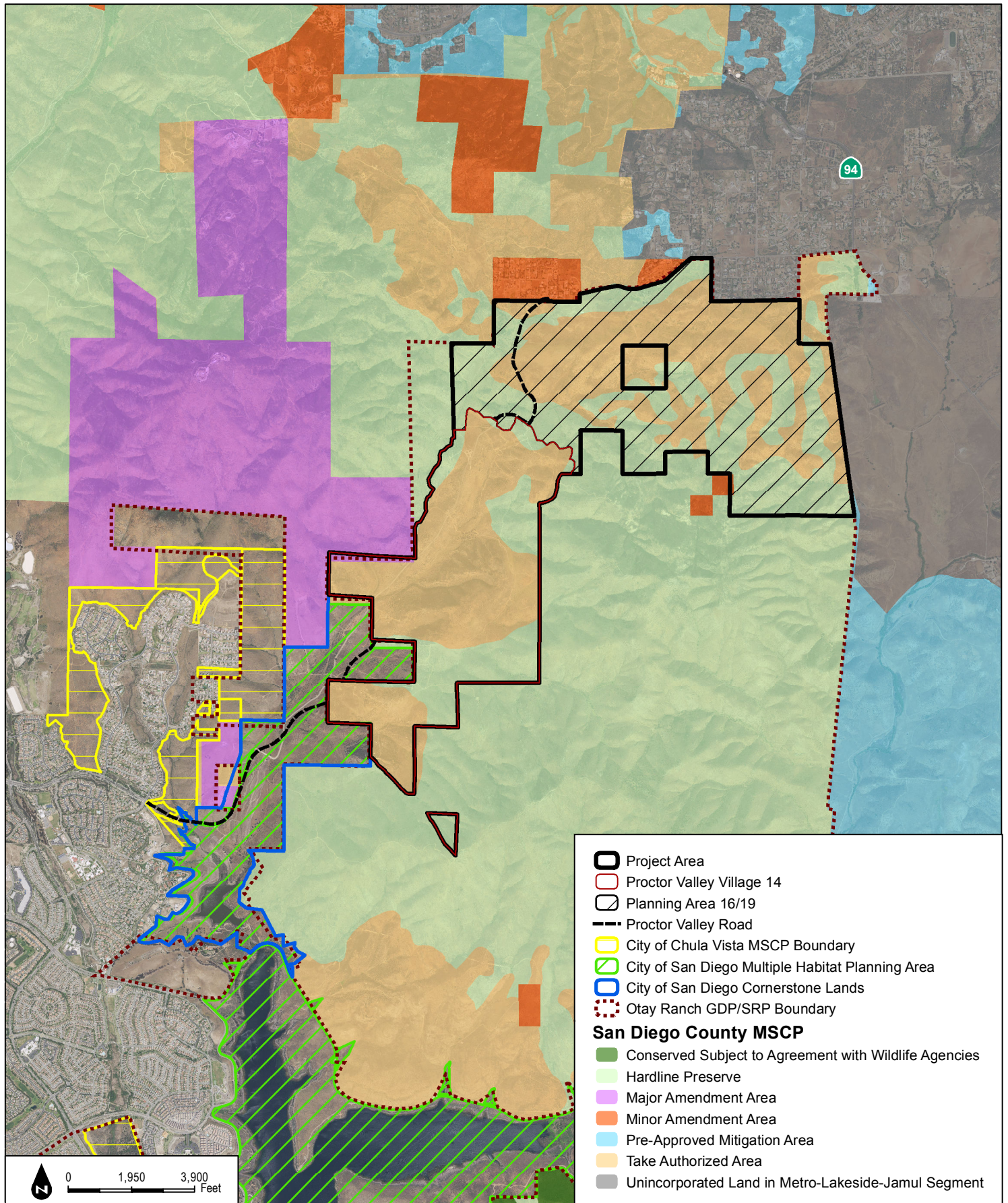
Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

2.1.2 Migratory Bird Treaty Act

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, or killing, or attempting to do so (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 USFWS to develop a memorandum of understanding. USFWS reviews actions that might affect these species.

2.1.3 Clean Water Act

Pursuant to Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (ACOE) regulates the discharge of dredged and/or fill material into “waters of the United States.” The term “wetlands” (a subset of waters of the United States) is defined in 33 Code of Federal Regulations (CFR) 328.3(b) as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.” In the absence of wetlands, the limits of ACOE jurisdiction in non-tidal waters, such as intermittent streams, extend to the “ordinary high water mark,” which is defined in 33 CFR 328.3(e).



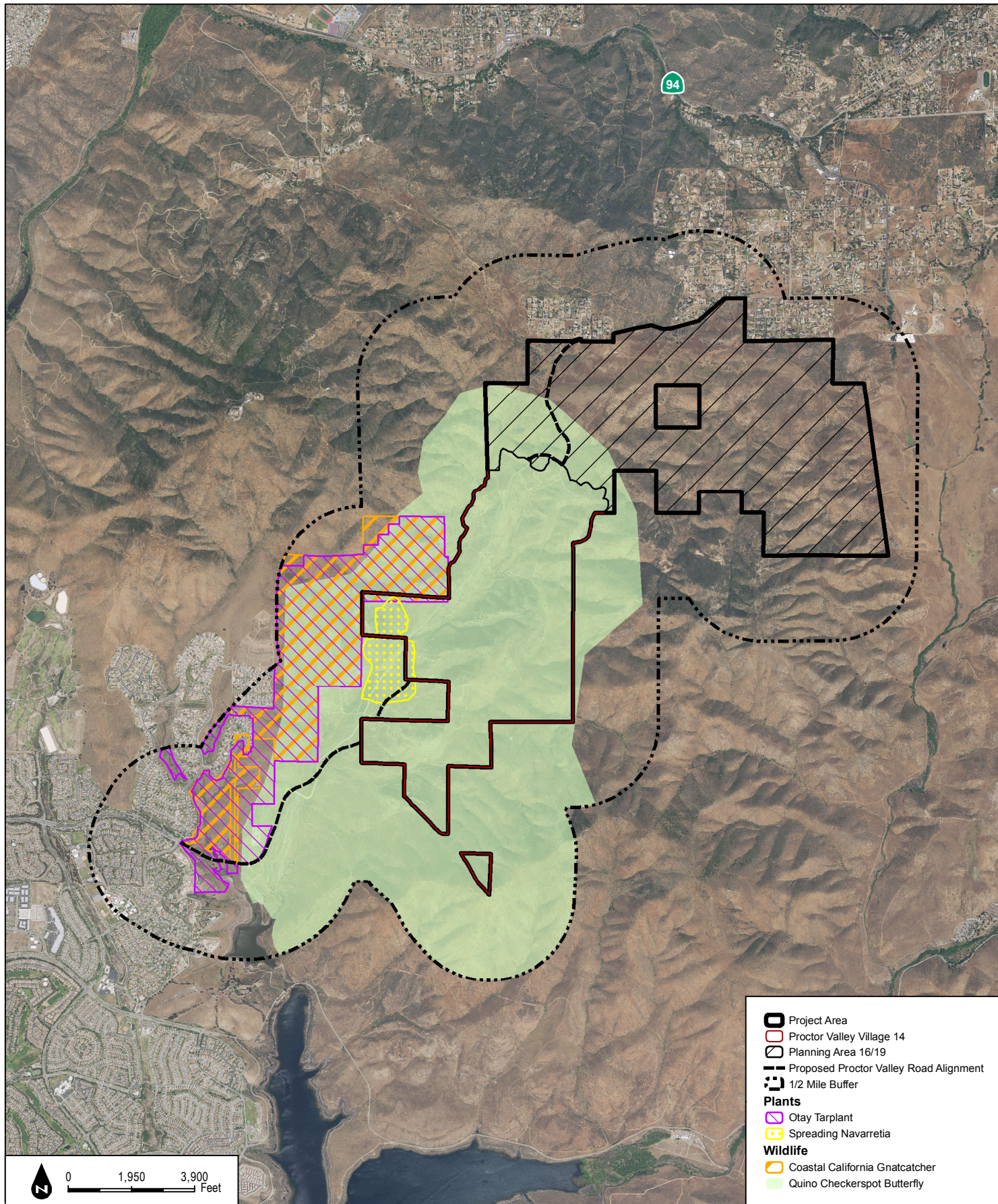
SOURCE: NAIP 2016; Hunsaker 2017;
SANGIS 2003, 2010; City of Chula Vista 2003

FIGURE 2-1
Regional Planning Context

Otay Ranch Village 14 and Planning Area 16/19 - Land Exchange Alternative

**Biological Resources Technical Report for the Otay Ranch
Village 14 and Planning Areas 16/19 Land Exchange Alternative**

INTENTIONALLY LEFT BLANK



SOURCE: NAIP 2016; Hunsaker 2017; USFWS 2016

DUDEK

Otay Ranch Village 14 and Planning Area 16/19 - Land Exchange Alternative

FIGURE 2-2
Critical Habitat

**Biological Resources Technical Report for the Otay Ranch
Village 14 and Planning Areas 16/19 Land Exchange Alternative**

INTENTIONALLY LEFT BLANK

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

2.1.4 Bald and Golden Eagle Protection Act

Bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*) are federally protected under the Bald and Golden Eagle Protection Act (BGEPA), passed in 1940 to protect bald eagle and amended in 1962 to include golden eagle (16 U.S.C. 668 et seq.). This act prohibits the take, possession, sale, purchase, barter, offering to sell or purchase, export or import, or transport of bald eagles and golden eagles and their parts, eggs, or nests without a permit issued by USFWS. The definition of “take” includes to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. The definition of “disturb” has been further clarified by regulation as follows: “Disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior” (50 CFR 22.3).

The BGEPA prohibits any form of possession or taking of both eagle species, and the statute imposes criminal and civil sanctions, as well as an enhanced penalty provision for subsequent offenses. Further, the BGEPA provides for the forfeiture of anything used to acquire eagles in violation of the statute. The statute exempts from its prohibitions on possession the use of eagles or eagle parts for exhibition, scientific, or Native American religious uses.

In November 2009, USFWS published the Final Eagle Permit Rule (74 FR 46836–46879) providing a mechanism to permit and allow for incidental (i.e., non-purposeful) take of bald and golden eagles pursuant to the BGEPA (16 U.S.C. 668 et seq.). The previous year, 2008, USFWS adopted 50 CFR Part 22.11(a), which provides that a permit authorizing take under FESA section 10 applies with equal force to take of golden eagles authorized under the BGEPA. These regulations were followed by issuance of guidance documents for inventory and monitoring protocols and for avian protection plans (USFWS 2010). In January 2011, USFWS released its Draft Eagle Conservation Plan Guidance aimed at clarifying expectations for acquiring take permits acquisition by wind power projects, consistent with the 2009 rule (USFWS 2011a).

On December 16, 2016, USFWS adopted additional regulations regarding incidental take of golden eagles and their nests (81 FR 91494 et seq.). Most of the new regulations address “programmatic eagle nonpurposeful take permits” such as those typically requested by members of the alternative energy industry, most notably wind farms. For example, the new regulations extend the duration of such permits from 5 to 30 years. In addition, the new regulations modify the definition of the BGEPA “preservation standard” to mean “consistent with the goals of maintaining stable or increasing breeding populations in all eagle management units and the persistence of local populations throughout the service range of each species” (81 FR 91496–91497).

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

2.2 State

2.2.1 California Endangered Species Act

CDFW administers the California Endangered Species Act (CESA) (California Fish and Game Code (CFGF) Section 2050 et seq.), which prohibits the “take” of plant and animal species designated by the California Fish and Game Commission as endangered or threatened in California. Under CESA Section 86, take is defined as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” CESA Section 2053 stipulates that state agencies may not approve projects that will “jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available consistent with conserving the species or its habitat which would prevent jeopardy.”

Sections 3511, 4700, and 5515 of the California Fish and Game Code designate certain birds, mammals, and fish as “fully protected” species. These species may not be taken or possessed without a permit from the Fish and Game Commission, and such take may only occur pursuant to scientific research or in connection with an authorized Natural Community Conservation Plan (NCCP). No “incidental take” of fully protected species is allowed.

CESA Sections 2080 through 2085 address the taking of threatened, endangered, or candidate species by stating, “No person shall import into this state, export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the Commission determines to be an endangered species or a threatened species, or attempt any of those acts, except as otherwise provided in this chapter, the Native Plant Protection Act (CFGF Sections 1900–1913), or the California Desert Native Plants Act (Food and Agricultural Code, Section 80001).”

Section 2081(b) and (c) of the Fish and Game Code authorizes take of endangered, threatened, or candidate species if take is incidental to otherwise lawful activity and if specific criteria are met. In such cases, CDFW issues the applicant an incidental take permit, which functions much like an incidental take statement in the federal context. Sections 2081(b) and (c) also require CDFW to coordinate consultations with USFWS for actions involving federally listed species that are also state-listed species. In certain circumstances, Section 2080.1 of CESA allows CDFW to adopt a federal incidental take statement or a 10(a) permit as its own, based on its findings that the federal permit adequately protects the species and is consistent with state law. As mentioned above, CDFW may not issue a Section 2081(b) incidental take permit for take of “fully protected” species. The Fish and Game Code lists the fully protected species in Section 3511 (birds), Section 4700 (mammals), Section 5050 (reptiles and amphibians), and Section 5515 (fish).

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

2.2.2 California Fish and Game Code

Streambed Alteration Agreement

Pursuant to Section 1602 of the California Fish and Game Code, CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. A Streambed Alteration Agreement (CFGF Section 1602 et seq.) is required for impacts to jurisdictional resources, including streambeds and associated riparian habitat.

Birds and Mammals

According to Sections 3511 and 4700 of the California Fish and Game Code, which regulate birds and mammals, a fully protected species may not be taken or possessed. CDFW may not authorize the take of such species except (1) for necessary scientific research, (2) for the protection of livestock, and (3) when the take occurs for fully protected species within an approved NCCP, such as the MSCP that covers the Land Exchange Area.

Resident and Migratory Birds

The California Fish and Game Code provides protection for wildlife species. It states that no mammals, birds, reptiles, amphibians, or fish species listed as fully protected can be “taken or possessed at any time.” In addition, CDFW affords protection over the destruction of nests or eggs of native bird species (CFGF Section 3503), and it states that no birds in the orders of Falconiformes or Strigiformes (birds of prey) can be taken, possessed, or destroyed (CFGF Section 3503.5). CDFW cannot issue permits or licenses that authorize the take of any fully protected species, except under certain circumstances such as scientific research and live capture and relocation of such species pursuant to a permit for the protection of livestock (CFGF Section 3511). Separate from federal and state designations of species, CDFW designates certain vertebrate species as Species of Special Concern based on declining population levels, limited ranges, and/or continuing threats that have made them vulnerable to extinction.

California Native Plant Protection Act

The Native Plant Protection Act of 1977 (CFGF Section 1900–1913) directed CDFW to carry out the legislature’s intent to “preserve, protect and enhance rare and endangered plants in this State.” The Native Plant Protection Act gave the California Fish and Game Commission the power to designate native plants as “endangered” or “rare,” and to protect endangered and rare plants from take. When CESA was passed in 1984, it expanded on the original Native Plant Protection Act, enhanced legal protection for plants, and created the categories of “threatened” and “endangered” species to parallel FESA. CESA categorized all rare animals as threatened

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

species under CESA, but did not do so for rare plants, which resulted in three listing categories for plants in California: rare, threatened, and endangered. The Native Plant Protection Act remains part of the California Fish and Game Code, and mitigation measures for impacts to rare plants are specified in a formal agreement between CDFW and project proponents.

2.2.3 Porter–Cologne Water Quality Control Act

The Porter–Cologne Water Quality Control Act protects water quality and the beneficial uses of water. It applies to surface water and groundwater. Under this law, the State Water Resources Control Board develops statewide water quality plans, and the Regional Water Quality Control Boards (RWQCBs) develop regional basin plans that identify beneficial uses, water quality objectives, and implementation plans. The RWQCBs have the primary responsibility to implement the provisions of statewide plans and basin plans. Waters regulated under the Porter–Cologne Water Quality Control Act include isolated waters that are no longer regulated by ACOE. Developments with impacts to jurisdictional waters must demonstrate compliance with the goals of the act by developing stormwater pollution prevention plans (SWPPP), standard urban stormwater mitigation plans, and other measures to obtain a Clean Water Act Section 401 certification.

2.2.4 California Environmental Quality Act

CEQA requires identification of a project’s potentially significant impacts on biological resources and feasible mitigation measures and alternatives that could avoid or reduce significant impacts. CEQA Guideline 15380(b)(1) defines endangered animals or plants as species or subspecies whose “survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors” (14 CCR 15000 et seq.). A rare animal or plant is defined in CEQA Guideline 15380(b)(2) as a species that, although not presently threatened with extinction, exists “in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or ... [t]he species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered ‘threatened’ as that term is used in the federal Endangered Species Act.” Additionally, an animal or plant may be presumed to be endangered, rare, or threatened if it meets the criteria for listing, as defined further in CEQA Guideline 15380(c). CEQA also requires identification of a project’s potentially significant impacts on riparian habitats (such as wetlands, bays, estuaries, and marshes) and other sensitive natural communities, including habitats occupied by endangered, rare, and threatened species.

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

2.3 Regional

2.3.1 San Diego County General Plan and Community and Subregional Plans

The Conservation and Open Space Element of the County's General Plan (Chapter 5) provides land-use-based conservation goals and policies that protect the ecological and lifecycle needs of threatened, endangered, or otherwise sensitive species and their associated habitats. The Conservation and Open Space Element outlines the goals and policies pertaining to each type of open space, not all of which are for the preservation of biological resources (County of San Diego 2011a). Resource Conservation Areas are described and delineated in each of the Community and Subregional Plans. Each Resource Conservation Area was designated for a purpose specific to that area. When a site is located within a mapped Resource Conservation Area, that project must comply with the relevant policies for that Resource Conservation Area (e.g., avoidance of oaks).

2.3.2 Multiple Species Conservation Program

The Land Exchange Alternative is located within the boundaries of the MSCP Plan. The MSCP is a multi-jurisdictional habitat conservation planning program which involves USFWS, CDFW, the County of San Diego, the City of San Diego, the City of Chula Vista, and other local jurisdictions and special districts (Figure 2-1). Local jurisdictions and special districts implement their respective portions through subarea plans. The combination of the MSCP Plan and subarea plans serve as a Habitat Conservation Plan (HCP) pursuant to Section 10(a)(1)(B) of FESA and as an NCCP pursuant to the California NCCP Act of 1991 (MSCP 1998).

The MSCP Plan study area encompasses 582,243 acres within the southwestern portion of San Diego County. As stated in the MSCP Plan, an objective of the MSCP is to conserve a connected system of biologically viable habitat lands in a manner that maximizes the protection of sensitive species and precludes the need for future listings of species as threatened or endangered. The MSCP Plan identifies a Multi-Habitat Planning Area (MHPA), which is the area within which the permanent MSCP Preserve will be assembled and managed for its biological resources. The MHPA is defined in many areas by mapped boundaries in figures in the MSCP Plan, and is also defined by quantitative targets for conservation of vegetation communities and goals and criteria for Preserve design. The MSCP Plan targets 171,917 acres within the MHPA for conservation (MSCP 1998).

A total of 85 plant and animal species are "covered" by the MSCP Plan. With approval of each subarea plan and corresponding implementing agreement, each participating local jurisdiction receives permits and/or authorization to directly impact or "take" MSCP Covered Species. The Covered Species include species listed as endangered or threatened by the FESA or CESA, as

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

well as unlisted species. Table 3-4a in the MSCP Plan provides a list of the MSCP Covered Species. Table 3-5 in the MSCP Plan includes specific conditions required for take authorizations (MSCP 1998).

2.3.3 County of San Diego MSCP Subarea Plan

The MSCP County of San Diego Subarea Plan implements the MSCP Plan within the unincorporated areas of the County of San Diego and encompasses 252,132 acres. The MSCP County Subarea Plan provides “take” coverage for 85 species, provided the County satisfies the conservation and mitigation goals set forth in the Implementing Agreement (USFWS et al. 1998) to the MSCP County Subarea Plan (County of San Diego 1997).

The MSCP County Subarea Plan is divided into three segments: South County, Lake Hodges, and Metro–Jamul–Lakeside. The Land Exchange Area is located within the boundaries of the South County segment. The maps associated with the South County segment in the MSCP County Subarea Plan delineate where habitat will be conserved (County of San Diego 1997). As stated in Section 1.4 of the Implementing Agreement (USFWS et al. 1998) for the MSCP County Subarea Plan, the Wildlife Agencies (i.e., USFWS and CDFW) have agreed to areas where development can occur, and areas required to be preserved as mitigation for granting take authorization for the 85 Covered Species.¹

The MSCP County Subarea Plan (County of San Diego 1997) and Implementing Agreement (USFWS et al. 1998) provide that all development-related impacts to Covered Species within take-authorized areas or areas found to be in compliance with the Biological Mitigation Ordinance (BMO) are deemed mitigated through a project applicant’s participation in the MSCP Plan. Specifically, projects with an agreed upon “hard line” MSCP Preserve are authorized, within certain limits, to “take” any of the 85 Covered Species, and they may do so without applying for or securing incidental take permits from CDFW or USFWS. Projects that do not have an agreed upon “hard line” boundary must demonstrate conformance with the County’s BMO.

In addition, because the MSCP County Subarea Plan and Implementing Agreement incorporate the Otay Ranch RMP into the MSCP Preserve, any Otay Ranch project that participates in, and is consistent with, the MSCP is deemed to have mitigated its CEQA impacts on any affected Covered Species (see below). Thus, for example, development impacts to the orangethroat whiptail—a Covered Species—are considered already mitigated due to the habitat set aside in the MSCP Preserve in anticipation of development. Note, however, that significant impacts to species not covered by the MSCP County Subarea Plan are mitigated in accordance with the

¹ A full description of the Implementing Agreement and its mechanics is in Section 2.3.4.

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

RMP on a Ranch-wide basis. If a species is not addressed in the RMP, then it will be mitigated on a project-specific basis.

2.3.4 County of San Diego MSCP Implementing Agreement

The Implementing Agreement between USFWS, CDFW, and the County of San Diego is a contractual document that dictates how the MSCP and MSCP County Subarea Plan will be implemented within unincorporated areas of the County. It assigns rights and duties to the various signatories to the agreement, and it provides mechanisms for addressing contingencies that may or may not occur in the future. In this way, the Implementing Agreement gives the MSCP Plan both structure and flexibility (USFWS et al. 1998). (See Implementing Agreement, Recital 1.3: “A goal of the MSCP is to conserve biodiversity in the MSCP Plan Area and to achieve certainty in the land development process for private sector and public sector land development projects” (USFWS et al. 1998).)

The signatories to the Implementing Agreement are CDFW, USFWS, and the County. However, the agreement also grants certain rights to the “Third Party Beneficiaries” (i.e., the landowners who convey property to the MSCP Preserve and thereby earn development privileges under the MSCP and the MSCP County Subarea Plan). Specifically, the Implementing Agreement provides the following (USFWS et al. 1998):

Upon execution of this Agreement by the Parties and the issuance of Take Authorizations by USFWS and CDFG [California Department of Fish and Game, now CDFW], the County may allow within the Subarea the Incidental Take of Covered Species Subject to Incidental Take by Third Party Beneficiaries under the direct control of the County, specifically including landowners and public and private entities undertaking land development activities in conformance with an approval granted by the County in compliance with this Section and Sections 9 and 10 of this Agreement.

Through this provision of the Implementing Agreement, Third Party Beneficiaries can obtain take authorization directly from the County, and need not obtain incidental take permits from CDFW or USFWS.

The Implementing Agreement also assures Third Party Beneficiaries that their mitigation obligations, as set forth in the MSCP, would not change over time, unless certain extraordinary conditions arise (Implementing Agreement, 9.5, 9.6; Implementing Agreement, 17C (USFWS et al. 1998)).

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

Under the Agreement, “Extraordinary Circumstances” means either of the following (USFWS et al. 1998):

1. a significant, unanticipated adverse change in the population of any Covered Species or its habitat within the MSCP Plan Area; or
2. any significant new or additional information relevant to the MSCP that was not anticipated by the parties at the time the MSCP was approved and that would likely result in a significant adverse change in the population of any Covered Species or its habitat within the MSCP Plan Area).

The burden to establish “Extraordinary Circumstances” rests with the director of CDFW or regional director or director of USFWS. They must demonstrate to the County, “using the best scientific and commercial data available that is clear and convincing,” that such Extraordinary Circumstances exist (Implementing Agreement, 9.6C (USFWS et al. 1998)). In the event the County agrees that Extraordinary Circumstances do exist, the Implementing Agreement allows the County to devise “Additional Conservation Measures,” but it may not impose such measures on Third Party Beneficiaries, as this would erode the “certainty” built into the Agreement (Implementing Agreement, 9.6E (USFWS et al. 1998)). Instead, the Additional Conservation Measures are limited to modifications of the County’s “preserve management program or habitat acquisition program and shall not involve the commitment of additional land or additional land restrictions or additional financial compensation on the part of the County or Third Party Beneficiaries without their consent” (Implementing Agreement, 9.6E (USFWS et al. 1998)). In other words, any additional conservation measures to address Extraordinary Circumstances must be paid for or performed by CDFW and/or USFWS; the Third Party Beneficiaries cannot be required to do or give up more than what is already mandated in the MSCP Plan and MSCP County Subarea Plan (USFWS et al. 1998).

2.3.5 Otay Ranch Resource Management Plan Phase I and II

The Otay Ranch RMP Phase I is a comprehensive planning document that addresses the preservation, enhancement, and management of sensitive natural and cultural resources on the 22,899-acre Otay Ranch property and was designed specifically for Otay Ranch (City of Chula Vista and County of San Diego 1993b). The RMP was prepared in two phases. RMP Phase I identifies Preserve areas within Otay Ranch and contains policies for species and habitat conservation and long-term management of the Preserve. RMP Phase II includes Otay Ranch-wide studies that provide details on conveyance, management, and funding for the Otay Ranch RMP Preserve. Portions of the RMP Phase II were adopted by the County of San Diego, and the RMP has been incorporated in the Chula Vista MSCP Subarea Plan (City of Chula Vista and

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

County of San Diego 1993a). The County of San Diego and the City of Chula Vista were in the process of updating the Phase 2 RMP as of the writing of this report.

The RMP is intended to be the functional equivalent of the County of San Diego Resource Protection Ordinance (RPO) (County of San Diego 2007) for Otay Ranch. As such, subsequent Otay Ranch projects are exempted from the provisions of the RPO if determined to be consistent with a Comprehensive Resource Management and Protection Program, such as the Otay Ranch RMP.

In addition, the RMP is a component of the MSCP County Subarea Plan. For example, Section 3.3.3.7 of the MSCP County Subarea Plan states, “All conditions and exceptions listed in the Otay Ranch approval documents, including the Resource Management Plan (Volume I) are hereby incorporated by reference, with respect to easement requirements, revegetation requirements, allowed facilities within the Preserve area, etc.” (County of San Diego 1997).

The RMP and the 11,375-acre Otay Ranch RMP Preserve serve as the basis for mitigation of biological impacts identified in the Otay Ranch GDP/SRP Final Program Environmental Impact Report (EIR) (Otay Ranch PEIR) (City of Chula Vista and County of San Diego 1993c) (Implementing Agreement Section 10.5.2 (USFWS et al. 1998)). The RMP includes conveyance procedures for dedicating parcels of land to the Otay Ranch RMP Preserve and establishes an obligation for each new development to convey its fair share of the Otay Ranch RMP Preserve. Fair-share contribution requirements are established in the RMP as a proportion of Ranch-wide development to Ranch-wide Preserve Land. The loss of sensitive resources would be mitigated through the conveyance of 1.188 acres of Otay Ranch RMP Preserve land to the POM for every developable acre impacted. The Preserve conveyance requirement serves to mitigate throughout the entire Otay Ranch Preserve, and therefore enables the RMP Preserve system designed for Otay Ranch to be assembled and conveyed to the POM to be managed by one entity regardless of ownership.

The Otay Ranch RMP Preserve is a hardline Preserve and includes land reserved for mitigation stemming from impacts to sensitive resources as a result of Otay Ranch development. The Otay Ranch RMP Preserve was designed and is managed specifically for protection and enhancement of multiple species present on Otay Ranch. These dedicated conservation lands also serve to connect large areas of open space through a series of wildlife corridors, including connections between regional open spaces such as the Otay Reservoir System and San Miguel Mountain. The Otay Ranch RMP Preserve is included in the MSCP County Subregional Plan Preserve.

On March 6, 1996, the Chula Vista City Council and County of San Diego Board of Supervisors authorized the formation of an Otay Ranch POM through the execution of a Joint Powers Agreement between the City of Chula Vista and the County. The POM is responsible for management of resources, restoration of habitat, and enforcement of open space restrictions for

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

the entire Otay Ranch RMP Preserve once the Preserve is formally established and title to the land is conveyed to the POM. The Chula Vista MSCP Subarea Plan defines the POM as “the entity responsible for overseeing the day-to-day and long-range Preserve management activities within the Otay Ranch RMP Preserve, including but not limited to management of resources, restoration of habitat, and enforcement of open space restrictions” (City of Chula Vista 2003).

Land Exchange Alternative’s impacts to sensitive resources within the Village 14 Development Footprint are subject to the goals, objectives, and policies set forth in the Otay Ranch RMP. These goals, objectives, and policies include the types and locations of impacts, conservation of populations, and habitat for sensitive species, as well as Preserve conveyance for overall impacts (City of Chula Vista and County of San Diego 1993b).

2.4 Local

2.4.1 City of San Diego MSCP Subarea Plan

The Land Exchange Alternative encompasses 26.5 acres within the MSCP City of San Diego Subarea Plan area, specifically known as Cornerstone Lands. This portion of the Land Exchange Alternative would consist of realignment and improvements to Proctor Valley Road. The City of San Diego MSCP Subarea Plan (City of San Diego 1997) encompasses 206,124 acres within the MSCP Subregional Plan study area. The subarea is characterized by urban land uses with approximately three-quarters either built out or retained as open space/park system. The City of San Diego Multiple Habitat Planning Area (MHPA) represents a hardline Preserve, in which boundaries have been specifically determined. It is considered an urban Preserve that is constrained by existing or approved development, and is composed of linkages connecting several large areas of habitat.

The City of San Diego’s MHPA is approximately 56,831 acres and includes approximately 47,910 acres within City of San Diego jurisdiction, and additional City of San Diego–owned lands (8,921 acres) in the unincorporated areas around the San Vicente Reservoir, the Otay Reservoir System, and Marron Valley.

Cornerstone Lands

The City of San Diego Water Department owns four large areas of land within the City of San Diego MSCP Preserve system: lands surrounding portions of Upper and Lower Otay Reservoir; lands surrounding San Vicente Reservoir; lands owned by the City of San Diego in Marron Valley; and watershed management lands around Hodges Reservoir, including the portion of San Pasqual Valley from Hodges Reservoir east to the area referred to as the “narrows.” These lands contain valuable biological resources and have each been identified as a core biological resource area.

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

These lands total 10,400 acres and are commonly referred to as the Cornerstone Lands because they are considered essential building blocks for creating a viable habitat Preserve system. Except for the lands around Hodges Reservoir, the City of San Diego Cornerstone Lands are located within unincorporated areas of the County and are within the City of San Diego's jurisdiction.

The San Diego City Charter restricts the use and disposition of water utility assets and, thus, the City of San Diego Water Department must be compensated for any title restrictions placed on the Cornerstone Lands. To meet the policy objectives of the MSCP and comply with the City of San Diego Charter, the City of San Diego entered into a Conservation Land Bank Agreement with the Wildlife Agencies for the Cornerstone Lands.

The realignment and improvements to Proctor Valley Road South would affect some parts of City of San Diego Cornerstone Lands that are also located within the City of San Diego MHPA. Specifically, approximately 0.3 miles of the road between the South Village 14 and Central Village 14 would be realigned to the east to provide a 100-foot buffer from the watershed for vernal pools that are located in the City of San Diego Cornerstone Land properties and 1.2 miles of road south of South Village 14 would be improved. The City of San Diego MSCP Subarea Plan excludes certain utilities and public facilities from the MHPA within Cornerstone Lands, including Proctor Valley Road. As such, construction of Proctor Valley Road within the Preserve system "is not precluded based on the City's Cornerstone Lands Conservation Bank Agreement" (City of San Diego 1997). Impacts to City of San Diego Cornerstone Lands are discussed in Section 5 and Section 10.2.5 of this report.

2.4.2 Chula Vista MSCP Subarea Plan

The Land Exchange Alternative encompasses 5.4 acres within the Chula Vista MSCP Subarea Plan boundaries. This portion of the Land Exchange Alternative would include realignment and improvements to Proctor Valley Road. The Chula Vista MSCP Subarea Plan was approved by the City of Chula Vista in May 2003 (City of Chula Vista 2003) and received take authorization from the Wildlife Agencies (USFWS and CDFW) in January 2005. 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. The Chula Vista MSCP Subarea Plan Preserve system is mapped as either 100% or 75%–100% Conservation Area. The 100% Conservation Areas are delineated by hardline boundaries, and the 75%–100% Conservation Areas are defined by a quantitative and qualitative target for habitat conservation where final boundaries are not yet determined. 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. Conversely, the Development Footprint consists of mapped areas

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

within which the “take” of Covered Species is authorized by the Chula Vista MSCP Subarea Plan Section 10(a)(1)(B) (City of Chula Vista 2003) and Section 2835 permit.

The Chula Vista MSCP Subarea Plan identifies “Covered Projects” as those projects involving land use development within the City of Chula Vista for which hardline MSCP Preserve boundaries have been established and where conservation measures consistent with the MSCP Plan and Chula Vista MSCP Subarea Plan have been or will be specified as binding conditions of approval in the project’s plans and approvals. Covered Projects provide protection of narrow endemic species through consideration of narrow endemic species in the MSCP Preserve design for those projects. The Chula Vista MSCP Subarea Plan defines narrow endemic species as species that are highly restricted by their habitat affinities, soil conditions, or other ecological factors, including specific geographic and climatological conditions that support species with limited habitat ranges (City of Chula Vista 2003). Impacts to narrow endemic species require additional avoidance and minimization of impacts to ensure that their long-term viability is maintained. 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).

Chapter 6.0 of the Chula Vista MSCP Subarea Plan identifies permitted uses within the Chula Vista MSCP Preserve. Section 6.3.3 of the Chula Vista MSCP Subarea Plan differentiates between “Planned Facilities” and “Future Facilities.” Planned Facilities are major roads and infrastructure that were planned for development through existing plans and/or project approvals (i.e., General Plan and Otay Ranch GDP/SRP) and allowed to be constructed, operated, and maintained within the Chula Vista MSCP Preserve at the time of writing of the Chula Vista MSCP Subarea Plan. These Planned Facilities are identified in Table 6-1 of the Chula Vista MSCP Subarea Plan (City of Chula Vista 2003). Future Facilities are those facilities necessary to support planned development that were not identified at the time of the Chula Vista MSCP Subarea Plan but were anticipated to be required. Table 6-2 of the Chula Vista MSCP Subarea Plan identifies Future Facilities and Implementation Criteria. These facilities include detention basins, fire access roads, maintenance and operations roads, and new trails (City of Chula Vista 2003).

Take Authorization for Planned Facilities is expressly provided for through the Chula Vista MSCP Subarea Plan. Impacts to Covered Species and habitats from Planned Facilities within or required as part of Covered Projects both outside and within the Chula Vista MSCP Preserve are mitigated by specific Covered Project conditions and mitigation requirements contained in the Chula Vista MSCP Subarea Plan, and are not subject to the Habitat Loss and Incidental Take Ordinance. Impacts to Covered Species and habitats resulting from Planned Facilities located outside of Covered Projects both outside of and within the Chula Vista MSCP Preserve would be

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

subject to and mitigated pursuant to the Habitat Loss and Incidental Take Ordinance. All Planned Facilities outside of and within the Chula Vista MSCP Preserve are considered conditionally compatible with the Chula Vista MSCP Preserve, subject to the Facilities Siting Criteria contained in Section 6.3.3.4, protection of narrow endemic species contained in Section 5.2.3, and protection of wetlands contained in Section 5.2.4 of the Chula Vista MSCP Subarea Plan (City of Chula Vista 2003).

The Land Exchange Alternative proposes improvements to approximately 0.25 miles of Proctor Valley Road South within the City of Chula Vista. The portion of Proctor Valley Road to be improved as part of the Land Exchange Alternative is considered a Planned Facility and would be subject to the Facilities Siting Criteria (see Section 10.2.5 of this report). Additionally, the portion of the road to be improved is within a 100% Conservation Area, and therefore, is subject to the Narrow Endemic Species and Wetlands protection provisions of the Chula Vista MSCP Subarea Plan. However, as explained below, the impacts on narrow endemic species associated with these road improvements have been previously mitigated and, therefore, this portion of the Land Exchange Alternative is in compliance with the protection provisions of the Chula Vista MSCP Subarea Plan.

The portion of Proctor Valley Road that is located in the City of Chula Vista—sometimes referred to as the “easternmost reach” of the road—has been reviewed under CEQA as part of Rolling Hills Ranch (also known as “Salt Creek Ranch”), a Covered Project. Therefore, impacts from the City of Chula Vista’s portion of Proctor Valley Road have already been analyzed, disclosed, and mitigated.² An easement to accommodate the future alignment of Proctor Valley Road’s easternmost reach was granted per the City of Chula Vista’s Final Map 14756A. Through this easement agreement, impacts to certain resources, including non-wetland MSCP Covered Species, do not require further mitigation (see Appendix B).

Facilities Siting Criteria

Within the City of Chula Vista, both Planned and Future Facilities located within the MSCP Preserve are subject to the Facilities Siting Criteria contained in Section 6.3.3.4 of the Chula Vista MSCP Subarea Plan (City of Chula Vista 2003). Compliance with the Facilities Siting Criteria ensures that the facilities located within the MSCP Preserve have been sited within the

² See the Salt Creek Ranch Annexation General Development Plan Pre-Zone Final Environmental Impact Report (ECI/EIR-89-3); Salt Creek Ranch Sectional Planning Area (SPA) Plan Final Supplemental Environmental Impact Report EIR-91-03; Addendum to Final EIR No91-03 for Salt Creek Ranch Sectional Planning Area Plan; City of Chula Vista’s Final Map 14756A; and Letter Agreement between USFWS, CDFW, City of Chula Vista, and Pacific Bay Homes dated July 19, 2001 (Appendix B).

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

least environmentally sensitive areas and that impacts to the MSCP Preserve have been minimized to the maximum extent practical. A summary of the Facilities Siting Criteria is provided in Section 6.3.3.4 and Table 6-1 of the Chula Vista MSCP Subarea Plan (City of Chula Vista 2003).

Narrow Endemic Species Protection

The following two provisions are applicable to the 5.4 acres of the portion of the Land Exchange Area located in the City of Chula Vista. As indicated previously, however, the impacts to narrow endemic species have been mitigated in association with the Rolling Hills Ranch project; therefore, the Land Exchange Alternative is in compliance with the narrow endemic species protection requirements as outlined below.

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 Chula Vista MSCP 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 are limited to 5% of the total narrow endemic species population within a project site. Unavoidable impacts to narrow endemics are subject to the equivalency findings, limitations, and provisions of Section 5.2.3.6, Equivalency Findings, of the City of Chula Vista MSCP Subarea Plan (City of Chula Vista 2003).

If, after comprehensive consideration of avoidance and minimization measures, a project's impacts exceed 5% of the covered narrow endemic species population, the City of Chula Vista must make a determination of biologically superior preservation consistent with Section 5.2.3.7 of the City of Chula Vista MSCP Subarea Plan (City of Chula Vista 2003). To make such a determination, the City of Chula Vista must demonstrate that a project, despite exceeding the 5% impact threshold, would still result in an overall MSCP Preserve design and configuration that is equal or greater than an alternative design and would not exceed the impact threshold. As part of this assessment, the City of Chula Vista must analyze a project's equivalency findings regarding impacts to covered narrow endemic species, as defined in Section 5.2.3.6 of the Chula Vista MSCP Subarea Plan (City of Chula Vista 2003), and then send that assessment to the Wildlife Agencies for review.

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

Wetlands Protection

Development projects within the City of Chula Vista that contain wetlands are 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, the City of Chula Vista would apply the wetlands mitigation ratios identified in Chula Vista MSCP Subarea Plan. The wetlands mitigation ratios provide a standard for each habitat type, but may be adjusted depending on the functions and values of the impacted wetlands and the wetlands mitigation proposed by a project. The City of Chula Vista may also consider the wetland habitat type being impacted and used for mitigation in establishing whether these standards have been met.

**Biological Resources Technical Report for the Otay Ranch
Village 14 and Planning Areas 16/19 Land Exchange Alternative**

INTENTIONALLY LEFT BLANK

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

3 SURVEY METHODOLOGIES

The current biological resources database for the Land Exchange Area was accumulated through a literature search, largely consisting of regional species' descriptions and specific Otay Ranch studies (such as the golden eagle assessments performed by H.T. Harvey & Associates; see Appendix C, Golden Eagle Analysis and Reference Documents), and recent surveys conducted by Dudek and HELIX Environmental Planning (HELIX) biologists (see Appendix D, Quino Checkerspot Butterfly Survey Reports). Biological surveys of the Land Exchange Area were originally conducted as part of the Otay Ranch GDP/SRP planning process by various consultants between 1989 and 1991 (Ogden 1992a). Biologists from Dudek and HELIX have recently (2014 through 2017) updated the surveys in the Land Exchange Area. The survey efforts focused on updated mapping of vegetation communities and land cover types, jurisdictional aquatic resources, and sensitive plant and animal species. Additional surveys for sensitive plant and wildlife species within limited areas of Planning Areas 16/19 were conducted in 2017 to address data gaps.

3.1 Literature Review

Special-status plant and wildlife species present or potentially present within the Land Exchange Area were identified through an extensive literature search using the following sources: USFWS Critical Habitat and Occurrence Data (USFWS 2015a, 2017), CDFW's California Natural Diversity Database (CNDDB) (CDFW 2016a, 2016b, 2016c, 2017), California Native Plant Society's (CNPS) Online Inventory of Rare and Endangered Vascular Plants (CNPS 2017), the San Diego Plant Atlas (SDNHM 2017), and the Proctor Valley Vernal Pool Restoration Plan (AECOM and Hogan 2012). The literature review also included review of the list of plant and wildlife species covered under the MSCP Plan (MSCP 1998) and species considered sensitive by the County of San Diego (County of San Diego 2010a). The Soil Survey, San Diego Area, California Part 1 (Bowman 1973) also was reviewed to identify potentially occurring special-status plants based on known soil associations. Native plant community classifications used in this report follow Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986) as modified by the County and noted in Draft Vegetation Communities of San Diego County (Oberbauer et al. 2008).

The Land Exchange Alternative is located within the boundaries of the MSCP Plan, the MSCP County Subarea Plan, and the Otay Ranch RMP. These documents were reviewed to ensure that the Land Exchange Alternative is consistent with relevant conservation goals and policies. The County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements: Biological Resources (County of San Diego 2010a) were also reviewed to ensure consistency.

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

3.2 Field Reconnaissance

From 2014 through 2017, Dudek biologists conducted a Quino checkerspot butterfly habitat assessment, Hermes copper butterfly (*Lycaena hermes*) habitat mapping and surveys, arroyo toad (*Anaxyrus californicus*) habitat assessment, vernal pool branchiopods habitat assessment and surveys, vegetation mapping, and a jurisdictional delineation for the Land Exchange Area. Focused surveys and habitat assessments were also conducted for burrowing owl (*Athene cunicularia*), coastal California gnatcatcher (*Poliophtila californica californica*), western spadefoot (*Spea hammondi*), and rare plants. Table 3-1, Schedule of Surveys, lists the dates, conditions, and survey focus for each survey performed.

Dudek reviewed the Land Exchange Alternative to determine whether impacts on golden eagles, including potential impacts on their foraging habitat and nesting sites, would be consistent with those assessed in, and covered under, the MSCP Plan (and, by extension, the Otay Ranch RMP). As part of its golden eagle analysis, Dudek also consulted raptor specialists at H.T. Harvey & Associates (Appendix C).

HELIX and its subconsultants conducted a Quino checkerspot butterfly habitat assessment and focused surveys in 2015 and 2016 (HELIX 2015 and 2016). Detailed information regarding those surveys, including the survey schedule, is located in Appendix D.

Off-site areas within CDFW-owned lands and County easements in Planning Area 16 were surveyed for vegetation and jurisdictional resources in 2016. Since these areas contain suitable habitat for coastal California gnatcatcher, focused surveys for this species were conducted in 2017.

Field surveys were completed according to County guidelines (County of San Diego 2010a) and included directed searches and habitat assessments for the County list of potential special-status wildlife and plant species within the Land Exchange Area. Special-status species occurrences, habitat, and jurisdictional resources were mapped and analyzed together with the Land Exchange Alternative plans.

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

**Table 3-1
Schedule of Surveys**

Date	Hours ^a	Personnel	Focus	Conditions
<i>Quino Checkerspot Butterfly Habitat Assessment and Host Plant Mapping</i>				
2/21/14	0900–1200	KCD, KM	QCB	65°F–70°F, 30%–20% cc, 1–3 mph winds
3/19/14	0927–1540	KCD, KM, TSL	QCB	55°F–68°F, 0% cc, 0–4 mph wind
3/19/14	0900–1600	CJF, PCS	QCB	55°F–68°F, 0% cc, 0–4 mph winds
3/21/14	0730–1300	KCD, KM	QCB	57°F–64°F, 90%–10% cc, 0–5 mph winds
<i>Quino Checkerspot Butterfly Habitat Assessment and Focused Surveys</i>				
2/12/15 to 4/2/15	Varied	HELIX and subconsultants	QCB	Varied ^b
2/15/16 to 3/31/16	Varied	HELIX and subconsultants	QCB	Varied ^b
<i>Burrowing Owl Habitat Assessment and Survey</i>				
4/4/14	0700–1440	DAM, KM, MP, JB	BUOW pass 1	50°F–61°F, 70%–90% cc, 0–2 mph winds
4/7/14	0729–1550	DAM, KM, JB, PCS	BUOW pass 1	63°F–83°F, 0% cc, 2–4 mph winds
4/8/14	0700–1300	DAM, MP	BUOW pass 1	60°F–83°F, 0% cc, 2–4 mph winds
4/9/14	0700–1130	DAM, JB, EAW, PCS	BUOW pass 1	62°F–81°F, 95%–90% cc, 0–2 mph winds
4/9/14	0733–1045	MP, TSL	BUOW pass 1	62°F–81°F, 95%–90% cc, 0–2 mph winds
5/6/14	0700–1200	DAM, EAW	BUOW pass 2	61°F–64°F, 80%–50% cc, 2–5 mph wind
5/7/14	0730–1100	DAM, TSL	BUOW pass 2	60°F–64°F, 100%–0% cc, 3–7 mph wind
6/23/14	0700–1100	TSL, CM, DAM	BUOW pass 3	59°F–67°F, 0%–100% cc, 2–6 mph winds
7/14/14	0700–1100	EAW, DAM	BUOW pass 4	63°F–72°F, 100%–70% cc, 0–4 mph winds
<i>Arroyo Toad Habitat Assessment</i>				
4/22/14	1000–1600	JDP, PML	ARTO	70°F–76°F, 5%–2%cc, 1–8 mph winds
<i>Vegetation Mapping and Jurisdictional Delineation</i>				
4/23/14	N/A	PCS, EAW, CJF, MP	VEG/JD	65°F, 0% cc, 0%–2 mph winds
4/25/14	0730–1341	MP, EAW, JB	VEG/JD	64°F–72°F, 10% cc, 0–8 mph winds
4/30/14	0715–1530	PCS, EAW, CJF, MP	VEG/JD	72°F, 0% cc, 5%–8 mph winds
5/1/14	0700–1600	PCS, EAW, JB, SCG	VEG/JD	74°F–93°F, 0%–3% cc, 3–8 mph winds
11/11/16	0800–1045	JM	VEG/JD	74°F–82°F, 0%–10% cc, 0–3 mph winds
<i>Rare Plant Survey</i>				
4/23/14	0730–1530	KCD, DAM	RP	58°F–75°F, 0% cc, 2–8 mph winds
4/24/14	0730–1555	EAW, KCD, DAM, KM, MP	RP	58°F–75°F, 0% cc, 2–8 (gusts up to 15) mph winds
5/1/14	0836–1545	BAS, KCD, DAM, MP	RP	75°F–92°F, 0% cc, 2–5 mph winds
5/2/14	0738–1521	BAS, DAM, KM MP	RP	70°F–100°F, 0% cc, 2–3 mph winds
5/6/15	1215–1800	EJB	RP	63°F, 80% cc, 2 mph winds
5/7/15	0730–1830	EJB	RP	63°F–69°F, 80%–100% cc, 2–3 mph winds
5/14/15	1000–1745	CJF, EJB	RP	55°F–63°F, 40%–100% cc, 0 mph winds; raining
5/18/15	0745–1730	CJF, EJB	RP	63°F–70°F, 40%–70% cc, 2–4 mph winds

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

**Table 3-1
Schedule of Surveys**

Date	Hours ^a	Personnel	Focus	Conditions
5/19/15	0830–1100	CJF, EJB	RP	59°F–75°F, 70%–80% cc, 1–3 mph winds
4/26/16	0853–1607	JM, KM, AT, EJB, SCG, SC	RP	64°F–83°F, 10%–20% cc, 0–6 mph winds
5/4/16	0755–1630	JM, AT, EJB, JW	RP	65°F–72°F, 0% cc, 1 mph winds
6/2/16	0730–1300	AT, SCG, JW	RP	66°F–80°F, 0% cc, 2–6 mph winds
6/3/16	0720–1335	JM, KM, KCD	RP	64°F–84°F, 0%–100% cc, 0–3 mph winds
4/5/17	0703–1736	EJB, MO	RP	59°F–83°F; 0%–30% cc; 0–1 mph winds
4/6/17	0655–1530	EJB, MO, JM	RP	53°F–78°F; 0%–100% cc; 0–1 mph winds
4/13/17	0830–1530	KCD, JM	RP	60°F–70°F; 20%–100% cc; 1–5 mph winds
4/24/17	0818–1615	EJB, KCD, JM, JW	RP	58°F–67°F; 70%–100% cc; 1–5 mph winds
4/25/17	0855–1803	EJB, JM	RP	65°F–69°F; 50%–80% cc; 0–2 mph winds
4/26/17	0758–1510	KCD, MO, EJB, JM	RP	59°F–72°F; 20% cc; 0–2 mph winds
4/28/17	1015–1445	KCD	RP	66°F–73°F; 0%–10% cc; 0–15 mph winds
6/1/17	0806–1607	ME, SCG	RP	58°F–70°F; 0%–100% cc; 0–11 mph winds
6/5/17	0859–1714	EJB, ME	RP	65°F–74°F; 20%–100% cc; 0–3 mph winds
6/6/17	0730–1526	EJB, ME, JM, JT	RP	60°F–70°F; 100% cc; 0–1 mph winds
6/7/17	0712–1500	EJB, ME, JM, JW	RP	58°F–70°F; 30%–100% cc; 0–3 mph winds
<i>Coastal California Gnatcatcher Surveys</i>				
6/18/14	0700–1205	TSL	CAGN – Area 5	59°F–73°F, 0% cc; 3–8 mph winds
6/26/14	0640–1210	TSL	CAGN – Area 4	65°F–79°F, 100–70% cc; 0–3 mph winds
6/26/14	0600–1200	EJB	CAGN – Area 1	62°F–86°F, 100–0% cc; 1–4 mph winds
6/26/14	0640–1210	TSL	CAGN – Area 4	65°F–79°F, 100–70% cc; 0–3 mph winds
6/26/14	0700–1200	JDP	CAGN – CDFW-owned lands	64°F–78°F, 100–70% cc; 1–5 mph winds
6/27/14	0615–1300	EJB	CAGN – Area 3	63°F–87°F, 90–0% cc; 1–5 mph winds
7/1/14	0608–1200	EJB	CAGN – Area 5	63°F–84°F, 100–0% cc; 1–5 mph winds
7/2/14	0602–1200	EJB	CAGN – Area 1	62°F–78°F, 100–0% cc; 1–4 mph winds
7/3/14	0608–1200	EJB	CAGN – Area 3	64°F–81°F, 100–0% cc; 1–5 mph winds
7/8/14	0700–1200	PML	CAGN – Area 5	67°F–89°F, 60–5% cc; 4–8 mph winds (9–15 mph gusts)
7/9/14	0700–1200	JDP	CAGN – Area 4	67°F–82°F, 100–0% cc; 1–4 mph winds
7/9/14	0700–1200	EJB	CAGN – Area 1	62°F–84°F, 100–0% cc; 1–3 mph winds
7/9/14	0700–1200	JDP	CAGN – Area 4	67°F–82°F, 100–0% cc; 1–4 mph winds
7/10/14	0600–1200	EJB	CAGN – Area 3	63°F–82°F, 100–0% cc; 1–2 mph winds

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

**Table 3-1
Schedule of Surveys**

Date	Hours ^a	Personnel	Focus	Conditions
7/11/14	0600–1200	EJB	CAGN – CDFW-owned lands	62°F–81°F, 100–0% cc; 1–2 mph winds
7/16/14	0700–1200	TSL	CAGN – Area 4	68°F–81°F, 100–0% cc; 0–5 mph winds
7/16/14	0700–1200	TSL	CAGN – Area 4	68°F–81°F, 100–0% cc; 0–5 mph winds
10/23/14	0620–1145	EJB	CAGN – Area 1	58°F–79°F, 0% cc; 1–6 mph winds
10/24/14	0700–1040	TSL	CAGN – Area 2	55°F–74°F, 0% cc; 0–3 mph winds
10/24/14	0645–1030	JDP	CAGN – Area 3	60°F–72°F, 0% cc; 0–4 mph winds
10/24/14	1030–1145	JDP	CAGN – CDFW-owned lands	60°F–72°F, 0% cc; 0–4 mph winds
10/27/14	0715–1300	KJM	CAGN – Area 4	54°F–71°F, 0% cc; 0–6 mph winds
10/30/14	0700–1030	PML	CAGN – Area 5	60°F–74°F, 40–70% cc; 0–2 mph winds
10/30/14	1030–1120	PML	CAGN – CDFW-owned lands	60°F–74°F, 40–70% cc; 0–2 mph winds
10/31/14	0615–1200	EJB	CAGN – Area 1	56°F–81°F, 0% cc; 1–6 mph winds
11/2/14	0700–1200	JDP	CAGN – Area 2	57°F–68°F, 50% cc; 0–4 mph winds
11/4/14	0700–1045	TWP	CAGN – Area 3	57°F–68°F, 50% cc; 0–4 mph winds
11/4/14	0700–1200	JDP	CAGN – Area 4	56°F–74°F, 0% cc; 0–6 mph winds
11/4/14	1045–1200	TWP	CAGN – CDFW-owned lands	57°F–68°F, 50% cc; 0–4 mph winds
11/6/14	0545–0955	BAO	CAGN – Area 5	50°F–83°F, 0% cc; 0–1 mph winds
11/6/14	0955–1115	BAO	CAGN – CDFW-owned lands	50°F–83°F, 0% cc; 0–1 mph winds
11/7/14	0600–1150	AMH	CAGN – Area 1	64°F–78°F, 0% cc; 3–5 mph winds
11/11/14	0540–1005	BAO	CAGN – Area 2	50°F–66°F, 100% cc; 0–3 mph winds
11/11/14	0715–1145	KJM	CAGN – Area 3	51°F–71°F, 0% cc; 2–3 mph winds
11/11/14	1145–1315	KJM	CAGN – CDFW-owned lands	51°F–71°F, 0% cc; 2–3 mph winds
11/13/14	0615–1030	AMH	CAGN – Area 5	55°F–69°F, 0% cc; 1–3 mph winds
11/13/14	1030–1150	AMH	CAGN – CDFW-owned lands	55°F–69°F, 0% cc; 1–3 mph winds
11/16/14	0710–1200	PML	CAGN – Area 4	60°F–69°F, 5%–15% cc; 0–5 mph winds
3/21/17	0646–1200	TSL	Off-site roads	48°F–65°F, <10%–15% cc; 0–4 mph winds
3/28/17	0650–1146	TSL	Off-site roads	49°F–64°F, 0% cc; 0–5 mph winds
4/6/17	0652–1148	TSL	Off-site roads	56°F–69°F, <10%–50% cc; 0–4 mph winds
<i>Hermes Copper Butterfly Habitat Assessment and Surveys^c</i>				
3/17/2015	0755–1515	EAW, KCD	Hermes Copper Habitat Assessment	55°F–77°F; 80%–100% cc; 4–100 mph winds
3/18/2015	0730–1515	EAW, KCD	Hermes Copper Habitat Assessment	56°F–69°F; 100% cc; 1–7 mph winds
3/19/2015	0715–1350	EAW, KCD	Hermes Copper Habitat Assessment	56°F–71°F; 20%–100% cc; 2–5 mph winds

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

**Table 3-1
Schedule of Surveys**

Date	Hours ^a	Personnel	Focus	Conditions
5/26/15	1130–1730	CJF, EJB	Hermes Copper Focused Survey	68°F–72°F, 80%–100% cc, 0–1 mph winds
5/29/15	0940–1408	EJB	Hermes Copper Focused Survey	72.9°F–83.1°F, 0% cc, 0–1.3 mph winds
6/9/15	0930–1735	CJF, MP, SJ	Hermes Copper Focused Survey	78°F–82°F, 60–80%cc, 1–2 mph winds
6/23/15	0850–1730	EJB, MP	Hermes Copper Focused Survey	74.8°F–85.8°F, 0% CC, 1–2 mph winds
6/24/15	0900–1300	MP	Hermes Copper Focused Survey	71°F–76°F, 0% cc, 0–2 mph winds
7/7/15	1300–1800	MP	Hermes Copper Focused Survey	79°F–81°F, 0% cc, 3–5 mph winds
7/8/15	1200–1740	MP	Hermes Copper Focused Survey	73°F–77°F, 0% cc, 2–6 mph winds
7/9/15	1130–1330	MP	Hermes Copper Focused Survey	73°F–76°F, 25% cc, 2–3 mph winds
7/10/15	1130–1330	MP, CJF	Hermes Copper Focused Survey	78°F, 20% cc, 1–3 mph winds
3/29/17	0911–1525	CJF, MO, SC	Hermes Copper Habitat Assessment	64°F–82°F, 0% cc, 0–5 mph winds
4/3/17	0815–1635	MO	Hermes Copper Habitat Assessment	57°F–63°F, 10% cc, 0–3 mph winds
4/4/17	0832–1526	CJF	Hermes Copper Habitat Assessment	58°F–75°F, 0% cc, 0–2 mph winds
4/11/17	0832–1705	MO	Hermes Copper Habitat Assessment	57°F–65°F, 0% cc, 0–5 mph winds
4/11/17	1200–1708	SC	Hermes Copper Habitat Assessment	68°F–71°F, 0% cc, 0–5 mph winds
4/13/17	0846–1822	MO	Hermes Copper Habitat Assessment	62°F, 60%–100% cc, 0–5 mph winds
4/13/17	1205–1808	SC	Hermes Copper Habitat Assessment	66°F–72°F, 20%–70% cc, 0–5 mph winds
4/15/17	1145–1500	SC	Hermes Copper Habitat Assessment	NR
4/19/17	1014–1626	CJF	Hermes Copper Habitat Assessment	70°F–73°F, 0%–10% cc, 0–2 mph winds
4/24/17	0750–1640	MO	Hermes Copper Habitat Assessment	57°F–66°F, 50%–100% cc, 0–3 mph winds
4/25/17	0823–1819	MO, SC	Hermes Copper Habitat Assessment	59°F–62°F, 70%–80% cc, 0–4 mph winds
5/1/17	0803–1530	KCD	Hermes Copper Habitat Assessment	63°F–78°F, 0% cc, 0–12 mph winds

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

**Table 3-1
Schedule of Surveys**

Date	Hours ^a	Personnel	Focus	Conditions
5/1/17	0806–1435	MO	Hermes Copper Habitat Assessment	63°F–78°F, 0% cc, 0–4 mph winds
5/17/17	0949–1448	SC	Hermes Copper Focused Survey	70.5°F–73°F, 20%–30% cc, 0–5 mph winds
5/18/17	0926–1740	CJF, MO, PCS	Hermes Copper Focused Survey	70°F–72°F, 0% cc, 0–1 mph winds
5/19/17	0845–1515	KS	Hermes Copper Focused Survey	76°F–89°F, 0% cc, 1–10 mph winds
6/1/17	1111–1722	EJB, KS, MO	Hermes Copper Focused Survey	70°F–72°F, 0%–20% cc, 0–7 mph winds
6/5/17	0921–1638	SC	Hermes Copper Focused Survey	70.6°F–80.4°F, 10%–20% cc, 1–6 mph winds
6/9/17	09 24 – 1246	SC	Hermes Copper Focused Survey	73°F–86.4°F, 0%–10% cc, 0–2 mph winds
6/15/17	0825–1602	CJA, KS, MO	Hermes Copper Focused Survey	70°F–93°F, 0% cc, 0–2 mph winds
6/18/17	0855–1516	EJB	Hermes Copper Focused Survey	73°–82°F, 0%–10% cc, 0–3 mph winds
6/23/17	1000–1745	SC, MF	Hermes Copper Focused Survey	76°F–78°F, 10%–20% cc; 1–4 mph winds
7/6/17	0905–1614	CJF	Hermes Copper Focused Survey	79°F–89°F, 0%–60% cc, 0–1 mph winds
7/6/17	0808–1521	KS	Hermes Copper Focused Survey	73°F–88°F, 0%–20% cc, 0–5 mph winds
7/6/17	0830–1800	MF, SC	Hermes Copper Focused Survey	74°F–77°F, 0%–10% cc, 0–5 mph winds
7/7/17	0810–1116	KS	Hermes Copper Focused Survey	82°F–95°F; 0%–10% cc, 0–4 mph winds
7/8/17	0900–1515	SC	Hermes Copper Focused Survey	76°F–94°F, 10%–40% cc, 0–4 mph winds
<i>Listed Large Branchiopods (Fairy Shrimp) Habitat Assessments and Surveys^d</i>				
4/11/14	0850–1430	TSL	Vernal Pool Habitat Assessment 1	66°F–88°F, 10% cc, 0–3 mph winds
6/18/14	N/A	TSL	Vernal Pool Habitat Assessment 2	N/A
12/19/14	0830–1315	DAM, PML, TSL	Fairy Shrimp Survey 1	57°F–75°F, 0% cc, 0–3 mph winds
1/2/15	0800–1430	DAM, TSL	Fairy Shrimp Survey 2	43°F–63°F, 0% cc, 0–1 mph winds
1/13/15	0903–NR	DAM	Fairy Shrimp Survey 3	57°F–63°F, NR cc, NR mph winds
1/16/15	0730–NR	DAM, TSL	Fairy Shrimp Survey 4	42°F–NR°F, 0% cc, 0 mph winds
1/30/15	0747–NR	DAM	Fairy Shrimp Survey 5	57°F–63°F, NR cc, NR mph winds
2/13/15	N/A	DAM	Fairy Shrimp Survey 6	53°F–74°F, NR cc, 1–6 mph winds
3/3/15	0910–1400	DAM, TSL	Fairy Shrimp Survey 7	68°F–75°F, 0%–10% cc, 0 mph winds

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

**Table 3-1
Schedule of Surveys**

Date	Hours ^a	Personnel	Focus	Conditions
3/16/15	1238–NR	DAM	Fairy Shrimp Survey 8	88°F, NR cc, 1–4 mph winds
3/30/15	N/A	DAM	Fairy Shrimp Survey 9	55°F–80°F, NR cc, 1–8 mph winds
5/18/15	0850–1210	TSL	Fairy Shrimp Survey 10	NR°F–77°F, 25%–40% cc, 1–4 mph winds
6/1/15	N/A	TSL	Fairy Shrimp Survey 11	59°F–79°F, NR cc, 0 mph winds
10/22/15	N/A	TSL, MP	Dry Season Survey	N/A
11/10/15	NR	PML	Fairy Shrimp Survey 1	NR
12/29/15	1004–1259	TSL	Fairy Shrimp Survey 2	59°F–66°F, 0% cc, 1–4 mph winds
1/5/16	0907–1018	TSL	Fairy Shrimp Survey 3	53°F, 100% cc, 0 mph winds
1/10/16	0956–1229	TSL	Fairy Shrimp Survey 4	56°F, 100% cc, 0 mph winds, sprinkling
1/12/16	1026–1338	TSL	Fairy Shrimp Survey 5	59°F–62°F, 0% cc, 0 mph winds
1/19/16	0835–1045	TSL	Fairy Shrimp Survey 6	53°F–60°F, 0–90% cc, 0–1 mph winds
1/26/16	NR	TSL	Fairy Shrimp Survey 7	NR
2/2/16	0740–1250	TSL	Fairy Shrimp Survey 8	46°F–53°F, 0% cc, 1–3 mph winds
2/9/16	0844–NR	TSL	Fairy Shrimp Survey 9	71°F, 0% cc, 0 mph winds
2/16/16	NR	TSL	Fairy Shrimp Survey 10	NR
2/22/16	NR	TSL	Fairy Shrimp Survey 11	NR
3/10/16	0825–1137	TSL	Fairy Shrimp Survey 12	59°F–66°F, 0–10% cc, 0 mph winds
3/16/16	1037–1300	TSL	Fairy Shrimp Survey 13	80°F–87°F, 0% cc, 0–4 mph winds
3/22/16	NR	TSL	Fairy Shrimp Survey 14	NR
3/29/16	NR	TSL	Fairy Shrimp Survey 15	NR
4/13/16	1240–1500	TSL	Fairy Shrimp Survey 16	73°F–75°F, 0% cc, 0–2 mph winds
4/20/16	NR	TSL	Fairy Shrimp Survey 17	NR
5/4/16	NR	TSL	Fairy Shrimp Survey 18	NR
5/12/16	NR	TSL	Fairy Shrimp Survey 19	NR
11/18/16	1200–1600	TSL	Dry Season Survey	70°F–69°F, 0% cc, 0 mph wind
<i>Western Spadefoot Surveys</i>				
3/7/17	0759–1230	TSL	Pass 1	49°F–74°F, 0% cc, 0 mph winds
3/8/17	1100–1400	TSL	Pass 1	76°F–81°F, <10%cc, 1–4mph winds
3/9/17	1130–1510	TSL	Pass 1	76°F–80°F, 0% cc, 0 mph winds
3/17/17	0910–1448	TSL	Pass 2	70°F–84°F, 0% cc, 0 mph winds
3/28/17	1235–1530	TSL	Pass 3	64°F–67°F, 0% cc, 0 mph winds
<i>Additional Parcels</i>				
5/15/14	0700–1100	EAW, DAM	Veg/JD, BUOW, RP	75°F–100°F, 0% cc, 2–7 mph winds
5/18/15	1730–1830	CJF, EJB	VEG/JD (Off-Site Waterline)	63°F–70°F, 40%–70% cc, 2–4 mph winds
6/15/15	1100–1600	BAO	BUOW/CAGN Habitat Assessment (Off-Site Waterline)	90°F–100°F, 0% cc, 3–5 mph winds

Definitions: °F = degrees Fahrenheit; cc = cloud cover; mph = miles per hour; NR = not recorded; N/A = not applicable.

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

Personnel: KCD = Kathleen Dayton; KM = Kyle Mathews; DAM= Danielle Mullen; EAW = Emily Wier; JB = Joseph Broad; CM = Caroline Monaco; SCG = Scott Gressard; MP = Marshall Paymard; CJF = Callie Ford; PCS = Patricia Schuyler; EJB = Erin Bergman; TSL = Thomas Liddicoat; JDP = Jeff Priest; PML = Paul Lemons; AMH = Anita Hayworth, PhD; BAO = Brock Ortega; BAS = Britney Strittmater; TWP = Tricia Wotipka; SJ = Sienna Josh; JM = Jake Marcon; AT = Andy Thomson; SC = Shana Carey; JW = Janice Wondolleck, MO = Monique O'Conner; KS = Kevin Shaw; ME = Megan Enright; JT = Jayme Timberlake.

Survey Designations/Focus: QCB = habitat assessment for Quino checkerspot butterfly; BUOW = focused survey for burrowing owl; ARTO = arroyo toad habitat assessment; RP = rare plant survey; VEG = vegetation mapping; JD = jurisdictional delineation; CAGN = focused survey for coastal California gnatcatcher.

Notes:

- ^a Hours and weather conditions for the jurisdictional wetland delineation, vegetation mapping, rare plant surveys, and fairy shrimp may be reported as N/A (not applicable) because they are not relevant to the outcome of those surveys.
- ^b The schedule for the focused Quino checkerspot butterfly surveys is included in Appendix D of the focused survey reports.
- ^c Weekly Hermes copper surveys were spaced over several days due to weather conditions. Some surveys were conducted during high cloud cover days due to the number of active butterflies observed in those conditions.
- ^d Conditions for focused fairy shrimp surveys that were not recorded (NR) were site checks to detect and confirm pooling after rainfall, and therefore data was not collected.

3.2.1 Resource Mapping

Vegetation communities and existing land uses on and within 100 feet of the majority of the Land Exchange Area were mapped in the field directly onto a 200-foot-scale (1 inch = 200 feet) aerial photograph-based field map of the Land Exchange Area. Following completion of the fieldwork, vegetation polygons were transferred to a topographic base and digitized using ArcGIS, and a GIS coverage was created. Once in ArcGIS, the acreage of each vegetation community and land cover present within the Land Exchange Area was determined. Portions of the Land Exchange Area owned by the state, which will not be developed and which are provided as context for the Land Exchange Alternative, were not surveyed, instead mapping within those areas is based on the San Diego Association of Governments' Western San Diego County Vegetation Mapping database (SANDAG 2012). Vegetation community classifications used in this report follow Holland (1986) and Oberbauer et al. (2008), consistent with the latest County of San Diego Report Format and Content Requirements: Biological Resources (County of San Diego 2010b).

3.2.2 Plants and Wildlife

Plant species encountered during the field surveys were identified and recorded. Latin and common names for plant species with a California Rare Plant Rank (CRPR; formerly CNPS List) follow the California Native Plant Society's On-Line 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's Natural Resources Conservation Service PLANTS Database (USDA 2017).

In addition to species actually detected, expected wildlife use of the Land Exchange Area was determined based on known habitat preferences of local species and knowledge of their relative

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

distributions in the area. Latin and common names of animals follow Crother (2012) for reptiles and amphibians, the American Ornithologists' Union for birds (AOU 2016), the North American Butterfly Association for butterflies (NABA 2016), and Wilson and Reeder (2005) for mammals.

3.2.3 Jurisdictional Delineation

Dudek biologists conducted a formal jurisdictional delineation in April and May 2014 within the majority of the Land Exchange Area. Portions of the Land Exchange Area owned by CDFW were mapped using the National Hydrology Dataset (USGS 2014a). This includes the two CDFW parcels within the northeastern portion of the Land Exchange Area. The delineations were conducted in accordance with the methods prescribed in the 1987 Wetland Delineation Manual (ACOE 1987), the 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) (ACOE 2008a), and 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). The information required to process an approved jurisdictional determination in accordance with the ACOE/U.S. Environmental Protection Agency Rapanos Guidance (ACOE and EPA 2008) was gathered for the Land Exchange Area. During the jurisdictional delineation surveys, the majority of Land Exchange Area was walked and evaluated for evidence of an ordinary high water mark, surface water, saturation, wetland vegetation, and nexus to a traditional navigable water of the United States. Portions of the Land Exchange Area owned by the state but that are not a part of the land exchange were not surveyed on foot. The extent of any identified jurisdictional areas was determined by mapping the areas with similar vegetation and topography to the sampled locations.

Pursuant to the federal Clean Water Act, ACOE and RWQCB wetland waters include those supporting all three wetlands criteria described in the ACOE Manual: hydric soils, hydrology, and hydrophytic vegetation. Areas regulated by the RWQCB are generally coincident with ACOE, but can also include isolated features that have evidence of surface water inundation pursuant to the state Porter–Cologne Water Quality Protection Act. These areas generally support at least one of the three ACOE wetland indicators, but are considered isolated because of the lack of surface water hydrology/connectivity downstream.

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, which defines waters boundaries by a single parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology) (Cowardin et al. 1979).

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. Water-dependent resources regulated by ACOE, RWQCB, and CDFW are collectively referred to as jurisdictional

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

aquatic resources herein. Terminology used in this document to distinguish each jurisdictional aquatic resource according to the agency that regulates the resource is as follows:

- **ACOE and RWQCB:** “Wetland” and “non-wetland waters.” Wetland waters of the United States and non-wetland waters of the United States are subject to regulation by ACOE and RWQCB, pursuant to the Clean Water Act. Within the Land Exchange Area, ACOE waters of the United States and wetlands, and RWQCB waters of the United States and wetlands overlap, and therefore are combined under one term: “non-wetland waters” or “wetlands.”
- **CDFW:** “Riparian areas” and “streambeds.” Lakes, rivers, and streambeds, including any associated riparian habitat, are subject to regulation by CDFW pursuant to the California Fish and Game Code. Within the Land Exchange Area, CDFW streambeds are synonymous with ACOE and RWQCB non-wetland waters, and CDFW riparian areas are synonymous with ACOE and RWQCB wetlands.

3.3 Focused Surveys for Sensitive Biological Resources

Special-status, or sensitive, biological resources are those defined by the County or other regulatory agency as (1) species that have been given special recognition by federal, state, or local conservation agencies and organizations due to limited, declining, or threatened population sizes; (2) species and habitat types recognized by local and regional resource agencies as sensitive; (3) habitat areas or plant communities that are unique, are of relatively limited distribution, or are of particular value to wildlife; or (4) wildlife corridors and habitat linkages.

Dudek biologists and/or other qualified biologists conducted focused surveys and/or habitat assessments for the following sensitive biological resources: focused surveys for rare plants; a habitat assessment, larval host plant survey, and protocol surveys for Quino checkerspot butterfly; focused protocol surveys for coastal California gnatcatcher; a habitat assessment and four-pass protocol burrowing owl survey; a habitat assessment for arroyo toad; a habitat assessment and protocol surveys for Hermes copper butterfly; nest survey and habitat assessment for golden eagle; a habitat assessment and protocol wet-season and dry-season surveys for listed large branchiopods (i.e., fairy shrimp); and focused surveys for western spadefoot. Incidental detections of wildlife species, either through sight, calls, tracks, scat, or other signs, were also recorded. Dates and site conditions for the field efforts performed as part of this biological report are organized in Table 3-1.

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

3.3.1 Focused Surveys and Habitat Assessment for Special-Status Plants

Focused surveys for special-status plant species were conducted in spring 2014 at the appropriate phenological stage of the plant (blooming and fruiting) to detect and identify the target species. Other than the two parcels of CDFW-owned land within Planning Areas 16/19 the entire Land Exchange Area was surveyed at a rate of 100 acres per person/day. In late spring/early summer 2015, rare plant surveys were conducted with a focus on Otay tarplant (*Deinandra conjugens*). Nearby reference sites were visited to determine the bloom status of this species, and surveys were initiated within the Land Exchange Area based on detection of blooming plants within the reference sites. The 2015 plant surveys focused primarily on the exchange lands between the state and Land Exchange Alternative applicant, and the southern portion of Proctor Valley Road. In spring and summer of 2016, additional focused surveys for just the applicant-owned portion of the Village 14 Development Footprint were conducted. Reference populations for Otay tarplant and variegated dudleya (*Dudleya variegata*) were reviewed to determine the appropriate survey period. A second season of focused surveys within the areas designated as development in Planning Areas 16/19 were conducted in the spring and summer of 2017.

Field survey methods and mapping of rare plants generally conformed to CNPS's *Botanical Survey Guidelines* (CNPS 2001); *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities* (CDFG 2000); and *General Rare Plant Survey Guidelines* (Cypher 2002). Special-status plant observations were mapped in the field using a GPS receiver or were mapped directly onto an aerial field map to record the locations of special-status plant populations. The special-status plant observations were then digitized into the geodatabase by Dudek GIS technician Andrew Greis using ArcGIS software.

3.3.2 Quino Checkerspot Butterfly Habitat Assessment and Focused Survey

Quino checkerspot butterfly is not a Covered Species under the MSCP.³ In 2014, Dudek biologists reviewed the majority of the Land Exchange Area⁴ to determine which areas of the site could be excluded as unsuitable for Quino checkerspot butterfly habitat. HELIX reviewed the

³ As described in Section 2, Applicable Regulations, the MSCP Plan addresses the potential impacts of urban growth, natural habitat loss and species endangerment and creates a plan to mitigate for the potential loss of Covered Species and their habitat due to the direct impacts of future development of both public and private lands within the MSCP area. The County received from USFWS certain long-term take authorizations that allow the taking of certain Covered Species incidental to land development and other lawful land uses that are authorized by the County. A species that is not an MSCP Covered Species is not allowed take through the MSCP.

⁴ The two state-owned parcels in Planning Areas 16/19 were not surveyed as they are not a part of the proposed Land Exchange Alternative.

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

Land Exchange Area in 2015 and again in 2016. Excluded areas were based on USFWS survey guidelines (USFWS 2014a).

Areas not recommended for Quino checkerspot butterfly surveys (USFWS 2014a):

- Orchards, developed areas, or small in-fill parcels (plots smaller than an acre completely surrounded by urban development) largely dominated by non-native vegetation.
- Active/in-use agricultural fields without natural or remnant inclusions of native vegetation or that are completely without any fallowed or unplowed areas.
- Closed-canopy woody vegetation including forests, riparian areas, shrub-lands, and chaparral. “Closed-canopy woody vegetation” describes shrubs or trees growing closely together in which the upper portions of the vegetation converge (are touching) to the point that the open space between two or more plants is not significantly different than the open space within a single plant. Closed canopy shrub-land and chaparral are defined as vegetation so thick that it is inaccessible to humans except by destruction of woody vegetation (branches).

2014 Quino Checkerspot Butterfly Habitat Assessment

Following the mapping of areas to be excluded, those areas not excluded were surveyed to determine if any host plants (*Plantago erecta*, *Plantago patagonica*, *Antirrhinum coulterianum*, *Cordylanthus rigidus*, *Castilleja exserta*, or *Collinsia* spp.) were present. Due to discussion with USFWS staff regarding drought conditions, very little host plant expression, and the general lack of a 2014 Quino checkerspot butterfly flight season, protocol-level adult surveys were not conducted. No Quino checkerspot butterfly or larvae were observed by Dudek biologists during the habitat assessment or host plant mapping in 2014.

2015 Quino Checkerspot Butterfly Habitat Assessment

In 2015, HELIX conducted a habitat assessment, host plant mapping, and focused protocol-level surveys for the Quino checkerspot butterfly within portions of the Land Exchange Area (Figure 3-1a, 2015 Quino Checkerspot Butterfly Survey Area). The habitat assessment focused on the Village 14 Development Footprint and Proctor Valley Road alignments and included a buffer, and also included portions of CDFW lands that are a part of the Land Exchange Alternative. The buffer was determined in coordination with the Land Exchange Alternative’s design engineer based on the potential for design changes related to the Village 14 footprint at that time (generally about a 100-foot buffer from the potential Village 14 footprint at that time). Planning Areas 16/19 and Village 14 Otay Ranch RMP Preserve areas were not included within the survey area due to the high costs to complete these surveys pursuant to the 2014 survey protocol.

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

However, these areas were assessed for host plants. The purpose of the habitat assessment was to exclude portions of the Land Exchange Area that do not support Quino checkerspot butterfly suitable habitat based on USFWS survey protocol (USFWS 2014a), as shown on Figure 1 of Appendix D and detailed in the 2015 Quino checkerspot butterfly survey report (Appendix D). Of the 778 total acres evaluated, 649 were in the Village 14 Development Footprint and 215 acres within the footprint were excluded. Therefore, the 562 acres that were part of the protocol surveys included 434 acres within Village 14 Development Footprint.

As part of the weekly protocol Quino checkerspot butterfly surveys, HELIX mapped the locations and approximate number of individuals of Quino checkerspot butterfly host plants within the survey area (i.e., within the Village 14 Development Footprint). If host plants occurred in areas *smaller* than 250 square feet, they were mapped as “points.”⁵ If the host plants occurred in areas *greater* than 250 square feet, they were mapped as “patches.” Dotseed plantain (*Plantago erecta*) was mapped in patches of low density⁶ (1 to 100 plants), medium density (100 to 1,000 plants), and high density (1,000 to 10,000 + plants).

HELIX completed host plant mapping within approximately 50%–60% of the proposed Otay Ranch RMP Preserve and the area proposed to be given to the state, focusing on the areas of highest potential for host plants. Host plant mapping for Otay Ranch RMP Preserve areas was conducted in April and August 2015. These surveys were conducted to map potential Quino resources within the Otay Ranch RMP Preserve. The April 2015 Preserve host plant mapping was conducted in the areas closest to the Village 14 Development Footprint. Additional host plant surveys within the remaining Otay Ranch RMP Preserve areas were conducted in August 2015. Prior to conducting the August 2015 mapping, HELIX reviewed a current aerial photograph of the site to identify “signatures” on the aerial photograph of likely open habitat areas that may contain low vegetative cover and cryptogamic soils. Those areas were then assessed in the field on foot and compared to areas within Village 14 Development Footprint where 1,000–10,000+ host plant individuals were mapped. The areas that contained low vegetative cover and highly developed cryptogamic soils were documented with a GPS and mapped as “Potential Quino Resource Areas.”

⁵ For the purposes of incorporating the acreage of point locations, HELIX used the midpoint of the range (i.e., 125 square feet) as the average host plant size for each mapped point, for the Land Exchange Area.

⁶ The term *density* is used to describe the number of plants per patch. Although this is not a true measure of density due to the variable sizes of patches, the term is used for descriptive purposes in this letter.

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

2015 Quino Checkerspot Butterfly Focused Surveys

In addition to the 2015 Quino habitat assessments, HELIX and a team of permitted subconsultants conducted focused protocol surveys of the Village 14 Development Footprint, including potential Proctor Valley Road realignment areas and the appropriate buffer described in the February 2015 Quino Checkerspot Butterfly Habitat Assessment section above, over a 7-week period between February 17 and April 2, 2015. Due to a deterioration of host plant conditions, and the relatively small number of Quino checkerspot butterflies observed in the County, the 2015 surveys were discontinued during the seventh week. HELIX had several communications with USFWS staff (i.e., Susan Wynn and Alison Anderson) to confirm the extremely limited Quino checkerspot butterfly sightings in San Diego County prior to making a decision to stop the weekly surveys. Resource mapping for the Village 14 Development Footprint and off-site areas is representative of Quino checkerspot butterfly resources, however, no Quino checkerspot butterflies were observed within the Village 14 Development Footprint. The results of the surveys are discussed further in Section 6.4, Analysis of Project Effects and Determination as to Significance, of this chapter, and they are also provided in Appendix D.

2016 Quino Checkerspot Butterfly Habitat Assessment

HELIX biologists completed a site habitat assessment in accordance with the 2016 Quino Checkerspot Butterfly Survey Protocol (2016 USFWS Survey Protocol) that was developed in coordination with USFWS, the County of San Diego, and the Building Industry Association (USFWS 2016). The 2016 Quino Checkerspot Butterfly Habitat Assessment covered all portions of the Land Exchange Area, including Otay Ranch RMP Preserve and off-site development areas, and also included portions of CDFW lands adjacent to the Land Exchange Area⁷ (Figure 3-1b, 2016 Quino Checkerspot Butterfly Survey Area). The purpose of the site assessment was to determine how much of the total Land Exchange Area contained habitat that could support Quino checkerspot butterfly and thus should be surveyed. Habitat that was not likely to support Quino checkerspot butterfly was excluded. Areas were excluded based on, and in accordance with, guidance provided in the 2016 USFWS Survey Protocol, and then mapped on an aerial photograph as required by the protocol. Several different aerial photographs, including Google Earth and Bing Maps, were used to aid in assessing canopy cover and habitat density, as well as to locate suitable openings in habitat.

⁷ The majority of the State of California lands will not be discussed in this assessment because they are excluded from the Land Exchange Alternative. Only the CDFW-owned lands within the Proctor Valley Road alignment and access roads are addressed.

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

The habitat assessment within the Land Exchange Area was conducted on foot. Based on this habitat assessment and consultation with USFWS, approximately 47.4 acres of the 658.2-acre Village 14 Development Footprint were considered excluded areas and removed from further consideration in Quino checkerspot butterfly surveys, leaving a total of 610.8 acres to be surveyed for Quino checkerspot butterfly. This same evaluation process indicated that 7.3 acres of the 517.4-acre Preserve should also be excluded, leaving a total of 510 acres within the Preserve to be surveyed for Quino checkerspot butterfly.

The excluded areas represent dense patches of chamise chaparral or southern mixed chaparral, developed areas, and eucalyptus woodland. Dense patches of excluded chaparral represented closed-canopy vegetation where the branches from shrubs overlapped, leaving no open space areas and preventing physical access to the area. Areas where there were suitable openings in the vegetation at least within 100 meters of each other were included in the survey area. Absent the excluded areas, the total 2016 survey area associated with the Land Exchange Area was 1,600 acres. This 1,600-acre Quino checkerspot butterfly survey area was divided into smaller areas and distributed amongst the surveyors.

2016 Quino Checkerspot Butterfly Host Plant Mapping

Using a GPS unit, HELIX mapped the locations and approximate number of individuals of Quino checkerspot butterfly host plants within the 1,600-acre survey area (i.e., within Land Exchange Areas defined as suitable habitat) in February 2016, prior to the start of the 2016 flight season. Host plant mapping was updated during the 2016 protocol surveys as changes in field conditions were noted. Mapping of host plants followed the density categories (low, medium, high) and methods (points vs. patches) described for the 2015 habitat assessment. Nearly all of the areas mapped as low or medium consisted of points (i.e., in locations less than 250 square feet). Areas mapped as high also tended to consist of points, but there were some patches as well, ranging from 250 square feet (0.006 acres) to 1.47 acres. Nearly all of the owl's clover (*Castilleja* spp.) was mapped as points, with 1 patch mapped that was larger than 250 square feet; the owl's clover generally consisted of patches containing less than 10 individuals.

Permitted Quino checkerspot butterfly biologists considered the host plants that emerged in 2016 to be above average throughout San Diego County; it should be noted that host plant conditions in 2015 were considered to be representative of an exceptional year.

2016 Quino Checkerspot Butterfly Protocol Surveys

HELIX and a team of permitted subconsultants conducted protocol surveys for Quino checkerspot butterfly individuals within the Land Exchange Area in 2016. Surveys began on

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

February 24, 2016 and continued through March 31, 2016. Surveys began following the first observation of adult Quino checkerspot butterfly in San Diego County (reported by Korey Klutz with Klutz Biological Consulting) on February 22, 2016, at east Otay Mesa (Quino Biologists United 2016). Surveys were discontinued after the fifth survey week, in coordination with USFWS personnel (Porter 2016), based on the lack of recent regional Quino checkerspot butterfly sightings, which indicated that the flight season along the coastal regions had come to an end. The last fresh Quino checkerspot butterfly sighting in the County was reported on March 17, 2016, which was 2 weeks prior to the last survey, when a Quino checkerspot butterfly was observed at San Vicente Reservoir. The last reported Quino checkerspot butterfly sighting of a single worn individual occurred on March 25, 2016, in Marron Valley, which reinforced that the flight season was nearing completion. The surveys conducted within the Land Exchange Area were negative for both Quino checkerspot butterfly adults and larvae (i.e., no Quino checkerspot butterfly adults or larvae were observed).

3.3.3 Coastal California Gnatcatcher Surveys

Coastal California gnatcatcher is a federally listed threatened species and a Covered Species under the MSCP. Dudek conducted focused protocol surveys for coastal California gnatcatcher in the Land Exchange Area in summer and fall 2014 (Figure 3-2, California Gnatcatcher Survey Area and Results) (Appendix E, Coastal California Gnatcatcher Survey Reports). Additional surveys were conducted within a small portion of Planning Area 16 in 2017. Some of the survey areas and observations (see Figure 3-2) are outside the Land Exchange Area. These additional locations were retained to give context of the populations within and surrounding the Land Exchange Area. Dudek biologists with federal permits for California gnatcatcher surveys conducted such surveys pursuant to USFWS's coastal California gnatcatcher presence/absence survey protocol (USFWS 1997). The survey included three visits at a minimum of 7-day intervals. Survey routes completely covered areas of coastal scrub habitat within the Land Exchange Area. Survey conditions (time of day and weather conditions) (see Table 3-1) were within protocol limits specified in the survey protocol. The permitted biologists played a tape of recorded vocalizations approximately every 50 to 100 feet to elicit a response from any gnatcatcher present within the vicinity. Other avian species incidentally detected during surveys were recorded.

3.3.4 Burrowing Owl Habitat Assessment and Focused Surveys

Burrowing owl is a Covered Species under the MSCP and is also a USFWS Bird of Conservation Concern. Prior to conducting burrowing owl habitat surveys, relevant sources pertaining to burrowing owl occurrences, including the CNDDB (CDFW 2015) and USFWS occurrence data (USFWS 2015a), were examined, along with SANGIS (SANDAG 2012) mapped vegetation communities for the Land Exchange Area and surrounding areas. A habitat assessment for

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

burrowing owl was conducted based on CNDDDB and USFWS records of this species in the vicinity (approximately 3 and 5 miles southwest) and vegetation communities present (i.e., non-native grassland, open coastal sage scrub, disturbed habitat). During the habitat assessment, the entire potential Land Exchange Area, including areas that would be directly/indirectly impacted by the Land Exchange Alternative as well as known Otay Ranch RMP/MSCP Preserve areas, were surveyed for suitable burrows and habitat. Both suitable and unsuitable habitat for burrowing owl were mapped. The habitat assessment also served as the first survey pass. Based on the presence of potentially suitable burrows, suitable vegetation communities within the Land Exchange Area, and the prior observation of the species in the vicinity, subsequent focused burrowing owl surveys were initiated in areas that contained suitable habitat (Figure 3-3, Burrowing Owl Survey Area). According to CDFW's Staff Report on Burrowing Owl Mitigation guidelines, "essential habitat for the burrowing owl in California must include suitable year-round habitat, primarily for breeding, foraging, wintering and dispersal habitat consisting of short or sparse vegetation (at least at some time of year), presence of burrows, burrow surrogates or presence of fossorial mammal dens, well-drained soils, and abundant and available prey within close proximity to the burrow" (CDFG 2012).

Focused surveys followed the Staff Report on Burrowing Owl Mitigation (CDFG 2012) guidelines. Four site visits were conducted between April and July 2014 during daylight hours (see Table 3-1). The first visit was conducted in April 2014 and the last three visits were timed to occur at least 3 weeks apart, May through July 2014, during the peak of the breeding season.⁸ The first visit included searching for the presence of suitable burrows and/or burrow surrogates (>11 centimeters (4 inches) in diameter (height and width) and >150 centimeters (60 inches) in depth). The first survey/habitat assessment included walking straight-line transects spaced 7 to 20 meters (23 to 66 feet) apart. Subsequent surveys were conducted using meandering transects. At the start of each transect and at least every 100 meters (330 feet), the entire visible survey area was scanned using binoculars (10×40 magnification) for burrowing owls. Potential burrows within the identified suitable habitat were examined for signs and documented using a GPS unit. Surveys were conducted under good weather conditions that would permit clear detection of individuals should they be present within the Land Exchange Area during the time of the surveys. See Section 3.4 for survey limitations.

An additional habitat assessment conducted in June 2015 on the 1296 zone water tank parcel, no longer a part of the Land Exchange Alternative, determined that no additional surveys were required due to unsuitable habitat, slope, and lack of burrows.

⁸ In California the burrowing owl breeding season extends from February 1 through August 31 (CDFG 2012). However, visits were timed to occur within the commonly accepted breeding season (April 15 through July 15) (CBOC 1997).

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

Based on the surveys described above, the Land Exchange Area supports 215 acres of suitable habitat for burrowing owl, consisting of non-native grassland and open areas of coastal sage scrub (including disturbed) that contain burrows, burrow surrogates, or fossorial mammal dens (Figure 3-3). No burrowing owls were observed during the focused surveys of the Land Exchange Area conducted in 2014. In 2015, while conducting rare plant surveys, biologists observed burrowing owl sign consisting of white wash, feathers, and pellets at one specific location in the central portion of the Village 14 Development Footprint.

3.3.5 Golden Eagle Foraging and Nesting Habitat Assessment

Golden eagle is protected under the federal BGEPA (16 U.S.C. 668 et seq.) and under the California Fish and Game Code as a “fully protected” species. In addition, golden eagle is a Covered Species under the MSCP, which provides federal “take” coverage for the species. The MSCP County Subarea Plan incorporates the Otay Ranch RMP and MSCP Preserve, which together provide the CEQA mitigation necessary to offset impacts to golden eagle habitat. The County, when it adopted the Otay Ranch GDP/SRP in 1993, assumed and approved development of Village 14 and Planning Areas 16/19. The RMP and the MSCP County of San Diego Subarea Plan likewise made the same assumption.

Golden eagle habitat within the Land Exchange Area was assessed based on the habitat types identified in Table 3-5 of the MSCP Plan and the acreages of the vegetation communities provided in Table 3-3 of the MSCP Plan, entitled Vegetation Community Acres targeted for Conservation within Multi-Habitat Planning Area. Table 3-5 of the MSCP Plan identifies the following vegetation communities as potential foraging/nesting habitat (i.e., suitable habitat) for golden eagle: coastal sage scrub, chaparral, grassland, and oak woodland. Table 3-3 of the MSCP Plan includes the vegetation communities within the entire MSCP study area (MSCP 1998).

However, the vegetation communities listed in Table 3-3 of the MSCP Plan are generalized and do not represent subcategories of vegetation communities that are present within the Land Exchange Area. Therefore, to determine which vegetation communities within the Land Exchange Area should be included in the suitable habitat model, Dudek overlaid the MSCP Plan Preserve boundary with the vegetation mapping used for the entire MSCP San Diego County Subarea Plan mapping effort (SANDAG 1995). The MSCP Plan mapping for the entire County relies on Holland (1986) to classify the vegetation communities within the MSCP Plan region. This procedure is known as “crosswalking” the data, and is commonly performed to reconcile biological data from different sources. As described in detail in Appendix C of this report, this exercise resulted in the need to confirm that the San Diego Association of Governments (SANDAG) data matched the acreage presented Table 3-3 of the MSCP Plan so that this data could be used for further analysis.

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

The total amount of golden eagle habitat in the MSCP study area is 264,448 acres. Table 3-5 of the MSCP Plan states that the conservation goal for golden eagle is preservation of 53% (approximately 139,000 acres) of golden eagle foraging/nesting habitat (MSCP 1998).

In addition, Dudek overlaid the MSCP Plan vegetation mapping with current HabiTrak (Habitat Tracking Reporting) data available from the SANDAG SANGIS Regional Data Warehouse (SANDAG 2015). HabiTrak is a GIS-based habitat-tracking tool developed by the Wildlife Agencies (CDFW and USFWS) in conjunction with SANDAG and other local agencies that provides a standardized process for tracking and reporting on habitats conserved (i.e., gain) and lost over time (i.e., loss). CDFW is charged with maintaining the dataset. The vegetation communities identified within the MSCP Plan as targeted for conservation within the MHPA have also been identified as a “gain” or a “loss” in the HabiTrak data. The HabiTrak data maintained by CDFW within the SANGIS database varies slightly from the County of San Diego’s records, since the County manually calculates gains and losses (County of San Diego 2015a). The analysis is provided in Appendix C of this report.

Additionally, H.T. Harvey & Associates conducted periodic 2-day surveys in 2016 and 2017 during the golden eagle breeding season to document activity at San Miguel Mountain, the Jamul Mountains, and Proctor Valley areas (Appendix C).

3.3.6 Arroyo Toad Habitat Assessment

Arroyo toad is a federally listed endangered species and a Covered Species under the MSCP. Prior to visiting the Land Exchange Area, Dudek reviewed aerial maps and selected areas that have the potential to support perennial or intermittent water to focus on during the on-site habitat assessment (Figure 3-4, Arroyo Toad Habitat Assessment). Based on the aerial review, the majority of the Land Exchange Area does not contain potentially suitable habitat for arroyo toad. However, the aerial review did identify potential suitable habitat in the two areas mapped as open water within Planning Areas 16/19, and at the downstream (southernmost) end of the Land Exchange Area, which contains a drainage that parallels the off-site portions of Proctor Valley Road located within the City of San Diego Cornerstone Lands. The open water and large drainage, and the upstream portions of three stream channels were selected for an on-site investigation to determine if there was potential for these areas to support suitable arroyo toad habitat. In total, 6 acres of the Land Exchange Area were surveyed as part of the arroyo toad habitat assessment (see Figure 3-4). Arroyo toads require at least 2 to 3 months of water for larvae to hatch from eggs, grow, and metamorphose into toadlets. Afterward they still require moist conditions for an extended period. In the Land Exchange Area, water is an intermittent resource and the creek does not flow or hold water for the requisite amount of time. Further, there are no known records of arroyo toad occurring within the Otay Reservoir System watershed

Biological Resources Technical Report for the Otay Ranch Village 14 and Planning Areas 16/19 Land Exchange Alternative

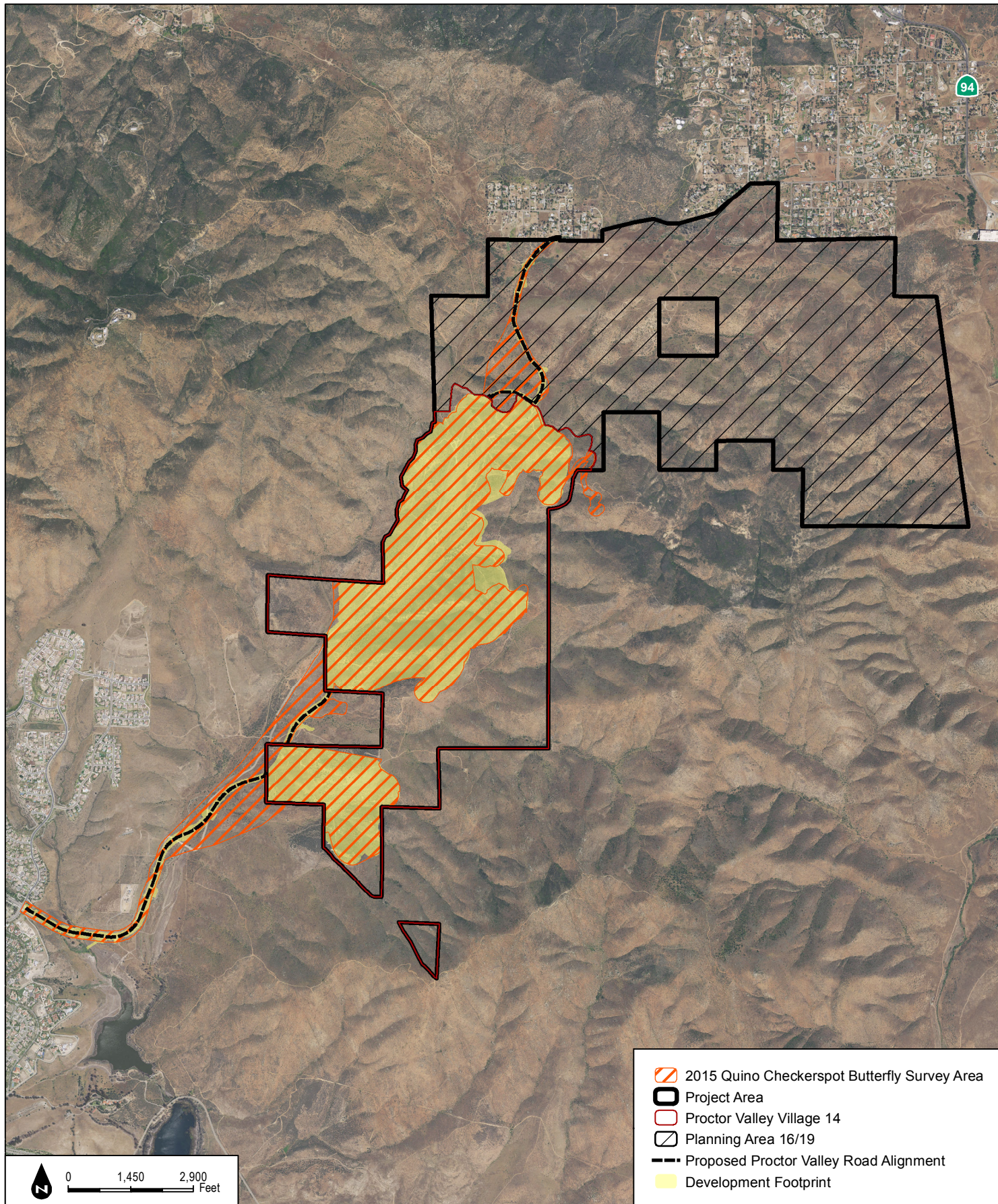
where this drainage is located. The closest known populations are along the Sweetwater River, approximately 3 miles to the northwest, on the opposite side of San Miguel Mountain, and along Cottonwood Creek approximately 13 miles to the east (CDFW 2017). Drainages within the Land Exchange Area have “low to no” potential to support arroyo toad. The drainages do not appear to have the appropriate substrate required for this species, and there is no connectivity to existing arroyo toad populations in the region. Based on the habitat assessment of the only potential suitable habitat, the lack of water for requisite time periods, isolation, and lack of species observations, the arroyo toad has low potential to occur.

3.3.7 Hermes Copper Butterfly Habitat Assessment and Focused Survey

Hermes copper butterfly is not a Covered Species under the MSCP, but is a candidate for federal listing. In 2015 and 2017, Dudek mapped Hermes copper butterfly habitat in accordance with the County of San Diego Guidelines for Hermes Copper (*Lycaena hermes*) (Attachment B of County of San Diego 2010b). The County guidelines state that habitat within 150 meters (492 feet) of a Hermes copper observation should be mapped as occupied habitat; therefore, a 500-foot buffer was created around the Village 14 Development Footprint and off-site improvement areas to create the 2015 Hermes copper butterfly study area. In 2017, biologists conducted additional habitat assessments and focused Hermes copper butterfly surveys within Planning Areas 16/19 and within those areas outside of the previously defined Development Footprint. Within these study areas, redberry buckthorn (*Rhamnus crocea*) was mapped within 15 feet of Eastern Mojave buckwheat (*Eriogonum fasciculatum*) as potential habitat and was surveyed (Figures 3-5a and 3-5b, Hermes Copper Survey Area). Based on the 2015 habitat assessment, 17 acres of the Hermes copper butterfly study area was determined to contain potential habitat and was surveyed according to County of San Diego protocol survey guidelines. Four surveys from May to July 2015 were conducted per the County guidelines. Based on the 2017 habitat assessment, 20 acres of the Hermes copper butterfly study area was determined to contain potential habitat for the species and was surveyed according to County of San Diego protocol survey guidelines. Four survey passes were conducted from May to July 2017; no Hermes copper butterflies were observed during the 2015 or 2017 protocol surveys.

**Biological Resources Technical Report for the Otay Ranch
Village 14 and Planning Areas 16/19 Land Exchange Alternative**

INTENTIONALLY LEFT BLANK



SOURCE: NAIP 2016; Hunsaker 2017; Helix 2015

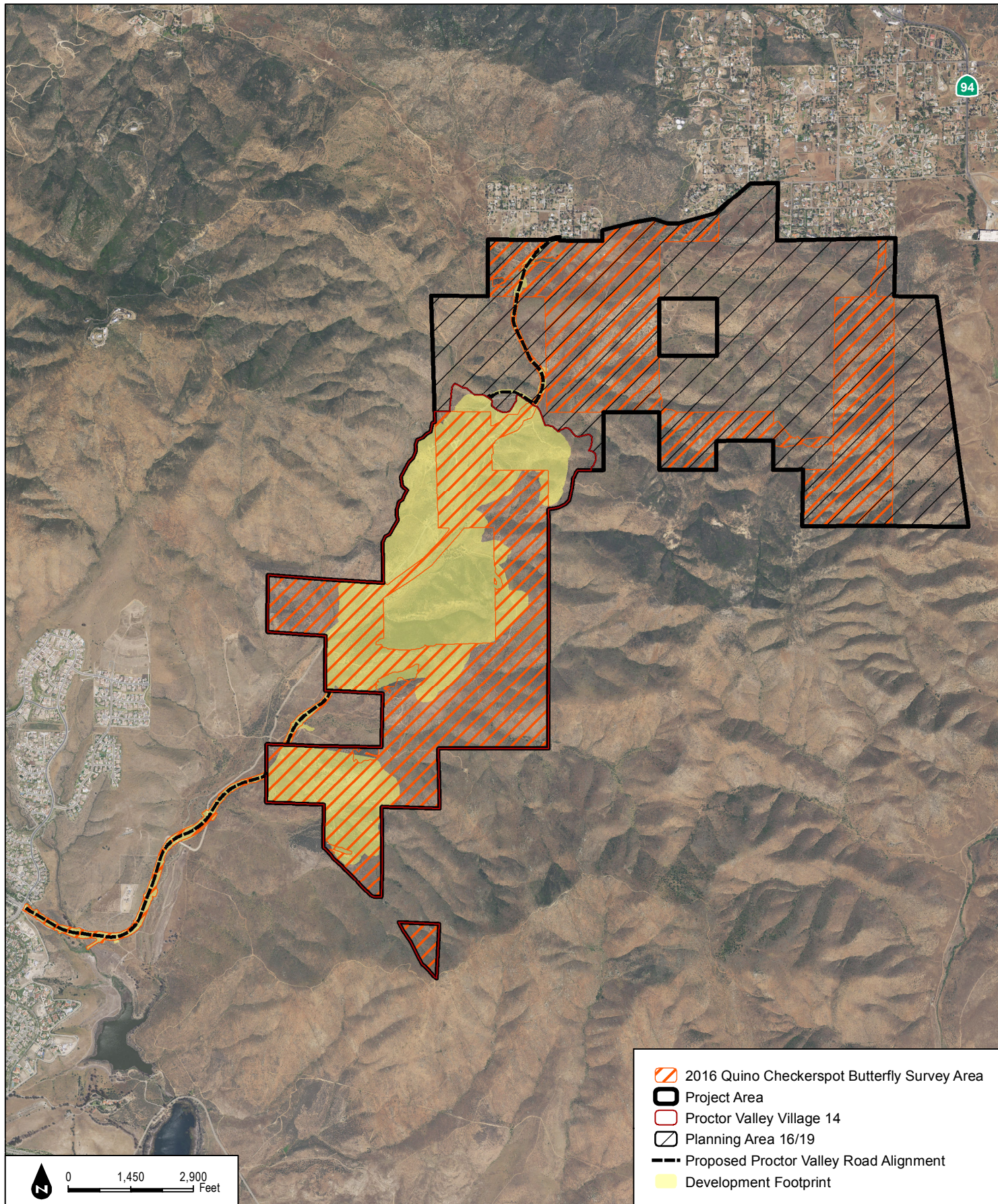
FIGURE 3-1a
2015 Quino Checkerspot Butterfly Survey Area

Otay Ranch Village 14 and Planning Area 16/19 - Land Exchange Alternative

NOTE: Survey areas may include additional acreage outside of the Project Area

**Biological Resources Technical Report for the Otay Ranch
Village 14 and Planning Areas 16/19 Land Exchange Alternative**

INTENTIONALLY LEFT BLANK



SOURCE: NAIP 2016; Hunsaker 2017; Helix 2016

FIGURE 3-1b
2016 Quino Checkerspot Butterfly Survey Area

Otay Ranch Village 14 and Planning Area 16/19 - Land Exchange Alternative

NOTE: Survey areas may include additional acreage outside of the Project Area

**Biological Resources Technical Report for the Otay Ranch
Village 14 and Planning Areas 16/19 Land Exchange Alternative**

INTENTIONALLY LEFT BLANK