APPENDIX M

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DRAFT

Biological Resources Technical Report

Mission Bay Park Improvements Program

DECEMBER 2025

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Table of Contents

SECTION **PAGE NO.**

Acronyms and Abbreviations xi

Executive Summary xiii

1 Introduction 1
- 1.1 Program Location 1
- 1.2 Program Setting, Background, and Purpose 1
  - 1.2.1 Setting 1
  - 1.2.2 Background and Purpose 4
- 1.3 Program Elements 4
  - 1.3.1 Wetland and Water Quality Improvements 5
  - 1.3.2 Restoration of Shoreline 15
  - 1.3.3 Upland Habitat and Preserve Expansion 21
  - 1.3.4 Bicycle and Pedestrian Improvements 28
  - 1.3.5 Restoration of the Seawall Bulkhead 31
  - 1.3.6 Deferred Maintenance Activities 34
- 1.4 Environmental Protocols 35
- 1.5 Regulatory Context 38
  - 1.5.1 Federal 38
  - 1.5.2 State 41
  - 1.5.3 Local Regulations and Conservation Plans 44

2 Survey Methods 49
- 2.1 Literature Review 49
- 2.2 Field Surveys 50
  - 2.2.1 Resource Mapping 56
  - 2.2.2 Flora and Fauna 56
  - 2.2.3 Aquatic Resources Delineation 57
- 2.3 Focused Surveys for Sensitive Biological Resources 58
  - 2.3.1 Special-Status Plant Surveys 58
  - 2.3.2 Eelgrass Surveys 59
  - 2.3.3 Coastal California Gnatcatcher Surveys 60
  - 2.3.4 Light-Footed Ridgway's Rail, California Least Tern, Western Snowy Plover, and Belding's Savannah Sparrow Surveys 60
  - 2.3.5 Burrowing Owl Surveys 61
  - 2.3.6 Least Bell's Vireo and Southwestern Willow Flycatcher Surveys 61
- 2.4 Survey Limitations 62

3 Results 63
3.1 Physical Characteristics 63
3.1.1 Topography 63
3.1.2 Soils 63
3.1.3 Watersheds and Hydrology 64
3.2 Vegetation Communities and Land Cover Types 65
3.2.1 Beach (64400) 66
3.2.2 Coastal and Valley Freshwater Marsh (52410) 66
3.2.3 Coastal Brackish Marsh (52200) 66
3.2.4 Diegan Coastal Sage Scrub (32510) 66
3.2.5 Disturbed Coastal and Valley Freshwater Marsh (52410) 67
3.2.6 Disturbed Diegan Coastal Sage Scrub (32510) 67
3.2.7 Disturbed Habitat (11300) 67
3.2.8 Disturbed Southern Coastal Salt Marsh (52120) 67
3.2.9 Disturbed Southern Willow Scrub (63320) 67
3.2.10 Disturbed Wetland – Arundo (11200) 68
3.2.11 Eelgrass (64110 and 64123) 68
3.2.12 Intertidal Estuary (64132) 68
3.2.13 Non-Native Riparian (65000) 68
3.2.14 Open Water (64110) 68
3.2.15 Subtidal Ocean (64111) 68
3.2.16 Shallow Bay (64123) 69
3.2.17 Saltpan/Mudflats (64300) 69
3.2.18 Southern Coastal Salt Marsh (52120) 69
3.2.19 Southern Foredunes (79100) 69
3.2.20 Tidal Channel 69
3.2.21 Unvegetated Habitat (64000) 70
3.2.22 Urban/Developed Land (12000) 70
3.3 Floral Diversity 70
3.4 Wildlife Diversity 70
3.5 Special-Status Plants 70
3.5.1 Aphanisma (*Aphanisma blitoides*) 72
3.5.2 Beach Goldenaster (*Heterotheca sessiliflora* ssp. *sessiliflora*) 72
3.5.3 Brand's Star Phacelia (*Phacelia stellaris*) 72
3.5.4 Coast Woolly-Heads (*Nemacaulis denudata* var. *denudata*) 72
3.5.5 Coulter's Goldfields (*Lasthenia glabrata* ssp. *coulteri*) 72
3.5.6 Coulter's Saltbush (*Atriplex coulteri*) 72
3.5.7 Cliff Spurge (*Euphorbia misera*) 73
3.5.8 Decumbent Goldenbush (*Isocoma menziesii* var. *decumbens*) 73
3.5.9 Estuary Seablite (*Suaeda esteroa*) 73

3.5.10 Golden-Spined Cereus (*Bergerocactus emoryi*) 73
3.5.11 Nuttall's Lotus (*Lotus nuttallianus*) 73
3.5.12 Nuttall's Scrub Oak (*Quercus dumosa*) 74
3.5.13 Orcutt's Pincushion (*Chaenactis glabriuscula* var. *orcuttiana*) 74
3.5.14 Palmer's Frankenia (*Frankenia palmeri*) 74
3.5.15 San Diego Barrel Cactus (*Ferocactus viridescens*) 74
3.5.16 San Diego Marsh Elder (*Iva hayesiana*) 74
3.5.17 Salt Marsh Bird's-Beak (*Cordylanthus maritimus* ssp. *maritimus*) 75
3.5.18 South Coast Saltscale (*Atriplex pacifica*) 75
3.5.19 Slender-Pod Jewelflower (*Caulanthus stenocarpus*) 75
3.5.20 Non-Special-Status Species 75
3.6 Special-Status Wildlife 77
3.6.1 Coastal California Gnatcatcher (*Polioptila californica*) 79
3.6.2 California Least Tern (*Sternula antillarum browni*) 79
3.6.3 Light-Footed Ridgway's Rail (*Rallus obsoletus levipes*) 80
3.6.4 Western Snowy Plover (*Anarhynchus* [formerly *Charadrius*] *nivosus nivosus*) 81
3.6.5 Belding's Savannah Sparrow (*Passerculus sandwichensis beldingi*) 81
3.6.6 Western Burrowing Owl (*Athene cunicularia*) 82
3.6.7 Cooper's Hawk (*Accipiter cooperii)* 83
3.6.8 Brant (*Branta bernicla*) 83
3.6. 9 Northern Harrier (*Circus hudsonius*) 83
3.6.10 Reddish Egret (*Egretta rufescens*) 84
3.6.11 White-Tailed Kite (*Elanus leucurus*) 84
3.6.12 California Horned Lark (*Eremophila alpestris actia*) 84
3.6.13 American Peregrine Falcon (*Falco peregrinus anatum*) 85
3.6.14 Long-Billed Curlew (*Numenius americanus*) 85
3.6.15 Osprey (*Pandion haliaetus*) 85
3.6.16 California Brown Pelican (*Pelecanus occidentalis californicus*) 86
3.6.17 White-Faced Ibis (*Plegadis chihi*) 86
3.6.18 Elegant Tern (*Thalasseus elegans*) 86
3.6.19 Tricolored Blackbird (*Agelaius tricolor*) 87
3.6.20 Canada Goose (*Branta canadensis*) 87
3.6.21 Yellow Rail (*Coturnicops noveboracensis*) 87
3.6.22 Southwestern Willow Flycatcher (*Empidonax traillii extimus*) 88
3.6.23 Large-Billed Savannah Sparrow (*Passerculus sandwichensis rostratus*) 88
3.6.24 Yellow Warbler (*Setophaga petechia*) 88
3.6.25 Least Bell's Vireo (*Vireo bellii pusillus*) 89
3.6.26 Southern California Legless Lizard (*Anniella stebbinsi*) 89
3.6.27 Orange-Throated Whiptail (*Cnemidophorus hyperythrus* ssp. *beldingi*) 90
3.6.28 Green Sea Turtle (*Chelonia mydas*) 90

3.6.29 Crotch's Bumble Bee (*Bombus crotchii*) 90
3.6.30 Salt Marsh Skipper (*Panoquina errans*) 91
3.6.31 Monarch Butterfly (*Danaus plexippus*) 91
3.6.32 Fisheries and Marine Mammals 91
3.7 Jurisdictional Aquatic Resources 92
3.7.1 U.S. Army Corps of Engineers 92
3.7.2 Regional Water Quality Control Board 93
3.7.3 California Department of Fish and Wildlife 94
3.7.4 California Coastal Commission 95
3.7.5 City of San Diego 96
3.8 Wildlife Corridors, Habitat Linkages, and Nursery Sites 97

4 Multiple Species Conservation Program Subarea Plan Consistency 99
4.1 General Planning Policies and Design Guidelines 100
4.2 Land Use Adjacency Guidelines 107
4.3 Multiple Species Conservation Program Conditions of Coverage/Area-Specific Management Directives 113
4.4 Framework Management Plan – Management Goals and Objectives 124

5 Impacts 149
5.1 Explanation of Findings of Significance 149
5.2 Direct Impacts 151
5.2.1 Component Footprint Analysis 151
5.2.2 Wetland and Water Quality Improvements Element 152
5.2.3 Restoration of Shoreline Element 158
5.2.4 Upland Habitat and Preserve Expansion Element 167
5.2.5 Bicycle and Pedestrian Improvements Element 177
5.2.6 Restoration of the Seawall Bulkhead Element 181
5.2.7 Wetland Impacts in the Coastal Overlay Zone 181
5.2.8 Direct Impacts to Sensitive Wildlife Species 182
5.2.9 Direct Impacts to Wildlife Corridors, Habitat Linkages, and Nursery Sites 189
5.3 Indirect Impacts 190
5.3.1 Indirect Impacts on Sensitive Vegetation Communities and Plant Species Occurrences 190
5.3.2 Indirect Impacts on Jurisdictional Resources 190
5.3.3 Indirect Impacts to Special-Status Wildlife Species 191
5.3.4 Indirect Impacts to Wildlife Corridor, Habitat Linkages, and Nursery Sites 193
5.4 Cumulative Impacts 194

6 Mitigation Measures 195

7 References 223

TABLES

1-1 North Fiesta Island Proposed Vegetation Communities and Land Cover Types 5
1-2 Preliminary Engineering Report Restoration Vegetation and Land Cover Type Descriptions 6
1-3 Tecolote Creek and Fiesta Island Causeway Existing and Proposed Vegetation Communities and Land Cover Types 10
1-4 Cudahy Creek Existing and Proposed Vegetation Communities and Land Cover Types 12
1-5 Fiesta Island Upland Habitat and Preserve Expansion 22
1-6 Sea World Drive/San Diego River Upland Habitat Restoration and Preserve Expansion Areas 25
2-1 Surveys Conducted for the Program 50
3-1 Soils Within the BSA 64
3-2 Vegetation Communities and Land Covers Within the BSA 65
3-3 Special-Status Plant Species with Potential to Occur Within the BSA 71
3-4 Special-Status Wildlife Species with Potential to Occur Within the BSA 77
3-5 Progression of Burrow Status by Survey Pass 83
3-6 Potentially USACE Jurisdictional Aquatic Resources Within the BSA 92
3-7 Potentially RWQCB Jurisdictional Aquatic Resources Within the BSA 94
3-8 Potentially CDFW Jurisdictional Aquatic Resources Within the BSA 95
3-9 Potentially CCC Jurisdictional Aquatic Resources Within the BSA 96
3-10 Potentially City Jurisdictional Aquatic Resources Within the BSA 96
4-1 Consistency with MSCP SAP General Planning and Policies Section 1.4.2 100
4-2 Consistency with MSCP Land Use Adjacency Guidelines Section 1.4.3 107
4-3 Conformance with MSCP Area-Specific Management Directives – Plants 114
4-4 Conformance with MSCP Area-Specific Management Directives – Wildlife 116
4-5 Consistency with MSCP Section 1.5.2 General Management Directives 124
4-6 Conformance with the Mission Bay Natural Resources Management Plan 138
5-1 Wetland Vegetation Community and Land Cover Impacts at the North Fiesta Island Component 152
5-2 Upland Vegetation Community and Land Cover Impacts at the North Fiesta Island Component 153
5-3 Wetland Vegetation Community and Land Cover Impacts at the North Fiesta Island Component Stockpile Option 1 154
5-4 Upland Vegetation Community and Land Cover Impacts at the North Fiesta Island Component Stockpile Option 1 154
5-5 Direct Impacts to Special-Status Plants in the North Fiesta Island Component Stockpile Option 1 Footprint 154
5-6 Upland Vegetation Community and Land Cover Impacts at the North Fiesta Island Component Stockpile Option 2 155
5-7 Upland Vegetation Community and Land Cover Impacts at the North Fiesta Island Component Stockpile Option 3 155

5-8 Wetland Vegetation Community and Land Cover Impacts at the Tecolote Creek and Fiesta Island Causeway Component 156
5-9 Upland Vegetation Community and Land Cover Impacts at the Tecolote Creek and Fiesta Island Causeway Component 156
5-10 Direct Impacts to Special-Status Plants in the Tecolote Creek and Fiesta Island Causeway Component Footprint 157
5-11 Wetland Vegetation Community and Land Cover Impacts at the Cudahy Creek Component 157
5-12 Upland Vegetation Community and Land Cover Impacts at the Cudahy Creek Component 158
5-13 Wetland Vegetation Community and Land Cover Impacts at the Vacation Island Northwest Component 159
5-14 Upland Vegetation Community and Land Cover Impacts at the Vacation Island Northwest Component 159
5-15 Wetland Vegetation Community and Land Cover Impacts at the Vacation Island Northeast Component 160
5-16 Upland Vegetation Community and Land Cover Impacts at the Vacation Island Northeast Component 160
5-17 Wetland Vegetation Community and Land Cover Impacts at the Vacation Island Southwest Component 161
5-18 Upland Vegetation Community and Land Cover Impacts at the Vacation Island Southwest Component 161
5-19 Wetland Vegetation Community and Land Cover Impacts at the Ventura Cove Park Component 162
5-20 Upland Vegetation Community and Land Cover Impacts at the Ventura Cove Park Component 162
5-21 Wetland Vegetation Community and Land Cover Impacts at the Crown Point Component 163
5-22 Upland Vegetation Community and Land Cover Impacts at the Crown Point Component 163
5-23 Wetland Vegetation Community and Land Cover Impacts at the West Sail Bay Component 164
5-24 Upland Vegetation Community and Land Cover Impacts at the West Sail Bay Component 164
5-25 Wetland Vegetation Community and Land Cover Impacts at the Bonita Cove Component 165
5-26 Upland Vegetation Community and Land Cover Impacts at the Bonita Cove Component 165
5-27 Wetland Vegetation Community and Land Cover Impacts at the Bahia Point Component 166
5-28 Upland Vegetation Community and Land Cover Impacts at the Bahia Point Component 166
5-29 Upland Vegetation Community and Land Cover Impacts at the Fiesta Island Site No. 1 – South Component 167
5-30 Direct Impacts to Special-Status Plants in the Fiesta Island Site No. 1 – South Component Footprint 168
5-31 Upland Vegetation Community and Land Cover Impacts at the Fiesta Island Site No. 2 – North Central Component 169
5-32 Direct Impacts to Special-Status Plants in the Fiesta Island Site No. 2 – North Central Component Footprint 169
5-33 Wetland Vegetation Community and Land Cover Impacts at the Fiesta Island Site No. 3 – Near Youth Camping Component 170

5-34 Upland Vegetation Community and Land Cover Impacts at the Fiesta Island Site No. 3 – Near Youth Camping Component 170
5-35 Direct Impacts to Special-Status Plants in the Fiesta Island Site No. 3 – Near Youth Camping Component Footprint 171
5-36 Wetland Vegetation Community and Land Cover Impacts at the Fiesta Island Site No. 4 – California Least Tern (CLT) Preserve Area Component 172
5-37 Upland Vegetation Community and Land Cover Impacts at the Fiesta Island Site No. 4 – California Least Tern (CLT) Preserve Area Component 172
5-38 Upland Vegetation Community and Land Cover Impacts at the Sea World Drive/San Diego River Site No. 5a – Cloverleaf Area Component 173
5-39 Upland Vegetation Community and Land Cover Impacts at the Sea World Drive/San Diego River Site No. 5b – Triangle Restoration Area Component 174
5-40 Direct Impacts to Special-Status Plants in the Sea World Drive/San Diego River Site No. 5b – Triangle Restoration Area Component Footprint 174
5-41 Upland Vegetation Community and Land Cover Impacts at the Sea World Drive/San Diego River Site No. 5c – South Shores East Area Component 175
5-42 Direct Impacts to Special-Status Plants in the Sea World Drive/San Diego River Site No. 5c – South Shores East Component Footprint 176
5-43 Wetland Vegetation Community and Land Cover Impacts at the Rose Creek Bike Path Component 177
5-44. Upland Vegetation Community and Land Cover Impacts at the Rose Creek Bike Path Component 178
5-45 Direct Impacts to Special-Status Plants in the Rose Creek Bike Path Component Footprint 178
5-46 Wetland Vegetation Community and Land Cover Impacts at the Fiesta Island Causeway Path Component 179
5-47 Upland Vegetation Community and Land Cover Impacts at the Fiesta Island Causeway Path Component 179
5-48 Upland Vegetation Community and Land Cover Impacts at the Ocean Beach Bike Path Component 180
5-49 Direct Impacts to Special-Status Plants in the Ocean Beach Bike Path Component Footprint 180
5-50 Upland Vegetation Community and Land Cover Impacts at the Restoration of the Seawall Bulkhead Element 181
5-51 Non-Listed Wildlife Species Observed or with a Moderate or High Potential to Occur 186
5-52 Summary of Potentially Significant In-Water Sound Pressure Level Impacts 192
6-1 Summary of Mitigation Measures and Program Component Applicability 195
6-2 Summary of Listed Wildlife Species Mitigation Measures and Program Component Applicability 196

FIGURES

1 Mission Bay Bark Improvements Program – Location 233
2 Biological Study Area 235
3 Mission Bay Park Improvements Program Overview and Elements Locations 237
4 Mission Bay Park Improvements Program Elements – Wetland and Water Quality Improvements 239

5 North Fiesta Island Wetland 241
6 Tecolote Creek and Fiesta Island Causeway 243
7 Cudahy Creek 245
8 Mission Bay Park Improvements Program Elements – Restoration of Shoreline 247
9 Vacation Island NW Shoreline Restoration 249
10 Vacation Island NE Shoreline Restoration 251
11 Vacation Island SW Shoreline Restoration 253
12 Ventura Cove Shoreline Restoration 255
13 Crown Point 257
14 West Sail Bay Shoreline Restoration 259
15 Bonita Cove Shoreline Restoration 261
16 Bahia Point Shoreline Restoration 263
17 Upland Habitat and Preserves Expansion Element 265
18 Fiesta Island Site No. 1 – South 267
19 Fiesta Island Site No. 2 – North Central 269
20 Fiesta Island Site No. 3 – Near Youth Camping 271
21 Fiesta Island Site No. 4 – California Least Tern Preserve 273
22 Sea World Drive/San Diego River Site No. 5a – Cloverleaf 275
23 Sea World Drive/San Diego River Site No. 5b – Triangle Restoration Area 277
24 Sea World Drive/San Diego River Site No. 5c – South Shores East 279
25 Mission Bay Park Improvements Program Elements – Bicycle and Pedestrian Improvements 281
26 Rose Creek Bike Path 283
27 Fiesta Island Causeway Path 285
28 Ocean Beach Bike Path 287
29 Mission Bay Park Improvements Program Elements – Restoration of Seawall Bulkhead Element 289
30A Replacement Segments A and B 291
30B Replacement Segments A and B 293
30C Replacement Segments A and B 295
30D Replacement Segments A and B 297
30E Replacement Segments A and B 299
31 New Segment C 301
32 Soils 303
33 Hydrology 305
34A Vegetation Communities/Eelgrass 307
34B Vegetation Communities/Eelgrass 309
34C Vegetation Communities/Eelgrass 311
34D Vegetation Communities/Eelgrass 313
34E Vegetation Communities/Eelgrass 315

34F Vegetation Communities/Eelgrass 317
34G Vegetation Communities/Eelgrass 319
34H Vegetation Communities/Eelgrass 321
34I Vegetation Communities/Eelgrass 323
34J Vegetation Communities/Eelgrass 325
34K Vegetation Communities/Eelgrass 327
34L Vegetation Communities/Eelgrass 329
35 CNDDB Results 331
36A Special-Status Plant Species 333
36B Special-Status Plant Species 335
36C Special-Status Plant Species 337
36D Special-Status Plant Species 339
36E Special-Status Plant Species 341
36F Special-Status Plant Species 343
36G Special-Status Plant Species 345
36H Special-Status Plant Species 347
36I Special-Status Plant Species 349
36J Special-Status Plant Species 351
36K Special-Status Plant Species 353
36L Special-Status Plant Species 355
37A Sensitive Wildlife Species Observations 357
37B Sensitive Wildlife Species Observations 359
37C Sensitive Wildlife Species Observations 361
37D Sensitive Wildlife Species Observations 363
37E Sensitive Wildlife Species Observations 365
37F Sensitive Wildlife Species Observations 367
37G Sensitive Wildlife Species Observations 369
37H Sensitive Wildlife Species Observations 371
37I Sensitive Wildlife Species Observations 373
37J Sensitive Wildlife Species Observations 375
37K Sensitive Wildlife Species Observations 377
37L Sensitive Wildlife Species Observations 379
38 Coastal California Gnatcatcher Suitable Habitat, Survey Area, and Survey Results 381
39 California Least Tern Suitable Habitat, Survey Area, and Survey Results 383
40 Light-Footed Ridgway's Rail Suitable Habitat, Survey Area, and Survey Results 385
41 Western Snowy Plover Suitable Habitat, Survey Area, and Survey Results 387
42 Belding's Savannah Sparrow Suitable Habitat, Survey Area, and Survey Results 389
43 Western Burrowing Owl Suitable Habitat, Survey Area, and Survey Results 391

44A Potential Jurisdictional Waters of the U.S. and State 393
44B Potential Jurisdictional Waters of the U.S. and State 395
44C Potential Jurisdictional Waters of the U.S. and State 397
44D Potential Jurisdictional Waters of the U.S. and State 399
44E Potential Jurisdictional Waters of the U.S. and State 401
44F Potential Jurisdictional Waters of the U.S. and State 403
44G Potential Jurisdictional Waters of the U.S. and State 405
44H Potential Jurisdictional Waters of the U.S. and State 407
44I Potential Jurisdictional Waters of the U.S. and State 409
44J Potential Jurisdictional Waters of the U.S. and State 411
44K Potential Jurisdictional Waters of the U.S. and State 413
44L Potential Jurisdictional Waters of the U.S. and State 415

APPENDICES

A Plant Species Compendium
B Wildlife Species Compendium
C Aquatic Resources Delineation Report
D 45-Day Presence/Absence Survey Report for California Gnatcatcher Surveys
E Results of a Focused Survey for the Light-Footed Ridgway's Rail, Belding's Savannah Sparrow, Western Snowy Plover, and California Least Tern
F 2019 Western Burrowing Owl Survey Report
G 2024 Focused Least Bell's Vireo and Southwestern Willow Flycatcher Survey Report
H Special-Status Plant Species Potential to Occur
I Special-Status Wildlife Species Potential to Occur

Acronyms and Abbreviations

Acronym/Abbreviation	Definition
ADA	Americans with Disabilities Act
APRM	Advanced Permittee Responsible Mitigation
ASMD	Area-Specific Management Directive
BCME	Biological Construction Mitigation/Monitoring Exhibit
BMP	best management practice
BSA	biological survey area
BSS	Belding's savannah sparrow
BUOW	burrowing owl
CAGN	coastal California gnatcatcher
CBB	Crotch's bumble bee
CCA	California Coastal Act
CCC	California Coastal Commission
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CLT	California least tern
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
COZ	Coastal Overlay Zone
CRPR	California Rare Plant Rank
CWA	Clean Water Act
CY	cubic yards
DPS	Distinct Population Segment
ECP	Engineering & Capital Projects
ED	Environmental Designee
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
EP	Environmental Protocol
ESHA	Environmentally Sensitive Habitat Area
ESL	Environmentally Sensitive Lands
FAA	Federal Aviation Administration
FESA	federal Endangered Species Act
GIS	geographic information system
HMMP	Habitat Mitigation and Monitoring Plan
HTL	high tide line
HU	Hydrologic Unit
I	Interstate

Acronym/Abbreviation	Definition
LBV	least Bell's vireo
LCD	Landscape Construction Document
LDC	Land Development Code
LFRR	light-footed Ridgway's rail
MBPMP	Mission Bay Park Master Plan
MBTA	Migratory Bird Treaty Act
MHPA	Multi-Habitat Planning Area
MSCP	Multiple Species Conservation Program
MSL	mean sea level
NGVD	National Geodetic Vertical Datum
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
NTP	Notice to Proceed
PB	Project Biologist
PC	Project Contractor
PEIR	Program Environmental Impact Report
PM	Project Manager
PSO	protected species observer
QMB	Qualified Monitoring Biologist
RIC	Revegetation Installation Contractor
RMC	Revegetation Maintenance Contractor
RWQCB	Regional Water Quality Control Board
SanGIS	County of San Diego Geographic Information System
SDBG	City of San Diego Biology Guidelines
SLR	sea-level rise
SWFL	southwestern willow flycatcher
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
VPHCP	Vernal Pool Habitat Conservation Plan
WSP	western snowy plover

Executive Summary

The Mission Bay Park Improvement Program (Program) contains specific components to be implemented at location-specific sites throughout Mission Bay Park and includes the following elements: Wetland and Water Quality Improvements (including potential stockpile sites), Restoration of Shorelines, Upland Habitat and Preserve Expansion, Bicycle and Pedestrian Improvements, Restoration of the Seawall Bulkhead, Signage Improvements, and Deferred Maintenance Activities. Site-specific recommendations within each of these elements are referred to as components of each element. Implementation of the Program will follow the Implementation Framework, which outlines subsequent component implementation procedures , including site-specific updates to biological resource surveys, site-specific impact analysis, final component design, and project-specific mitigation conformance that will be required as part of future subsequent approval(s). The Implementation Framework includes specific Environmental Protocols that describe subsequent component implementation processes to demonstrate conformance with City of San Diego Municipal Code regulations to avoid and minimize potential direct and indirect impacts to biological resources.

The Biological Study Area (BSA) consists of the 4,387-acre Program area including Mission Bay and the San Diego River. Between October 2018 and July 2019, baseline biological surveys conducted by Balk Biological within the BSA included: vegetation mapping and general biological reconnaissance surveys, special-status plant surveys, and focused surveys for California gnatcatcher (CAGN; *Polioptila californica*), California least tern (CLT; *Sternula antillarum browni*), western snowy plover (WSP; *Anarhynchus* [formerly *Charadrius*] *nivosus nivosus*), light-footed Ridgway's rail (LFRR; *Rallus obsoletus levipes*), Belding's savannah sparrow (BSS; *Passerculus sandwichensis beldingi*), and western burrowing owl (BUOW; *Athene cunicularia*). In 2019, Schaefer Ecological Solutions conducted an aquatic resources delineation within the BSA. In 2024, Balk Biological conducted focused surveys for least Bell's vireo (LBV, *Vireo bellii pusillus*) and southwestern willow flycatcher (SWFL; *Empidonax traillii extimus*) within the BSA, and an additional vegetation mapping effort was conducted within the Program component areas in order to confirm and/or adjust the conclusions made during previous site visits. In 2025, Schaefer Ecological Solutions conducted an aquatic resources delineation verification. All biological surveys were conducted in accordance with the City's Guidelines for Conducting Biological Surveys as applicable (City of San Diego 2018); state or federal focused survey protocols were followed when appropriate. Focused surveys were conducted within suitable habitat within the BSA. Additional species observations and nesting locations were provided by City of San Diego Parks and Recreation Department.

A total of 21 vegetation communities and/or land cover types, including City-defined wetlands (marine habitats, open water, freshwater marsh, salt marsh, riparian scrub, disturbed wetland and non-vegetation channel or floodway), upland habitats (Tier I – southern foredune, Tier II – coastal sage scrub) and Tier IV disturbed/developed lands, were observed within the BSA. Portions of the BSA support aquatic resources under the jurisdiction of the U.S. Army Corps of Engineers, Regional Water Quality Control Board, California Department of Fish and Wildlife, and California Coastal Commission. The following special-status plant species were detected within the BSA: Nuttall's lotus (*Lotus nuttallianus*), salt marsh bird's beak (*Chloropyron maritimum* ssp. *maritimum*), San Diego barrel cactus (*Ferocactus viridescens*), Palmer's frankenia (*Frankenia palmeri*), beach goldenaster (*Heterotheca sessiliflora* ssp. *sessiliflora*), decumbent goldenbush (*Isocoma menziesii* var. *decumbens*), San Diego marsh-elder (*Iva hayesiana*), Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*), coast woolly-heads (*Nemacaulis denudata* var. *denudata*), and estuary seablite (*Suaeda esteroa*). Additional special-status plant species have a high or moderate potential to occur in the BSA. The following potential special-status wildlife species were detected within the BSA: CAGN, CLT, WSP, BSS, BUOW, Cooper's hawk (*Accipiter cooperii*), brant (*Branta bernicla*), northern harrier (*Circus hudsonius*),

reddish egret (*Egretta rufescens*), white-tailed kite (*Elanus leucurus*), California horned lark (*Eremophila alpestris actia*), American peregrine falcon (*Falco peregrinus anatum*), long-billed curlew (*Numenius americanus*), osprey (*Pandion haliaetus*), California brown pelican (*Pelecanus occidentalis californicus*), white-faced ibis (*Plegadis chihi*), elegant tern (*Thalasseus elegans*), yellow warbler (*Setophaga petechia*). Additional special-status wildlife species have a high or moderate potential to occur in the BSA. The BSA serves as an important regional and local migration corridor for wildlife movement, particularly as a migratory stopover point of the Pacific Flyway. The BSA also includes portions of the Multiple Species Conservation Program (MSCP) Subarea Plan (SAP) Multi Habitat Planning Area (MHPA).

The Program has been designed to comply with the MSCP SAP, including MHPA Land Use Adjacency Guidelines and Area Specific Management Directives (ASMDs), Mission Bay Master Plan (MBPMP) and Mission Bay Natural Resources Management Plan (MBNRMP). As future site-specific project components are implemented, are reviewed during subsequent environmental analysis, consistency with each MSCP SAP and NRMP policy will be confirmed prior to project approval. Within the analysis, separate discussions for each program component are provided, as needed, to characterize the existing conditions and analysis relative to each program component.

The Program, absent mitigation, would result in significant direct impacts to wetland and upland habitats, supporting special-status plant and wildlife species, and jurisdictional aquatic resources due to the clearing of vegetation and resultant loss of habitat or special-status plant occurrence. The Program is expected to have less than significant indirect impacts to wetland and upland habitat and special-status plant species during construction and in the long-term, through the implementation of construction best practices and design of components that reduce edge effects, improve water quality, and expand native habitat. Significant direct and indirect impacts may occur during construction to wildlife species and nursery sites, including CAGN (in the MHPA), CLT, WSP, BSS, LFRR, LBV, BUOW, Crotch's bumble bee *(Bombus crotchii),* green sea turtle (*Chelonia mydas*), common bottlenose dolphin (*Tursiops truncatus*), Pacific harbor seal (*Phoca vitulina*), California sea lion (*Zalophus californianus*), spawning grunion (*Leuresthes tenuis*), and several non-listed avian, reptile, and one invertebrate species. Mitigation measures are proposed to reduce significant impacts, to the extent feasible.

1 Introduction

This Biological Resources Technical Report (report) provides an analysis of potential biological resource impacts associated with the Mission Bay Park Improvements Program (Program) in the City of San Diego, California.

In accordance with the current City of San Diego (City) Biology Guidelines (SDBG; City of San Diego 2018), this report provides an introduction, a Program description including potential design and operations descriptions for each component, a summary of the pertinent biological resource regulations, survey methods, existing biological resources, special-status biological resources, required Environmental Protocols, analysis of each Program component's consistency with the Multiple Species Conservation Program Subaera Plan (MSCP SAP), component impacts (direct, indirect, and cumulative), determination of California Environmental Quality Act (CEQA) significance, mitigation measures to reduce significant impacts, and an evaluation of significance after mitigation. The biological resources and Program component impacts are discussed in accordance with CEQA, Clean Water Act (CWA), Migratory Bird Treaty Act (MBTA), California Fish and Game Code (CFGC), the City's Final MSCP SAP (City of San Diego 1997), and the City's Environmentally Sensitive Lands (ESL) Regulations.

The Program includes an Implementation Framework, which provides an overview for how each Program component may be implemented, and includes compliance with various environmental regulations related to biological resources. The findings of this report have been included in the Implementation Framework to provide a roadmap for how various biological resource avoidance, minimization, and mitigation measures would be implemented in accordance with applicable regulations.

1.1 Program Location

The Biological Study Area (BSA) consists of the 4,387-acre Program area, as defined in City Charter Section 55.2 (refer to Section 1.2, Program Setting, Background, and Purpose, for more information). Regionally, the BSA is located in the westernmost portion of the central City of San Diego, as shown on Figure 1, Mission Bay Park Improvements Program – Location. The BSA encompasses the 4,237-acre Mission Bay Park and adjacent/connected areas; the specific extent of the BSA is shown on Figure 2, Biological Study Area. The extent of the BSA is consistent with the Mission Bay Park Improvement Zone. Within the BSA, there are various Program component areas, that are grouped by improvement type as 'elements.' An overview map of these component areas is provided on Figure 3, Mission Bay Park Improvements Program Overview and Elements Locations. Specific details of each location are described for each component in Section 1.3, Program Elements. Regional access to the BSA is provided by Interstate (I) 5 from the north and south, and I-8 from the east. Access to each individual component within the Program area is provided by local roadways throughout and surrounding Mission Bay Park.

1.2 Program Setting, Background, and Purpose

1.2.1 Setting

The BSA contains approximately 4,387 acres of terrestrial and aquatic resources comprises commercial, residential, recreational and park, and natural land uses. Within the aquatic space, Mission Bay is divided into two 'lobes,' Fiesta Bay to the east of Crown Point and Sail Bay to the west. Fiesta Island is located in Fiesta Bay and is accessible by vehicle via East Mission Bay Road and Fiesta Island Road. Enchanted Isle is located in Enchanted

Cove on the east side of Fiesta Island, west of Tecolote Shores. Leisure Island is located in Leisure Lagoon, east of Fiesta Island and north of Enchanted Isle. West Ski Island(also known as Horseshoe Island) and Federal Aviation Administration (FAA) Island (also known as Government Island) are located in north Fiesta Bay, west of Fiesta Island and east of Crown Point.

Rose Creek enters Fiesta Bay in the northeast corner of Mission Bay. Around the peninsula of DeAnza Point and to the north is DeAnza Cove, which then leads south to the North Pacific Passage, which is part of the egress from Tecolote Creek. Tecolote Creek runs under I-5 as it enters Mission Bay, and the outflow is dispersed north around Fiesta Island via the North Pacific Passage (part of which enters Enchanted Cove on the east side of Fiesta Island), and south around Fiesta Island via the South Pacific Passageway (part of which enters Hidden Anchorage on the south side of Fiesta Island). The South Pacific Passage flows past Perez Cove and Sunset Point, south of Vacation Isle, as it enters the Mission Bay Channel between the North Jetty and South Jetty before finally reaching the Pacific Ocean. As water flows through the Mission Bay Channel, it also feeds Mariner's Basin, east of Mission Beach, and Quivira Basin, south of West Mission Bay Drive. Hospitality Point is formed between Quivira Basin and the South Jetty.

Sail Bay, the western lobe of Mission Bay, is separated from Fiesta Bay via Fisherman's Channel, north of Vacation Isle. Three land masses jut into Sail Bay from the west: Santa Clara Point, creating Santa Clara Cove to the west; El Carmel Point, creating San Juan Cove to the north and Santa Barbara Cove to the south; and Bahia Point, south and east of Santa Barbara Cove. Mariner's Point and Mission Point create Bonita Cove south of Mission Bay Drive, helping to form the western border of the Mission Bay Channel. South of Hospitality Point and the South Jetty is the San Diego River Estuary, which is subject to tidal influx as it meets the Pacific Ocean.

Ingraham Street runs through Vacation Isle, connecting it to West Mission Bay Drive to the south and Crown Point Drive to the north. East of Ingraham Street, Vacation Isle contains Ski Beach Park, comprising landscaped turf, ornamental trees, picnic areas and comfort stations, parking lots, and a strip of sandy shoreline. The northwest quadrant of Vacation Isle comprises the grounds of the Paradise Point Resort and Spa, including restaurants, lodging, and the Kai Elua Outrigger Canoe Club and neighboring North Cove Public Beach. The southwest quadrant of Vacation Isle contains Vacation Isle Park, whose primary feature is the Model Yacht Pond, as well as landscaped turf, ornamental trees, picnic areas, parking lots, and a beach along the shore.

Fiesta Island, within the western lobe of Mission Bay, is accessed via Fiesta Island Road off East Mission Bay Drive. Fiesta Island, approximately 470 acres in size, is relatively undeveloped, and its primary features include Fiesta Island Road, which encircles the perimeter of the island and is popular among pedestrians, bicyclists, and motorists; the sandy shoreline surrounding the island used for swimming, fishing, and launching of motorized and non-motorized watercraft; the San Diego Youth Aquatic Center in the northeast area of the island, providing camp and recreational activities such as SEACAMP San Diego; the Fiesta Island Dog Park on the southwestern peninsula of the island; and the Over the Line Tournament Fields in the center of the island. The interior of the island is undeveloped and comprises ruderal and native habitats as well as a network of trails traversing this area. The northern point of the island contains designated California least tern (CLT) nesting habitat, which is also located at Stony Point in the southwest corner of the island.

The community of Mission Beach is located on a peninsula between the Pacific Ocean and Mission Bay and consists of public park property, residences, Belmont Park (an amusement park), the Bahia Resort, the Catamaran Resort and Spa, the San Diego Rowing Club, the Mission Bay Yacht Club, the Mission Bay Aquatic Center and Mission Bay Sport Center, and several restaurants, cafes, shops, businesses, and smaller hotels. Mission Boulevard runs

through the center of Mission Beach, and a pedestrian and bicycle path (Bayside Walk and Oceanfront Walk) is located along the perimeter of the peninsula, separating the beach along the shoreline from the coastal residences. The North Jetty of the entrance channel to Mission Bay extends west from South Mission Beach.

Crown Point extends into Mission Bay from the north and separates Sail Bay from Fiesta Bay, with Ingraham Street crossing Fisherman's Channel into Vacation Isle. The interior of Crown Point is composed mainly of private residences with a few small businesses, and Bayside Walk extends along the perimeter of Crown Point culminating at Crown Point Beach and Park. Northeast of Crown Point Beach begins the Northern Wildlife Preserve and Kendall-Frost Mission Bay Marsh Reserve (Kendall-Frost Reserve). The Northern Wildlife Preserve is situated north of the Kendall-Frost Reserve, east of Corona Oriente Road.

The Northern Wildlife Preserve is in the northeastern section of Mission Bay Park and comprises 31 acres of coastal salt marsh. A total of 15 of the 31 acres is owned by the City, and the remaining 16 acres, known as Kendall-Frost Reserve, is owned by the University of California, San Diego. This area of Mission Bay is influenced by tidal influx and runoff. Bordering the Northern Wildlife Preserve to the east is Campland on the Bay, a 15-acre RV park. North of Campland on the Bay is Mission Bay Senior High School, and east of the RV park is Rose Creek, which outfalls into Mission Bay. Rose Creek contains patches of saltmarsh and other wetland habitat further north toward Rose Canyon.

East of Rose Creek is the Pacific Beach Tennis Club, the Mission Bay Golf Course and Practice Center, and De Anza Cove Park. De Anza Cove Park consists of parking lots, a volleyball area, a playground, picnic areas and comfort stations, a bicycle and pedestrian path, as well as a boat launch ramp. The Mission Bay RV Resort is located west of De Anza Cove Park on De Anza Point. De Anza Cove Park extends south and blends into the remaining parks within Mission Bay Park: Playa Pacifica, Tecolote Shores, and the Mission Bay Park Playground located on the southern end of Mission Bay Park Island. These parks surround the San Diego Mission Bay Resort, located off East Mission Bay Drive. East Mission Bay Drive continues south, crosses Tecolote Creek, and intersects with Fiesta Island Road, which leads to Fiesta Island, and Sea World Drive, where it turns into Pacific Highway heading east out of Mission Bay Park.

Sea World Drive leads to South Shores Park and SeaWorld San Diego (SeaWorld). South Shores Park contains a bike and pedestrian path, comfort stations, a boat launching area, and an area designated for radio-controlled airplanes. West of South Shores Park is the approximately 190-acre SeaWorld complex, bordered by Mission Bay to the north, Sea World Drive to the south, and Ingraham Street to the west. Ingraham Street leads to the Dana Landing Marina to the north before crossing the Mission Bay Channel onto Vacation Isle. As Ingraham Street leads south, it turns into West Mission Bay Drive, which passes under Sea World Drive and over the San Diego River. Ingraham Street also has an exit north of Sea World Drive for West Mission Bay Drive, which leads to Mission Bay Drive and the community of Mission Beach. There is an exit for Quivira Road off West Mission Bay Drive, leading to several sportfishing outfits and boat rentals, marinas servicing Quivira Basin, the Hyatt Regency Mission Bay Spa and Marina, and the Marina Village Conference Center. Quivira Road turns into Quivira Way as it curves south and to the west to Hospitality Point. The San Diego Lifeguard Station is located on Hospitality Point, and the South Jetty of the entrance channel to Mission Bay extends west from Hospitality Point.

The Southern Wildlife Preserve is located in the San Diego River south of the South Jetty as it meets the Pacific Ocean and transitions from salt marsh to brackish and freshwater marsh from west to east. South of the San Diego River is the community of Ocean Beach; Dog Beach, Dusty Rhodes Park, the Ocean Beach Athletic Area/Robb Field,

the Robb Field Skate Park, and the San Diego River Bikeway. Locations for all the defining features of Mission Bay Park are provided on Figure 2.

1.2.2 Background and Purpose

The Program is intended to address issues related to water quality and water circulation improvements, habitat improvements, and visitor-serving improvements in specifically identified areas pursuant to Section 55.2 of the City Charter. The Program includes the implementation of the following elements: Wetland and Water Quality Improvements, Restoration of Shoreline, Upland Habitat and Preserve Expansion, Bicycle and Pedestrian Improvements, Restoration of the Seawall Bulkhead, deferred maintenance activities, and signate update. Wetland and Water Quality Improvements are focused within three component locations, including North Fiesta Island Wetland, Tecolote Creek and Fiesta Island Causeway, and Cudahy Creek. Restoration of Shoreline would occur at eight locations, including Vacation Island Northwest, Vacation Island Northeast, Vacation Island Southwest, Ventura Cove, Crown Point, West Sail Bay, Bonita Cove, and Bahia Point. Upland Habitat and Preserve Expansion would occur at four locations on Fiesta Island, Site No. 1 South, Site No. 2 North Central, Site No. 3 Near Youth Camping, and Site No. 4 California Least Tern (CLT) Preserve Area and within three locations along Sea World Drive/San Diego River, Site No. 5a Cloverleaf Area, Site No. 5b Triangle Restoration Area, and Site No. 5c South Shores East Area. Bicycle and Pedestrian Improvements would occur bay-wide with three main locations identified as key areas; Rose Creek Bike Path, Fiesta Island Causeway Path, and Ocean Beach Bike Path; and include several elements, including missing portions or gaps in bicycle and pedestrian paths, signage, sustainable lighting, and parking lot repairs. Restoration of the Seawall Bulkhead would occur along the oceanfront at Pacific Beach and Mission Beach. A Preliminary Engineering Report was prepared up to 30% complete design for each of these location-specific elements. These location-specific improvements are identified on Figure 3. Deferred maintenance would occur bay-wide and include maintenance of the following facilities: playgrounds, comfort stations, furnishings, lighting, landscaping and parking lot repairs (including stormwater best management practices [BMPs]) among others identified in the Preliminary Engineering Report. Signage and wayfinding improvements would also occur at several locations bay-wide.

Certain elements are located in areas that may be the subject of revisions to the Mission Bay Park Master Plan (MBPMP; City of San Diego 2021), specifically De Anza Cove. The Fiesta Island Mission Bay Park Master Plan amendment was completed in 2021 and elements herein on Fiesta Island are designed and evaluated in relation to the current MBPMP (City of San Diego 2021b). The De Anza Natural amendment to the MBPMP was adopted by City Council in 2024 and certification by the CCC is pending. The recommendations in the Improvement Program are consistent with the De Anza Natural amendment, with only minor refinements to the alignment of the proposed Rose Creek Bike Path Improvements needed during final design; however, these components may be subject to change based on potential CCC modifications for De Anza Natural certification.

1.3 Program Elements

The Improvement Program contains specific elements to be implemented at location-specific sites and bay-wide throughout Mission Bay Park (Figure 3). The City would obtain all required permits from the U.S. Army Corps of Engineers (USACE), the Regional Water Quality Control Board (RWQCB), CDFW, CCC, and/or the City for impacts to jurisdictional aquatic resources prior to component initiation.

1.3.1 Wetland and Water Quality Improvements

The Program includes an element consisting of wetland and water quality improvements involving three location-specific components described below and shown on Figure 4, Mission Bay Park Improvements Program Elements – Wetland and Water Quality Improvements. Additionally, Conceptual Habitat Restoration and Management Plans (CHRMPs) have been prepared for each site that propose site-specific recommendations aimed at restoring and enhancing habitat along with monitoring and maintenance recommendations to ensure the long-term viability of the restoration efforts.

1.3.1.1 North Fiesta Island

Description

North Fiesta Island is partially located within the Multi-Habitat Planning Area (MHPA) (Figure 2). Improvements proposed at North Fiesta Island would create and restore tidal wetlands to improve the water quality of Mission Bay. Under the Improvement Program for North Fiesta Island, tides would be introduced to the interior of North Fiesta Island, and the tidal hydrology supports the establishment of tidal wetland habitats to a large extent. Wetland restoration at North Fiesta Island would create a gradient of balanced habitat types relative to existing conditions through site grading modifications. Site grading will lower the high elevations in the interior of the site and convert the existing non-native uplands to salt marsh. The grading design includes a primary channel (or tidal exchange channel), subtidal channels, and areas of low marsh and mid marsh (Figure 5, North Fiesta Island Wetland). The orientation of the tidal exchange channel is from west to east, while the subtidal channels are oriented in a north–south direction. The subtidal channels branch off the main tidal channel and are designed to distribute tidal waters and the nutrients they provide throughout the salt marsh system. Conveyance of seawater throughout the main tidal channel and subtidal channels will create a mix of salt marsh habitat that includes subtidal/eelgrass, mudflats, low marsh, mid marsh, and high marsh. The Preliminary Engineering Report for this component also includes a transitional wetland area that allows for upward migration of the marsh as sea levels rise. Non-tidal and upland habitat would persist around the perimeter of the North Fiesta Island site and would receive restoration treatments under the Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area component (described below).

The North Fiesta Island wetland restoration site would be designed to provide a gentle transition from wetlands to uplands identified at the Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area to the west.

Table 1-1 outlines proposed salt marsh habitat area for North Fiesta Island.

Table 1-1. North Fiesta Island Proposed Vegetation Communities and Land Cover Types

Proposed Vegetation/Land Cover Type	Proposed Designed Acreage[1]
Subtidal/Open Water	5.3
Mudflat	2.0
Low Marsh	4.2
Mid Marsh	2.4
High Marsh	0.3
Transitional	5.4

Table 1-1. North Fiesta Island Proposed Vegetation Communities and Land Cover Types

Proposed Vegetation/Land Cover Type	Proposed Designed Acreage[1]
Disturbed Habitat/Upland	5.4
Disturbed Salt Marsh	0.4
Beach	4.9
Total Area	**30.3**

Source: Moffatt & Nichol 2021.
1 Designed acreages are approximate and subject to change based upon final component design.

The listed vegetation communities and land cover types are a mix of salt marsh habitat that includes subtidal/eelgrass, mudflats, low marsh, mid marsh, and high marsh, as well as non-tidal (i.e., transitional) and upland habitat. Table 1-2 provides a definition of each type of listed habitat. These descriptions apply to all components in the Wetland and Water Quality Improvements element.

Table 1-2. Preliminary Engineering Report Restoration Vegetation and Land Cover Type Descriptions

Vegetation Community and Land Cover Type	Description
Subtidal	Subtidal habitat is defined as shallow areas of open water that do not drain during each tidal period. Elevation range of below −3.7 feet NGVD 29.
Mudflat	Intertidal mudflat habitat is defined as unvegetated, unconsolidated mud or sand bottom habitat. Mudflat habitat is typically situated low in the intertidal zone, between subtidal habitat and low intertidal salt marsh. Mudflats are inundated and exposed during most tidal cycles. Elevation range from −3.7 to +1.1 feet NGVD 29.
Low Marsh	Intertidal salt marsh that is dominated by California cordgrass (*Spartina foliosa*). Elevation ranges from +1.1 feet to +1.9 feet NGVD 29.
Mid Marsh	Salt marsh habitat that is inundated irregularly by tides relative to the low marsh, but at a higher frequency than the high marsh. As a result, the plant species that inhabit the mid salt marsh are adapted to high soil salinities and long periods of exposure. Elevation ranges from +1.9 feet to +3.7 feet NGVD 29.
High Marsh	Intertidal high salt marsh occurs at elevations between mid-salt marsh and supratidal transition zone habitat. The high marsh is irregularly to intermittently flooded and the plants of this marsh habitat are adapted to hypersaline soil conditions. Elevation ranges from +3.7 feet to approximately +4.8 feet NGVD 29.
Transitional	Supratidal transition zone habitat occurs between the range of the highest high tides and non-tidal supratidal uplands. These areas represent a transition from the highest salt marsh plant species to upland plant species with both plant assemblages occurring within this relatively narrow elevation band. Elevation ranges from +4.8 feet to +6.8 feet NGVD 29.
Upland	Uplands are areas above the elevation where flooding generally occurs. Elevation above +6.8 feet NGVD 29.
Beach	Sandy, pebbly, or rocky zone at the water's edge.

Source: Moffatt & Nichol 2021.
Note: NGVD = National Geodetic Vertical Datum.

The preliminary design also proposes the construction of two bridges, fencing, and a gate along Fiesta Island Road. One bridge would connect the redesigned CLT Preserve to Fiesta Island Road and another bridge along the east side of Fiesta Island Road would connect to the restored North Fiesta Island wetlands. At subsequent program component design, both bridges will undergo final engineering and design and would be required to span over the proposed main channel, which bisects North Fiesta Island from the remainder of the Island (Figure 5). The eastern bridge would connect to a new multi-use path that borders the southeastern edge of the restored wetland areas leading to a proposed picnic overlook area. Non-motorized beach access would also be provided by the bridge and multi-use path. The bridge, multi-use path, beach, and overlook would be closed to public access during the CLT nesting season. Use of the bridge connecting to the CLT Preserve will be restricted by the City to scientific teams, land managers, and maintenance personnel only. Each bridge will be supported by reinforced concrete piles, which will be driven into the existing ground at the site, per the recommendations of the Preliminary Engineering Report. This conceptual proposal could alternatively, utilize culverts to connect the main tidal channel to Mission Bay at subsequent component entitlement.

Perimeter fencing is proposed to restrict access and allow the North Fiesta Island component site's vegetative community time to develop and mature post-construction. The existing chain-link fence that presently traverses the site would be removed during construction, and a new 6-foot-high fence would be installed along the perimeter of the restored wetlands. Once the wetlands are established, the fence may be removed. For as long as the fence is in place, gates would be included to allow authorized access for monitoring and maintenance, and tours if desired. A pedestrian and bicycle path would be constructed on the eastern perimeter of the site, stopping at a proposed picnic feature and marsh overlook toward the northern end of North Fiesta Island. Seasonal public access to the proposed pedestrian and bicycle path and public beaches along the eastern shore of the North Fiesta Island component would be restricted during the CLT nesting season.

Construction

Subsequent component construction is anticipated to occur in the dry season using conventional earthmoving equipment. This is due to the existing site topography being relatively high above groundwater, the large quantity of material to be removed, and the limited time for removal due to nesting season restrictions. Construction would be subject to the version of the City's "Whitebook" current at the time of construction. Additionally, construction would be scheduled to avoid the nesting bird season (typically considered February 15 through September 15). Additionally, the City of San Diego Annual Beach Area Construction Restriction limits non-emergency construction work during the summer period (Memorial Day to Labor Day) in beach areas. The North Fiesta Island component would necessarily be constructed after the Upland Habitat and Preserve Expansion Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area component, with no prescribed duration between the construction activities of these components.

The majority of site excavation would occur above the mean tide level within existing disturbed upland and beach habitats. The mean tide level is likely to represent the groundwater level encountered during excavation. Lower elevations would be included in the North Fiesta Island component, which would be at the center of channels near the inverts establishing open water channels. Working in dry conditions can be more efficient and require shorter time periods as compared to working in wet conditions using a dredge. Approximately 315,000 cubic yards (CY) of soil would be removed.

Material Re-Use

Material re-use would be available in the coordination of adjacent wetland restoration projects in Mission Bay under the Program. The material excavated from the North Fiesta Island component could be reused for wetland creation for the Tecolote Creek Wetland Restoration and Cudahy Creek Wetland Restoration components (see Sections 1.3.1.2 and 1.3.1.3) to balance material across the components of the wetland and water quality improvements element. The North Fiesta Island excavated material would be stockpiled on North Fiesta Island.

Three stockpile areas have been identified within Fiesta Island for potential stockpiling activities (see Figure 4). The closest proposed stockpile option 1 Is located directly south of the North Fiesta Island component site. Stockpile site 2 would be located approximately 2,000 feet to the southwest, and Stockpile site 3, if ultimately needed, would be located approximately 4,400 feet to the south. Earthmoving equipment would be used to transport excavated material the relatively short distance to the stockpile site and return for another load. Stockpiled material would be stored temporarily and reused in restoring the two other proposed wetland sites, Tecolote Creek component wetlands and Cudahy component wetlands, when implementation of restoration projects is initiated. Generally stockpiled material would be stored as mounds or piles of materials, if stockpile site 3 is needed, material there would be spread evenly across the site and would be suitable for continued (over the line) activities at that site.

If excavated soil is believed to be contaminated, procedures outlined in the Hazardous Substance Abatement Plan (Appendix Q of the PEIR) shall be implemented, as required by environmental protocol EP-SW-1. Prior to component initiation, through contract bid items specific to the conditions of component implementation, the contractor would be required to prepare and implement certain standards of the City's "Whitebook" that allow the contractor to adequately prepare for encountering hazardous substances throughout the life of the project. The contractor would provide a Community Health and Safety Plan (CHSP) and a Hazardous Substances Management Plan (HSMP) to outline appropriate actions if hazardous substances are encountered. If the material cannot be stockpiled on site, due to the contamination or condition of the material, it would be hauled off the Island to be disposed appropriately. If the material to be disposed of is classified as non-hazardous contaminated soil, it can be disposed of at the Miramar Landfill; however, capacity or other limitations may apply for disposal. Contaminated soil that is classified as hazardous waste or designated waste must be characterized and disposed of at a facility specially permitted to except such materials. If wet material is removed, such as the lower elevations of channels, amphibious excavators may be used. Alternatively, if subsequent component implementation proposes construction during the wet condition, one or more dredges could be used to pump the material to a disposal or re-use location. Land-based construction equipment would access the site from the Fiesta Island Causeway from East Mission Bay Drive. If water-based construction equipment is used, it would be delivered over the causeway or delivered over water from Mission Bay.

Operation and Maintenance

Operations and maintenance would be required for the North Fiesta Island Wetland component. Non-intensive actions would include the following:

- Trash removal
- Weed removal from transitional habitat areas
- Channel and culvert maintenance
- Perimeter fence repair
- Sea-level rise (SLR) adaptive management

Maintenance would be required regularly to ensure the habitat functions at the highest level possible for the site. If subsequent program components utilize culverts on site, inspection and maintenance of the culverts would be conducted periodically to ensure proper functioning. Inspection and maintenance frequency would vary with site conditions, such as floating debris, which can plug the opening, marine fouling organisms (mussel growth), and vandalism. Inspections would occur every year, with periodic cleaning (as necessary) to maintain smooth operation. Inspections would verify the condition of the openings and of the wetland water levels to confirm unimpeded connections. Debris removal would also be included.

When a wetland is initially restored, nutrients are sometimes mobilized on a large scale, and a bio-fouling community may quickly develop inside culverts. Continued flushing of the wetland system reduces the nutrient load and thereby also reduces the nutrient-dependent marine fouling community. If a marine fouling community develops inside the culvert pipe, the fouling may have to be periodically removed. Cleaning of the culverts would be conducted with a hand scraper or power washer to remove bio-fouling and accumulated sediment only if they interfere with the conveyance of water through the pipes.

Issues with compromised habitat conditions or hydrology would be addressed through subsequent component-specific adaptive SLR management. Adaptive management activities may include minor grading, planting, culvert modifications, and periodic thin-layer sediment augmentation to maintain appropriate tidal/land elevation relationships that support the target marsh habitat diversity.

Conceptual Habitat Restoration Plan

1.3.1.2 Tecolote Creek and Fiesta Island Causeway

Description

Tecolote Creek Subcomponent

The Tecolote Creek subcomponent would create approximately 12 acres of wetlands in southeastern Mission Bay Park. The preliminary design, as shown in Figure 6, Tecolote Creek and Fiesta Island Causeway, incorporates the existing tidal channel, which has the appropriate depth and capacity to introduce the full tide range into the proposed restoration site. Freshwater input and storm runoff from Tecolote Creek would also affect the wetlands. However, it is the tidal hydrology that would drive the wetland ecology to a large extent and support diverse, self-sustaining salt marsh habitat. The wetland grading design provides for a gentle slope from the constructed wetlands restoration area into Tecolote Shores. A forebay (i.e., sedimentation basin) would be constructed at the mouth of Tecolote Creek. The purpose of the forebay is to capture sediment flowing from Tecolote Creek before it enters the proposed wetlands. Rock scour protection would be installed at the mouth of Tecolote Creek, constructed of 1-ton rock riprap, to prevent erosion from and reduce velocity of the flowing water.

An open channel is proposed under the Fiesta Island Causeway. The proposed channel would be 20 feet wide at its bottom, would have an invert elevation of −6 feet (National Geodetic Vertical Datum [NGVD] 29), and would have a bank slope of 3:1 to match the crest elevations of the existing causeway. The open channel would connect the waters north and south of the causeway, which would promote tidal circulation and enhance water quality in areas surrounding east Fiesta Island. A bridge is envisioned to span the open channel to maintain connection between East Mission Bay Drive and Fiesta Island Road. Alternatively, a (two-way) culvert beneath the existing causeway could be constructed to connect the waters of Mission Bay north and south of the causeway. It could consist of a large box culvert, or several smaller pipe or box culverts that provide equivalent cross-sectional area. The base

elevation would be −6 feet NGVD 29; the top elevation would be +10 feet NGVD 29, and the maximum width would be 200 feet at the bottom. This conceptual connection would maintain access across the proposed water connection.

The preliminary design includes substantial earthwork and grading of the site to create a suitable mosaic of salt marsh habitat: subtidal/eelgrass, mudflats, low marsh, mid marsh, high marsh, and buffer area over a majority of the subcomponent area. The Tecolote Creek subcomponent would also include a transitional wetland area that allows for upward migration of the marsh as the sea level rises. Non-tidal and upland habitat would persist around the perimeter of the Tecolote Creek subcomponent area. The existing beach area on the northern boundary would be transformed into a sand dune with associated coastal strand vegetation. The dune would have a top elevation approximately 6 feet above the road elevation to create a physical barrier and visual screen of vehicular movements on Fiesta Island Road. Higher habitat would occupy a portion of the Tecolote Creek subcomponent site to transition into upland. Excavation and grading would be required to create the channel under the Fiesta Island Causeway. Table 1-3 outlines existing and proposed vegetation communities and land cover types and acreages, and Figure 6 illustrates the concept habitat design plan for the Tecolote Creek component.

Table 1-3. Tecolote Creek and Fiesta Island Causeway Existing and Proposed Vegetation Communities and Land Cover Types

Proposed Vegetation Communities and Land Cover Types	Proposed Designed Acreage[1]
Subtidal/Open Water	3.5
Mudflat	2.5
Low Marsh	3.4
Mid Marsh	6.8
High Marsh	4.1
Transitional	0.6
Upland/Dunes	5.2
Total Area	**21.20**

Source: Tecolote Creek Wetland Restoration & Fiesta Island Causeway PER (Moffat & Nichol 2021).
1 Designed acreages are approximate and subject to change based upon final component design.

Finally, perimeter fencing is proposed to restrict access and to allow the site's vegetative community time to develop and mature post-construction. Site protection measures, restrictions, and restoration establishment metrics would be consistent with the provisions of the SDBG and final habitat restoration plans. The fencing would reduce the risk of damage to the salt marsh caused by either foot traffic, animals, or unauthorized vehicular traffic. A 6-foot-high chain-link fence is assumed for the Tecolote Creek component. Gates would be included to allow authorized access for monitoring and maintenance.

Fiesta Island Causeway Subcomponent

The Fiesta Island Causeway subcomponent would create better water circulation in eastern Mission Bay. The preliminary design is shown in Figure 6. Specifically, an open channel is proposed to create the desired hydraulic connection between the basins on either side of the existing causeway. A bridge is proposed to span over the open channel to connect the basins north and south of the existing causeway and to maintain the existing connection between East Mission Bay Drive and Fiesta Island Road. The bridge would be constructed of concrete pre-cast girders hauled to the site and placed, would be ADA compliant and approximately 100 feet long by 60 feet wide,

and would fully span the approximately 20-foot-wide open channel. A culvert beneath the existing causeway is an alternative option to provide a water connection of bay waters north and south of the causeway.

Construction

Tecolote Creek Subcomponent

Construction would occur in the dry areas with earthmoving equipment and would consist of placing 180,000 CY of material into the proposed wetland footprint at the existing location of the Tecolote Creek mouth and east Mission Bay. The material would be sourced from the North Fiesta Island component and delivered from one of the three stockpile sites on Fiesta Island to the Tecolote Creek component site in the dry season by truck and placed by earthmovers. Approximately 169,220 CY of material would be available from North Fiesta Island component excavation to be contributed to the restoration at Tecolote Creek. Material stored at stockpile site 2 would be directly adjacent to the Tecolote Creek component site and earthmovers and excavators would be used to move the material. Trucks would be used to deliver material from stockpile sites 1 and 3 using established routes on existing roadways on Fiesta Island. An excavator would sit within the interior of the site to move the material around to gradually fill the site as the material is delivered by truck. The excavator would be able to create the grades required on the grading plans. The site would be filled from the edges toward the middle of the site. A turbidity boom would be placed along the northern boundary of the Tecolote Creek component site during construction to protect east Mission Bay from turbidity associated with the filling.

Fiesta Island Causeway Subcomponent

The Fiesta Island Causeway subcomponent would be installed using excavators to remove the portion of the causeway needed for the channel. As discussed above, a bridge would be installed as a pre-cast structure delivered to the site and set in place.

A bridge structure would be constructed by drilling cast-in-drilled-hole piles for the substructure, constructing abutments and bent caps, placing pre-cast concrete girders, and then casting the deck and barriers. This would all be accomplished one section at a time, allowing one lane of the causeway to remain open to traffic with flaggers. Once the bridge is finished, the channel would be constructed.

Operation and Maintenance

Operations and maintenance would be required for the wetland. The most intensive actions may include:

- Trash removal
- Weed removal from transitional habitat areas
- Channel and culvert maintenance
- Perimeter fence repair
- SLR adaptive management

Maintenance would occur regularly to ensure the habitat functions at the highest level possible for the site. Periodic maintenance of the forebay in the form of sediment removal would be done by the City.

Issues with compromised habitat conditions or hydrology would need to be addressed through adaptive SLR management. Adaptive management may include minor grading, planting, culvert modifications, and periodic thin-layer sediment augmentation to maintain appropriate tidal/land elevation relationships that support the target marsh habitat diversity.

1.3.1.3 Cudahy Creek

Description

The Cudahy Creek component would create 6.1 acres of wetlands within the Cudahy Creek Cove area. The Cudahy Creek component would consist of low-salt and mid-salt marsh restoration areas, subtidal channels, berm, oyster bag, and riprap revetment within the Cudahy Creek Cove. The marshes would provide water quality treatment of stormwater and bay water as well as native habitat. Two subtidal channels are proposed to convey flows from the two existing outfalls. A berm is proposed along the wetland limits along the open water of the bay. Oyster bags are proposed on the outer fill slope of the restoration area for stabilization and water filtration purposes. Riprap revetment is proposed at the existing outfalls and the connection of the subtidal channels with the open water in the bay to prevent erosion. Approximately 1,800 linear feet of perimeter fencing would be installed post-construction to restrict access to protect the habitat. See Figure 7, Cudahy Creek, for a depiction of the preliminary design and the included components. The existing habitat and proposed salt marsh habitat for this component are listed in Table 1-4.

Table 1-4. Cudahy Creek Existing and Proposed Vegetation Communities and Land Cover Types

Proposed Vegetation Communities and Land Cover Types	Proposed Designed Acreage[1]
Subtidal/Open Water	4.0
Low Marsh	3.7
Mid Marsh	1.5
Transitional	0.3
Disturbed Habitat/Upland	0.2
Riprap	0.2
Total Area	**9.9**

Source: Rick Engineering 2024.

[1] Designed acreages are approximate and subject to change based upon final component design.

Subtidal Channels

The proposed subtidal channels have two main purposes: (1) during wet weather, the subtidal channels would provide a connection between each of the two storm drain outfalls and the open water area of Mission Bay (i.e., to provide conveyance for stormwater runoff through the wetland area and to the North Pacific Passage of Mission Bay); and (2) allow tidal fluctuations to result in wetland inundation and subsequent drainage of the proposed wetland areas. That is, during flood tide conditions, the water level elevations within the subtidal channels would rise with the tide levels and allow bay water to inundate the salt marsh wetland areas. During ebb tide conditions, the subtidal channels would allow the salt marsh areas to drain by carrying water out of the wetland area and back to the Mission Bay open water. This process of inundation and draining is necessary for the health of the salt marsh wetland and would provide water quality benefits by circulating water through the wetland, which would result in filtering through the vegetation and wetland soils prior to being returned to the bay. Depending on the tide level

during wet weather, a varying portion of the stormwater runoff would exceed the capacity of the subtidal and flow into the salt marsh area, which would provide water quality benefits to the stormwater runoff entering the bay.

Subtidal Channel Stabilization

The results of the hydraulic modeling indicate that the subtidal channels would require stabilization at three locations: (1) Cudahy Creek outlet, (2) dual reinforced concrete pipe outlet, and (3) the connection area with the Mission Bay North Pacific Passage. In the areas of the storm drain outlets, the rock would be at the elevation of the storm drain system for a distance of 30 feet to 40 feet followed by a transition down to the subtidal channel geometry. In the area of the subtidal channel connection with the North Pacific Passage, the two subtidal channels would merge together resulting in greater flow and velocity in comparison to the individual channel reaches. Additionally, to increase stormwater runoff flow onto the low-salt marsh areas, the subtidal channel geometry at the wetland exit would be manipulated with steps or benches, and a reduced channel bottom width. Based on the results of the hydraulic modeling, a riprap class of 2 tons covering approximately 0.2 acres would be required.

Salt Marsh Wetland

A combination of low-, transitional-, and mid-salt marsh wetland areas are proposed in the Cudahy Creek component area. Approximately 3.3 acres of low-salt marsh area is proposed adjacent to each side of the proposed subtidal channels. The proposed elevation of the low-salt marsh would vary slightly to promote drainage of the area during periods between inundations. The proposed elevations are on the lower end of the elevation range in which low-salt marsh would be sustainable, and the elevations were selected to balance the water quality objective and the habitat mitigation objective. Along the perimeter of Cudahy Creek component, approximately 1.4 acres of mid-salt marsh is proposed. The width of the mid-salt marsh would vary slightly, but in general, it is approximately 50 feet. Between the low- and mid-salt marsh areas, an area with a width of 12 feet is proposed as transitional. This would result in a design slope of 4:1 (horizontal to vertical), which would have an adequate grade for a quick transition while being flat enough to promote vegetation and reduce the risk of erosion.

Berm Area

A 20-foot-wide berm area is proposed between the proposed salt marsh wetland areas and the North Pacific Passage of Mission Bay for the entire length of the wetland except in the area where the subtidal channel is proposed to connect to the Mission Bay open water. The berm area would consist of a low-salt marsh wetland habitat (approximately 0.35 acres in addition to the amount described above). The berm would serve to contain water in the wetland areas to promote the filtration of the water through the vegetation and to improve the water quality benefit of the system. During periods of high tide levels, there would be a direct exchange of water between the wetland area and Mission Bay (i.e., water would flow over the top of the berm). This inundation is necessary for wetland health and would result in additional water quality benefits.

Oyster Bag Slope

Along the west side of the proposed fill area constructed to create the wetland would be a sloped area that ranges in elevation. The proposed slope would be 10:1 (horizontal to vertical) and has been designed to make a near seamless connection to the existing slopes of the North Pacific Passage north and south of the proposed wetland area. Oyster bags are proposed along the slope to culture the growth of oysters. Oysters provide water quality benefits through filter-feeding, which removes nutrients from the water by consuming and assimilating the nitrogen and phosphorus into their tissue and shells.

Fencing

Perimeter fencing is proposed in the Cudahy Creek component to restrict access and allow the site's vegetative community time to develop and mature post-construction. The fencing would reduce the risk of damage to the salt marsh caused by either foot traffic, animals, or unauthorized vehicular traffic. Approximately 1,800 linear feet of 6-foot-high chain-link fence is proposed, with gates to allow authorized access for monitoring and maintenance.

Construction

Subsequent Cudahy Creek component construction phasing would be determined at the time of future component entitlement, ideally during dry conditions. During the dry season of the year, rain events and discharges at the existing outfall would be minimal. To access the component site limits, barges would need to be utilized when constructing the west side of the component (berm area and confluence of subtidal channel), since it is in the middle of Mission Bay. Furthermore, construction access may be from the shore via shared paths and the shoreline. Equipment used on the shoreline would be stored/staged within the existing parking lot located north of the component limits and west of East Mission Bay Drive.

The quantity of soil to be imported would be approximately 58,000 CY, which would require at least 91 working days. The import material would be sourced from the North Fiesta Island component and delivered from one of the three stockpile sites on Fiesta Island to the Tecolote Creek component site in the dry season by truck or barge and placed by earthmovers.

Operation and Maintenance

Operations and maintenance would be required for the wetland. The most intensive actions may include the following:

- Trash removal
- Weed removal from transitional habitat areas
- Channel maintenance
- SLR adaptive management

Maintenance would occur regularly to ensure the habitat functions at the highest level possible for the site. Because nutrients are sometimes mobilized on a grand scale, and a bio-fouling community may quickly develop inside culverts when a wetland is initially restored, continued flushing of the wetland system would initially be necessary to reduce the nutrient load and nutrient-dependent marine fouling.

Intended ongoing adaptive management to accommodate SLR may include minor grading, planting, and periodic thin-layer sediment augmentation to maintain appropriate tidal/land elevation relationships that support the target marsh habitat diversity.

Sedimentation is anticipated to occur within the Cudahy wetland. However, it is not anticipated to require maintenance. Sediment levels will fluctuate as the marshland experiences cycles of sedimentation and flushing during storm events. Channel maintenance may be required, so it is analyzed in this report as an operational activity; however, due to the design of the subtidal channels, sediment accumulation to a level that would affect the function of the wetland is not anticipated.

Conceptual Habitat Restoration Plan

1.3.2 Restoration of Shoreline

Description

The Restoration of Shoreline element includes eight locations throughout Mission Bay where shoreline restoration activities would occur. Shoreline restoration locations are shown in Figure 8, Mission Bay Park Improvements Program Elements – Restoration of Shoreline, and outlined below: Vacation Island Northwest, Vacation Island Northeast, Vacation Island Southwest, Ventura Cove Park, Crown Point, West Sail Bay, Bonita Cove, and Bahia Point. Additionally, a Conceptual Habitat Restoration and Management Plan (CHRMP) has been prepared for the restoration of eelgrass beds that may be impacted due to the implementation of this element, or any other element under the Program that may impact eelgrass.

1.3.2.1 Vacation Island Northwest

The Vacation Island Northwest component comprises 0.7 acres along the northwestern boundary of Vacation Isle west of Ingraham Street. This site currently suffers from shoreline erosion. The Mission Bay Hydrology Study, Mission Bay Program Environmental Impact Report (PEIR; Moffatt & Nichol 2019) has identified that tidal currents travel north to this site, and then rapidly change direction with hydraulic energy directed at the eroding shoreline. Maximum velocities adjacent to the eroding shoreline are identified at 0.8 feet per second. The shoreline restoration concept is intended to restore and stabilize the sandy beach along the northwest corner of Vacation Island. Coarse sand would be placed to widen and elevate the beach. The nourished sand would be retained with two sand retention rock groins, capturing the bi-directional alongshore sediment transport, which is eroding the shoreline. The rock groin at Vacation Island Northwest is designed with a crest (i.e., bench) elevation of +8 feet NGVD 29, 5 feet above the current Mean Higher High Water (MHHW) line. The rock groin can maintain a sandy beach up to +8 feet NGVD 29 in elevation, 1 foot above current beach nourishment design, after which sediment transport will pass horizontally over the crest. The top of the rock groins would be developed with pedestrian access, which would be accessible from the beach. See Figure 9, Vacation Island NW Shoreline Restoration, for a preliminary concept of Vacation Island Northwest.

1.3.2.2 Vacation Island Northeast

The Vacation Island Northeast component comprises 1.14 acres along the northeastern boundary of Vacation Isle east of Ingraham Street at Ski Beach. Wave action has caused upland erosion, with scarps having been carved out of the earthen fill material, limiting recreational beach space at this location (Figure 10, Vacation Island NE Shoreline Restoration).

The Vacation Island Northeast component would occur in two phases. Phase one of the restoration proposes beach nourishment around the entirety of the point extending the beach approximately 100 feet from the current shoreline. At the toe of beach nourishment, cobble material (typically defined as rounded stone with a diameter of 2.5 inches to 10 inches [Moffatt and Nichol 2019]) or small boulders of approximately 26,100 tons would be constructed as a berm intended to lessen wave energy and hold the shoreline position. The cobble berm would be backfilled by beach nourishment, creating a wider public beach and providing additional shore protection. Once construction of the cobble berm and beach nourishment are completed, the shoreline restoration site would be monitored for beach erosion and sediment transport patterns with the intention of assessing the feasibility of sand

retention measures. If sediment transport and loss is observed during monitoring, phase two of the Vacation Island Northeast component would entail the installation of a shore-perpendicular groin at the southern boundary of the nourishment area.

West of Ingraham Street bridge, the shoreline of the public park is a degraded riprap shoreline, likely suffering from wave-induced erosion and potentially back-slope erosion from upland runoff. The West of Ingraham Street concept in Vacation Island Northeast was developed in conjunction with other similar Mission Bay restoration of shoreline sites: Ventura Cove Park and Vacation Island Southwest. The shoreline concept proposes to stabilize and restore the shoreline by repairing approximately 650 linear feet of the rock revetment west of Ingraham Street. Revetment crest height is proposed to be raised above the existing elevation to improve performance under SLR. A drainage ditch running along the crest of the revetment would channel surface runoff and prevent erosion of the underlying soil. See Figure 10 for a preliminary concept of Vacation Island Northeast.

1.3.2.3 Vacation Island Southwest

The Vacation Island Southwest component comprises 0.78 acres along the southwestern boundary of Vacation Isle, west of Ingraham Street. The Vacation Island Southwest component consists of approximately 1,600 linear feet of shoreline armored with riprap and backed by bare soil, bonfire pits, and a footpath. Over 40% of the revetment is failing, losing upland soil, and in need of repair. The crest elevation of revetment varies over the site. Where the revetment is in good condition, the rock extends up to +5 feet to +6 feet NGVD 29. However, in the damaged areas, the riprap only extends up to +3 feet to +4 feet NGVD 29 (East of and adjacent to the site, the shoreline was repaired through revetment construction, as a part of the Mission Bay Shoreline Protection Phase III) (Pountney Associates 1998).

The Vacation Island Southwest component concept proposes to repair and improve the revetment at the shoreline similar to previous adjacent repairs. The riprap revetment would be raised up to +8 feet NGVD 29, providing additional crest height that accommodates SLR. The crest of the revetment would be buried by sand to create a recreational perched beach. This concept would include oyster habitat improvements. The oyster habitat would consist of rocky substrate, oyster bags, and/or reef balls. In some cases, existing, undersized riprap could be reused for the creation of oyster habitat. See Figure 11, Vacation Island SW Shoreline Restoration, for a preliminary concept of Vacation Island Southwest.

1.3.2.4 Ventura Cove Park

The Ventura Cove Park component comprises 0.27 acres on the western point north of Mission Bay Drive bridge. However, the armor only extends up to +2 feet to +3 feet NGVD 29. On the northernmost tip of Ventura Cove Park, the soil above +3 feet NGVD has given away and created a 4-foot scarp. West of the scarp, 200 feet of previously exposed shoreline had been repaired with large riprap extending up to +6 feet NGVD 29. However, the rest of Ventura Cove Park's shoreline remains exposed above +3 feet NGVD 29. The Ventura Cove Park concept proposes to repair and improve the revetment at the shoreline. The riprap revetment would be repaired and crest would be raised to +8 feet NGVD 29 to accommodate SLR. A footpath would be constructed parallel to the revetment crest to improve public access, with the added benefit of stabilizing the soil behind the revetment crest. This concept would also include oyster habitat improvements. The oyster habitat would consist of rocky substrate, oyster bags, and/or reef balls. In some cases, existing, undersized riprap could be reused for the creation of oyster habitat. For the purposes of this report, approximately 8,033 tons of rocky substrate have been analyzed for the construction

of the proposed oyster habitat. See Figure 12, Ventura Cove Shoreline Restoration, for a preliminary concept of the Ventura Cove Park component.

1.3.2.5 Crown Point

The Crown Point component comprises 0.69 acres of beach and open water located at Crown Point. Crown Point, also known as Riviera Shores, has been the site of previous shoreline restoration (Pountney Associates 1994). The focus of restoration was the design and construction of the Crown Point seawall, and beach fill strategically placed at the northern and southern areas of the seawall. However, Crown Point is currently vulnerable to coastal erosion and SLR, especially south of the Crown Point seawall. A coastal process known as "end effects" has caused increased wave erosion where the seawall transitions to beach at the Ingraham Street bridge. Continuing south from this location, coastal erosion has threatened beach access and the existing public pathway.

Crown Point is located in north Mission Bay and is bisected by Ingraham Street. The concept for the Crown Point component is to construct a seawall as shoreline protection, extending from the southern end of the existing seawall approximately 150 feet to the south and east. The seawall would follow the alignment of the bike path and gradually diminish in size and transition into the existing public beach. The seawall would match the existing seawall design and create a seamless aesthetic and structural transition protection. The seawall would reflect waves and the fronting beach widths may erode. Consistent with the MBPMP as updated in 2023, recommendations to preserve "all natural bluff areas, especially Riviera and Crown Point Shores," this design proposes a shoreline stabilization solution to a vulnerable reach of the Mission Bay shoreline. See Figure 13, Crown Point, for a preliminary concept of Crown Point.

1.3.2.6 West Sail Bay

The West Sail Bay component comprises approximately 0.7 acres of beach located in northwest Mission Bay. The beach on the western shore of West Sail Bay has narrowed over time and the erosion now threatens the bayside walk and increases the risk of flooding. Beach nourishment is proposed along approximately a 0.25-mile length, to develop a 75-foot-wide beach berm and 50-foot-wide beach slope. The beach width at the narrowest location would expand from 20 feet to 90 feet at high tide. The beach berm is proposed to tie in with the maximum beach heights at West Sail Bay. The beach nourishment would maintain the general function and character of the existing shoreline and would actively advance the shoreline into Mission Bay to protect land-based infrastructure from erosion and wave runup while expanding the sandy beach space for recreational users. Beach nourishment can improve resilience to SLR; as the water level rises, the beach profile retreats inland and rises in elevation. A wide beach could provide protection for several years but would endure slow, continuous erosion requiring future renourishment. Beach grooming may be required in the future to redistribute the sand as it collects to the north and south of West Sail Bay. Material for the beach nourishment would come from within Mission Bay as part of dredging or other components herein, or sources available at the time of implementation. See Figure 14, West Sail Bay Shoreline Restoration, for a preliminary concept of the West Sail Bay component.

1.3.2.7 Bonita Cove

The Bonita Cove component comprises approximately 2.02 acres located in the southwest corner of Mission Bay. As described in the Mission Bay Master Plan, it is an area composed of inland parks and residential parcels, existing and proposed recreational beaches, and open water, including existing and proposed mooring basins adjacent to the shoreline. The shoreline in the northwest corner of Bonita Cove has historically eroded, especially in the area of San Fernando Place headland. Due to a process called wave refraction, wave energy tends to focus at convex-

shaped headlands, often causing more severe erosion than the adjacent concave-shaped shorelines to the north and south.

The concept for the Bonita Cove component proposes to relocate the sidewalk and nourish the beach at the headland off San Fernando Place. Relocating the sidewalk up to 30 feet inland would alleviate the immediate coastal erosion threats of undermining infrastructure. A 100-foot-wide dry beach is proposed to advance the land at the San Fernando Place headland. A coarse sand grain size, which is defined as between 2.0 millimeters and 4.76 millimeters by the Unified Soil Classification System, is identified for use in this restoration component, the beach would be anticipated to resist erosion for a longer period of time. This beach is anticipated to protect infrastructure and public access for years but would erode over time. To curb such erosion, a 650-foot-long cobble berm is proposed at the toe of the beach nourishment. With the use of soft engineering materials, the berm is intended to lessen wave energy in a similar manner to a breakwater and hold the shoreline position in a similar manner to a revetment. See Figure 15, Bonita Cove Shoreline Restoration, for a preliminary concept of the Bonita Cove component.

1.3.2.8 Bahia Point

The Bahia Point component comprises 3.30 acres located in West Mission Bay, adjacent to the Bahia Resort Hotel, West Mission Bay Drive, Ventura Cove, and Ventura Cove Park. The Bahia Point component site was determined to encompass Bahia Point Beach and Ventura Cove Beach, an approximately 3,000-linear-foot strip of public space composed of parking lots, grassy park, and sandy beach along the entirety of the site. The shoreline is currently experiencing erosion and stormwater management issues and is projected to experience severe flooding under projected SLR (ICF 2018). Based on a review of the available storm drain inventory data from the County of San Diego Geographic Information System (SanGIS), the Bahia Point restoration area has three storm drain outfalls within its limits. These outfalls were analyzed for hydraulic adequacy in the Preliminary Engineering Report Mission Bay PEIR Restoration of Shoreline (Moffatt & Nichol 2021).

Past shoreline studies have identified erosion at Bahia Point and Ventura Cove. The erosion rate of Ventura Cove was defined as between 4.6 feet and 7.8 feet/year (Tetra Tech 1984). Without human intervention, this rate of erosion could eliminate beaches at high tide within 10 years in certain eroded areas of Ventura Cove and Bahia Point. This site was the focus of a previous shoreline restoration component by Pountney Associates (1994, 1998) from the north tip of Bahia Point to the east shore, and to the south corner of Bahia Point and Ventura Cove Beach. The prior component entailed grading the shoreline, importing sand fill, and rearranging existing material to eliminate scarps and irregular beach contours.

To improve beach conditions and provide stability to Bahia Point and Ventura Cove, the site concept proposes two simultaneous approaches, or phases, consisting of the following: (1) improving and repairing with beach nourishment, cobble breakwater, and stormwater improvements across all outfalls and (2) installing multiple groin pilots (tests) on east Bahia Point adjacent to stormwater outfalls.

The first phase of the Bahia Point shoreline restoration would entail placing beach fill along the entirety of the shoreline within the component footprint. If possible, sand that has slumped into the bay would be reclaimed by excavating and placing the material upland. This phase would include the installation of a cobble breakwater at the toe of the beach fill at the northern tip of Bahia Point. The stormwater outfalls would also be improved. Flow dissipative features would be installed at three stormwater outlets in Ventura Cove Park and parking lot. The storm drain at the corner of Ventura Cove Beach and Bahia Point would be repaired or replaced. Two PVC stormwater outfalls along east Bahia Point would be repaired and extended for a total of six stormwater improvements within

Bahia Point. Vehicular beach access routes would be incorporated to allow beach maintenance crews to perform their duties. The routes would be located at the south end of Bahia Bay near the entrance to the Bahia Resort and at the north end of Bahia Point near the restroom facility.

Phase two would be a multiple groin pilot on east Bahia Point. Two small sheetpile groins would be installed; one would be positioned adjacent to the northern end of the Bahia Resort, one would be position downcoast of the northern groin. The sheetpiles would be installed, sand placed along each side. The pilot groins would be monitored for a year to assess their effectiveness. Following the monitoring period, it would be determined which temporary groins, if any, were effective for sand retention and if they resulted in any unintended secondary impacts permanent structures. After that point the need for permanent groins would be assessed and the existing groins would either be replaced with permanent groins or removed. For the purposes of the analysis in this report, two temporary rock groins would be constructed, one approximately 110 feet long the other approximately 60 feet long. See Figure 16, Bahia Point Shoreline Restoration, for a preliminary concept of the Bahia Point component and phasing.

Construction

Construction means and methods would vary with respect to variables including but not limited to site location and component type (landside construction or waterside construction),

The following section outlines two fundamental approaches to construction (landside and waterside construction).

Landside Construction

Landside construction is a common form of construction for shoreline development projects. Landside construction occurs in dry conditions, utilizing backhoes, dump trucks, front-end loaders, and other land-based equipment for various construction activities above mean sea level (MSL) in dry conditions.

Staging Areas and Access

Mobilization and demobilization of equipment and personnel for construction would require access points and staging areas on site.

Mobilization and demobilization of heavy construction equipment would be brought to the restoration site by way of the regional highway (I-5, I-8, Pacific Coast Highway) and local street network. The larger pieces of equipment would likely be transported to the restoration site on trucks during the late evening to early morning (between 9:00 p.m. and 6:00 a.m.) hours to minimize potential traffic congestion. Additional equipment may be brought onto the restoration site, as the contractor deems necessary; however, this would be considered an isolated case and would not occur on a regular basis. Daily access to the restoration site would be necessary for construction personnel. Periodic dust control along site access routes would be conducted by the construction contractor.

Staging areas would be required for the delivery, storage, and maintenance of equipment and materials. Areas would be selected to avoid and minimize potential impacts to nesting areas and sensitive habitat. Staging areas do not necessarily need to be within the site vicinity (i.e., adjacent parking lots); however, providing the most efficient access routes for equipment and crew would reduce the construction period and cost.

Construction Methods

Landside construction would require a minimum of 18 feet to 20 feet of clear area behind the immediate area of construction to facilitate the mobility of heavy equipment (e.g., excavator). Should landside construction be opted for, it is important to note that long-arm excavators are limited to an approximately 30-foot reach.

Excavation for shoreline treatment would be done with a clamshell or backhoe. Earthwork quantities would be designed to maximize the re-use of material on site. Fill activities with land-based equipment would utilize trucks or scrapers and be incorporated into the grading plan as suitable fill. Clean material suitable for transition would be hauled in from off-site or adjacent work areas and placed as appropriate. However, it is possible that portions of excavated material may be disposed of off site.

Particularly for freshwater wetland construction, performing earthwork in the dry season is preferred over working in the wet season. Dry season work would require some measure of dewatering to excavate reaches and install stormwater controls. However, the amount of dewatering required during the dry season is much reduced compared to any dewatering needed during the wet season. Working during the wet season may require extensive dewatering, depending on the amount of rain at the site. Dewatering requires pumps to pull water from the marsh and store it in temporary “Baker” tanks for testing. Depending on its condition, the stored water is then either released into a different portion of the marsh or a nearby flood channel or disposed of off site. Dewatering would require obtainment of a dewatering permit from the City prior to commencement of activity.

Beach fill components may be constructed from the landside. It is anticipated that dump trucks would be used to import sand.

Waterside Construction

Waterside construction may be necessary for specific shoreline restoration sites. Waterside construction would take place in wet conditions, at or below MSL. Wet construction would involve working over water so that material below MSL could be removed using dredge and/or excavator equipment. Waterside construction would necessarily be paired with land-based construction, at a minimum through the use of a take-off area for equipment and materials to be transported to the water environment.

Staging Areas and Access

Mobilization and demobilization of equipment and personnel for construction would require access points and staging areas. Waterside staging areas may be located on a barge. In order to transport equipment and materials to the site over water, an offloading and onloading area would be required for the vessel and barge. The farther away this site is located, the costlier construction would be. Two possible access areas are the 24th Avenue and Convention Center marine terminals. The use of marine terminals would require coordination with and authorization by the Port of San Diego.

Access for waterside equipment must consider water depth and variable oceanographic conditions including water level and wave fluctuations from tidal and storm conditions. Workboats typically require up to 6 feet of water depth to accommodate draft and a barge that is fully loaded with rock material may need up to 12 feet of water depth.

Site Preparation

Waterside construction is restricted by environmental, pedestrian, and commercial activity within Mission Bay. All sites are accessible to public use, with the exception of the southern half of the De Anza boot. Waterside construction would require a defined waterside boundary to isolate construction activities and protect public activity.

As stated earlier, waterside construction would likely be paired with landside construction and land-based staging and access. This may take place on site, at the staging area, and the offloading/onloading wharf. Landside site preparation methods would be applicable in such cases.

Construction Methods

Waterside construction may require dredging activities, especially at beach fill and wetland restoration sites. Hydraulic dredge equipment would be used, including installing a discharge pipe routed from the bay to the restoration site. Sand sources within Mission Bay include the Mission Bay Channel and existing maintenance dredging sites that have been identified throughout Fiesta Bay and Sail Bay (Moffatt & Nichol 2024). The hydraulic cutter-head dredge would provide the fastest method of material sourcing and placement. Construction with a hydraulic dredge would require the use of a silt curtain to minimize turbidity impacts.

Operation and Maintenance

Operation and maintenance activities would be limited for shoreline restoration element. However, slow, continuous erosion would occur over time and some areas would need to be re-nourished in the future. For the West Sail Bay component, for example, beach grooming may be required to redistribute the sand as it collects to the north and south of West Sail Bay.

1.3.3 Upland Habitat and Preserve Expansion

Description

Fiesta Island Habitat and Preserve Expansion Areas

Four potential habitat expansion/preservation sites on Fiesta Island are proposed, as shown in Figure 17, Upland Habitat and Preserves Expansion Element. Table 1-5 summarizes the four proposed habitat and preserve expansion areas on Fiesta Island. The acreage of proposed habitat restoration reflects the opportunity within each identified area. Additionally, a Conceptual Habitat Restoration and Management Plan (CHRMP) has been prepared for the proposed Upland Habitat and Preserve Expansion sites that propose site-specific recommendations aimed at restoring and enhancing habitat along with monitoring and maintenance recommendations to ensure the long-term viability of the restoration efforts.

The Program proposes modification and revegetation of the sand berm that borders each of the proposed restoration sites. Conversion of the berms from non-native vegetation to Coastal Strand and Southern Foredune habitat would help to connect these habitat patches with continuous native vegetation communities. The berms presently support non-native species populations that, if left intact, would provide an ongoing source of non-native weed seed that would invade the proposed habitat restoration areas. Treatment of the berms would reduce long-term maintenance and strengthen native vegetation communities within each of the proposed restoration areas.

Table 1-5. Fiesta Island Upland Habitat and Preserve Expansion

Component	Upland Habitat and Preserve Expansion Fiesta Island				Import Sand
	Diegan Sage Scrub	Coastal Strand	Southern Foredune	Coastal Salt Marsh	
Fiesta Island Site No. 1 South	X	X		X	Yes (berm)
Fiesta Island Site No. 2 North Central			X	X	Yes (berm)
Fiesta Island Site No. 3 Near Youth Camping	X	X		X	Yes (berm)
Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area		X	X	X	Yes (preserve cap)

1.3.3.1 Fiesta Island Site No. 1 – South

The proposed habitat expansion area, identified herein as Site No. 1, comprises 39.99 acres within the south end of Fiesta Island between Fiesta Island Road and an existing kelp drying and sand maintenance/storage area (see Figure 18, Fiesta Island Site No. 1 – South). The area is bordered by a sand berm that parallels the entire length of the Fiesta Island Road and encloses the southern and western boundaries of Site No. 1. Another berm runs along the east side of the site separating Site No. 1 from the kelp drying and sand maintenance/storage area.

Based on fairly undisturbed site conditions and the native species observed in this area, Diegan coastal sage scrub, Coastal Strand, and southern coastal salt marsh habitats are proposed. Diegan coastal sage scrub would be established on the broad, flat interior area and Coastal Strand vegetation would be established on the existing berm. In addition, expansion of size and aerial extent of the existing population of Nuttall's lotus (*Lotus nuttallianus*) within the site is possible. To achieve this habitat restoration goal, exotic/non-native species would be eradicated throughout the area, followed by the installation of appropriate native species from container plants and seed. The perimeter berm topography would be modified to flatten the side slopes through the placement of additional sand. Additional berm grading would occur to create topographic variation and meandering mounding that resembles dune features. Adequate site preparation would be critical to the success of the restoration effort in this location.

The existing laurel sumac (*Malosma laurina*) shrubs would be preserved, and appropriate native Diegan coastal sage scrub species would be introduced to expand the native habitat area. In addition, the minor occurrences of southern coastal salt marsh species in several locations would be linked together where appropriate, and appropriate southern coastal salt marsh species would be introduced.

A temporary irrigation system would be installed to support young container plants and stimulate seed germination and seedling establishment. Irrigation would continue until plant materials become adequately established and adapted to natural site conditions. The proposed irrigation system would be required to comply with the irrigation system standards found in Section II: Irrigation Systems of the City of San Diego Land Development Manual Landscape Standards.

Fencing would be installed along the designated new trail system between the recreational use area and the preserve to protect the area from damage, allow the native revegetation program to take hold, and prevent visitor access. The perimeter of Site No. 1 is identified as a Coastal Landscape (Natural Recreation) Area by the Mission Bay Master Plan, as shown on Figure 32(a), Fiesta Island Concept Plan, of the Mission Bay Master Plan. Therefore, the fencing would prevent those using the multi-use trail and adjacent natural recreational areas from accessing Site No. 1.

1.3.3.2 Fiesta Island Site No. 2 – North Central

The proposed habitat preserve expansion area, referred to herein as Site No. 2, comprises 14.38 acres located in the north-central portion of Fiesta Island, between the central connector road and the proposed North Fiesta Island Wetland component (see Figure 19, Fiesta Island Site No. 2 – North Central). Site No. 2 is currently utilized as an informal hiking and dog use area, composed of a network of trails meandering through patches of native and non-native vegetation. The trails are informal and have been formed in natural sand. There is a low elevation access point along the west edge of the site that affords entrance up to the area from a widened parking area off Fiesta Island Road. The site is bordered to the south by the section of Fiesta Island Road that bifurcates the island and to the west by the portion of the road that follows the perimeter of Fiesta Island. To the north and east of the site is disturbed habitat associated with the kelp processing and sand management area interspersed with and areas of southern foredune and southern coastal salt marsh vegetation.

Southern foredune habitat is proposed for establishment on Site No. 2. The natural, windy location on the island would provide some benefit to the establishment of the dune habitat. To achieve this, the network of informal trails would be eliminated. A more formalized trail is proposed in the Mission Bay Master Plan, as shown on Figure 32(a), Fiesta Island Concept Plan, of the Mission Bay Master Plan, around the perimeter of the restoration area. Fencing and signage would be incorporated into the trail system, to keep trail users and pets out of Site No. 2. Further establishment of southern foredune vegetation is proposed on the existing berm following a similar treatment as described for Site No. 1. Berm modification and establishment of southern foredune vegetation would extend north to the North Fiesta Island Wetland component to create habitat connectivity between these resource areas. Additional southern foredune vegetation establishment is proposed outside the berm on a disturbed area located between Fiesta Island Road and the berm. Habitat establishment on the berm and adjacent areas would create a larger block of habitat that is more easily maintained and protected.

According to the Mission Bay Master Plan, as shown on Figure 32(a), Fiesta Island Concept Plan, of the Mission Bay Master Plan, the sand replenishment maintenance areas would be relocated to the southeast and north ends of this site, which would include a maintenance road connecting the two areas to the Fiesta Island connector road. It would be important to maintain a buffer zone between the sand replenishment maintenance area and Site No. 2. The sand maintenance activities could compromise the functionality of Site No. 2 due to noise, dust, vehicular access, etc. The removal of invasive/exotic species and weeds and a combination of planting and seeding with appropriate native species would expand and enhance this habitat area.

1.3.3.3 Fiesta Island Site No. 3 – Near Youth Camping

This proposed habitat preservation area, identified herein as Site No. 3, comprises 13.40 acres located at the northeast end of the San Diego Youth Aquatic Center (see Figure 20, Fiesta Island Site No. 3 – Near Youth Camping). The Mission Bay Master Plan, as shown on Figure 32(a), Fiesta Island Concept Plan, shows a portion of this youth camping area along the northeast edge of the site up to the bay edge as a designated habitat preserve. The easterly

edge of Site No. 3 extends to the edge of the beach along the bay. The existing paved access road, gate and paved trails would be maintained for continued access by youth camping facility users. The paved road divides Site No. 3 in a northwest to southeast direction, resulting in a preserve area on each side of the existing road.

Native vegetation communities that are proposed for this area include Diegan coastal sage scrub, Coastal Strand, and creation of southern coastal salt marsh. Interpretive elements would be incorporated along the margins of the existing roads, trails, and habitat preserve areas.

1.3.3.4 Fiesta Island Site No. 4 – California Least Tern Preserve Area

This preserve expansion, herein referred to as Site No. 4, comprises approximately 29 acres in the northwest end of Fiesta Island, adjacently west of the existing California Least Tern (CLT) Preserve located in the northeast portion of Fiesta Island (see Figure 21, Fiesta Island Site No. 4 – California Least Tern Preserve). Fiesta Island Road and a sand berm run in a northeast–southwest direction through the entirety of the site, and the perimeter fence demarcating the existing CLT preserve runs through a portion of Site No. 4. Site No. 4 is composed of primarily disturbed habitat and beach, with a small area of disturbed southern coastal salt marsh. Soils throughout the area are sandy.

Small portions of Site No. 4 exhibit salt panne characteristics in the low-lying areas where water periodically ponds. Soils within Site No. 5 appear to contain fine silt particles that provide an opportunity for non-native species to recruit. Site No. 4 is very flat with little to no topographic variation.

Upland habitat expansion would relocate the existing CLT nesting site so that it is reoriented to maximize direct access to Mission Bay and to accommodate the proposed North Fiesta Island wetland restoration, situating the preserve in the northwestern portion of Fiesta Island. Site No. 4 would include a large nesting area with a beach providing direct access to Mission Bay waters to the north and west. Low undulated dunes would line the eastern boundary of the CLT nesting site (western boundary of the salt marsh restoration site) to provide cover for juveniles. The adjacent marsh will also provide calm waters supporting fish nursery habitat with small fish on which CLT fledglings may practice their foraging techniques. The dunes would not rise up but rather form an east-facing descent toward the salt marsh area to preserve line-of-sight into the adjacent restored marsh for predator detection. However, the dune features on the north and south side of the CLT preserve will be elevated above the CLT preserve to create a noise and access buffer from human encroachment; specifically, the southern dune is designed as a noise barrier from the adjacent RV park and public beach to the south across the created channel. The west-facing toe of the undulated dunes would be vegetated sparsely with low-growing native dune vegetation to provide cover for juveniles.

Sand with shell and driftwood fragments would be imported and spread throughout the CLT nesting site, which would be designed to be relatively flat with a shallow westerly slope toward the water. Compaction of substrate should be no more than 75% to promote scraping for CLT nest creation. Roof tiles are recommended to be distributed throughout the nesting site to provide cover for juveniles. While the dune vegetation will provide cover for juveniles, North Fiesta Island is subject to intense predator pressure and the roof tiles will be important to provide additional refuge in closer proximity to nests.

Initial CLT preserve security will be provided by a temporary 6-foot-tall chain-link fence with anti-perching features that will be installed at the top of the temporary slope until the North Fiesta Island wetlands restoration site is constructed. The fence will be located along the CCC line demarcating the boundary between the CLT nesting

preserve and North Fiesta Island wetlands restoration project. Once the North Fiesta Island wetlands are constructed, site security will be provided by a deep, subtidal channel that will provide tidal exchange between the west and east sides of North Fiesta Island. A vehicular bridge over the tidal channel will be installed as part of the North Fiesta Island wetlands project to provide authorized entry to the CLT preserve. The temporary fence is recommended to be removed from upland areas to reduce the potential for predation and to allow free access to bay water and foraging opportunities.

CLT nesting site management would follow existing and future adaptive management practices in place at other nesting areas within Mission Bay (San Diego Audubon 2020, 2022). These activities include nest monitoring, vegetation management (e.g., vegetation removal, invasive species control, herbicide application, seed collection, seed broadcast), maintenance of infrastructure (e.g., chick fencing, decoys, chick shelters, lockboxes for logbooks, signage), predator control (e.g., flushing predatory birds), placement of sand amendments (e.g., oyster shell, fine grade sand, sand redistribution).

Sea World Drive/San Diego River Upland Habitat and Preserve Expansion Areas

Three potential upland habitat restoration and preserve expansion sites were identified for evaluation along Sea World Drive and the San Diego River. A summary of potential upland habitat restoration and preserve expansion opportunities in the Sea World Drive/San Diego River area is provided in Table 1-6. Additionally, as discussed previously, a Conceptual Habitat Restoration and Management Plan (CHRMP) has been prepared for the proposed Upland Habitat and Preserve Expansion sites that propose site-specific recommendations aimed at restoring and enhancing habitat along with monitoring and maintenance recommendations to ensure the long-term viability of the restoration efforts.

Table 1-6. Sea World Drive/San Diego River Upland Habitat Restoration and Preserve Expansion Areas

Site	Habitat Restoration Opportunities				Import Sand
	Diegan Coastal Sage Scrub	Coastal Strand	Southern Foredune	Southern Coastal Salt Marsh	
No. 5a Cloverleaf Area	None	X	None	X	Yes
No. 5b Triangle Restoration Area	Enhancement only	None	None	None	No
No. 5c South Shores East Area	X	X	X	None	Yes

1.3.3.5 Sea World Drive/San Diego River Site No. 5a – Cloverleaf Area

This area (Site No. 5a) comprises approximately 17.38 acres bounded to the north by Sea World Drive, the south by Old Sea World Drive, and the west by West Mission Bay Drive (see Figure 22, Sea World Drive/San Diego River Site No. 5a – Cloverleaf). The area is bordered by an existing chain-link fence, which also cuts through the center of the site, separating the area designated as a CLT preserve on the west side from the previous salt marsh mitigation area on the east side of the site. The site currently features disturbed areas composed of non-native vegetation. Torrey pines (*Pinus torreyana*) line Sea World Drive to the north. Proposed exotic species removal and control coupled with

revegetation of coastal strand and southern coastal salt marsh species, would enhance the habitat value of this area. Portions of the site may be suitable as habitat to create a new population of Nuttall's lotus.

The eastern portion of Site No. 5a was previously restored as a southern coastal salt marsh mitigation site, and as such may not be able to be modified, other than being enhanced through exotics species removal and control. The condition of the vegetation has degraded since the site was originally restored, because of non-native species invasion; therefore, removal of non-native species and enhancement through native coastal strand vegetation establishment is proposed.

In locations where hard compacted soil is present, these areas should have additional sand placed over areas that pond to provide suitable substrate for coastal strand vegetation. Minor topographic variation and mounding should be created to create microtopographic variation. Sand depth should consider the depth of water accumulation at low points to avoid water ponding within the sand area.

1.3.3.6 Sea World Drive/San Diego River Site No. 5b – Triangle Restoration Area

Site No. 5b is a 6.76-acre area primarily composed of disturbed Diegan coastal sage scrub that has been referred to as the "triangle area." Habitat restoration and enhancement activities have previously been implemented in this area by the San Diego Audubon Society. The site is bordered to the north by Sea World Drive, to the east by Friars Road, and to the south by the Old Sea World Drive access road/trail and the rock-armored San Diego River bank (see Figure 23, Sea World Drive/San Diego River Site No. 5b – Triangle Restoration Area).

This area would be targeted for non-native species eradication and native species enhancement. Once eradication is complete, native species would be installed through container planting and seeding to enhance the existing habitat area.

1.3.3.7 Sea World Drive/San Diego River Site No. 5c – South Shores East Area

Site No. 5c is a 51.57-acre area primarily composed of disturbed habitat, that is bordered by Sea World Drive to the south and east and Mission Bay to the north and west (see Figure 24, Sea World Drive/San Diego River Site No. 5c – South Shores East). Portions of this site are part of the former Mission Bay Landfill, which was an active dump site in the 1950s, as shown on the Landfill Phases Map, City of San Diego, Mission Bay Landfill (SCS Engineers 2004). The southern portion of Site No. 5c falls within the limits of the old landfill; however, the northerly portion of the site appears to have been outside of the landfill footprint. An existing trail runs along the northern boundary that borders Mission Bay. A few informal trails are interspersed through the northern portion of the site.

The Program proposes Diegan coastal sage scrub restoration and enhancement because the site is large and has non-native species present that can be removed for habitat enhancement. Also proposed is soil import (i.e., sand and loamy soil) to provide appropriate soils that would support the target native vegetation communities to support establishment of those communities as self-sustaining biological resources. In consideration of the former landfill cap, filling over the landfill would protect buried materials and provide for additional topographic variation to create habitat diversity and microclimates that support species diversity. Site grading of imported soil would be designed to provide topographic variation. Once grading is complete, native species would be installed through container planting and seeding. The area is suitable for restoration of Diegan coastal sage scrub and coastal strand vegetation

communities. The Nuttall's lotus population within the center of the site would be protected from disturbance. Only eradication of non-native species would occur in those areas. Opportunities to expand the population would be examined and incorporated into the final design.

Construction

Construction would involve weed eradication, fencing, grading, and revegetation. These activities would ideally be implemented during the fall and winter months to take advantage of seasonal rainfall, as well as to avoid work disturbance during the migratory bird nesting period, which is from February 15 through September 15.

Access points for equipment would be provided at each site where grading and soil placement is proposed. A traffic control plan is likely not required, as the quantity of equipment entering and leaving the site would be minimal. Two staging areas for the storage of equipment and supplies are proposed, one on Fiesta Island and the other in the Sea World Drive/San Diego River Site No. 5c South Shores East Area location.

Within the Fiesta Island area, Fiesta Island Road, a paved access road, navigates the perimeter of the island to provide public access and parking. Parking areas are unpaved and unimproved, including beach parking. At the approximate center of the island, at the head of Enchanted Cove, and west of the Youth Camping area, Fiesta Island Road branches off to the northeast and west, bifurcating the island and providing a cut-through for vehicular access to the west side of the island. All of the Fiesta Island sites can be accessed by the Fiesta Island Road.

Within the San Diego River/Sea World Drive area, vehicular access to restoration sites is provided from East Mission Bay Drive and Sea World Drive. South Shores Parkway provides vehicular access to Old Sea World Drive, which parallels the San Diego River. Informal parking is afforded off the shoulder of Old Sea World Drive, no formal parking areas exist. This road is now used primarily for recreational purposes (e.g., walking, biking, birding, and resource interpretation access).

The import of sand and shell fragment material is proposed for the Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area. Additionally, import of sand is proposed for Fiesta Island Sites No. 1 and 3 and Sea World Drive/San Diego River Sites No. 5a and 5c. The source of the material would be preferred from Fiesta Island sand stockpile sources; however, sand could come from elsewhere in Mission Bay, as well as from the North Fiesta Island wetland component. All material sources would be reviewed and approved by the habitat restoration specialist as appropriate for the intended revegetation efforts. It is assumed that this material would be imported to the beach sand replenishment site on Fiesta Island and then transferred from that location to the sites via smaller vehicles when needed. Other materials, including irrigation equipment, soil amendments, plant materials and seed would be brought to the site on an as needed basis and stored as necessary based upon construction scheduling.

The revegetation areas would be maintained and monitored for an initial 120-day period (i.e., 4 months). The 120-day maintenance would be done by the installation contractor.

Operation and Maintenance

Long-term maintenance is required for habitat restoration activities for 25 months post-construction per the City's Land Development Code (LDC). Any longer monitoring will be provided as required by agency permits but would be no less than 25 months. Maintenance vehicles (i.e., pick-up trucks) and the size of the maintenance crews would vary depending on the location being maintained. Crews are anticipated to be small, with likely no more than two trucks and a crew of from four to eight laborers and one to two supervisors.

Maintenance and control of non-native exotic species would be an ongoing effort based upon seasonal conditions and would target the most aggressive and invasive species first. A combination of hand pulling and vegetation thinning would be implemented. Weed control would be implemented in the least environmentally impactive methods. Integrated pest management techniques would be utilized in the maintenance program.

1.3.4 Bicycle and Pedestrian Improvements

Description

Specific improvement components for bicycle and pedestrian facilities would be located at Rose Creek Bike Path, the Fiesta Island Causeway Path, and the Ocean Beach Bike Path, as shown on Figure 25, Mission Bay Park Improvements Program Elements – Bicycle and Pedestrian Improvements. Some areas are in good condition and require no improvements, such as the recently renovated multi-modal path along portions of Sea World Drive. In other areas, gaps or missing connections exist in the multi-modal path, like at Rose Creek. Between these extremes, various improvements are needed, including pavement repairs, wayfinding enhancements, stormwater upgrades, path widening, ADA-compliant curbs, and safety measures. Where appropriate, sustainable lighting and parking lot repairs are also part of the component.

Pavement improvements are a key design component across all three components. Sub-standard pavement in existing areas will be removed and replaced. Based on previous similar bike components, the preliminary design will use a 3-inch asphalt concrete over 9-inch crushed aggregate base. In areas with longitudinal slopes greater than 5%, undercrossing bridges, and locations directly adjacent to major roadways, a more robust design of 6-inch Portland cement concrete over an 18-inch crushed aggregate base will be applied. This pavement section is a conservative estimate derived from comparable components. The final pavement design will be determined by the geotechnical engineer during final design phase. Additionally, fencing and pedestrian railings will be installed in certain areas to enhance safety by separating pedestrians from vehicles.

Retaining walls and concrete barriers are proposed for the Fiesta Island Causeway. Using these protective barriers can enhance safety and allow a variety of users to continue using these bike paths. Retaining walls or concrete barriers are not proposed for the Ocean Beach Bike Path and the Rose Creek Bike Path improvements. However, retaining walls may be required for the Rose Creek Bike Path pending further geotechnical retaining wall and allowable fill slope requirements adjacent to Rose Creek.

The three improvement areas would be designed according to the standards in the Highway Design Manual (Caltrans 2020) and the ADA Standards for Accessible Design (Department of Justice 2010).The following are specific improvements identified for this element. Refer to Figures 26–28 for a preliminary design of each improvement.

1.3.4.1 Rose Creek Bike Path

The Rose Creek Bike Path component requires the removal and replacement of an approximately 0.85-mile-long section of the existing bike path within approximately 2.04 acres. The existing non-standard bike path (0.85 miles) needs to be replaced and widened due to poor pavement conditions. The path would be 14 feet wide with a 2% cross-slope.

The proposed Rose Creek Bike Path component would remove and replace the existing chain-link fence along the east and west sides of the path. Additionally, under the two bridges the existing pedestrian railings would be removed and replaced in conjunction with the path widening.

Segments of the existing Rose Creek bike path have vertical clearance issues. The proposed design provides the minimum vertical clearance of 8 feet, between the bike path and the Garnet Avenue Bridge and Grand Avenue Bridge. The existing Rose Creek bike path would be lowered to provide the minimum vertical clearance between the existing bridge soffit and the proposed bike path. There are a few existing storm drain systems that outlet into Rose Creek within the limits of the existing Rose Creek bike path. These systems would need to be extended in order to accommodate a wider bike facility. Additionally, sewer and water facilities cross the bike path, and it is anticipated these facilities would not be affected by the proposed improvements.

The existing path is located on property that is owned and maintained by the City of San Diego. However, there are two locations where the geometry of the existing path is insufficient to meet geometric standards, and a horizontal curve has been added (see Figure 26, Rose Creek Bike Path). Right-of-way acquisition is required from two adjacent properties, owned by San Diego Mission Bay Boat & Ski Club and Mission Bay Golf Course.

1.3.4.2 Fiesta Island Causeway Path

The Fiesta Island Causeway component includes separate trails for pedestrians and bicyclists within approximately 1.30 acres. Sections of this component include 5-foot-wide bike lanes on either side of the roadway and an 8-foot-wide multi-use trail, all of which would have a 2% maximum cross-slope and be constructed of asphalt concrete or Portland cement concrete.

The Fiesta Island Causeway improvements propose installing a pedestrian railing on the north side of the causeway between the walkway and the bay (see Figure 27, Fiesta Island Causeway Path). The improvements also include a masonry retaining wall with a mounted pedestrian railing on the north side of the causeway. Additionally, a concrete barrier (i.e., K-railing) would be installed to separate the shared-use trail from the roadway.

Along the Fiesta Island Causeway, there is an existing 15-inch sewer and 10-inch water line within the roadway limits. It is anticipated that these existing utilities would not be affected by the improvements on the north side of the roadway. However, the design of the Fiesta Island Causeway component, as described above, incorporates the design of the bicycle and pedestrian path.

1.3.4.3 Ocean Beach Bike Path

The Ocean Beach Bike Path component comprises 2.63 acres and includes the removal and replacement of an approximately 1.06-mile section of the existing bike path pavement due to sub-standard widths (5 feet to 6 feet) and poor pavement conditions (see Figure 28, Ocean Beach Bike Path). The path would have a 2% cross-slope and 14-foot width (10-foot traveled way, and two 2-foot and 4-foot shoulders) per Caltrans Highway Design Manual 1003.1 (2020) and consistent with design recommendations outlined in the San Diego River Trail Enhancement Plan (San Diego River Trail Project).

There are various utilities that cross the Ocean Beach bike path. These include both storm drain and sewer systems. It is anticipated that these facilities would not be affected by the proposed improvements to the bike path. The Ocean Beach Bike Path improvements do not propose pedestrian railing or fencing.

Construction

The construction activities of reach of the locations would be similar. Three of the four proposed component sites would need to consider rerouting existing users during construction, as discussed below.

Rose Creek Bike Path

Due to the length of Rose Creek Bike Path, and the lack of convenient bicycle and pedestrian alternatives on the adjacent streets, the concept is proposed to be phased.

Phase 1 is the section from the Mike Gotch Memorial Bridge and Path to the Grand Avenue Bridge. A possible detour for path users is to travel west along the Mike Gotch Memorial Bridge and Path to the intersection of Pacific Beach Drive and Olney Street, then travel north on Olney Street (which has a sidewalk and no posted bicycle facilities) to Grand Avenue. The user would travel east on Grand Avenue (which has a Class II bike lane and sidewalks) to the signalized intersection at Figueroa Boulevard, and proceed west to the Grand Avenue Bridge, utilizing the ramp to the Rose Creek Bike Path leading north.

Phase 2 is the section from the Grand Avenue Bridge to the Garnet Avenue Bridge. A possible detour for path users is to travel east on Grand Avenue (which has Class II bike lanes and sidewalks) to the intersection with Figueroa Boulevard. The user would then travel north on Figueroa Boulevard, west on Magnolia Avenue, and north on Bond Street all of which have sidewalks, and no posted bicycle facilities to Garnet Avenue. The Rose Creek Bike Path is accessed via a ramp a short distance to the west.

Phase 3 is the section from the Garnet Avenue Bridge to the terminus at Mission Bay Drive. A possible detour for path users is to travel west on Garnet Avenue, north on Pico Street, east on Bluffside Avenue and south on Mission Bay Drive to the terminus of the Rose Creek Bike Path. All of these streets have sidewalks, except Mission Bay Drive. None of these streets have posted bicycle facilities.

Fiesta Island Causeway

The retaining wall would be the first item of construction and can be constructed outside of the existing bicycle, pedestrian, and vehicular travel ways. The new pavement section can be constructed in an accelerated fashion in approximately 5 days. During that time bicycle access to the island would be restricted at night and open during the day with the use of a flagger due to the limited paved width available.

Ocean Beach Bike Path

From the east end of the Ocean Beach Bike Path at Sunset Cliffs Boulevard pedestrians can travel the concrete sidewalk along the south side of Robb Field to the Gateway Connection at the intersection of Sunset Cliffs Boulevard and West Point Loma Boulevard. This requires a short section of travel within a parking lot, which is not favorable, or on the dirt/grass adjacent to the parking lot. Pedestrians would then travel west along West Point Loma Boulevard until they reached the beach.

Operation and Maintenance

The operation of the bicycle and pedestrian paths would generally be limited to cleaning, clearing, and repairs as necessary.

1.3.5 Restoration of the Seawall Bulkhead

Description

The Restoration of the Seawall Bulkhead element is located along Mission Beach Boardwalk. Two segments of the existing seawall would be replaced. The first segment (A) starts at the intersection of Balboa Court and continues up to San Fernando Place. The second segment (B) starts at the intersection of Ventura Place and continues up to Pacific Beach Drive. Improvements to existing beach access points at various locations along segments A and B would also be provided as either replacement stairways or ADA ramps and one new vehicular access for City use would be created at Thomas Avenue. In addition, a new 375-foot-long segment (C) would be constructed from the north end of the existing seawall at Thomas Avenue toward Crystal Pier. See Figure 29, Mission Bay Park Improvements Program Elements – Restoration of Seawall Bulkhead Element, for the location of this element.

The Restoration of the Seawall Bulkhead element consists of replacement of approximately 9,780 linear feet of the existing seawall along Mission Beach Boardwalk, extension of the seawall by approximately 375 feet northwards to Crystal Pier, improve up to 14 existing beach access locations with stairways or ADA ramps, and potentially create one new (City) vehicular access to the beach at Thomas Avenue.

1.3.5.1 Replacement Segments A and B

The Replacement Segments A and B component area comprises approximately 4.27 acres of Pacific Beach and Mission Beach. The 9,780 linear feet is broken up into two segments (Segments A and B) (see Figures 30A–30E, Replacement Segments A and B). Segment A is approximately 8,760 feet long, sections of which were constructed in 1925, 1928, and 1986. The existing parapet height ranges from approximately 30 inches to 36 inches, which would be replaced, and the height increased to a new consistent parapet height of 42 inches (an increase of 6 inches to 12 inches). This additional height is necessary to provide required fall height protection and resilience from 6 inches to 12 inches of SLR.

Segment B is approximately 1,020 feet long and was constructed in 2000 with a parapet height of 36 inches. As with Segment A, the parapet would be replaced to a new height of 42 inches, an increase of 6 inches. This additional height is necessary to provide the required fall height protection and would provide resilience to 6 inches of SLR.

For both segments the existing wall would be demolished to the top of the concrete pile cap. The new wall would be placed and connected to the existing pile cap through vertical reinforcing bars.

The wall segments would be formed with reveals to meet the architectural features required for historical preservation and would be color-matched with the previous improvements, as required by the historic preservation requirements in the San Diego Municipal Code. The modified replacement-in-kind design would tie in with the overall look of the Mission Beach Boardwalk. No work is required on the walkway for the parapet replacement, so only portions of the boardwalk would require fencing during construction. However, there are voids identified beneath the existing boardwalk that would be filled as part of this element by creating core holes in the sidewalk and inserting grout, necessitating partial sidewalk/boardwalk closures during construction activities.

1.3.5.2 New Segment C

The New Segment C component area comprises 0.12 acres of Pacific Beach. A new segment (Segment C) would be constructed where the existing k-rail separates the beach from the boardwalk from the end of Thomas Avenue, northwards approximately 375 feet to Grand Avenue (see Figure 31, New Segment C). The existing 13-foot-wide Segment C boardwalk is proposed to be widened by 5 feet to a total width of approximately 18 feet. At the north end of Segment C, the new wall would tie in at the front edge of the existing flatwork for the shower near the lifeguard station. The added width would provide congestion relief in this heavily trafficked pedestrian area. Consistent with the replacement segments (A and B) the new wall would have a parapet height of 42 inches. The new wall would be supported on a spread footing.

For the new wall segment to remain stable, the City would be required to maintain a minimum sand elevation, similar to a requirement of the 2015 Belmont Park component, which was used as guidance for this study. The City would likely need to continue constructing sand berms each winter season to maintain this sand level.

1.3.5.3 Access Improvements

Description

Pedestrian beach access along Segments A and B is currently provided by “pop-out” stairways at 14 locations (see Figures 30A–30E). These existing stairways were constructed at different times with varied configurations along the boardwalk. Replacement of these stairs would be achieved with either new code-compliant stairs or ADA access ramp.

Stairs

The existing sheet piles supporting the stairs are assumed to be concrete in Segment A and steel in Segment B and could remain in place to support the new stairs. The stairs would rise 2 feet before descending to match the existing configuration. At the end of the stairway, an “L”-shaped segment of new sheet pile wall with a concrete cap would be constructed to lengthen the stairway to meet code requirements. The proposed stairs would descend to approximately EL 7.00 (NGVD 29) to match the elevation of the bottom of the existing stairs.

Americans with Disabilities Act Ramps

The ADA-compliant pedestrian ramp that would replace some of the existing beach access stairs at locations determined by the City would slope at 1:13 (7.69%) maximum and provide landings for every 30-inch rise per the City of San Diego 2021 Standard Drawing SDM-115. The ramp would also have a picket guardrail with a handrail for fall protection. The proposed ramp would rise 2 feet before descending to provide the same level of coastal protection currently provided.

The proposed bottom landing would be approximately 3 feet below the top of the boardwalk. This is assumed to be near the same elevation where the current stairs terminate and is the lowest the ramp can descend before requiring an additional landing.

New Vehicular Access

A 75-foot-long driveway is proposed at Thomas Avenue that would provide beach access for City equipment. The driveway would be 16 feet wide. The driveway would be constructed parallel to the existing boardwalk at the north end of Segment B. The driveway would descend to approximately elevation 1.0 (NGVD 29). Because there is currently no shoreline protection provided, the driveway does not need to rise 2 feet before descending (as required for the pedestrian beach access locations).

Construction

Replacement (Segments A and B)

Phasing is included by the length of wall section based on the nature of the work required.

New Seawall (Segment C)

Construction of the new wall (Segment C) would require closing the boardwalk to provide the necessary clearance for wall footing excavation. The adjacent parking lot could be used as a temporary pedestrian traffic detour during construction. The duration of construction is estimated to be approximately 3 months.

Access Improvements

Each existing beach access location would be closed during construction of the replacement stairs; however, the boardwalk could remain partially open. The existing parapet along the stair pop-out would be demolished and reconstructed. The new stairs would tie into the boardwalk parapet, and thus the replacement of the boardwalk parapet must occur prior to reconstruction of the stairs. Construction duration is estimated at 2 weeks for each stairway.

To construct the ADA ramp, a new sheet pile wall and pile cap would be constructed to extend the existing pop-out to the necessary length for the ramp. The new sheet pile wall for the stairway would tie into the existing sheet pile wall. The existing stairs would be demolished and replaced by the ADA ramp. The parapet along the existing segment of the stair pop-out would be demolished and replaced. The new ramp would tie into the boardwalk parapet; as such, the replacement of the boardwalk parapet must occur prior to construction of the ramp. Aesthetically, the parapet wall for the ramp would be designed consistent with the new parapet wall proposed for the boardwalk. Construction duration is estimated at 1 month for each ADA ramp.

The new vehicular driveway would be supported by two new steel sheet pile walls with concrete caps, which would run parallel to the existing seawall. A structural concrete slab would span between the sheet piles. On the beach side, a parapet would be constructed to provide consistency with other segments of the seawall. On the boardwalk side, a new parapet would be constructed on top of the existing seawall as part of the Segment B work. The new parapet on the existing seawall (Segment B) would not tie in directly with the driveway, meaning the driveway could be constructed before or after the Segment B work is completed.

Operation and Maintenance

Upon completion of the Restoration of the Seawall Bulkhead element, operation and maintenance activities would be minimal and consistent with City's standard routine maintenance requirements.

1.3.6 Deferred Maintenance Activities

Location

This element is bay-wide, and improvements may occur throughout the Mission Bay Park Improvement Zone..

Description

Various improvements focusing on existing City assets (facilities) throughout the bay including ADA access ramps repair; parking lot pavement including stormwater improvements; benches repair/replacement; picnic table repair/replacement; lighting sustainability enhancements; fire pit and hot coal disposal replacement; playground equipment repair/maintenance; and comfort station repair/replacement. Opportunities for improvements to stormwater quality treatment, such as biofiltration basins, are included as part of considerations for all suitable deferred maintenance activities.

Construction

The type of equipment needed to construct any facilities associated with deferred maintenance activities would vary greatly dependent upon the type of asset being constructed. Many assets would be maintained by City staff utilizing service trucks with standard tools to support activities such as replacement of barbecue grills, benches, bike racks, drinking fountains, fire pits, fitness stations, hot coal disposal, picnic tables, signage, landscaping maintenance, and trash/recycling receptacles. These activities would not require the closure of any adjacent facilities. Painting would also be provided with service trucks and standard tools.

A variety of activities would require special equipment and specialized planning. For example, repair and/or replacement of comfort stations, gazebos, lifeguard towers, lighting, storm drain infrastructure, and parking lot pavement. Required equipment may include elevated work platforms (bucket trucks or person lifts), roofing equipment, and excavation equipment for storm drains. Repaving parking lots would require asphalt grinding machines, asphalt paving machines, rollers, and small loaders for moving materials. Planning for the temporary closure of facilities may be required. Engineering or architectural design may be necessary prior to initiating the maintenance activity.

Placement of water quality basins would require a variety of equipment to allow the excavation of basins, the placement of inlets and culverts, the forming of headwalls and other drainage structures, and the placement of concrete. Trucks would be required for the import of aggregate and large rocks to fill the basin and to export dirt from the site. For work that requires larger excavations (e.g., water quality basins), the design team will coordinate with utility owners early in the design phase to verify utility locations and coordinate for relocation if necessary.

Other activities would require the use of light duty cranes or mechanical equipment, for example the placement of picnic tables and playground equipment.

Operation and Maintenance

Once deferred maintenance activities are completed, repaired and/or replaced facilities would continue to be used, cleaned, and maintained in a manner consistent with the City's standard routine maintenance requirements. The maintenance team would notify Underground Service Alert so that utilities are accurately marked in the field prior to initiating maintenance activities that require minor digging.

1.4 Environmental Protocols

The activities proposed in the Mission Bay Implementation Framework were developed to implement recommended activities proposed in the Mission Bay Park Master Plan and Charter 55.2. These program elements prioritize restoration of ecological function of the area while avoiding and minimizing potential impacts to biological resources. The following Environmental Protocols (EPs) have been developed as part of the Implementation Framework because these specific proposed activities serve to reduce impacts to biological resources. Subsequent element specific components will be reviewed for applicability with EPs to avoid and minimize impacts to biological resources and will be implemented as part of each component construction and operations, to the extent applicable.

EP-BIO-1 Resource Verification and Component Consistency. Prior to submitting applications for the implementation of location-specific components recommended by the Improvement Program, surveys for biological resources, conducted in accordance with the SDBG, will be initiated to verify existing conditions, identify potential focused surveys, and to confirm that potential impacts are consistent with the analysis included in the approved Program Environmental Impact Report and Biological Resources Technical Report, and to outline applicability of Environmental Protocols and Mitigation Measures, and subsequent regulatory permit requirements (e.g., Section 404/10 permits for dredge/fill within waters of the US). Surveys shall, at a minimum, include vegetation mapping, jurisdictional aquatic resources delineation (if potential jurisdictional resources are present), and suitable habitat assessment for all special-status species with moderate or high potential to occur. Resource verification shall include written and graphic depiction of the component-specific footprint, biological resources/impacts and avoidance areas, access/staging/loading routes, construction timeline, and the equipment that will be used to complete the work.

EP-BIO-2 Landscaping and Revegetation. For all components where planting and irrigation is proposed or a component will create disturbed area of bare soil or are within existing disturbed areas, or within 100 feet of a structure within a City park, a Revegetation Plan will be prepared, in accordance with the SDBG (City of San Diego 2018) and the San Diego Municipal Code, LDC—Landscape Standards (City of San Diego 2016), prior issuance of a construction permit. Habitat revegetation will prioritize native species that are typical of the area, and erosion control features will include silt fence and straw fiber rolls, where appropriate. The revegetation areas will be monitored and maintained for 25 months to ensure adequate establishment and sustainability of the plantings/seedlings. Habitat restoration and/or revegetation inside the MHPA shall be conducted pursuant to MSCP Subarea Plan Section 1.5.2, “Restoration.”

1. A Revegetation Plan shall be prepared on D-sheets and submitted to the City’s Environmental Designee (ED) for review and approval. The plan shall consist of revegetation, planting, irrigation, and erosion control details, including all required graphics, notes, details, specifications, letters, and reports as outlined below.
2. The Revegetation Plan shall be prepared in accordance with the LDC Chapter 14, Article 2, Division 4, the LDC Landscape Standards submittal requirements, and Attachment “B” (General Outline for Revegetation/Restoration Plans) of the SDBG (City of San Diego 2018). The Project Biologist (PB) shall identify and adequately document all pertinent information

concerning the revegetation goals and requirements, such as but not limited to, plant/seed palettes, timing of installation, plant installation specifications, method of watering, protection of adjacent habitat, erosion and sediment control, performance/success criteria, inspection schedule by the ED, document submittals, reporting schedule, etc. The plan shall also include comprehensive graphics and notes addressing the ongoing maintenance requirements (after final acceptance by the City). For areas where a water source is not available, irrigation can be completed by a water truck or hand watering. Additionally, it is recommended that planting/seeding occur in the fall or early winter, to the maximum extent practical, in order to minimize the number of water truck or hand watering visits needed.

3. The Revegetation Installation Contractor (RIC), Revegetation Maintenance Contractor (RMC) and PB, where applicable, shall be responsible for ensuring that for all grading and contouring, clearing, grubbing, installation of plant materials, and any necessary maintenance activities or remedial actions required during installation and the 120-day plant establishment period are done per approved LDC. The following procedures at a minimum, but not limited to, shall be performed:
    a. The RMC shall be responsible for the maintenance of the upland mitigation area for a minimum period of 120 days.
    b. At the end of the 120-day period, the PB shall review the revegetation area to assess the completion of the short-term plant establishment period and submit a report for approval by ED. If the 120-day plant establishment period success criteria have not been met, an extension may be warranted at the discretion of the PB.
    c. ED would provide approval in writing to begin the 25-month maintenance and monitoring program.
    d. Existing indigenous/native species shall not be pruned, thinned, or cleared in the revegetation area.
    e. The revegetation site shall not be fertilized.
    f. The RIC is responsible for reseeding (if applicable) if weeds are not removed, within 1 week of written recommendation by the PB.
    g. Weed control measures shall include the following: (1) hand removal, (2) cutting, with power equipment, and (3) chemical control. Hand removal of weeds is the most desirable method of control and would be used wherever possible.

Damaged areas shall be repaired immediately by the RIC/RMC. Insect infestations, plant diseases, herbivory, and other pest problems would be closely monitored throughout the 25-month maintenance period. Protective mechanisms such as metal wire netting shall be used, as necessary. Diseased and infected plants shall be immediately disposed of off-site in a legally acceptable manner at the discretion of the PB (City approved). Where possible, biological controls would be used instead of pesticides and herbicides.

EP-WQ-1 Stormwater Standards. Prior to component construction, a Stormwater Applicability Checklist shall be completed to determine stormwater standards applicable to each component. A Water Pollution Control Plan or Stormwater Pollution Prevention Plan may be required and would be implemented in conformance with San Diego RWQCB standards, to control runoff and potential discharge of pollutants during and following construction activities. Implementation of these

standard stormwater best management practices are expected to substantially control adverse edge effects (e.g., erosion, sedimentation, habitat conversion) during and following construction that occurs both adjacent to and downstream from sensitive biological resources (including the MHPA). Components of the Water Pollution Control Plan include the following:

1. During construction activities, material stockpiles shall be placed in stockpile areas such that they cause minimal interference with any on-site drainage patterns. This will protect sensitive vegetation from being inundated with sediment-laden runoff.
2. Any use or storage of potentially toxic or hazardous substances shall be limited to staging areas at least 50 feet away from any jurisdictional resources.
3. Additional measures shall also be used to prevent the drainage of such materials into the MHPA.
4. No trash, oil, parking, or other construction-related material/activities shall be allowed outside any approved staging or construction limits.
5. Indirect impacts from fugitive dust shall be avoided and minimized through watering and other appropriate best management practices measures (e.g., utilizing approved haul routes).
6. The undercarriage, tires, and any other intervening portions of equipment used will be thoroughly inspected and cleaned prior to and following work in any specific construction area to remove any invasive plant species seeds, rhizomes, or other propagules, thus limiting the probability of their spread to and from work areas.

EP-BIO-4 Lighting Standards. All new lighting shall comply with Land Development Code Section 142.0740 (Outdoor Lighting Regulations). In addition, where adjacent to the MHPA, lighting shall be shielded from the MHPA.

EP-LU-1 MHPA Land Use Adjacency Guidelines. Final design of Program elements adjacent to the MHPA shall incorporate and document on the final design plans conformance with the MHPA Land Use Adjacency Guidelines. Final designs shall be verified for consistency with the MSCP Subarea Plan consistency findings in the approved Program Environmental Impact Report. All final design plans of Program elements adjacent to the MHPA will discuss conformance with the following:

1. **Drainage:** All new and proposed parking lots and developed areas in and adjacent to the preserve must not drain directly into the MHPA. All developed and paved areas must prevent the release of toxins, chemicals, petroleum products, exotic plant materials and other elements that might degrade or harm the natural environment or ecosystem processes within the MHPA.
2. **Toxics:** Land uses, such as recreation and agriculture, that use chemicals or generate by-products such as manure, that are potentially toxic or impactive to wildlife, sensitive species, habitat, or water quality need to incorporate measures to reduce impacts caused by the application and/or drainage of such materials into the MHPA. Such measures should include drainage/detention basins, swales, or holding areas with non-invasive grasses or wetland-type native vegetation to filter out the toxic materials.
3. **Lighting:** Lighting of all developed areas adjacent to the MHPA should be directed away from the MHPA. Where necessary, development should provide adequate shielding with non-invasive plant materials (preferably native), berming, and/or other methods to protect the MHPA and sensitive species from night lighting.

4. **Noise:** Uses in or adjacent to the MHPA should be designed to minimize noise impacts. Berms or walls should be constructed adjacent to commercial areas, recreational areas, and any other use that may introduce noises that could impact or interfere with wildlife utilization of the MHPA. Excessively noisy uses or activities adjacent to breeding areas must incorporate noise reduction measures and be curtailed during the breeding season of sensitive species. Adequate noise reduction measures should also be incorporated for the remainder of the year.
5. **Barriers:** New development adjacent to the MHPA may be required to provide barriers (e.g., non-invasive vegetation, rocks/boulders, fences, walls, and/or signage) along the MHPA boundaries to direct public access to appropriate locations and reduce domestic animal predation.
6. **Invasives:** No invasive non-native plant species shall be introduced into areas adjacent to the MHPA.
7. **Brush Management:** New residential development located adjacent to and topographically above the MHPA (e.g., along canyon edges) must be set back from slope edges to incorporate Zone 1 brush management areas on the development pad and outside of the MHPA. Zones 2 and 3 will be combined into one zone (Zone 2) and may be located in the MHPA upon granting of an easement to the City (or other acceptable agency) except where narrow wildlife corridors require it to be located outside of the MHPA.
8. **Grading/Land Development:** Manufactured slopes associated with site development shall be included within the development footprint for projects within or adjacent to the MHPA.

1.5 Regulatory Context

1.5.1 Federal

Federal Endangered Species Act

The federal Endangered Species Act (FESA) of 1973 (16 USC 1531 et seq.), as amended, is administered by the U.S. Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration, and National Marine Fisheries Service. This legislation is intended to provide a means to conserve the ecosystems upon which endangered and threatened species depend and provide programs for the conservation of those species, thus preventing extinction of plants and wildlife. Under provisions of Section 9(a)(1)(B) of FESA, it is unlawful to "take" any listed species. "Take" is defined in Section 3(19) of FESA as, "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." FESA provides for designation of critical habitat for species designated as endangered, defined in 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 "which 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."

The FESA allows for the issuance of "incidental take" permits for listed species under Section 7, which is generally available for components that also require other federal agency permits or other approvals, and under Section 10, which provides for the approval of habitat conservation plans on private property without any other federal agency involvement. Incidental take is defined as "take that results from, but is not the purpose of, carrying out an otherwise lawful activity" (Title 50 Code of Federal Regulations [CFR] 17.22 and 17.32).

Migratory Bird Treaty Act

The 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 pursue, hunt, shoot, wound, kill trap, capture, or collect, or any attempt to carry out these activities (16 USC 703 et seq.). The number of bird species covered by the MBTA is extensive; the species are listed in Title 50 of the CFR, Part 10.13. The regulatory definition of "migratory bird" is broad and includes any mutation or hybrid of a listed species, and also includes any part, egg, or nest of such birds (50 CFR 10.12). The MBTA, which is enforced by USFWS, makes it unlawful "by any means or in any manner, to pursue, hunt, take, capture, [or] kill" any migratory bird or attempt such actions, except as permitted by regulation. The applicable regulations prohibit the take, possession, import, export, transport, sale, purchase, barter, or offering of these activities, except under a valid permit or as permitted in the implementing regulations (50 CFR 21.11). Additionally, Executive Order 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds," requires that any component 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.

Currently, birds are considered to be nesting under the MBTA only when there are viable eggs or chicks, which are dependent on the nest.

Local implementation of the MBTA typically involves a qualified biologist conducting a nesting bird survey prior to construction activities between February 1 and September 15. Such surveys are required in all construction areas where natural or ornamental trees, shrubs, and ground cover may provide suitable nesting habitat for protected species. A nest avoidance buffer, as determined by the qualified biologist, shall be established and serve to protect active nests from direct and indirect disturbance until breeding activities have been completed.

Clean Water Act – Section 404

The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Under Section 404 of the CWA, USACE has the authority to regulate activities that could discharge fill or dredge material or otherwise adversely modify wetlands or other waters of the United States. The USACE implements the federal policy embodied in Executive Order 11990, which, when implemented, is intended to result in no net loss of wetland values or function.

The definition of waters of the United States establishes the geographic scope for authority under Section 404 of the CWA; however, the CWA does not specifically define waters of the United States, leaving the definition open to statutory interpretation and agency rulemaking. Under the U.S. Environmental Protection Agency's current waters of the United States definition, a "water of the United States" includes traditional navigable waters, territorial seas, interstate waters, impoundments, and certain tributaries, wetlands, and other features that meet a "relatively permanent" standard. The relatively permanent standard generally requires standing or continuously flowing water, which may be seasonally limited. Excluded from waters of the United States are features that support surface flows only in direct response to precipitation.

The term "wetlands" (a subset of waters of the United States) is defined in 33 CFR, Section 328.3(c)(16), as "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 USACE jurisdiction in non-tidal waters, such as intermittent streams, extend to the "ordinary high water

mark," which is defined in 33 CFR 328.3(c)(7) as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."

Sections 9 and 10 of the Rivers and Harbors Act

Section 9 of the Rivers and Harbors Act prohibits the construction of any bridge, dam, dike or causeway over or in navigable waterways of the United States without Congressional approval. Administration of Section 9 has been delegated to the U.S. Coast Guard. Consultation with the U.S. Coast Guard may be necessary to determine if a Section 9 permit would be required under the Rivers and Harbors Act.

Section 10 of the Rivers and Harbors Act requires that permits be obtained from USACE in navigable waters of the United States for all structures such as riprap and activities such as dredging. Navigable waters are defined as those subject to the ebb and flow of the tide and susceptible to use in their natural condition or by reasonable improvements as means of interstate transport or foreign commerce. USACE grants or denies Section 10 permits based on the effects on navigation. Most components covered under this Act are also covered under Section 404 of the CWA.

Magnuson–Stevens Fishery Conservation and Management Act

The Magnuson–Stevens Fishery Conservation and Management Act (16 USC 1801–1884) of 1976, as amended in 1996 and reauthorized in 2007 (Magnuson–Stevens Act), is intended to protect fisheries resources and fishing activities within 200 miles of shore. The amended law, also known as the Sustainable Fisheries Act (Public Law 104-297), requires all federal agencies to consult with the Secretary of Commerce on proposed projects authorized, funded, or undertaken by that agency that may adversely affect Essential Fish Habitat (EFH). The main purpose of the EFH provisions is to avoid loss of fisheries due to disturbance and degradation of habitat. EFH is regulated under the Magnuson–Stevens Act, protecting waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (16 USC 1801 et seq.). Substrates that are considered include sediment, hard bottom, structures underlying waters, and associated biological communities.

Congress defined EFH to mean those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. In 2002, the National Oceanic and Atmospheric Administration (NOAA) Fisheries further clarified EFH with the following definitions (50 CFR 600.05–600.930):

- "Waters" include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate.
- "Substrate" includes sediment, hard bottom, structures underlying the waters, and associated biological communities.
- "Necessary" means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and
- "Spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle.

The entire coastal region of California, including Mission Bay, is designated as EFH in the Pacific Coast Groundfish Fishery Management Plan and Coastal Pelagic Species Fisheries Management Plan (NOAA 2025a; PFMC 2024a, 2024b).

Marine Mammal Protection Act

All marine mammals are afforded protection under the Marine Mammal Protection Act (16 USC Section 1361 et. seq.). With limited exception, the Marine Mammal Protection Act makes it illegal to "take" a marine mammal without authorization granted by National Marine Fisheries Service. "Take" is defined as harassing, hunting, capturing, or killing, or attempting to harass, hunt, capture, or kill any marine mammal. "Harassment" is defined as pursuit, torment, or annoyance, which has the potential to injure a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering. Take authorization must be granted by the National Marine Fisheries Service.

Coastal Zone Management Act of 1972

The Coastal Zone Management Act of 1972 (16 USC Sections 1451 through 1464, Chapter 33) is administered by the National Oceanic and Atmospheric Administration's Office of Ocean and Resource Management and was established as a national policy to preserve, protect, develop, and – where possible – enhance or restore the coastal zone in the Unites States. The federal consistency provision, Section 307 of the Coastal Zone Management Act, encourages states to join the Coastal Zone Management Program, which takes a comprehensive approach to coastal resource management by balancing the competing and/or conflicting demands of coastal resource use, economic development, and conservation and allows states to issue the applicable permits. California has a federally approved Coastal Zone Management Program, and the Coastal Zone Management Act is administered by the California Coastal Commission (CCC). Therefore, the Coastal Zone Management Program and permit requirements are discussed further in the California Coastal Act section below.

1.5.2 State

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 Guidelines Section 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 California Code of Regulations [CCR] 15000 et seq.). A rare animal or plant is defined in CEQA Guidelines Section 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 Guidelines Section 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.

California Coastal Act

The CCC was established by voter initiative in 1972 and was made permanent by the California Legislature through the adoption of the California Coastal Act of 1976 (Public Resources Code Section 30000 et seq.). The CCC, in

partnership with coastal cities and counties, plans and regulates the use of land and water in the coastal zone. Under the CCA, cities and counties are responsible for preparing local coastal programs in order to obtain authority to issue coastal development permits for projects within their jurisdiction. Local coastal programs consist of land use plans, zoning ordinances, zoning maps, and other implementing actions that conform to the policies of the CCA. Until an agency has a fully certified local coastal program, the CCC is responsible for issuing coastal development permits.

Under the CCA Section 30107.5, environmentally sensitive habitat areas are areas within the coastal zone that are "designated based on the presence of rare habitats or areas that support populations of rare, sensitive, or especially valuable species or habitats." In addition, the CCC regulates impacts to coastal wetlands defined in Section 30121 of the CCA as, "lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens." The CCA requires that most development avoid and buffer coastal wetland resources in accordance with Sections 301231 and 30233, including limiting the filling of wetlands to certain allowable uses.

The BSA is located entirely within the coastal zone.

California Endangered Species Act

The California Department of Fish and Wildlife (CDFW) administers the California Endangered Species Act (CESA; CFGC Section 2050 et seq.), which prohibits the "take" of plant and animal species designated by the Fish and Game Commission as endangered or threatened in the State of 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."

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 (CFGC, Sections 1900–1913), or the California Desert Native Plants Act (Food and Agricultural Code, Section 80001)." Take authorization for otherwise lawful activities may be obtained from CDFW under Section 2081 of the CFGC.

California Fish and Game Code

According to Sections 3511, 4700, 5050, and 5515 of the CFGC, which regulate birds, mammals, reptiles and amphibian, and fish, respectively, a "fully protected" species may not be taken or possessed without a permit from the CFGC, and, with few exceptions, take of these species is prohibited.

According to Section 3503, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3503.5 states that it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation

adopted pursuant thereto. Section 3513 states that it is unlawful to take or possess any migratory nongame bird as designated in the MBTA.

The Native Plant Protection Act of 1977 (CFGC, Section 1900 et seq.) gives CDFW authority to designate state endangered, threatened, and rare plants, and provides specific protection measures for identified populations.

California Department of Fish and Wildlife Wetland Regulation

The CDFW exercises jurisdiction over waters of the state under Sections 1600–1616 of the CFGC based on the definition of regulated activity provided in Section 1602 of the CFGC and the definition of a stream provided in Title 14, Section 1.72, of the CCR.

Section 1602 of the CFGC states: "An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake" without notifying CDFW. Title 14, Section 1.72, of the CCR defines a stream as: "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation." This definition includes a broad range of vegetation communities, including some that do not contain wetland species but are in a riparian landscape position. CDFW jurisdiction typically extends to the outer limit of riparian vegetation, or to the top of bank of an unvegetated stream channel.

Under Section 1603 of the CFGC, upon notification, CDFW "shall determine whether the activity may substantially adversely affect an existing fish and wildlife resource." If such a determination is made, CDFW reaches an agreement with the notifying entity (a Streambed Alteration Agreement) that includes measures to protect the resources CDFW has determined the activity may substantially adversely affect.

In addition, CDFW's Marine Region may advise on projects within tidal waters. Recommended measures may include conducting presence surveys for invasive *Caulerpa* species prior to disturbing aquatic vegetation communities to ensure the species does not spread if detected.

Clean Water Act – Section 401

The State Water Resources Control Board has authority over wetlands through Section 401 of the CWA, as well as the Porter–Cologne Act, CCR Section 3831(k), and California Wetlands Conservation Policy. The CWA requires that an applicant for a Section 404 permit (to discharge dredge or fill material into waters of the United States) first obtain certification from the appropriate state agency stating that the fill is consistent with the state's water quality standards and criteria. In California, the authority to either grant certification or waive the requirement for permits is delegated by the State Water Resources Control Board to the nine regional boards. The San Diego Bay RWQCB has authority for Section 401 compliance within the BSA. A request for certification is submitted to the regional board at the same time that an application is filed with the USACE.

The State Water Resources Control Board defines a water of the state as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code Section 13050[e]). The State Water Resources Control Board's definition of a water of the state includes the following (SWRCB 2021):

1. Natural wetlands.

2. Wetlands created by modification of a surface water of the state.
3. Artificial wetlands that meet any of the following criteria:
    a. Approved by an agency as compensatory mitigation for impacts to other waters of the state, except where the approving agency explicitly identifies the mitigation as being of limited duration;
    b. Specifically identified in a water quality control plan as a wetland or other water of the state;
    c. Resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape; or
    d. Greater than or equal to one acre in size unless the artificial wetland was constructed and is currently used and maintained, primarily for one or more of the following purposes: industrial or municipal wastewater treatment or disposal; settling of sediment; detention, retention, infiltration, or treatment of stormwater runoff and other pollutants or runoff subject to regulation under a municipal, construction, or industrial permitting program; treatment of surface waters; agricultural crop irrigation or stock watering; fire suppression; industrial processing or cooling water; active surface mining – even if the site is managed for interim wetlands functions and values; log storage; treatment, storage, or distribution of recycled water; maximizing groundwater recharge (this does not include wetlands that have incidental groundwater recharge benefits); or fields flooded for rice growing.

All waters of the United States are waters of the state. Wetlands, such as isolated seasonal wetlands, that are not generally considered waters of the United States are considered waters of the state if, "under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation" (SWRCB 2021).

California Coastal Commission Wetlands Regulation

As described above, the CCC regulates impacts to coastal wetlands defined in Section 30121 of the CCA as, "lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens." The CCA requires that most development avoid and buffer coastal wetland resources in accordance with Sections 301231 and 30233, including limiting the filling of wetlands to certain allowable uses.

1.5.3 Local Regulations and Conservation Plans

County of San Diego Multiple Species Conservation Program

The City is a participant in the regional County San Diego MSCP, a cooperative federal, state, and local environmental conservation program aimed at preserving San Diego's unique native plants and animals (covered species) comprehensive, regional long-term habitat conservation program designed to provide permit issuance authority for take of covered species to the local regulatory agencies. The MSCP addresses habitat and species conservation within approximately 900 square miles in the southwestern portion of San Diego County. It serves as an approved habitat conservation plan pursuant to an approved Natural Communities Conservation Plan in accordance with the state Natural Communities Conservation Planning Act (County of San Diego 1998). The plan's boundaries extend over multiple jurisdictions and environments, including regional watersheds and migratory wildlife corridors. The plan also protects the region's diverse native plant and animal species, including those that

are threatened and endangered. The MSCP also provides provisions and regulations that accommodate future growth and streamline building regulations while protecting natural resources in the region.

The MSCP identifies 85 plants and animals to be "covered" under the plan (termed Covered Species). Many of these Covered Species are subject to one or more protective designations under state and/or federal law and some are endemic to the County of San Diego. The MSCP seeks to provide adequate habitat in the preserve to maintain ecosystem functions and persistence of extant populations of the 85 Covered Species while also allowing participating landowners "take" of Covered Species on lands located outside of the preserve. The purpose of the MSCP is to address species conservation on a regional level and thereby avoid component-by-component biological mitigation, which tends to fragment habitat.

City of San Diego Multiple Species Conservation Program Subarea Plan

The City of San Diego MSCP Subarea Plan (SAP) (City of San Diego 1997) encompasses 206,124 acres within the MSCP Subregional Plan area. The Subarea Plan establishes a preserve system designed to conserve large blocks of interconnected habitat having high biological value that are delineated in MHPAs. The City MHPA is a "hard line" preserve developed by the City in cooperation with the Wildlife Agencies, property owners, developers, and environmental groups. The MHPA identifies biological core resource areas and corridors targeted for conservation, in which only limited development may occur (City of San Diego 1997).

The Subarea Plan is characterized by urban land uses with approximately three-quarters either built out or retained as open space/park system. The MHPA is considered an urban preserve that is constrained by existing or approved development and is composed of habitat linkages connecting several large core areas of habitat. The criteria used to define core and linkage areas involves maintaining ecosystem function and processes, including large animal movement. Each core area is connected to other core areas or to habitat areas outside of the MSCP SAP either through common boundaries or through linkages. Core areas have multiple connections to help ensure that the balance in the ecosystem will be maintained (City of San Diego 1997). Critical habitat linkages between core areas are conserved in a functional manner with a minimum of 75% of the habitat within identified linkages conserved (City of San Diego 1997).

Vernal Pool Habitat Conservation Plan

The City of San Diego Vernal Pool Habitat Conservation Plan (VPHCP) is intended to provide an effective framework to protect, enhance, and restore vernal pool resources within the City of San Diego, while improving and streamlining the environmental permitting process for impacts to threatened and endangered species associated with vernal pools. Vernal pools are seasonal, depression-type wetlands that result from a unique set of physical parameters and support a specific biological assemblage of plant and animal species. Functional vernal pool ecosystems form under specific physical conditions when small, shallow depressions collect precipitation to create a seasonally perched water table. The VPHCP provides coverage for threatened and endangered vernal pool species that do not currently have federal coverage under the MSCP SAP. The VPHCP is compatible with the MSCP SAP and expands upon the City's existing MHPA to conserve additional lands with vernal pool resources. The VPHCP covered species includes the following seven threatened and endangered species:

- Otay Mesa mint (Pogogyne nudiuscula, PONU)
- San Diego Mesa mint (Pogogyne abramsii, POAB)
- Spreading navarretia (Navarretia fossalis, NAFO)

- San Diego button-celery (Eryngium aristulatum var. parishii, ERAR)
- California Orcutt grass (Orcuttia californica, ORCA)
- Riverside fairy shrimp (Streptocephalus woottoni, RFS)
- San Diego fairy shrimp (Branchinecta sandiegonensis, SDFS)

City of San Diego Land Development Code – Environmentally Sensitive Lands Regulation and Biology Guidelines

The City of San Diego Development Services Department developed the SDBG presented in the Land Development Manual "to aid in the implementation and interpretation of ESL Regulations, San Diego LDC, Chapter 14, Division 1, Section 143.0101 et seq., and the Open Space Residential (OR-1-2) Zone, Chapter 13, Division 2, Section 131.0201 et seq." (City of San Diego 2018). The guidelines also provide standards for the determination of impact and mitigation under CEQA and the CCA. Sensitive biological resources, as defined by ESL Regulations, include lands within the MHPA, as discussed in Section 1.3.3 of this report, as well as other lands outside of the MHPA that contain wetlands; vegetation communities classifiable as Tier I, II, IIIA, or IIIB; habitat for rare, endangered, or threatened species; or narrow endemic species. The San Diego Municipal Code ranks upland habitat values by rarity and sensitivity. The most sensitive habitats are Tier I, and the least sensitive are Tier IV. The varying mitigation ratios and requirements that mitigation be either in-tier or in-kind are based on the sensitivity of the habitat being affected. It is further intended for the ESL Regulations and accompanying Biology, Steep Hillside, and Coastal Bluffs, and Beaches Guidelines to serve as standards for the determination of impacts and mitigation under CEQA and the California Coastal Act. These standards also serve to implement the MSCP by placing priority on the preservation of biological resources within the MHPA, as identified in the City's SAP. The habitat-based level of protection that results through implementation of the MHPA is intended to meet the mitigation obligations of the Covered Species addressed.

The City's definition of wetlands is broader than the definition applied by the USACE. According to SDBG (City of San Diego 2018), City wetlands include areas characterized by one or more of the following conditions:

1. All areas persistently or periodically containing naturally occurring wetland vegetation communities characteristically dominated by hydrophytic vegetation, including but not limited to salt marsh, brackish marsh, freshwater marsh, riparian forest, oak riparian forest, riparian woodlands, riparian scrub, and vernal pools;
2. Areas that have hydric soils or wetland hydrology and lack naturally occurring wetland vegetation communities because human activities have removed the historic wetland vegetation or catastrophic or recurring natural events or processes have acted to preclude the establishment of wetland vegetation as in the case of salt pannes and mudflats;
3. Areas lacking wetland vegetation communities, hydric soils, and wetland hydrology due to non-permitted filling of previously existing wetlands; or
4. Areas mapped as wetlands on Map C-713 as shown in Chapter 13, Article 2, Division 6 (Sensitive Coastal Overlay Zone).

Per the SDBG, areas that contain wetland vegetation, soils, or hydrology created by human activities in historically non-wetland areas do not qualify as wetlands under the City's definition unless they have been delineated as wetlands by the USACE and/or CDFW (City of San Diego 2018). Artificially created wetlands consist of the following: wetland vegetation growing in brow ditches and similar drainage structures outside of natural drainage courses;

wastewater treatment ponds; stock watering; desiltation and retention basins; water ponding on landfill surfaces; road ruts created by vehicles; and artificially irrigated areas, which would revert to uplands if the irrigation ceased. Previously dredged tidal areas, such as Mission Bay, should be considered wetlands under ESL Regulations (City of San Diego 2018).

Guidelines that supplement the development regulation requirements described in this section are provided in the San Diego Municipal Code, LDC—Biology Guidelines (City of San Diego 2018). The Program is located entirely within the Coastal Overlay Zone (COZ), and therefore wetlands within the BSA would require adherence to the COZ wetland buffer regulations (City of San Diego 2018). According to the SDBG, a wetland buffer is an area surrounding a wetland that helps protect the function and value of the adjacent wetland by reducing physical disturbance, provides a transition zone where one habitat phases into another, and acts to slow flood waters for flood and erosion control, sediment filtration, water purification, and groundwater recharge (City of San Diego 2018). Within the COZ, wetland buffers should be provided at a minimum of 100 feet wide adjacent to all identified wetlands within the COZ. The width of the buffer may be either increased or decreased as determined on a case-by-case basis, in consultation with the CDFW, USFWS, and the USACE The width of the buffer is determined by factors such as type and size of development, sensitivity of the wetland resource to edge effects, topography, and the need for upland transition (City of San Diego 2018). Per ESL Regulations, uses permitted in wetlands within the COZ are limited to aquaculture, wetlands-related scientific research and wetlands-related educational uses; wetland restoration components where the primary purpose is restoration of the habitat; and incidental public service components, where it has been demonstrated that there is no feasible less environmentally damaging location or alternative, and where mitigation measures have been provided to minimize adverse environmental effects. Also per ESL Regulations, permitted uses in wetland buffer areas shall be limited to public access paths, fences, restoration and enhancement activities, and other improvements necessary to protect wetlands. ESL Regulations also lists permitted uses and developmental regulations for steep hillsides, coastal bluffs, coastal beaches, and special flood hazard areas.

City of San Diego General Plan

The proposed component is located in the City of San Diego and therefore is subject to the goals and policies in the City's General Plan. The General Plan was adopted in March 2008 and was most recently amended in July 2024. The General Plan provides policy guidance to balance the needs of a growing city while enhancing the quality of life for current and future San Diegans. It includes the City of Villages strategy, which outlines how the City can enhance its many communities and neighborhoods as growth occurs over time. The General Plan contains 11 elements that provide a comprehensive "blueprint" for the City's growth over the next 20 plus years. As shown in the General Plan land use map (City of San Diego 2024a, Figure LU-2), the component site is located in an area that is designated as Park, Open Space, and Recreation.

Mission Bay Park Master Plan

The component site falls within the boundaries of Mission Bay Park—a regional park that serves the residents of and visitors to San Diego. The MBPMP was adopted on August 2, 1994, and was most recently updated on November 21, 2021, with a revised concept plan for Fiesta Island (City of San Diego 2021b). The De Anza Natural amendment to the MBPMP was adopted by City Council in 2024 and certification by the CCC is pending. De Anza Natural is the City's revised concept and land use plan for De Anza Cove, which envisions the expansion of wetlands within Rose Creek and the cove while retaining the diversity of current recreation uses including low-cost visitor accommodations. The MBPMP serves as the local coastal program for this area of the City. The proposed

component is subject to the goals and recommendations established in the MBPMP, and the proposed component will be incorporated into the MBPMP as an amendment. The MBPMP recommends that the proposed study area should serve regional recreation needs, including guest housing (recreational vehicles and other low-cost camping facilities); improve the park's water quality, including creating additional wetlands; facilitate hydrologic improvements to safeguard the viability of marsh areas; provide a waterfront trail, viewing areas, and other passive recreational features to enhance public use of the component area; ensure leaseholds support the Mission Bay recreation use; improve access to recreational uses; and improve play areas for regional recreational needs.

The "Whitebook"

The City of San Diego published The "Whitebook" Standard Specifications for Public Works Construction (City of San Diego 2021a), which includes many standard practices that result in minimization of impacts to biological resources, including biological monitoring, materials suitability, safe construction methods, avian nest protection, tree protection, landscape standards, and stormwater protection measures. The Whitebook prescribed measures and standards are incorporated into the Program as Environmental Protocols (refer to Section 1.4 of this report).

2 Survey Methods

Data regarding biological resources present within the BSA were obtained through a review of pertinent literature, database, and general and focused surveys and assessments; all of which are described in detail below. All biological surveys were conducted in accordance with the City's Guidelines for Conducting Biological Surveys if applicable (City of San Diego 2018); state or federal focused survey protocols were followed when appropriate. As discussed in Chapter 6, Mitigation Measures, implementation of the Program would require focused surveys to be repeated, if older than 24 months, with the most recent survey results included with the final component design submittal.

2.1 Literature Review

The following data sources and existing studies were reviewed to assist with the biological resource surveys. Most data were queried for the BSA, except for species database occurrences, which were queried to include La Jolla quadrangle map and surrounding five quadrangles: La Mesa, Poway, Del Mar, Point Loma, and National City.

- U.S. Department of Agriculture (USDA) Web Soil Survey (USDA 2025a)
- CDFW California Natural Diversity Database (CNDDB; CDFW 2024)
- California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (CNPS 2025)
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory Wetlands Mapper (USFWS 2025a)
- USFWS Species Occurrence and Critical Habitat Data (USFWS 2025b)
- City of San Diego MSCP Subarea Plan (City of San Diego 1997)
- SDBG (City of San Diego 2018)
- SanGIS Data (USDA NAIP 2016, 2022)
- Mission Bay Park Natural Resource Management Plan (City of San Diego 1990)
- Mission Bay Master Plan Update (City of San Diego 2002)
- San Diego Bird Atlas (Unitt 2005)
- A Survey of the Belding's Savanna Sparrow in California, 2015 Season. Report to California Department of Fish and Game, for the Clapper Rail Recovery Fund (Zembal et al. 2015)
- Mission Bay Park Master Plan Fiesta Island Amendment (City of San Diego 2021b)
- Final Program Environmental Impact Report (EIR) for the De Anza Natural Amendment to the Mission Bay Park Master Plan (City of San Diego 2023)
- Biological Resources Technical Report for the De Anza Natural Amendment to the Mission Bay Park Master Plan (Harris & Associates 2023)
- Light-Footed Ridgway's (Clapper) Rail in California 2024 Season Final Report to US Fish and Wildlife Service and California Department of Fish and Wildlife Light-Footed Ridgway's (Clapper) Rail in California 2024 Season (Zembal et al. 2024)
- Revised Biological Resources Constraints Analysis for the Mission Bay South Shores General Development Plan (Dudek 2024)

- iNaturalist.org Observations Database (iNaturalist 2025), please note that a qualified biologist confirmed the data sources referenced from this source

2.2 Field Surveys

Between October 2018 and July 2019, baseline biological surveys conducted by Balk Biological within the BSA included: vegetation mapping and general biological reconnaissance surveys, special-status plant surveys, and focused surveys for California gnatcatcher (CAGN; *Polioptila californica*), California least tern (CLT; *Sternula antillarum browni*), western snowy plover (WSP; *Anarhynchus [*formerly *Charadrius] nivosus nivosus*), light-footed Ridgway's rail (LFRR; *Rallus obsoletus levipes*), Belding's savannah sparrow (BSS; *Passerculus sandwichensis beldingi*), and western burrowing owl (BUOW; *Athene cunicularia*). In 2019, Schaefer Ecological Solutions conducted an aquatic resources delineation within the BSA. In 2024, Balk Biological conducted focused surveys in suitable habitat for least Bell's vireo (LBV, *Vireo bellii pusillus*) and southwestern willow flycatcher (SWFL, *Empidonax traillii extimus*) within the BSA. In the fall of 2024, Balk Biological also reviewed and updated previous vegetation mapping within the Program component areas. In 2025, Schaefer Ecological Solutions conducted an aquatic resources delineation verification. All biological surveys were conducted in accordance with the City's Guidelines for Conducting Biological Surveys if applicable (City of San Diego 2018); state or federal focused survey protocols were followed when appropriate. Table 2-1 lists the species survey conducted, with dates, location of survey, and personnel or reference who performed the survey.

Table 2-1. Surveys Conducted for the Program

Date	Hours	Personnel	Focus	Location	Conditions
Vegetation Mapping, Jurisdictional Delineation, and Field Reconnaissance					
12/3/2018	0900–1700	BM	Vegetation Mapping	BSA	68°F–74°F; 20% cc
11/23/2018	1000–1600	CS	Aquatic Resources Delineation	BSA	68°F–74°F; 20% cc
1/10/2019	1100–1530	CS	Aquatic Resources Delineation	BSA	63°F–68°F; 5% cc
1/11/2019	1200–1530	CS	Aquatic Resources Delineation	BSA	62°F–64°F; 90% cc
12/4/2019	0800–1600	BM	Vegetation Mapping	BSA	63°F–68°F; 5% cc
12/11/2019	0900–1200	BM	Vegetation Mapping	BSA	62°F–64°F; 90% cc
9/17/2024	0930–1530	MB, BM	Vegetation Mapping Verification	Program Component Areas	66°F–70°F, 50%–100% cc, 2–8 mph
10/8/2024	0800–1500	MB, BM	Vegetation Mapping Verification	Program Component Areas	63°F–69°F, 40%–100% cc, 2–8 mph
04/15/2025	1100–1400	CS, MT	Aquatic Resources Delineation Verification	Fiesta Island	66°F–70°F; 75% cc

Table 2-1. Surveys Conducted for the Program

Date	Hours	Personnel	Focus	Location	Conditions
Rare Plant Surveys					
4/1/2019	0930–1700	SL, BM, KK, RM, BH	First Pass	BSA	74°F–78°F, wind 0–5 mph, 30%–40% cc
4/2/2019	0700–1500	KK, RM, BH	First Pass	BSA	57°F–63°F, wind 2–4 mph, 0% cc
4/3/2019	0730–1230	SL, BM, KK	First Pass	BSA	58°F–74°F, wind 3–8 mph, 10%–100% cc
4/4/2019	0715–1500	SL, BM, KK	First Pass	BSA	57°F–63°F, wind 5–7 mph, 20%–100% cc
4/9/2019	0700–1400	SL, BM, RM, BH	First Pass	BSA	56°F–65°F, wind 0 mph, 20% cc
4/10/2019	0800–1500	SL, RM, BH	First Pass	BSA	69°F, wind 8–10 mph, 0% cc
4/11/2019	0800–1215	SL, BM, RM	First Pass	BSA	55°F–67°F, wind 0–3 mph, 0% cc
4/14/2019	1000–1100	SL	First Pass	BSA	64°F, wind 5–7 mph, 60% cc
6/17/2019	0900–1700	SL, BM, RM, BH	Second Pass	BSA	64°F, wind 1–5 mph, 100% cc
6/18/2019	0700–1500	SL, BM, RM, BH	Second Pass	BSA	60°F–72°F, wind 1–3 mph, 100% cc
6/19/2019	0700–1500	SL, BM, RM	Second Pass	BSA	62°F–71°F, wind 1–5 mph, 90% cc
6/27/2019	1030–1215	SL, BM	Second Pass	BSA	67F°F–72°F, wind 0–4 mph, 20%–80% cc
7/3/2019	0700–1230	SL, RM	Second Pass	BSA	64°F–74°F, wind 5–8 mph, 10%–100% cc
Coastal California Gnatcatcher					
7/9/2019	0615–1030	BL	Focused Survey – Pass 1	BSA	64°F–72°F, wind 0–4 mph, 0%–95% cloud cover
7/16/2019	0835–1200	BL	Focused Survey – Pass 2	BSA	65°F–69°F, wind 1–5 mph, 0%–100% cloud cover

Table 2-1. Surveys Conducted for the Program

Date	Hours	Personnel	Focus	Location	Conditions
7/23/2019	0645–1130	BL	Focused Survey – Pass 3	BSA	70°F–77°F, wind 0–3 mph, 20%–90% cloud cover
Burrowing Owl					
3/25/2019	0622–1000	BM, SL	1a	BSA	53°F–63°F, wind 3–4 mph, 0% cc
3/26/2019	0630–1000	BM, SL	1b	BSA	54°F–60°F, wind 1–9 mph, 0% cc
3/26/2019	1704–1915	BM, SL	1c	BSA	63°F–59°F, wind 10 mph, 25%–100% cover/hazy cc
3/27/2019	0627–1000	BM, HH, SL	1d	BSA	58°F–54°F, wind 5–7 mph, 20%–25% cc
3/28/2019	0629–1000	BM, HH, SL, WR	1e	BSA	57°F–61°F, wind 2–4 mph, 75%–90% cc
3/28/2019	1705–1853	BM, HH, SL, WR	1f	BSA	63°F–61°F, wind 12 mph, 20% cc
3/29/2019	0622–0959	BM, HH, SL, WR	1g	BSA	53°F–61°F, wind 3–5 mph, 50%–90% cc
4/22/2019	0550–1000	BM, JW, SL, TD, WMS	2a	BSA	54°F–67°F, wind 1–2/3–5 mph, 0% cc
4/23/2019	0600–1000	BM, JW, MP, SL, TD, WMS	2b	BSA	60°F–65°F, wind 0/2–5 mph, 50%–100% cc
4/24/2019	0546–1000	BM, JW, MP, SL, TD, WMS	2c	BSA	60°F–65°F, wind 0–2/2–4 mph, 50%–100% cover
4/25/2019	0548–0933	BM, SL, WMS	2d	BSA	59°F–67°F, wind 0/2–5 mph, 10%–100% cc
5/20/2019	0543–1000	BM, JW, SL, WMS	3a	BSA	59°F–62°F, wind 10–12 mph, 75%–90% cc, light rain – no precipitation

Table 2-1. Surveys Conducted for the Program

Date	Hours	Personnel	Focus	Location	Conditions
5/21/2019	0545–1000	BM, JW, SL, WMS	3b	BSA	59°F, wind 10–12 mph, 100% cc
5/22/2019	0538–0950	MP, JW, SL, WMS	3c	BSA	54°F–60°F, wind 4–8/2–5 mph, 50%–100% cc
5/23/2019	0530–0915	BM, WMS	3d	BSA	54°F–60°F, wind 4–8/2–5 mph, 90%–100% cc, light drizzle – no precipitation
6/23/2019	0550–0800	BM	4a	BSA	65°F, wind 0–2 mph, 100% cc
6/24/2019	0530–1000	BM, JW, SL, WMS, WR	4b	BSA	64°F–66°F, wind 0–2/2–4 mph, 100% cc
6/25/2019	0545–1000	BM, JW, MP, SL, WMS, WR	4c	BSA	63°F–66°F, wind 2–4 mph, 100% cc
6/26/2019	0535–0913	BM, MP, SL, WMS	4d	BSA	62°F–64°F, wind 0–2/3–5 mph, 100% cc
Light-Footed Ridgway's Rail, California Least Tern, Western Snowy Plover, and Belding's Savannah Sparrow Focused Surveys					
3/24/2019	0630–0945	JK	LFRR/BSS/WSP (Survey 1)	BSA	Overcast; 57°F–63°F; 7–10 mph wind; 100% cc
3/25/2019	0615–0930	JK	LFRR/BSS/WSP (Survey 1)	BSA	Overcast; 60°F–63°F; 5–7 mph wind; 60% cc
3/30/2019	1625–1945	JK	LFRR/BSS/WSP (Survey 1)	BSA	Overcast; 68°F–62°F; 8–15 mph wind; 40% cc
4/5/2019	1630–1940	JK	LFRR/BSS (Survey 2)	BSA	Overcast; 66°F–65°F; 8–12 mph wind; 100% cc
4/12/2019	1630–1935	JK	LFRR/BSS (Survey 3)	BSA	Overcast; 72°F–66°F; 5–10 mph wind; 40% cc

Table 2-1. Surveys Conducted for the Program

Date	Hours	Personnel	Focus	Location	Conditions
4/18/2019	0645–1530	JK	WSP (Survey 2)/CLT (Survey 1)	BSA	Overcast; 60°F–66°F; 5–7 mph wind; 100% cc
5/1/2019	0700–1550	JK	WSP (Survey 3)/CLT (Survey 2)	BSA	Overcast; 65°F–68°F; 7–10 mph wind; 100% cc
5/19/2019	0730–1545	JK	CLT (Survey 3)	BSA	Overcast; 74°F–78°F; 5–7 mph wind; 0% cc
Southwestern Willow Flycatcher and Least Bell's Vireo Focused Surveys					
5/2/2024	0730–0900	BL	LBV Pass 1	BSA	60°F–63°F; 0–3 mph wind; 100% cc
5/13/2024	0630–0800	BL	LBV Pass 2	BSA	63°F–63°F; 0–3 mph wind; 100% cc
5/23/2024	0630–0715	BL	SWFL Pass 1	BSA	61°F–61°F; 0–3 mph wind; 100% cc
	0715–0815		LBV Pass 3		61°F–61°F; 0–3 mph wind; 100% cc
6/4/2024	0645–0750	BL	SWFL Pass 2	BSA	61°F–62°F; 0–8 mph wind; 100% cc
	0750–0830		LBV Pass 4		62°F–63°F; 3–8 mph wind; 100% cc
6/14/2024	0630–0730	BL	SWFL Pass 3	BSA	64°F–64°F; 2–7 mph wind; 90%–100% cc
	0730–0830		LBV Pass 5		64°F–66°F; 3–7 mph wind; 50%–90% cc
6/24/2024	0715–0830	BL	LBV Pass 6	BSA	73°F–75°F; 0–3 mph wind; 40%–50% cc
7/8/2024	0530–0630	JP	SWFL Pass 4	BSA	64°F–65°F; 0–1 mph wind; 100% cc
	0630–0730		LBV Pass 7		65°F–67°F; 0–1 mph wind; 100% cc

Table 2-1. Surveys Conducted for the Program

Date	Hours	Personnel	Focus	Location	Conditions
7/16/2024	0500–0700	JP	SWFL Pass 5	—	65°F–67°F; 0–1 mph wind; 100% cc
7/29/2019	0500–0700	JP	LBV Pass 8	BSA	60°F–64°F; 0–1 mph wind; 80%–100% cc
Eelgrass Focused Surveys					
10/1/2018	1159–1705	AC, AD, HM, JD, JT, KL, NL, WB	Eelgrass Dive Surveys	Mission Bay – Miscellaneous Coves	Clear; 72°F–87°F; 1–5 mph wind
10/2/2018	0857–1500	AC, AD, HM, JD, JT, KL, NL, WB	Eelgrass Dive Surveys	Mission Bay – Miscellaneous Coves	Clear; 72°F–76°F; 1–5 mph
10/3/2018	0831–1500	AC, AD, HM, JD, JT, KL, NL, WB	Eelgrass Dive Surveys	Mission Bay – Miscellaneous Coves	Clear; 69°F–75°F; 1–5 mph wind
10/4/2018	0819–1500	AC, AD, HM, JD, JT, KL, NL, WB	Eelgrass Dive Surveys	Mission Bay – Miscellaneous Coves	Clear; 68°F–76°F; 1–5 mph wind
10/5/2018	0743–1518	AC, AD, HM, JD, JT, KL, NL, WB	Eelgrass Dive Surveys	Mission Bay – Miscellaneous Coves	Clear; 69°F–75°F; 1–5 mph wind
10/09/2018	0817–1615	AC, AD, HM, JD, JT, KL, NL, SM, WB	Eelgrass Dive Surveys	Mission Bay – Miscellaneous Coves	Clear; 67°F–73°F; 1–5 mph wind
10/10/2018	0818–1600	AC, AD, HM, JD, JT, KL, NL, SM, WB	Eelgrass Dive Surveys	Mission Bay – Miscellaneous Coves	Clear; 65°F–71°F; 1–5 mph wind
10/11/2018	0812–1200	AC, AD, HM, JD, JT, KL, NL, SM, WB	Eelgrass Dive Surveys	Mission Bay – Miscellaneous Coves	Clear; 69°F–75°F; 1–5 mph wind
10/29/2018	0700–1545	CB, RD	Eelgrass Sonar Surveys	Mission Bay – Miscellaneous Coves	Clear; 69°F–75°F; 1–5 mph wind
10/30/2018	0700–1545	CB, RD	Eelgrass Sonar Surveys	Mission Bay – Miscellaneous Coves	Overcast to clear; 66°F–71°F; 1–5 mph wind
10/31/2018	0700–1545	CB, RD	Eelgrass Sonar Surveys	Mission Bay – Miscellaneous Coves	Overcast to clear; 66°F–71°F; 1–5 mph wind
11/6/2018	1030–1730	CB, CBa	Eelgrass Sonar Surveys	De Anza Cove Area waters	Overcast to clear; 66°F–71°F; 1–5 mph wind

Table 2-1. Surveys Conducted for the Program

Date	Hours	Personnel	Focus	Location	Conditions
11/6/2018	1030–1730	MF, SC	Eelgrass Kayak Surveys	De Anza Cove Area waters	Overcast to clear; 66°F–71°F; 1–5 mph wind
11/7/2018	0700–1600	MF	Eelgrass Pedestrian Surveys	San Diego River	Overcast to clear; 58°F–71°F; 1–2 mph wind

Definitions: °F = degrees Fahrenheit; mph = miles per hour; cc = cloud cover; NR = not recorded.
Personnel: AC: Achilles Yerou; AD: Andrea Dransfield; BH: Bob Huttar; BL: Brian Lohstroh; BM: Brynne Mulrooney; CBa: Curtis Battle; CB: Connor Burke; CS: Christina Schaefer; HH: Holly Hoffman; HM: Heather Moine; JD: John Davis IV; JK: John Konecny; JP: Jeffrey Priest; JT: Jayme Timberlake; JW: Jon Walker; KK: Korey Klutz; KL: Kaitlin Lively; MB: Michelle Balk; MF: Mackenzie Forgey; MP: Marshall Paymard; MT: Melissa Tu; NL: Nick Lorenzen; RD: Randy Deodat; RM: Ryan Mezsaros; SC: Shana Carey; SL: Shelley Lawrence; SM: Selena McMillan; TD: Thomas Dayton; WB: William Burns; WMS: Will Molland-Simms; WR: Will Roberts.

2.2.1 Resource Mapping

Existing vegetation and land cover mapping from the De Anza Natural Amendment to the Mission Bay Park Master Plan study area was incorporated into this report and areas within the BSA but outside of proposed component areas were not updated for this report (Harris & Associates 2023). Outside of the De Anza Natural Amendment to the Mission Bay Park Master Plan study area, existing SanGIS vegetation mapping data (SANDAG 2012) was updated by Balk Biological in 2018 and 2019, with additional verification in 2024, through desktop analysis of aerial ortho-photographs and ground truthing in the field. Vegetation mapping in the field was verified and updated by traversing the BSA and mapping from selected vantage points that allowed an expansive view of the BSA using the Esri Field Maps (formerly Collector) application for iOS. An additional supplementary ground truthing effort was conducted by Balk Biological within the BSA in 2024. Following completion of the fieldwork, all vegetation polygons were transferred to a topographic base and digitized using ArcGIS, and a geographic information system (GIS) coverage layer was created. Once in ArcGIS, the acreage of each vegetation community and land cover present within the BSA was determined.

Vegetation communities were classified in accordance with the Draft Vegetation Communities of San Diego County (Oberbauer et al. 2008), based on the Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986). Plant species observed within the mapped vegetation communities in the BSA during 2018 and 2019 field surveys are presented in Appendix A, Plant Species Compendium.

The suitability of habitats for special-status wildlife species within the BSA were evaluated during the vegetation mapping and general wildlife surveys. General wildlife surveys were conducted concurrently with focused protocol surveys. Wildlife sign, track, and direct observations were recorded during general and focused protocol surveys. Observed wildlife species are included in Appendix B, Wildlife Species Compendium.

2.2.2 Flora and Fauna

The plant species encountered during the 2018 and 2019 field surveys conducted by Balk Biological were compiled into Appendix A. Plant species encountered during the field surveys conducted within the De Anza Natural Amendment to the Mission Bay Park Master Plan project study area can be found in the Final Program EIR for the

De Anza Natural Amendment to the Mission Bay Park Master Plan (City of San Diego 2023). Latin and common names for plant species with a California Rare Plant Rank (CRPR; formerly CNPS List) follow the CNPS Rare Plant Inventory (CNPS 2025). 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 2025) and common names follow the USDA's Natural Resources Conservation Service PLANTS Database (USDA 2025b).

Wildlife species were detected during the field survey by sight, calls, tracks, scat, or other signs, and binoculars were used to aid in the identification of wildlife. A list of wildlife species observed during the 2018 and 2019 field surveys conducted by Balk Biological, and subsequent focused surveys for LBV and SWFL in 2024, is presented in Appendix B. Wildlife species encountered during the field surveys conducted within the De Anza Natural study area can be found in Appendix B of the Biological Technical Report for the De Anza Cove Amendment to the MBPMP (Harris & Associates 2023). Latin and common names of animals follow Crother (2017) for reptiles and amphibians, American Ornithological Society Checklist (AOS 2018) for birds, Wilson and Reeder (2005) for mammals, North American Butterfly Association (NABA 2025) or San Diego Natural History Museum (SDNHM 2002) for butterflies, and Moyle (2002) for fish.

In addition to species detected during the surveys, the BSA was assessed for the potential of special-status plant species to occur on site. Determinations were made through assessment of habitat preferences, knowledge of local and regional distributions, and review pertinent literature and local recorded occurrences.

2.2.3 Aquatic Resources Delineation

Schaefer Ecological Solutions conducted a planning-level aquatic resources delineation within the BSA in 2018 and 2019, and a verification in 2025. Full methodology and results are presented in the Aquatic Resources Delineation Report for the Mission Bay Park Improvement Program Environmental Impact Report included as Appendix C, to this report.

The delineation defined areas under the jurisdiction of CDFW pursuant to Sections 1600–1603 of the CFGC, under the jurisdiction of USACE pursuant to Section 404 of the federal CWA, under the jurisdiction of the RWQCB pursuant to CWA Section 401 and the Porter–Cologne Water Quality Control Act, under the jurisdiction of the CCC pursuant to the California Coastal Act, and wetlands defined under the SDBG (City of San Diego 2018). The delineation was performed in accordance with the USACE Wetlands Delineation Manual (USACE 1987), the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008a), Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (USACE 2008b), and current guidance provided by USACE and U.S. Environmental Protection Agency on the definition of waters of the United States. USACE and RWQCB jurisdiction, pursuant to the federal CWA, includes all areas supporting three-parameter wetlands criteria described in the USACE manual: hydric soils, hydrology, and hydrophytic vegetation. Aquatic resources under the potential jurisdiction of USACE were evaluated using the U.S. Environmental Protection Agency's current definition of waters of the United States, which includes traditional navigable waters, territorial seas, interstate waters, impoundments, and certain tributaries, wetlands, and other features that meet a "relatively permanent" standard. RWQCB may also take jurisdiction over additional waters of the state pursuant to the Porter–Cologne Water Quality Control Act based on the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (SWRCB 2021). Waters of the state may include areas that meet both current and historic definitions of waters of the United States, including ephemeral waters and isolated wetlands. Streambeds under the jurisdiction of CDFW and wetlands under the jurisdiction of CCC (within the coastal zone) 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). A predominance of hydrophytic vegetation, where associated with a lake or streambed, was used to determine CDFW-regulated riparian areas. City jurisdictional areas were based on the definition of City wetlands described in SDBG.

For tidal waters associated with Mission Bay, tidal elevation data provided by the nearest National Oceanic and Atmospheric Administration tidal station (San Diego, Station ID 9410170, located on Broadway Pier/San Diego Bay) was utilized along with topographic mapping (NOAA 2024). The extent of waters of the United States, as defined by Section 10 of the Rivers and Harbors Act, was determined to extend up to the mean high water (+4.56 feet above MSL, North American Vertical Datum 88). The extent of waters of the United States/state, as defined by Section 404 of the CWA, the State Porter–Cologne Water Quality Act, and the California Coastal Act, was determined to include all Section 10 waters and additional land up to the highest astronomical tide (+7.19 feet above MSL, North American Vertical Datum 88). In some locations there are walls or other vertical features, which results in the estimated mean high watermark and high tide line (HTL) being co-located.

2.3 Focused Surveys for Sensitive Biological Resources

Sensitive biological resources are those defined by the SDBG (City of San Diego 2018) as follows: (1) lands that have been included in the MHPA as identified in the Subarea Plan (City of San Diego 1997); (2) wetlands (as defined by the Municipal Code, Section 113.0103); (3) lands outside the MHPA that contain Tier I Habitats, Tier II Habitats, Tier IIIA Habitats, or Tier IIIB Habitats as identified in the SDBG (City of San Diego 2018); (4) lands supporting species or subspecies listed as rare, endangered, or threatened; (5) lands containing habitats with narrow endemic species as listed in the SDBG (City of San Diego 2018); and (6) lands containing habitats of covered species as listed in the SDBG (City of San Diego 2018).

Additionally, sensitive biological resources are defined as follows: (1) species that have been given special recognition by federal, state, or local agencies and organizations due to limited, declining, or threatened population sizes; (2) habitat types recognized by local and regional agencies as sensitive; and (3) habitat areas or plant communities that are unique, are of relatively limited distribution, or are of particular value to wildlife. Sources used for determination of sensitive biological resources are as follows: plants–USFWS (2018), CDFW (2018), and CNPS (2018); wildlife–USFWS (2018) and CDFW (2018); plant communities–Subarea Plan (City of San Diego 1997), and SDBG (City of San Diego 2018).

2.3.1 Special-Status Plant Surveys

An assessment of rare plant species that have potential to occur within the BSA was completed prior to field surveys. The assessment included queries of the CNDDB and CNPS Inventory databases within the U.S. Geological Survey 7.5-minute La Jolla quadrangle and the five surrounding quadrangles, Poway, La Mesa, Del Mar, Point Loma, and National City (CDFW 2024; CNPS 2025). An evaluation of known records in the six-quadrangle search area was conducted to determine which species have been recorded in the Program vicinity.

Focused special-status plant surveys were conducted by Balk Biological in 2019 in accordance with survey protocols set forth by *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants* (USFWS 2011); *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018); and *CNPS Botanical Survey Guidelines* (CNPS 2001). Surveys occurred during the known blooming period of potentially occurring species, and survey dates were chosen to

maximize visibility of potentially present rare plant species. The first pass of field surveys was conducted in April 2019. The second pass of field surveys were conducted in June and July 2019. Reference site visits were used to ensure the timing of the survey passes was appropriate. Silver Strand State Beach was visited on March 25, 2019, where Brand's phacelia (*Phacelia stellaris*) was observed in flower with approximately 10% fruit. During this reference site check, Nuttall's lotus was also observed in flower with 0% fruit. Torrey Pines State Natural Reserve was visited on April 23, 2019, where Orcutt's spineflower (*Chorizanthe orcuttiana*) was observed in flower with approximately 30% fruit. On May 6, 2019, in San Ysidro, a population of seaside cistanthe (*Cistanthe maritima*) was observed in flower with approximately 50% seed.

Vegetation maps and field assessments were used to determine the terrestrial special-status plant survey area. A 100% cover, floristic survey of the special-status plant survey area was conducted during the first pass by walking or, when inaccessible by foot, with a kayak or spotting scope. The second pass survey area was limited by the closure of the CLT nesting sites on FAA Island, Stoney Point, Mariner's Point, and northern Fiesta Island. In addition to the special-status plant survey area, the entire BSA was surveyed for Torrey pines (*Pinus torreyana* ssp. *torreyana*). Plants were keyed to the most current treatment found in *The Jepson Manual Vascular Plants of California* (Baldwin et al. 2012). All plant species encountered were recorded and special-status plant locations were mapped with the Esri Field Maps application for iOS. Data were collected in point, polygon, or plant revisit point layers with fields included for date, biologist, species, count, and notes. Point data and a radius were noted for an occurrence of multiple individuals where a polygon was not feasible. The plant revisit layer was used to record the location of a plant that required additional identifying features to confirm the species later in the season.

2.3.2 Eelgrass Surveys

Dudek deployed a scientific dive team to conduct eelgrass surveys in Mission Bay, San Diego, California. The eelgrass team included qualified scientific divers, surface support (i.e., biologist on kayak[s]), and a dive boat. Scientific divers conducted transect surveys in and adjacent to areas mapped as eelgrass (i.e., ground truthing) (Merkel & Associates 2013); mapped eelgrass in shallow water, in and around docks, or areas inaccessible to boat; determined the biological characteristics of observed of observed eelgrass beds, including eelgrass percent cover and turion density (NOAA 2014); and characterized marine flora and fauna.

Bathymetry surveys were conducted using Seafloor Systems sonar to delineate depths of Mission Bay to correlate with habitat suitability and presence of eelgrass using current dive surveys and previous surveys conducted by Merkel & Associates (2013). The Seafloor Systems unit was side-mounted from the boat. Specifically, a Trimble unit (R10) operating at a frequency of 450 kilohertz (kHz)–900 kHz and a single-beam fathometer operating at 200 kHz was used, creating a dual frequency survey unit. The single-beam fathometer enabled survey lines to be navigated at an approximate 164 feet (50 meters) separation. Survey lines were continuous to ensure the entirety of the accessible study area was captured. Those areas that were inaccessible (i.e., due to moored boats or docks, or small, shallow coves) were surveyed by SCUBA dive team via transects. Following completion of the sonographic surveys, bathymetric data was processed into a file that is compatible with ArcGIS.

The dive surveys for eelgrass within Mission Bay were included paired 30-meter transects with a separation distance of approximately 5 meters. Divers collected ecological data, including eelgrass cover and density; fish, invertebrate, and seagrass and macro algae observations; depth; and temperature data. Transect locations were selected based on the component areas and historical eelgrass locations (Merkel & Associates 2013) and recent dredging and mitigation sites (Merkel & Associates 2012). Eelgrass density was assessed within five 1.0-meter

quadrats placed in random pre-determined locations along the transect tape. Within each 1.0-meter quadrat, the total number of eelgrass turions were counted and recorded.

2.3.3 Coastal California Gnatcatcher Surveys

Presence-absence surveys were conducted by Balk Biological wildlife biologist Brian Lohstroh (TE-063608-6) in July 2019 in all suitable CAGN habitat within the BSA (approximately 58.5 acres of coastal sage scrub and disturbed coastal sage scrub). Surveys followed the current USFWS protocol for the species (USFWS 1997). In accordance with the protocol requirements for components located within active Natural Community Conservation Plan areas, and for surveys conducted between February 15 and August 30, three surveys were conducted at least 1 week apart (see Table 2-1 for full survey schedule and conditions). The surveys consisted of walking meandering transects and conducting passive surveillance (i.e., listening and looking for the species) in all habitats with potential to support the species, including all scrub habitats. If an observation was not made after approximately 5 to 10 minutes of passive survey activity, a digital vocalization of CAGN was broadcast for approximately 5 to 10 seconds (i.e., active survey activity) to initially locate CAGN, followed by another period of passive observation. The digital vocalization was discontinued with any positive CAGN response. The location of all CAGN detections was recorded as well as a list of all avian species detected.

Detailed methods and results of the focused CAGN surveys are presented in the 45-Day Presence/Absence Survey Report for California Gnatcatcher Surveys for the Mission Bay Park Improvement Zone Program Environmental Impact Report, San Diego, California included in Appendix D to this report.

2.3.4 Light-Footed Ridgway's Rail, California Least Tern, Western Snowy Plover, and Belding's Savannah Sparrow Surveys

Focused presence/absence surveys for LFRR, WSP, CLT, and BSS were conducted by Balk Biological wildlife biologist John Konecny (TE837308-7). All sandy beach and salt panne habitat in the BSA was surveyed for CLT and WSP with the exception of North Fiesta Island, West Ski Island, Stoney Point, and south Mariner's Point, which have seasonal access restrictions but are surveyed annually during the CLT breeding season by approved monitors under the supervision of Richard Zembal. All saltmarsh habitat in the BSA was surveyed for LFRR and BSS, with the exception of the National Wildlife Preserve and the east of the West Mission Bay Drive Bridge; these two areas are subject to ongoing annual or 5-year surveys conducted as part of the range-wide surveys for LFRR and BSS.

Focused surveys for each species consisted of three survey events, conducted at least 6 days apart, in the spring of 2019 (see Table 2-1 for full survey schedule and conditions). Surveys focused on LFRR included listening for vocalizing LFRR from within suitable habitat areas. If rails were not detected passively, a digital call-prompt of the LFRR "dueting" was played with an iPod and amplified speakers at 30-second intervals. Surveyors listened for a response for approximately 10 minutes before proceeding to the next survey station. Surveys focused on BSS, WSP, and CLT included scanning suitable habitat areas with binoculars and a spotting scope; no call prompts were played for BSS, WSP, and CLT.

Detailed methods and results of the focused LFRR, CLT, WSP, and BSS surveys are presented in Appendix E, Results of a Focused Survey for the Light-Footed Ridgway's Rail, Belding's Savannah Sparrow, Western Snowy Plover, and California Least Tern, to this report.

2.3.5 Burrowing Owl Surveys

Due to the presence of suitable habitat for BUOW, including scrub and disturbed habitat with low-growing vegetation, focused presence/absence surveys were determined necessary. Focused surveys were conducted by Balk Biological in accordance with the CDFW's Staff Report on Burrowing Owl Mitigation (CDFG 2012).

Per CDFW's 2012 BUOW breeding season protocol, four survey visits were conducted, with one visit between February 15 and April 15, two visits between April 15 and June 15, and one visit between June 15 and July 15. All visits were conducted at least 3 weeks apart. Surveys were conducted generally from approximately 30 minutes before sunrise until 10:00 a.m. and 2 hours before sunset until approximately 30 minutes after sunset (CDFG 2012). Surveys were conducted by walking straight-line transects spaced approximately 66 feet apart, the maximum allowable, in suitable habitat throughout the study area. Transects were completed in all suitable habitat between March 25 and July 26, 2013. During each survey, individual BUOW and potentially suitable BUOW burrows detected were recorded and marked using the GIS Field Maps application for iOS. For each BUOW observation, the presence of a burrow was noted, and the number, age, and behavior of individuals and behavior were recorded.

Detailed methods and results of the focused BUOW surveys are presented in Appendix F, 2019 Western Burrowing Owl Survey Report.

2.3.6 Least Bell's Vireo and Southwestern Willow Flycatcher Surveys

Due to the presence of suitable habitat for LBV and SWFL within the BSA (approximately 4.71 acres of riparian habitat), focused surveys were conducted by Balk Biological in 2024.

Suitable habitat within the BSA was surveyed eight times for LBV and five times for SWFL by Balk Biological wildlife biologists Jeff Priest (ES-840619-7) and Brian Lohstroh (ES-063608-7). The five surveys conducted for SWFL followed the currently accepted protocol (Sogge et al. 2010), which states that a minimum of five survey visits is needed to evaluate component effects on flycatchers. It is recommended that one survey is made between May 15 and 31, two surveys between June 1 and June 24, and two surveys between June 25 and July 17. Surveys during the final period (June 25 and July 17) were separated by at least 5 days. A tape of recorded flycatcher vocalizations was used, approximately every 50 to 100 feet within suitable habitat, to induce flycatcher responses. When a flycatcher was detected, playing of the tape ceased to avoid harassment. The eight surveys for vireo followed the currently accepted Least Bell's Vireo Survey Guidelines (USFWS 2001), which states that a minimum of eight survey visits should be made to all riparian areas and any other potential vireo habitats between April 10 and July 31. The site visits are required to be conducted at least 10 days apart to maximize the detection of early and late arrivals, females, non-vocal birds, and nesting pairs. Taped playback of vireo vocalizations was not used during the surveys. Surveys were conducted between dawn and 1100 for vireo and were not conducted during periods of excessive or abnormal cold, heat, wind, rain, or other inclement weather.

Detailed methods and results of the focused LBV and SWFL surveys are presented in Appendix G to this report, the 2024 Focused Least Bell's Vireo and Southwestern Willow Flycatcher Survey Report.

2.4 Survey Limitations

The majority of the surveys referenced in this report were conducted during the daytime to maximize visibility. Birds represent the largest component of the vertebrate fauna, and because most birds are active in the daytime, diurnal surveys maximize the number of observations of this portion of the fauna. Daytime surveys may result in fewer observations of animals that are more active at night, such as mammals. Similarly, many species of reptiles and amphibians are nocturnal or cryptic in their habits and may be difficult to observe using standard meandering transects.

Conditions, such as marsh habitats, where pedestrian surveys can damage habitat, or seasonal restrictions in sensitive areas such as Kendall-Frost Reserve, limited access in some areas during some surveys. Such restrictions did not affect the ability to map biological resources within the Program component areas. Dive surveys conducted within Mission Bay relied on clear water visibility to detect eelgrass beds and species. As such, areas of poor water quality may have reduced species counts and eelgrass mapping where not detectable. In addition, strong winds and tidal currents could affect data collection during dive and boat surveys. Sonar used in surveys may have detected subterranean structures and could affect mapping.

Studies documenting the trends of sensitive species that occur within the BSA were reviewed, These studies offer comprehensive species assessments specifically within Kendall-Frost Reserve; however, they may not comply with the City of San Diego Guidelines (2018) (e.g., have not been conducted within 24 months).

3 Results

3.1 Physical Characteristics

The BSA includes a variety of land uses. Open water makes up the majority of the BSA; however, developed land, including residential developments, hotels and resorts, shops and restaurants, marinas, parks and recreational areas, a conference center, and amusement parks, occurs throughout the terrestrial portion of the BSA. Native habitat occurs in the vicinity of the San Diego River and Tecolote Creek in the southern portion of the BSA, areas of Fiesta Island, the Northern Wildlife Reserve, Kendall-Frost Reserve, and Rose Creek in the northern portion of the BSA, and along the shoreline of the Pacific Ocean and Mission Bay in certain areas. The northern extent of the BSA is bordered by Garnet Avenue at Crystal Pier, and on one side it extends south along the coast, just west of Oceanfront Walk, around the peninsula of Mission Beach, and then back north along Bayfront Walk to Crown Point where Riviera Drive and Crown Point Drive create the northern border. From here the boundary extends into the Northern Wildlife Reserve/Kendall-Frost Reserve and then meets Pacific Beach Drive before extending north along the west side of Rose Creek until it meets Mission Bay Drive, where it extends back south along the eastern side of Rose Creek and then extends south of Grand Avenue until it meets Mission Bay Drive. The eastern extent is bordered by Mission Bay Drive, with an extension around Tecolote Creek, south to just north of I-8. The southern extent of the BSA occurs north of I-8, across Sunset Cliffs Boulevard, west of Nimitz Boulevard, and around Dusty Rhodes Park to Dog Beach. From Dog Beach the southern border extends west into the Pacific Ocean to the South Jetty, and then north to create the western extent of the boundary north to Garnet Avenue at Crystal Pier. The BSA, which encompasses the full extent of the Mission Bay Park Improvement Zone, totals 4,387 acres and occurs within the Subarea Plan (City of San Diego 1997). The physical characteristics of the BSA are analyzed in the following sections and included on Figures 32 and 33.

3.1.1 Topography

Elevations within the BSA range from 0 to 46 feet above MSL. Topography within the BSA is generally flat, characterized by the coastal shoreline of the Pacific Ocean and Mission Bay and marshland associated with the mouth of the San Diego River, Tecolote Creek, Rose Creek, and the Northern Wildlife Reserve. Elevation gradually increases from west to east. Some coastal bluffs occur in the vicinity of Crown Point, but the slopes do not meet the City of San Diego's definition of "steep slope" (greater than 25% slope and an elevation differential of 50 feet).

3.1.2 Soils

According to the USDA Web Soil Survey, nine soil mapping units were mapped within the BSA (USDA 2025a). Soil mapping units and their respective phases occurring within the BSA were mapped as shown on Figure 32, Soils, and are listed below in Table 3-1. Soils found within the BSA that are listed on the National List of Hydric Soils (USDA 2024) are also identified in Table 3-1. Hydric soils are defined as "a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part" (USDA 2024).

Table 3-1. Soils Within the BSA

Soil Mapping Unit	Soil Phase	Acreage
Non-Hydric Soil/Land Types		
Made land	soil land type	1,853.34
Marina loamy coarse sand	2% to 9% slopes	0.02
Salinas clay loam	2% to 9% slopes	0.59
Urban land	soil land type	65.28
	Subtotal[1]	*1,919.23*
Hydric Soil/Land Types		
Coastal Beaches[2]	NA	180.15
Corralitos loamy sandy	0% to 5% slopes	9.28
Tidal Flats	NA	107.87
Water[3]	NA	2,170.46
	Subtotal[1]	*2,429.01*
	Total[1]	**4,387.0**

Notes: BSA = biological survey area.
1 Totals may not sum due to rounding.
2 Includes 38.75 acres of adjacent land with no soil mapping unit assigned.
3 Comprised of "Lagoon water" and "Lagoons of San Diego area" mapping units.

3.1.3 Watersheds and Hydrology

The coastal inlet of Mission Bay was created over the last 18,000 years, after the last glacial period, as sea level rose to present level and riverine drainage incised the inlet. As sea level rose, the San Diego River deposited large volumes of alluvial sediment to create the delta that became the landmass for Mission Bay. During the 1820s, the San Diego River was redirected from Mission Bay, historically referred to as False Bay, into the San Diego Bay. This left False Bay as a low-flow marshland. False Bay was made up of fluvial and estuarine fine sand, silts, and clays from the surface to approximately 60 feet below ground surface (bgs), which were underlain by Quaternary-age dense clayey sands, hard clays, and gravel/cobble from approximately 50 feet to 70 feet bgs south of North Mission Bay Drive, and approximately 10 feet to 30 feet bgs north of North Mission Bay Drive.

False Bay was historically unnavigable as the channels were narrow and shallow. The City began dredging in 1946 to create Mission Bay Park. Dredging operations, and subsequent land creation with dredged and upland material, occurred between 1946 and 1956, 1959 and 1961, and 1963 and 1964 to create the current configuration of Mission Bay. Landforms, such as Fiesta Island, were formed with what is geologically described as Artificial Fill. This Artificial Fill consists primarily of loose to medium dense silty sands with intermittent layers of soft clay.

The existing terrain of the BSA consists of two component land types: low-lying fill at beach elevations, and upland fill areas. With the exception of salt panne in some areas, tidally connected coastal salt marsh habitat does not exist on North Fiesta Island. This is because the interior elevations of the island are too high, and there are no connections to seawater in the Bay. However, tidally connected coastal salt marsh habitat can be created with substantial earthwork and site grading at this location.

The BSA lies primarily within the southwestern portion of the Peñasquitos Hydrologic Unit ([HU] 906.00; Figure 33, Hydrology; SDRWQCB 2002). The Peñasquitos HU is a collection of coastal watersheds that drain approximately

162 square miles of southern San Diego County into Mission Bay, Los Peñasquitos Lagoon, and the Pacific Ocean. Primary drainages of the HU include Los Peñasquitos Creek and its tributaries, Tecolote Creek, Rose Creek (both tributaries of Mission Bay), Carroll Canyon Creek, Carmel Creek (both tributaries of Los Peñasquitos Lagoon), and several unnamed tributaries that drain into the Pacific Ocean. The San Diego HU (907.00) drains approximately 440 square miles of the San Diego River watershed and overlaps the BSA where the San Diego River enters the Pacific Ocean south of Mission Bay through the San Diego River estuary.

3.2 Vegetation Communities and Land Cover Types

A total of 21 vegetation communities and/or land cover types were observed within the BSA (Table 3-2) during 2019 vegetation mapping fieldwork and verified in 2024 (see Section 2.2.1, Resource Mapping). Table 3-2 and Figures 34A–34L, Vegetation Communities/Eelgrass, include all vegetation communities and land cover types, including sensitive communities (Tier I–IV and wetlands), occurring in the BSA.

Table 3-2. Vegetation Communities and Land Covers Within the BSA

Vegetation Communities and Land Cover Types	SDBG Wetland/Tiers	SDBG Habitat Types	Acreage
Wetland			
Beach[1]	Wetland	Marine Habitats	120.19
Coastal and Valley Freshwater Marsh	Wetland	Freshwater Marsh	0.02
Coastal Brackish Marsh	Wetland	Salt Marsh	12.54
Disturbed Coastal and Valley Freshwater Marsh	Wetland	Freshwater Marsh	1.16
Disturbed Southern Coastal Salt Marsh	Wetland	Salt Marsh	0.37
Disturbed Southern Willow Scrub	Wetland	Riparian Scrub	4.17
Disturbed Wetland - Arundo	Wetland	Disturbed Wetland	0.03
Disturbed Wetland - Concrete-Lined Channel	Wetland	Non-Vegetated Channel or Floodway	0.76
Intertidal Estuary	Wetland	Marine Habitats	14.10
Non-Native Riparian	Wetland	Riparian Scrub	2.16
Open Water[1]	Wetland	Marine Habitats	725.90
Eelgrass	Wetland	Eelgrass Beds	1,385.34
Saltpan/Mudflats	Wetland	Salt Panne	45.91
Shallow Bay	Wetland	Marine Habitats	5.01
Southern Coastal Salt Marsh	Wetland	Salt Marsh	110.95
Subtidal Ocean	Wetland	Marine Habitats	32.81
Tidal Channel	Wetland	Marine Habitats	2.35
Unvegetated Habitat[1]	Wetland	Marine Habitats	0.68
		Wetland Subtotal[3]	*2,464.41*
Uplands			
Beach[1]	IV	Disturbed	222.00
Diegan Coastal Sage Scrub	II	Coastal Sage Scrub	31.52

Table 3-2. Vegetation Communities and Land Covers Within the BSA

Vegetation Communities and Land Cover Types	SDBG Wetland/Tiers	SDBG Habitat Types	Acreage
Disturbed Diegan Coastal Sage Scrub	II	Coastal Sage Scrub	20.96
Disturbed Habitat	IV	Disturbed	474.62
Open Water	IV	Disturbed	3.65
Southern Foredunes	I	Southern Foredunes	17.01
Unvegetated Habitat	IV	Disturbed	0.27
Urban/Developed	N/A	Disturbed	1,145.58
		Subtotal[3]	*1,922.46*
		Total[3]	**4,387**

Notes: BSA = biological survey area.

1 Beach, Open Water, and Unvegetated Habitat are classified as both Wetland (Marine Habitat) and Tier IV Upland (Disturbed) based on location relative to tides and extent of recreation/maintenance uses.

2 Totals may not sum precisely due to rounding.

3.2.1 Beach (64400)

Beach is classified as sandy and/or cobbly habitat on coastal strands, lagoons or lakes, and is mainly unvegetated (Oberbauer et al. 2008). Beach occurs along the shoreline of the Pacific Ocean on Mission Beach, on most of the shoreline of Mission Bay, at the mouth of the San Diego River at Dog Beach, and along the perimeter of Fiesta Island and Tecolote Shores. Beach is primarily unvegetated and subject to maintenance (trash, seaweed removal). Where beach occurs below the HTL, it is assumed that tidal inundation results in some biological functions, and therefore these areas are classified as marine habitats. Where beach occurs above the HTL, there is very limited opportunity for biological function due to public use and maintenance; these areas are classified as Tier IV upland.

3.2.2 Coastal and Valley Freshwater Marsh (52410)

Coastal and valley freshwater marsh is dominated by perennial, emergent monocots and is permanently flooded by fresh water (Oberbauer et al. 2008). Within the BSA, coastal and valley freshwater marsh is primarily dominated by cattails (*Typha* spp.).

3.2.3 Coastal Brackish Marsh (52200)

Coastal brackish marsh is similar to, and intergrades with, coastal salt marshes, but is lower in salinity due to the input of freshwater, usually at the mouth of rivers and creeks (Oberbauer et al. 2008). Coastal brackish marsh occurs at the eastern end of the San Diego River and includes cattails and southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*), as well as Pacific pickleweed (*Sarcocornia pacifica*), marsh jaumea (*Jaumea carnosa*), and cordgrass (*Spartina foliosa*).

3.2.4 Diegan Coastal Sage Scrub (32510)

Diegan coastal sage scrub consists of low, soft-woody subshrubs that are drought- deciduous (Oberbauer et al. 2008). Characteristic species occurring within the BSA include coyote bush (*Baccharis pilularis*), broom baccharis

(*Baccharis sarothroides*), California buckwheat (*Eriogonum fasciculatum*), saltbush (*Atriplex canescens*), laurel sumac (*Malosma laurina*), deerweed (*Acmispon glaber*), and California sagebrush (*Artemisia californica*). Diegan coastal sage scrub occurs in small patches throughout the BSA: northwest of the Northern Wildlife Preserve; in northeast and southeast Fiesta Island; along Sea World Drive, north of the San Diego River, on Hospitality Point, and southeast of Dog Beach.

3.2.5 Disturbed Coastal and Valley Freshwater Marsh (52410)

Within the BSA, disturbed coastal and valley freshwater marsh contains cattails as well as disturbance-tolerant non-native species such as giant reed (*Arundo donax*), castor bean (*Ricinus communis*), and Brazilian pepper (*Schinus terebinthifolius*). Disturbed coastal and valley freshwater marsh occurs along Rose Creek north of Garnet Avenue, and along the eastern portion of Mission Bay Golf Resort adjacent to Mission Bay Drive.

3.2.6 Disturbed Diegan Coastal Sage Scrub (32510)

Within the BSA, disturbed portions of Diegan coastal sage scrub are composed of native species characteristic of the community as well as non-native species including black mustard (*Brassica nigra*), Russian thistle (*Salsola tragus*), iceplant (*Carpobrotus edulis*), wild oat (*Avena fatua*), and brome grasses (*Bromus* spp.).

3.2.7 Disturbed Habitat (11300)

Disturbed habitat is composed mainly of non-native species and/or barren land that has been exposed to human-induced disturbance such as agriculture, prior grading activities, or offroad vehicle use. Disturbed habitat occurs throughout the BSA, primarily on Fiesta Island and north of Sea World Drive. Characteristic species include ripgut grass (*Bromus diandrus*), red brome (*Bromus madritensis*), black mustard, short-pod mustard (*Hirschfeldia incana*), horseweed (*Conyza canadensis*), filaree (*Erodium* spp.), African fountain grass (*Pennisetum setaceum*), tocalote (*Centaurea melitensis*), Australian saltbush (*Atriplex semibaccata*), cockle-bur (*Xanthium strumarium*), crown daisy (*Chrysanthemum coronarium*), and telegraph weed (*Heterotheca grandiflora*). In addition to the vegetated habitat, disturbed habitat was also mapped in areas of bare ground and unpaved access roads.

3.2.8 Disturbed Southern Coastal Salt Marsh (52120)

Disturbed coastal salt marsh within the BSA occurs within three small, non-tidal saline basins in the interior of Fiesta Island and is characterized by the presence of coastal salt marsh plants as well as non-native species. Small patches of alkali heath (*Frankenia salina*), Pacific pickleweed, and salt heliotrope (*Heliotropium curassavicum*) occur, but these basins contain larger areas of unvegetated, salty soils and are primarily dominated by iceplant (*Mesembryanthemum* sp.).

3.2.9 Disturbed Southern Willow Scrub (63320)

Southern willow scrub is composed of dense, broad-leafed, winter-deciduous riparian thickets dominated by several willow (*Salix*) species, with scattered emergent Fremont cottonwood (*Populus fremontii*) and western sycamore (*Platanus racemosa*) (Oberbauer et al. 2008). Within the BSA, disturbed southern willow scrub is dominated by arroyo willow (*Salix lasiolepis*), Goodding's black willow (*Salix gooddingii*), Fremont's cottonwood, western sycamore, mulefat, as well as Mexican fan palm (*Washingtonia robusta*), eucalyptus trees (*Eucalyptus* spp.), and

Brazilian pepper (*Schinus terebinthifolius*). Disturbed southern willow scrub occurs along Rose Creek north of Garnet Avenue.

3.2.10 Disturbed Wetland – Arundo (11200)

Disturbed wetland – Arundo contains areas permanently or periodically inundated by water, which have been significantly modified by human activity and are dominated by stands of giant reed (Oberbauer et al. 2008). Within the northeastern portion of the Program, disturbed wetland is dominated by giant reed and occurs along the eastern boundary of the Mission Bay Golf Resort adjacent to Mission Bay Drive.

3.2.11 Eelgrass (64110 and 64123)

Eelgrass beds are not recognized by Oberbauer et al. (2008); however, eelgrass beds are a habitat type and wetlands community categorized by the SDBG (City of San Diego 2018). Eelgrass beds are characterized as open water or shallow bay that includes areas exposed by low tide and is dominated by eelgrass. Eelgrass beds contribute to ecosystem functions at multiple levels as a primary and secondary producer, as a habitat structuring element, as a substrate for epiphytes and epifauna, and as a sediment stabilizer and nutrient cycling facilitator. Eelgrass provides important foraging areas and shelter to young fish and invertebrates, food for migratory waterfowl and sea turtles, and spawning surfaces for invertebrates and fish such as the Pacific herring (*Clupea pallasii*) (NOAA 2014).

3.2.12 Intertidal Estuary (64132)

Intertidal estuary is periodically flooded, and then exposed, by tidal action (Oberbauer et al. 2008). Within the BSA, intertidal estuary occurs as permanently exposed mudflats within the San Diego River.

3.2.13 Non-Native Riparian (65000)

Non-native riparian vegetation occurs along Rose Creek north of Garnet Avenue and on the eastern end of the San Diego River adjacent to I-5. This area is a densely vegetated riparian thicket dominated by non-native, invasive species. Characteristic plants in this community include Canary Island date palm (*Phoenix canariensis*), Brazilian pepper tree, castor bean, and Mexican fan palm (*Washingtonia robusta*). Common native plants within this community include Goodding's black willow, arroyo willow, and mulefat.

3.2.14 Open Water (64110)

Open water occurs primarily within unvegetated bodies of water within Mission Bay, Rose Creek, San Diego River, and within the Model Yacht Pond on Vacation Isle.

3.2.15 Subtidal Ocean (64111)

Subtidal ocean occurs along the coastline of the Pacific Ocean extending seaward from the low tide line and including the depth that supports canopy forming kelp (Oberbauer et al. 2008). Subtidal ocean within the BSA occurs within the Pacific Ocean south of South Jetty in Ocean Beach.

3.2.16 Shallow Bay (64123)

Shallow bay occurs in water with a depth of less than 4 feet and may be unvegetated or vegetated with eelgrass (Oberbauer et al. 2008). Within the BSA, shallow bay occurs along the shoreline of Mission Bay before becoming open water and within Quivira Basin.

3.2.17 Saltpan/Mudflats (64300)

Mudflats and saltpans are unvegetated areas occurring along the coast where rivers or tides deposit mud (Oberbauer et al. 2008). Saltpans are generally exposed and covered with salts formed from evaporation of water. Mudflats form from pooled water following rain events. Mudflats and saltpans occur outside of the salt marsh habitat within the Northern Wildlife Preserve and Rose Creek, and within the San Diego River.

3.2.18 Southern Coastal Salt Marsh (52120)

Southern coastal salt marsh is common in bays, estuaries, and lagoons and is influenced by tidal action (Oberbauer et al. 2008). Within the BSA, southern coastal salt marsh is dominated by Pacific pickleweed, cordgrass, saltwort (*Batis maritima*), alkali heath, and seablite (*Suaeda* sp.). Southern coastal salt marsh occurs in the northern portion of the BSA within the Northern Wildlife Preserve, along Rose Creek between Grand Avenue and Garnet Avenue, at the mouth of Tecolote Creek, within the San Diego River, and along the southern edge of Dog Beach.

3.2.19 Southern Foredunes (79100)

Southern foredunes are areas where sand accumulates beyond the active dunes and are dominated by succulent, perennial herbs and subshrubs (Oberbauer et al. 2008). Dominant species within southern foredunes include sand verbena (*Abronia* sp.), beach bur-sage (*Ambrosia chamissonis*), beach evening primrose, sea rocket (*Cakile* sp.), and coast woolly-heads (*Nemacaulis denudata* var. *denudata*). Some plant species such as red sand verbena (*Abronia maritima*), beach evening primrose (*Camissoniopsis cheiranthifolia*), and Lewis' evening-primrose (*Camissoniopsis lewisii*) occurred in the Dog Beach area. Southern foredunes occurs in the northern portion of Fiesta Island and in the Dog Beach area within the BSA.

3.2.20 Tidal Channel

While not a distinct vegetation community recognized by Oberbauer et al. (2008), tidal channels occur in the Northern Wildlife Preserve and are influenced by the ebb and flow of ocean tides. The tidal channels occur as part of the transition between the mudflats and saltmarsh of the Northern Wildlife Preserve and the open water of Mission Bay. Tidal channels range from complete inundation at high tide to muddy creek beds at low tide. When inundated, tidal channels allow fish to move back and forth from estuaries to open water allowing them to exploit all available resources for food, shelter, breeding grounds, and nurseries. As tidal channels dry, suitable foraging habitat becomes available for wildlife.

3.2.21 Unvegetated Habitat (64000)

Unvegetated habitat is described as "submerged aquatic communities or terrestrial wetlands with minimal vegetative cover" and is often composed of open water, rocky outcroppings, sandy beaches, or mudflats (Oberbauer et al. 2008). Within the BSA, unvegetated habitat occurs on a spoil island in Leisure Lagoon west of East Mission Bay Drive.

3.2.22 Urban/Developed Land (12000)

Urban/developed land is the primary terrestrial land cover occurring within the BSA. Urban/developed areas consist of residential areas, shopping centers, businesses, paved roads, parking lots as well as recreational and landscaped areas.

3.3 Floral Diversity

A total of 211 species of plants, including 98 native species (46%) and 113 non-native species (54%), were recorded by Balk during the 2019 rare plant surveys or incidentally during biological reconnaissance and focused special-status wildlife surveys. A total of 19 of those species are considered special-status and are discussed in more detail in Section 3.5. A cumulative list of all common and sensitive plant species observed in the BSA are provided in Appendix A, Plant Species Compendium.

In addition, marine surveys detected three species of marine algae: two native—red algae (*Plocamium cartilagineum*) and red seaweed (*Gracilaria pacifica*), and one non-native—spaghetti algae or green hair algae (*Chaetomorpha spiralis*). Surfgrass (*Phyllospadix torreyi*), a flowering marine plant, was also observed in the study area.

3.4 Wildlife Diversity

A total of 142 wildlife species, including 131 native species and 7 non-native species were recorded by Balk during biological reconnaissance and focused special-status wildlife surveys. Of the 142 wildlife species observed, 23 are considered special-status and discussed in more detail in Section 3.6. A list of wildlife species observed in the BSA, including fish and invertebrate species detected by Dudek biologists during dive surveys, is presented in Appendix B, Wildlife Species Compendium.

3.5 Special-Status Plants

Plant species are considered special-status if they have been listed or proposed for listing by the federal or state government as rare, endangered, or threatened ("listed species"); are listed as a MSCP-covered species; and/or have been adopted by the City as narrow endemic. In addition, plant species with a CRPR 1–2 that do not meet the previously listed criteria are generally considered special-status species; species with a CRPR 3–4 that do not meet the previously listed criteria are evaluated but only considered special status if local populations are significant. An evaluation of known records (CDFW 2024; CNPS 2025; SDNHM 2025) in the six U.S. Geological Survey 7.5-minute quadrangle search area was conducted to determine which species have been recorded in the Program vicinity (within 5 miles of the BSA); CNDDB occurrences within the BSA are shown on Figure 35, CNDDB Results. In addition, Dudek's knowledge of biological resources and regional distribution of each species and results from the 2019 focused surveys, as well as elevation, habitat, and soils present within the BSA, were evaluated to determine the

potential for various special-status species to occur. Species potentially occurring within the BSA are identified as having moderate or high potential to occur; species for which there is little or no suitable habitat, or that are otherwise likely precluded from occurring within the BSA (e.g., due to known geographic and/or elevation ranges, soils present in the BSA, or other BSA characteristics) are identified as not expected to occur or having low potential to occur.

A total of 10 special-status plant species were detected within the BSA during 2019 focused surveys and are considered **present** within the BSA. The locations of the special-status plant species observed during Program surveys are displayed on Figures 36A–36L, and described in more detail below. Nine potential special-status species have a **high** or **moderate** potential to occur within the BSA but were not detected during the 2019 focused surveys. These species and their potential to occur within the BSA are described in more detail below. All other special-status plant species are either not expected to occur or have a low potential to occur based on a lack of documented occurrences within the vicinity, lack of suitable habitat, and/or the BSA being situated outside of the known geographic or elevational range of the species. These species are described in Appendix H, Special-Status Plant Species Potential to Occur, but are not discussed further. Table 3-3 summarizes the special-status plant species with potential to occur within the BSA.

Table 3-3. Special-Status Plant Species with Potential to Occur Within the BSA

Common Name	Scientific Name
Present Within the BSA	
beach goldenaster	*Heterotheca sessiliflora* ssp. *sessiliflora*
coast woolly-heads	*Nemacaulis denudata* var. *denudata*
Coulter's goldfields	*Lasthenia glabrata* ssp. *coulteri*
decumbent goldenbush	*Isocoma menziesii* var. *decumbens*
estuary seablite	*Suaeda esteroa*
Nuttall's lotus	*Lotus nuttallianus*
Palmer's frankenia	*Frankenia palmeri*
salt marsh bird's beak	*Cordylanthus maritimus* ssp. *maritimus*
San Diego barrel cactus	*Ferocactus viridescens*
San Diego marsh-elder	*Iva hayesiana*
High to Moderate Potential to Occur Within the BSA	
aphanisma	*Aphanisma blitoides*
Brand's star phacelia	*Phacelia stellaris*
cliff spurge	*Euphorbia misera*
Coulter's saltbush	*Atriplex coulteri*
golden-spined cereus	*Bergerocactus emoryi*
Nuttall's scrub oak	*Quercus dumosa*
Orcutt's pincushion	*Chaenactis glabriuscula* var. *orcuttiana*
slender-pod jewelflower	*Caulanthus stenocarpus*
south coast saltscale	*Atriplex pacifica*

Note: BSA = biological survey area.

3.5.1 Aphanisma (*Aphanisma blitoides*)

Aphanisma is a CRPR 1B.2 and MSCP SAP Narrow Endemic and covered species. This annual herb blooms between February and June, and occurs in coastal bluff scrub, coastal dunes, and coastal scrub. This species was not observed during 2019 focused surveys but has a **moderate** potential to occur within Diegan sage scrub and southern foredune communities within the BSA. Documented occurrences of this species within the immediate vicinity are historical in nature (SDNHM 2025), although there are more recent occurrences approximately 3 miles south of the BSA within coastal bluff habitat at Cabrillo National Monument (CDFW 2025a).

3.5.2 Beach Goldenaster (*Heterotheca sessiliflora* ssp. *sessiliflora*)

Beach goldenaster is a CRPR 1B.1 species that blooms between March and December. This perennial herb occurs in coastal chaparral, coastal dunes, and coastal scrub. This species was detected during 2019 focused surveys in a coastal scrub restoration site at Dog Beach. The observed plants were in bloom and were identified to subspecies by the distinctly wavy, green, distal leaves, and by the large leaf-like bracts subtending the flower head; therefore, the species is considered **present** in the BSA.

3.5.3 Brand's Star Phacelia (*Phacelia stellaris*)

Brand's star phacelia is a CRPR 1B.1 species that blooms between March and June. This species occurs in coastal dunes and coastal scrub. This species was not observed during 2019 focused surveys but has a **moderate** potential to occur within Diegan coastal sage scrub and saltpan communities within the BSA. There is a historical occurrence documented immediately adjacent to the BSA to the north in Crown Point (SDNHM 2025).

3.5.4 Coast Woolly-Heads (*Nemacaulis denudata* var. *denudata*)

Coast woolly-heads is a CRPR 2B.2 species that blooms between April and September and occurs in coastal dunes. This annual herb was detected during the 2019 focused surveys on Fiesta Island, Enchanted Isle, Leisure Island, west of I-5 and north of Friar's Road, FAA Island, Mariner's Point, and Dog Beach. Identifying key features to distinguish from the potentially occurring variation gracilis were confirmed, including the absence of a peduncle and red bracts with white hairs; therefore, the species is considered **present** in the BSA.

3.5.5 Coulter's Goldfields (*Lasthenia glabrata* ssp. *coulteri*)

Coulter's goldfields is a CRPR 1B.1 species that blooms between February and June. This annual herb occurs in coastal salt marsh and swamps, playas, and vernal pools. A total of 60 individuals of this species were detected during the 2019 focused surveys in the southern coastal salt marsh within the Rose Creek Inlet; therefore, the species is considered **present** in the BSA.

3.5.6 Coulter's Saltbush (*Atriplex coulteri*)

Coulter's saltbush is a CRPR 1B.2 species. This perennial herb blooms between March and October, and occurs in coastal bluff scrub, coastal dunes, coastal scrub, and valley and foothill grassland. This species was not observed

during 2019 focused surveys but has a **moderate** potential to occur within Diegan sage scrub and southern foredune communities within the BSA. The closest documented occurrence is located approximately 1 mile east of the BSA from 2024 (SDNHM 2025).

3.5.7 Cliff Spurge (*Euphorbia misera*)

Cliff spurge is a CRPR 2B.2 species. This perennial shrub blooms between December (sometimes October) and August, and occurs within coastal bluff scrub, coastal scrub, and Mojavean desert scrub. This species was observed within a restoration site within the Kendall-Frost Reserve/Northern Wildlife Preserve immediately adjacent to the BSA during 2019 focused surveys and is known to occur within Sunset Cliff Natural Park and Cabrillo National Monument approximately 2 miles south of the BSA (CDFW 2025a). This species has a **high** potential to occur within the Diegan coastal sage scrub community within the BSA.

3.5.8 Decumbent Goldenbush (*Isocoma menziesii* var. *decumbens*)

Decumbent goldenbush is a CRPR 1B.2 species that blooms between April and November. This species occurs in chaparral and coastal scrub. A total of 15 individuals of this species were detected during the 2019 focused surveys at Dog Beach and were identified with key characteristics including, but not limited to, being decumbent, gray, and cobwebby-tomentose. It is likely that this population is hybridizing with Menzies's goldenbush (*Isocoma menziesii* ssp. *menziesii*), which co-occurs at Dog Beach; therefore, the species is considered **present** in the BSA.

3.5.9 Estuary Seablite (*Suaeda esteroa*)

Estuary seablite is a CRPR 1B.1 species that blooms between July and October (sometimes January through May). This perennial herb occurs in coastal salt marshes and swamps below 5 meters where tidal influences are present. This species was detected during 2019 focused surveys at the Rose Creek Inlet, De Anza Cove, Enchanted Isle, the mouth of Tecolote Creek, Dog Beach, West Ski Isle, and Kendall-Frost Reserve/Northern Wildlife Preserve. This species was positively identified with the use of 10x magnification to confirm uniform green in the cross-section of the leaves; therefore, the species is considered **present** the BSA.

3.5.10 Golden-Spined Cereus (*Bergerocactus emoryi*)

Golden-spined cereus is a CRPR 2B.2 species. This perennial cactus blooms between May and June, and occurs within chaparral, closed-cone coniferous forest, and coastal scrub. This species was not observed during 2019 focused surveys but has a **moderate** potential to occur within the Diegan sage scrub community within the BSA. The closest documented occurrence is located approximately 2 miles south of the BSA within Sunset Cliffs Natural Park from an unknown date (CDFW 2025a).

3.5.11 Nuttall's Lotus (*Lotus nuttallianus*)

Nuttall's lotus is a CRPR 1B.1 and MSCP-Covered species. This species blooms between March and June and occurs in coastal dunes and open, sandy coastal scrub. This species can be a perennial or an annual herb. This species was detected during 2019 focused surveys west of I-5 and north of Friar's Road, on Fiesta Island, Leisure Island, FAA Island, southwest of Pacific Highway and Sea World Drive, Kendall-Frost Reserve/Northern Wildlife Preserve,

Hospitality Point, on the northern bank of the San Diego River and Dog Beach and is considered **present** within the BSA. Occurrences of Nuttall's lotus were positively identified by confirming the peduncled inflorescence. Several mapped occurrences contained a few large, established woody, perennial mats that flowered and produced seed. Mixed within the mats were annual herbaceous individuals that grew to be several inches tall but did not reach maturity to produce a mat, flowers, or seed. In addition to mats, old growth mounding individuals were observed to be intact and undisturbed west of I-5 and north of Friar's Road. Associated species in this area included beach evening primrose, which was also observed to be undisturbed and historic based on triangular mounds of annual growth.

3.5.12 Nuttall's Scrub Oak (*Quercus dumosa*)

Nuttall's scrub oak is a CRPR 1B.1 species that blooms between February and April (sometimes between May and August). This species occurs in chaparral, closed-cone coniferous forest, and coastal scrub. This species was not observed during 2019 focused surveys but has a **moderate** potential to occur within Diegan coastal sage scrub and saltpan communities within the BSA. This species is known to occur in the Mount Soledad area to the north of the BSA, and within the Cabrillo National Monument to the south of the BSA (SDNHM 2025).

3.5.13 Orcutt's Pincushion (*Chaenactis glabriuscula* var. *orcuttiana*)

Orcutt's pincushion is a CRPR 1B.1 species. This annual herb blooms between January and August and occurs in coastal dunes. This species was not observed during 2019 focused surveys but has a **moderate** potential to occur within the southern foredune community within the BSA. There are two documented occurrences within the BSA at Pacific Beach and Ocean Beach, although both occurrences are historical and are believed to be possibly extirpated (CDFW 2025a).

3.5.14 Palmer's Frankenia (*Frankenia palmeri*)

Palmer's frankenia is a CRPR 2B.1 species that blooms between May and July. This species occurs in coastal dunes, coastal salt marshes, swamps, and playas. Planted individuals of Palmer's frankenia were detected during 2019 focused surveys within a restoration site of the Kendall-Frost Reserve/Northern Wildlife Preserve; therefore, the species is considered **present** in the BSA.

3.5.15 San Diego Barrel Cactus (*Ferocactus viridescens*)

San Diego barrel cactus is a CRPR 2B.1 and MSCP-Covered species that blooms between May and June. This species occurs in chaparral, coastal scrub, valley and foothill grassland, and vernal pools. An individual San Diego barrel cactus was detected during 2019 focused surveys on a southeast-facing slope within coastal sage scrub habitat, within the Kendall-Frost Reserve/Northern Wildlife Preserve; therefore, the species is considered **present** in the BSA.

3.5.16 San Diego Marsh Elder (*Iva hayesiana*)

San Diego marsh elder is a CRPR 2B.2 species that blooms between April and October. This perennial herb occurs in marshes and swamps and playas. A total of 51 individuals of this species were detected during the 2019 focused

surveys in coastal and valley freshwater marsh within the Rose Creek Inlet; therefore, the species is considered **present** in the BSA.

3.5.17 Salt Marsh Bird's-Beak (*Cordylanthus maritimus* ssp. *maritimus*)

Salt marsh bird's beak is a CRPR list 1B.2 species and MSCP-Covered species. This annual herb blooms between May and October and occurs in coastal dunes and coastal salt marshes and swamps. This species was detected during 2019 focused surveys and is considered **present** within a known and managed location at the Ocean Beach Dog Beach.

3.5.18 South Coast Saltscale (*Atriplex pacifica*)

South coast saltscale is a CRPR 1B.2 species. This annual herb blooms between March and October, and occurs in coastal bluff scrub, coastal dunes, coastal scrub, and playas. This species was not observed during 2019 focused surveys but has a **moderate** potential to occur within Diegan sage scrub and southern foredune communities within the BSA. The closest documented occurrence is located approximately 1 mile northeast of the BSA from 2024 (CDFW 2025a).

3.5.19 Slender-Pod Jewelflower (*Caulanthus stenocarpus*)

Slender-pod jewelflower is a MSCP-Covered species. This annual herb blooms between March and May and occurs within coastal scrub and chaparral. This species was not observed during 2019 focused surveys but has a **moderate** potential to occur within the Diegan sage scrub community within the BSA. The closest documented occurrence is located approximately 2 miles south of the BSA within Sunset Cliffs Natural Park from an unknown date (CDFW 2025a). Documented occurrences of this species within the immediate vicinity are historical, although there are more recent occurrences approximately 4 miles south of the BSA within Cabrillo National Monument (CDFW 2025a).

3.5.20 Non-Special-Status Species

In this document, CRPR ranked 3 and 4 species, which are not highly imperiled, are also included here for full public disclosure and knowledge. In the future, some of these species may be elevated in status, so inclusion here is warranted as a programmatic document. The following species were observed and considered **present** within the BSA or have a **high** or **moderate** potential to occur in the BSA but are not considered special-status due to low level of rarity based on current guidance from USFWS, CDFW, CNPS or California Rare Plant Index and are also not covered by the City's MSCP SAP or Vernal Pool Habitat Conservation Plan (VPHCP). Information on occurrences and potential is provided herein this section, but as these are not special-status species, impacts to occurrences and further discussion are not included in this report, see Appendix H for further details.

Red sand verbena is a CRPR 4.2 species that occurs in coastal dunes and strand habitats. This species was detected during the 2019 focused surveys on Fiesta Island, in coastal dune beach habitat at Dog Beach, in disturbed coastal sage scrub west of I-5 and north of Friar's Road, and in beach habitat at Crown Point, El Carmel Point, Sail Bay, Mission Point, and Kendall-Frost Reserve/Northern Wildlife Preserve and is considered **present** in the BSA.

San Diego sagewort (*Artemisia palmeri*) is a CRPR list 4.2 species. A total of 17 individuals of this species were detected during 2019 focused surveys in coastal and valley freshwater marsh within the Rose Creek Inlet and is considered **present** within the BSA.

Lewis' evening-primrose (*Camissoniopsis lewisii*) is a CRPR 3 species that was detected during 2019 focused surveys throughout much of Fiesta Island, west of I-5 and north of Friar's Road, from the South Shores boat launching area to East Mission Bay Drive, Ventura Cove, Mariner's Point, and on the northern and southern banks of the San Diego River Flood Control Channel and is considered **present** within the BSA.

Seaside cistanthe (*Cistanthe maritima*) is a CRPR 4.2 species and was not observed during 2019 focused surveys but has a **moderate** potential to occur within the Diegan coastal sage scrub community within the BSA. The closest documented occurrence of this species is located approximately 2 miles east of the BSA in 2015 (SDNHM 2025).

Vernal barley (*Hordeum intercedens*) is a CRPR 3.2 species that was not observed during 2019 focused surveys but has a **moderate** potential to occur within southern foredunes communities within the BSA. There is a historical occurrence documented within the BSA at Mission Beach (SDNHM 2025).

Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*) is a CRPR 4.2 species that was detected during the 2019 focused surveys on site at the Rose Creek Inlet, Dog Beach and within the San Diego River Flood Control Channel east of Sunset Cliffs Boulevard and is considered **present** within the BSA.

Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*) is a CRPR 4.3 species that occurs in chaparral and coastal scrub. The variety *robinsonii* is not recognized in the current Jepson manual (Baldwin et al. 2012). Therefore, samples of *Lepidium virginicum* var. *robinsonii* were collected from the mapped location on Fiesta Island and were sent to the San Diego Natural History Museum for confirmation. The species and variation were confirmed on April 4, 2019, based on fruit shape, leaf and stem morphology, stamen number, and trichome type. According to the Museum, it is likely that this taxon will be recognized in future treatments. Mapping of 1,500 individuals of this taxon was limited to the area where samples were taken and confirmed **present** during 2019 focused surveys.

California box-thorn (*Lycium californicum*) is a CRPR 4.2 species that was positively identified and deemed **present** within the BSA during the 2019 focused surveys north of Mission Bay RV Resort near the Rose Creek Inlet, Kendall-Frost Reserve/Northern Wildlife Preserve, Crown Point, and Dog Beach.

Ashy spike-moss (*Selaginella cinerascens*) is a CRPR 4.1 species that was not observed during 2019 focused surveys but has a **moderate** potential to occur within Diegan coastal sage scrub and saltpan communities within the BSA. This closest occurrence of this species is located approximately 1 mile north of the BSA at Kate Sessions Memorial Park from 2018 (SDNHM 2025).

Woolly seablite (*Suaeda taxifolia*) is a CRPR 4.2 species that was detected during 2019 focused surveys at the Rose Creek Inlet, around the perimeter of Point De Anza, Enchanted Isle, throughout the bluffs of Fiesta Island, along the coastal edges of Tecolote Shores and South Shores Park, West Ski Isle, Kendall-Frost Reserve/Northern Wildlife Preserve, the northern bank of the San Diego River Flood Control Channel at Hospitality Point, Dog Beach, and the southern bank of the San Diego River west of West Mission Bay Drive. A polygon of approximately 100 sprouts (less than 6 inches tall) was mapped in the northern portion of inland Fiesta Island; however, the vast majority of woolly seablite observed was in the form of a mature shrub ranging from 3 feet to 5 feet in diameter. This species was positively identified with the use of 10x magnification to confirm a dark green ring just inside the epidermis of the cross-section of the leaves. Woolly seablite is considered **present** within the BSA.

San Diego County viguiera (*Bahiopsis laciniata*) is a CRPR 4.3 species; 40 individuals were detected and confirmed **present** within the BSA during the 2019 focused survey on a south-facing slope, west of I-5 and south of Pacific Highway.

Although Torrey pine is a CRPR 1B.2 and MSCP-Covered species, ornamental occurrences are not considered special-status species. Hundreds of this perennial evergreen tree were detected during 2019 focused surveys throughout the BSA as a planted ornamental tree; therefore, the species is considered **present** in the BSA. However, the BSA is located outside the native range of this species, Torrey Pines State Natural Reserve; therefore, the functional ecological value of the occurrences within the BSA is ornamental and it is not considered a special-status species in the BSA.

Additionally, while not given special status due to their rarity, it is important to track occurrences of green algae species in the genus *Caulerpa* due to these species' highly invasive nature and threat they pose to native aquatic communities, particularly eelgrass beds which are prevalent in the BSA. While native to shallow tropical and sub-tropical waters, there are no *Caulerpa* species native to California. Despite this, infestations from two *Caulerpa* species, *C. taxifolia* and *C. prolifera*, have been detected in California. While not identified within the BSA during eelgrass surveys, *Caulerpa* species have been detected in San Diego Bay, most recently in September 2023 (NOAA 2025c). Due to the proximity of San Diego Bay to Mission Bay and the highly invasive nature of *Caulerpa*, there is a **moderate** potential for *Caulerpa* species to be present within the BSA in the future.

3.6 Special-Status Wildlife

Special-status wildlife species are those listed as federally endangered or threatened, federally proposed for listing, state endangered or threatened, candidate for listing, CDFW fully protected, California Watch List, California Species of Special Concern, or MSCP SAP or VPHCP Covered Species. An evaluation of known records in the La Jolla quadrangle and the surrounding quadrangles, including La Mesa, Poway, Del Mar, Point Loma, and National City (CDFW 2024; CNPS 2025; USFWS 2025b), was conducted. CNDDB and SANBIOS occurrences of special-status wildlife species within the BSA are shown on Figure 35.

Special-status wildlife species that were observed and considered **present** within the BSA, or determined to have a **moderate** or **high** potential to occur, are analyzed in this section and included in Table 3-4. The locations of the special-status wildlife species observed during Program surveys are displayed on Figures 37A–37L, Sensitive Wildlife Species Observations, and described in more detail below. Special-status species assessed to have a low potential to occur, or that are not expected to occur, in the BSA are included in Appendix I, Special-Status Wildlife Species Potential to Occur. The following special-status species were observed but are not expected to nest in the Program area (see Appendix I): American peregrine falcon (*Falco peregrinus anatum*), American white pelican (*Pelecanus erythrorhynchos*), black skimmer (*Rynchops niger*), double-crested cormorant (*Phalacrocorax auritus*), California gull (*Larus californicus*), and redhead (*Aythya americana*). Because these species' sensitivity status is tied to nesting and no impacts are expected to nesting individuals, they are not analyzed further in this report.

Table 3-4. Special-Status Wildlife Species with Potential to Occur Within the BSA

Common Name	Scientific Name	Potential to Occur
Avian Species		
American peregrine falcon	*Falco peregrinus anatum*	Present, low potential to nest
American white pelican	*Pelecanus erythrorhynchos*	Present, low potential to nest

Table 3-4. Special-Status Wildlife Species with Potential to Occur Within the BSA

Common Name	Scientific Name	Potential to Occur
black skimmer	*Rynchops niger*	Present, low potential to nest
Belding's savannah sparrow (BSS)	*Passerculus sandwichensis beldingi*	Present, high potential to nest in salt marsh habitat within the Kendall Frost Marsh Reserve/Northern Wildlife Preserve and the San Diego River Low elsewhere
brant	*Branta bernicla*	Present High potential to winter, low potential to nest
California brown pelican	*Pelecanus occidentalis californicus*	Present High potential to occur but not expected to nest
California gull	*Larus californicus*	Present, low potential to nest
California horned lark	*Eremophila alpestris actia*	Present High potential to nest on Fiesta Island and South Shores
California least tern (CLT)	*Sternula antillarum browni*	Present High potential to nest within existing nesting areas, low elsewhere
Canada goose	*Branta canadensis*	High
coastal California gnatcatcher (CAGN)	*Polioptila californica*	Present in South Shores Moderate elsewhere
Cooper's hawk	*Accipiter cooperii*	Present High potential to nest within suitable habitat
double crested cormorant	*Phalacrocorax auritus*	Present, low potential to nest
elegant tern	*Thalasseus elegans*	Present, low potential to nest
light-footed Ridgway's rail (LFFR)	*Rallus obsoletus levipes*	High potential to nest in salt marsh habitat within the Kendall-Frost Reserve/Northern Wildlife Preserve and the San Diego River Low elsewhere
long-billed curlew	*Numenius americanus*	Present, low potential to nest
northern harrier	*Circus hudsonius*	Present, moderate potential to nest
osprey	*Pandion haliaetus*	Present, high potential to nest within suitable habitat
redhead	*Aythya americana*	Present, low potential to nest
reddish egret	*Egretta rufescens*	Present, low potential to nest
southwestern willow flycatcher (SWFL)	*Empidonax traillii extimus*	Not expected to occur
tricolored blackbird	*Agelaius tricolor*	Not expected to occur
western burrowing owl (BUOW)	*Athene cunicularia*	Present, low potential to nest
western snowy plover (WSP)	*Anarhynchus* [formerly *Charadrius*] *nivosus nivosus*	Present, low potential to nest
white-faced ibis	*Plegadis chihi*	Present, low potential to nest
white-tailed kite	*Elanus leucurus*	Present, moderate potential to nest

Table 3-4. Special-Status Wildlife Species with Potential to Occur Within the BSA

Common Name	Scientific Name	Potential to Occur
yellow rail	*Coturnicops noveboracensis*	Moderate potential to occur and to nest
yellow warbler	*Setophaga petechia*	Present, moderate potential to nest within riparian habitat
Non-Avian Species		
California sea lion	*Zalophus californianus*	High
common bottlenose dolphin	*Tursiops truncatus*	High
Crotch's bumble bee (CBB)	*Bombus crotchii*	Moderate
green sea turtle	*Chelonia mydas*	High potential to occur but not expected to nest
grunion	*Leuresthes tenuis*	High
monarch butterfly	*Danaus plexippus*	High potential to occur but not expected to overwinter
orange-throated whiptail	*Cnemidophorus hyperythrus* ssp. *beldingi*	Moderate
salt marsh skipper	*Panoquina errans*	High where saltgrass is present
Southern California legless lizard	*Anniella stebbinsi*	Moderate
Pacific harbor seal	*Phoca vitulina*	High

Note: BSA = biological survey area.

3.6.1 Coastal California Gnatcatcher (*Polioptila californica*)

CAGN (*Polioptila californica*) is federally listed as threatened, is a CDFW Species of Special Concern, and is an MSCP- Covered Species. CAGN is a local and uncommon year-round resident of Southern California. CAGN generally inhabits Diegan coastal sage scrub and Riversidian coastal sage scrub dominated by California sagebrush and flat-topped buckwheat, typically below 1,500 feet in elevation along the coastal slope. When nesting, this species typically avoids slopes greater than 25% with dense, tall vegetation. Due to the presence of suitable CAGN habitat in the proposed Program area, focused surveys were conducted on approximately 58.5 acres of suitable coastal sage scrub and disturbed coastal sage scrub habitat within the BSA. CAGN was not observed during the focused surveys conducted in the Program area (see Appendix I); however, one male CAGN was incidentally observed calling within disturbed coastal sage scrub, in the southeastern corner of the Program area, during biological reconnaissance surveys conducted in 2024 in support of the Mission Bay South Shores Project (Figure 38, Coastal California Gnatcatcher Suitable Habitat, Survey Area, and Survey Results). Although focused surveys were negative, the presence of breeding pairs near the Program area (CDFW 2024) and the incidental observation of an individual within the Program area suggests this species has a **moderate** potential to breed within potentially suitable habitat in the Program area in the future.

3.6.2 California Least Tern (*Sternula antillarum browni*)

CLT (*Sternula antillarum browni*) is federally listed as endangered, is state listed as endangered, is a California fully protected species, and is an MSCP-Covered Species.

CLT nesting areas are typically flat, open areas near the coast with light colored, sandy substrate, and little vegetation. The CLT also shows strong year after year fidelity to successful breeding sites, or proximal clusters of sites, and may return to a previously disturbed site after several years of absence.

No nesting CLT were detected in the BSA during focused surveys conducted in 2019; however, individual CLT were observed foraging in the BSA, including in the Mission Bay Channel immediately east of Mariner's Point, the western portion of the San Diego River, and in the Rose Creek Inlet, during the 2019 focused surveys (Figure 39, California Least Tern Suitable Habitat, Survey Area, and Survey Results) and CLT are known to nest and forage in Mission Bay Park. There are records of this species nesting from several locations throughout the BSA, including Mariner's Point, FAA Island, and Fiesta Island, where two CLT preserves exist (Figure 39; CDFW 2024). In 2019, the year of the most recent productivity survey data published by CDFW (2024), between 11 and 37 nesting pairs were detected on FAA Island, between 123 and 146 nesting pairs were detected on Mariner's Point, between 1 and 2 nesting pairs were detected on North Fiesta Island, and 1 nesting pair was detected on Stony Point (CDFW 2024). CLT is known to forage in Mission Bay, Fishermen's Channel, Mission Bay Channel, the Ventura Cove area, around West Ski Island, and the San Diego River (SRA 1994) and the species is present on the Kendall-Frost Reserve wildlife list maintained by UCSD (2025).

Within the Program area, CLT has a **high** potential to nest in the existing preserves on Fiesta Island and on FAA Island and Mariner's Point; the species also has a **low** potential to establish nesting colonies where suitable habitat persists or develops elsewhere in the Program area in future years (see Figure 39). It should be noted, however, that recent nesting on North Fiesta Island has been limited and, in some years, completely absent. During an observational study of breeding success conducted in 2022, no CLT nests were observed on North Fiesta Island, while 107 nests and 98 nests were observed at Mariner's Point and FAA Island, respectively (Jackson 2022). In a similar study conducted in 2024, 6 CLT nests were observed at North Fiesta Island, while 101 nests and 55 nests were observed at Mariner's Point and FAA Island, respectively (Jackson 2024). The selection of alternative nesting sites in Mission Bay suggests current habitat conditions on North Fiesta Island may not be conducive to successful CLT breeding, which could be due to a variety of reasons, such as (1) the nesting area is not directly connected to open water; (2) soils include fine silts that foster and promote undesirable non-native vegetation recruitment and cover; (3) portions of the site are occupied by dense, tall vegetation, which attracts predators and limits CLT's ability to view predators approaching the site; (4) vegetation within the preserve requires mowing, which compacts soils and may diminish the site's suitability for CLT nesting; and (5) the preserve is easily accessible and subject to trespassing.

3.6.3 Light-Footed Ridgway's Rail (*Rallus obsoletus levipes*)

LFRR (*Rallus obsoletus levipes*) is federally listed as endangered, is state listed as endangered, is a California fully protected species, and is an MSCP-Covered Species. LFRR is a permanent resident of coastal salt marsh traversed by tidal sloughs, usually characterized by cordgrass (*Spartina foliosa*) and pickleweed (*Salicornia* spp.) (Grinnell and Miller 1944; USFWS 1994). LFRRs have also nested in freshwater marsh characterized by cattails (*Typha* sp.) and bulrush (*Scirpus* sp.) at Buena Vista, Agua Hedionda, Batiquitos, San Elijo, and San Dieguito Lagoons in San Diego County (Zembal et al. 2018); and in southwestern spiny rush at Naval Air Station Point Mugu.

No LFRR was detected during the three focused surveys of suitable within the BSA conducted in 2019 (Figure 40, Light-Footed Ridgway's Rail Suitable Habitat, Survey Area, and Survey Results). However, LFRR has been regularly observed in the Kendall-Frost Reserve/Northern Wildlife Preserve during the annual census conducted for this species in California. During the most recent census conducted in 2024, 10 pairs of LFRR and 4 kecking males

were observed at Kendall-Frost Reserve/Northern Wildlife Preserve, and 13 pairs and 5 kecking males were observed in the San Diego River (Zembal et al. 2024).

Within the Program area, LFRR has a **high** potential to nest in suitable salt marsh habitat in the Kendall-Frost Reserve/Northern Wildlife Preserve and portions of the San Diego River; the species has a **low** potential to occur (including to nest) in other areas throughout Mission Bay that support suitable coastal salt marsh habitat, including North Fiesta Island, the Rose Creek Inlet, and the mouth of Tecolote Creek (see Figure 40).

3.6.4 Western Snowy Plover (*Anarhynchus* [formerly *Charadrius*] *nivosus nivosus*)

The Pacific Coast Distinct Population Segment (DPS) of WSP (*Anarhynchus* [formerly *Charadrius*] *nivosus nivosus*) is federally listed as threatened, is a CDFW Species of Special Concern, and is an MSCP-Covered Species. WSP preferred habitat is sandy beaches and coastal sand spits above the high tide line, dune-backed beaches, bayshore sand flats, salt evaporation ponds, salt flats, alkaline flats, and the shores of alkaline sink lakes. WSP forages for invertebrates in sand, low foredune vegetation, and washed up kelp. In winter, WSP is found on many of the beaches used for nesting as well as on beaches where they do not nest, in man-made salt ponds, and on estuarine sand and mud flats (USFWS 2007).

No nesting WSP were detected in the Program area during focused surveys conducted in 2019. WSP individuals were observed roosting in the BSA, including at South Mission Beach, at the sand spit near Kendall-Frost Reserve, and in the San Diego River west of Nimitz Boulevard (Figure 41, Western Snowy Plover Suitable Habitat, Survey Area, and Survey Results). Historically, WSP occasionally attempted to nest in Mission Bay Park, most of which were unsuccessful. The last known breeding attempt in Mission Bay was at Mariner's Point in 1995 (Unitt 2004). Large numbers of wintering WSP have been documented at South Mission Beach. A total of 52 individuals were documented in 2018 (USFWS 2018), and 52 to 62 individuals were found during the winter of 2018-2019 (City of San Diego 2023) at high tide. During low winter tides, these WSP apparently move off the South Mission roost site and move to the mouth of the San Diego River to forage (Konecny 2019, Appendix E). Western snowy plover has a **high** potential to winter and roost in the Program area but is **not expected** to nest.

3.6.5 Belding's Savannah Sparrow (*Passerculus sandwichensis beldingi*)

BSS (*Passerculus sandwichensis beldingi*) is state listed as endangered and is an MSCP-Covered Species. The Belding's subspecies of the savannah sparrow inhabits coastal salt marsh characterized by several species of pickleweed.

Nine BSS territories were detected in the San Diego River east of West Mission Bay Drive and 26 territories were detected at Kendall-Frost Reserve during range-wide surveys in 2015 (Zembal et al. 2015). Previous efforts have also detected BSS at FAA Island. Three BSS territories were detected in the BSA within the San Diego River west of Nimitz Boulevard during focused surveys conducted in 2019 (Figure 42, Belding's Savannah Sparrow Suitable Habitat, Survey Area, and Survey Results). BSS were also detected in the San Diego River immediately south of Site No. 5b, in Kendall-Frost Reserve, and on Fiesta Island near the San Diego Youth Aquatic Center during other wildlife surveys in the BSA in 2019. Within the Program area, BSS has a **high** potential to nest in suitable salt marsh habitat at the Kendall-Frost Reserve and in portions of the San Diego River, and has a **low** potential to occur (including

nest) in other areas throughout Mission Bay that support coastal salt marsh habitat dominated by pickleweed, including North Fiesta Island, the Rose Creek Inlet, and the mouth of Tecolote Creek (see Figure 42).

3.6.6 Western Burrowing Owl (*Athene cunicularia*)

BUOW (*Athene cunicularia*) is a candidate for state listing as endangered and is a CDFW Species of Special Concern and is an MSCP-Covered Species. With a relatively wide-ranging distribution throughout the west, BUOW is considered a habitat generalist (Lantz et al. 2004). In California, BUOWs are yearlong residents of open, dry grassland and desert habitats, and in grass, forb, and open shrub stages of pinyon–juniper and ponderosa pine habitats (Zeiner et al. 1990). Preferred habitat is generally typified by short, sparse vegetation with few shrubs, level to gentle topography, and well-drained soils (Haug et al. 1993). The presence of burrows is the most essential component of BUOW habitat, which are used for nesting, roosting, cover, and caching prey (Coulombe 1971; Martin 1973; Green and Anthony 1989; Haug et al. 1993). Since burrow excavation by BUOWs rarely occurs in California, BUOWs primarily select their habitat based on the presence of burrowing animals such as prairie dogs, ground squirrels, badgers, marmots, coyotes, and tortoise (Green and Anthony 1989; Haug et al. 1993). In California, BUOWs most commonly live in burrows created by California ground squirrels (*Spermophilus beecheyi*). BUOWs may occur in human-altered landscapes, such as agricultural areas, ruderal grassy fields, vacant lots, and pastures, if the vegetation structure is suitable (i.e., open and sparse), usable burrows are available, and foraging habitat occurs in close proximity (Gervais et al. 2008). Debris piles, riprap, culverts, and pipes can be used for nesting and roosting. Non-nesting burrows (i.e., satellite burrows) are presumably used by BUOWs to reduce risk of predation by moving young between burrows at regular intervals (CDFG 2012).

An initial habitat assessment of the BSA was conducted on December 3, 4, and 11, 2018. Follow-up visits to verify site conditions and suitable habitat were conducted on March 25, 26, 27, 28, and 29, 2019, during and after the first round of BUOW breeding season surveys. Habitat assessments identified approximately 516 acres of suitable habitat within the BSA (Figure 43, Western Burrowing Owl Suitable Habitat, Survey Area, and Survey Results). Results of the 2019 BUOW breeding season surveys documented the presence of 631 potential burrows and one BUOW individual on the first round of surveys on March 26, 2019 (Table 3-5). The BUOW documented in the first survey round was located at a burrow on a berm just north of the section of Fiesta Island Road where it cuts west and bisects the island, north of the Over the Line ball field. During subsequent surveys conducted in 2019, five additional burrows showed historic signs of BUOW use of the Program area (weathered whitewash was observed at four burrows and an old pellet was observed outside of another burrow). These burrows may have potentially been previously occupied by wintering BUOW individuals, as fresh BUOW sign was not observed at any of these burrows. No sign of BUOW activity was detected at any burrow during subsequent surveys conducted between May 2019 and June 2019; therefore, it can be assumed that no breeding took place on site in 2019 and that the Program area was being used by BUOW for wintering, dispersal, and/or as a migratory stopover site. Results of the focused BUOW surveys are presented in Appendix F.

There is a CNDDB record of a BUOW nesting colony on Fiesta Island, the date of which is unknown (CDFW 2024). In addition, the species has been regularly documented on eBird (2025) in Mission Bay. BUOW individuals detected in Mission Bay are assumed to be wintering, dispersing, or migrating individuals, including on Fiesta Island and in the San Diego River where the species is regularly observed (eBird 2025). Suitable BUOW habitat within the Program area ranges from low to high quality but generally includes most non-developed upland areas and other locations where burrows or burrow surrogates are present (Figure 43). BUOW has also been observed utilizing the riprap-lined portions of the San Diego River (eBird 2025). Within the Program area, BUOW has a **high** potential to occur during wintering, foraging, and/or dispersal, but this species is **not expected to nest**.

Table 3-5. Progression of Burrow Status by Survey Pass

Status	Count of Burrows and Burrow Status by Survey Number			
	Survey 1	Survey 2	Survey 3	Survey 4
Burrows				
Occupied	1	0	0	0
Active	1	0	0	0
Inactive (including destroyed and no longer suitable)	314	465	567	631
Total	**315**	**465**	**567**	**631**

3.6.7 Cooper's Hawk (*Accipiter cooperii)*

Cooper's hawk (*Accipiter cooperii*) is a CDFW watch list species and is an MSCP-Covered Species. This species is found throughout California in live oak, riparian, deciduous, or other forest habitats near water. Cooper's hawk uses patchy woodlands and edges with snags for perching while it hunts for prey such as small birds, small mammals, reptiles, and amphibians within broken woodland and habitat edges (Zeiner et al. 1990). Historically this species has preferred dense stands of live oak, riparian deciduous or other forest habitat near water, but has adapted to urban and developed areas, particularly those with eucalyptus trees. In San Diego County Cooper's hawks still commonly use oaks for nesting, but nesting has been observed to occur at greater rates in eucalyptus than in oaks and has also been observed in several other ornamental tree species (Unitt 2004).

Cooper's hawk was observed flying through the Program area, north of West Point Loma Boulevard and near Dog Beach (Figures 37H–37L). Suitable nesting habitat for Cooper's hawk occurs within southern willow scrub and non-native riparian habitats in Rose Creek, as well as in developed and disturbed areas where trees are present. Suitable foraging habitat for Cooper's hawk is widespread in the Program area, in broken woodlands and at the edges of wooded areas. Cooper's hawk has a **high** potential to nest in wooded areas within the Program area.

3.6.8 Brant (*Branta bernicla*)

Brant (*Branta bernicla*) is a CDFW Species of Special Concern. It is a small coastal goose found in large, shallow estuaries with eelgrass beds, which serves as their most important food source. Brant typically forages in shallow water or in exposed tidal areas and rests on open water of estuaries. Most important staging areas are found in shallow, marine waters along indented shorelines, within lagoons, or behind barrier beaches. They are characterized by the presence of tidal or subtidal eelgrass meadows (Reed et al. 1998).

Brant was observed in north Mission Bay outside of the Kendall-Frost Reserve (Figures 37E). Suitable wintering habitat for brant occurs throughout the Program area and this species has a **high** potential to winter in the open water of Mission Bay and the San Diego River.

3.6. 9 Northern Harrier (*Circus hudsonius*)

Northern harrier (*Circus hudsonius*) is a CDFW Species of Special Concern and is an MSCP-Covered Species. This species uses a wide variety of habitat types, with populations most concentrated in areas with low vegetation.

Foraging typically occurs over open scrub communities but can also occur over other open vegetation types. Nesting is associated with marshes, pastures, grasslands, prairies, croplands, desert shrubsteppe, and riparian woodland, with nests built on the ground surrounded by dense vegetation (Smith et al. 2011; Unitt 2004). In San Diego County, northern harrier is found year-round but occurs more commonly as a winter visitor than as a breeding bird (Unitt 2004).

Northern harrier was observed hunting throughout Fiesta Island during biological surveys (Figures 37B). Suitable breeding and foraging habitat for northern harrier occurs primarily on Fiesta Island and in the open space near South Shores Park, but northern harrier could forage in most undeveloped native and non-native habitat in the Program area northern harrier has a **moderate** potential to nest in the Program area wherever suitable nesting conditions exist near foraging habitat.

3.6.10 Reddish Egret (*Egretta rufescens*)

Reddish egret (*Egretta rufescens*) is an MSCP-Covered Species. Reddish egret is a nonbreeding visitor in Southern California, where it forages in calm shallow waters along the coast, and in protected bays and estuaries (Kaufman 1996). Suitable foraging habitat includes coastal tidal flats, salt marshes, and lagoons. San Diego County represents the northern limit of this species' wintering range along the Pacific coast (Unitt 2004).

Reddish egret was observed in the San Diego River during biological surveys (Figures 37A–37L). Suitable foraging habitat for reddish egret occurs throughout the shallow, shoreline waters of the Program area, where this species is expected to occur as a winter visitor. Most observations of the species within the Program area have been along the San Diego River (eBird 2025). Reddish egret has a **high** potential to occur in the Program area as a nonbreeding winter visitor.

3.6.11 White-Tailed Kite (*Elanus leucurus*)

White-tailed kite (*Elanus leucurus*) is a California fully protected Species. Nest sites are closely associated with suitable foraging habitat with high rodent populations in the immediate vicinity of the nest, often with preferred foraging habitat within 0.5 miles of the nest (Erichsen et al. 1996). White-tailed kite forages in undisturbed, open grasslands, meadows, farmlands, and emergent wetlands, ungrazed grasslands, fence rows, and irrigation ditches adjacent to grazed lands, open shrub and scrub, and open woodlands (County of Riverside 2008).

White-tailed kite was observed during biological surveys at Mariner's Point, on Fiesta Island, and in the San Diego River (Figures 37A–37L). Within the Program area, suitable foraging habitat occurs primarily on Fiesta Island and in the open space near South Shores Park and at the Sea World Drive/San Diego River Site No. 5a Cloverleaf Area. Trees throughout the Program area could be used for nesting where situated near suitable foraging habitat. White-tailed kite has a **moderate** potential to nest and forage in the Program area.

3.6.12 California Horned Lark (*Eremophila alpestris actia*)

California horned lark (*Eremophila alpestris actia*) is a CDFW watch list species. California horned lark prefers open spaces with low-growing, sparse vegetation or bare ground where they forage for seeds and insects. Common habitats used by this species include grasslands, farmlands, deserts, beaches, and disturbed areas.

Nesting California horned lark was observed in disturbed habitat and coastal sage scrub habitat on Fiesta Island and in the South Shores Park area (Figures 37A–37L). This species is regularly observed throughout the Program area and it has a **high** potential to nest and forage in most upland habitats in the Program area.

3.6.13 American Peregrine Falcon (*Falco peregrinus anatum*)

American peregrine falcon (*Falco peregrinus anatum*) is an MSCP-Covered Species. Peregrine falcons in general use a large variety of open habitats for foraging, including tundra, marshes, seacoasts, savannas, grasslands, meadows, open woodlands, and agricultural areas. In Southern California, peregrines are primarily found at coastal estuaries and inland oases during migration periods and during the winter months (Garrett and Dunn 1981). Breeding requires cliffs or suitable surrogates (e.g., tall trees, buildings, bridges) that are close to preferred foraging areas and that are prominent in the landscape.

American peregrine falcon was observed flying over the San Diego River during biological surveys (Figures 37A–37L). Suitable foraging habitat for this species occurs throughout the Program area, where shorebirds and water birds congregate. In the Program area, two bridges – the Ingraham Street Bridge and the West Mission Bay Bridge – as well as tall trees with views toward suitable foraging habitat could support nesting American peregrine falcon, though this species has not been recorded nesting in Mission Bay in the past and typical nest sites (i.e., cliffs or tall buildings) are absent from most of the Program area. American peregrine falcon has a **low** potential to nest on bridges and tall trees in and near the Program area.

3.6.14 Long-Billed Curlew (*Numenius americanus*)

Long-billed curlew (*Numenius americanus*) is a CDFW watch list species and an MSCP-Covered Species. It prefers large coastal estuaries, upland herbaceous areas, and cropland habitats, and commonly feeds on aquatic invertebrates in intertidal mudflats. Long-billed curlew occurs in San Diego County as a migrant and winter visitor and the species is commonly observed in the Program area (eBird 2025).

Long-billed curlew was observed near Mariner's Point and the Kendall-Frost Reserve during biological surveys (Figures 37A–37L). Within the Program area, suitable foraging habitat for long-billed curlew occurs along the shallow shorelines of Mission Bay and the San Diego River, where this species is known to occur as a winter visitor. Long-billed curlew has a **high** potential to occur as a migrant and winter visitor but is **not expected** to nest in the Program area.

3.6.15 Osprey (*Pandion haliaetus*)

Osprey (*Pandion haliaetus*) is a CDFW watch list species. Ospreys can be found in fresh and saltwater, along the coast, and at rivers, lakes, reservoirs, estuaries, and salt marshes where large numbers of fish are present (Kaufman 1996).

Osprey was observed nesting on a light post next to Robb Field and on a platform in the Kendall-Frost Reserve and is regularly seen fishing along the San Diego River (Figures 37A–37L). Osprey individuals show strong nest fidelity and the nest near Robb Field has been occupied in the years since it was observed during biological surveys. Suitable nesting and foraging habitat for osprey occurs throughout the Program area, in both Mission Bay and along the San Diego River, and the species has a **high** potential to nest and forage in the Program area wherever suitable conditions are present.

3.6.16 California Brown Pelican (*Pelecanus occidentalis californicus*)

California brown pelican (*Pelecanus occidentalis californicus*) is an MSCP-Covered Species. This species is commonly found in salt bays, beaches, and along the ocean. It is common along the coast of San Diego County, including within the Program area, but is not known to nest in San Diego County. California brown pelican nests colonially on islands, with the nearest nesting colony to San Diego on Los Coronados Islands off Tijuana (Unitt 2004).

California brown pelican was observed in Mission Bay near Mariner's Point and Fiesta Island during biological surveys (Figures 37A–37L). Suitable foraging habitat for this species occurs throughout the Program area, including in Mission Bay, along the Pacific coast, and within the San Diego River. California brown pelican has a **high** potential to occur in the Program area during winter and migration, with some year-round nonbreeding residents present; this species is **not expected** to nest in the Program area.

3.6.17 White-Faced Ibis (*Plegadis chihi*)

White-faced ibis (*Plegadis chihi*) is a CDFW watch list species and is an MSCP-Covered Species. White-faced ibis nests in freshwater marshes and forages in shallow water and wet grass (Unitt 2004). Two nesting colonies of this species were recorded by Unitt (2004) in northern San Diego County. Wintering has also historically been more prevalent in the northern portions of the County, while migration is more widespread; however, the species is regularly observed migrating and wintering throughout the County, including in the Program area (Unitt 2004).

This species was observed foraging in Rose Creek during biological surveys (Figures 37A–37L). However, nesting requires extensive freshwater marsh with emergent vegetation and suitable freshwater marsh habitat within the Program area is limited to a small area (0.02 acres) within Rose Creek. In addition, white-faced ibis has not been recorded nesting in the Program area and known nesting populations in San Diego County are limited to lower Santa Margarita and San Luis Rey River Valleys, northern San Diego County coastal lagoons, and up Escondido Creek and the San Dieguito River to the San Pasqual Valley during the breeding season (San Diego Management and Monitoring Program 2025a). This species is **not expected** to nest in the Program area, but it has a **high** potential to occur as a migrant and may forage during winter in freshwater marsh and shallow estuarine habitats in the Program area.

3.6.18 Elegant Tern (*Thalasseus elegans*)

Elegant tern (*Thalasseus elegans*) is a CDFW watch list species and is MSCP-Covered Species. Elegant tern occurs along coastal bays and beaches, and breeds on sandy or rocky islands (Kaufman 1996). In San Diego County, elegant tern nests in the San Diego Bay Salt Works and is often observed as a migrant elsewhere along the coast of San Diego County (Unitt 2004).

This species was observed on Dog Beach and along the shoreline of Kendall-Frost Reserve during biological surveys (Figures 37A–37L). The species is also known to nest on West Ski Island (M. Berninger, pers. comm., 2025). Within the Program area, elegant tern has a **high** potential to nest and forage in the Program area wherever suitable conditions are present.

3.6.19 Tricolored Blackbird (*Agelaius tricolor*)

Tricolored blackbird (*Agelaius tricolor*) is state listed as threatened, a CDFW Species of Special Concern, and is an MSCP-Covered Species. Tricolored blackbird nesting colonies usually occur in freshwater marshes with dense growths of emergent vegetation dominated by cattails or bulrushes, but breeding colonies also occur in willows, blackberries, thistles, and nettles. Other nesting habitats include giant reed, safflower, black mustard, tamarisk, riparian scrublands and forests, California ash, mulefat, wheat, and barley (Beedy 2008). Tricolored blackbird usually forages in open habitats such as grassland and agricultural areas, as well as dairies and feedlots. It may also forage in wet and dry vernal pools, seasonal wetlands, riparian scrub, and open marsh borders (Beedy 2008). The main threats to this species are habitat loss and degradation primarily resulting from human activity.

Within the Program area, potentially suitable habitat for tricolored blackbird is limited to the freshwater marsh associated with Rose Creek in the northeast corner of the BSA. This species has not been observed in the Program area during biological surveys or during ongoing monitoring for this species that is conducted as part of the tricolored blackbird statewide surveys. The closest known record for this species is from 1997, approximately 2.5 miles east of Mission Bay within the San Diego River (CDFW 2024). No tricolored blackbird nesting colonies have been recorded in the Program vicinity, despite extensive survey efforts in the area, and this species is **not expected** to nest in the Program area.

3.6.20 Canada Goose (*Branta canadensis*)

Canada goose (*Branta canadensis*) is an MSCP-Covered Species. It occurs in a variety of habitats near lakes, rivers, ponds, and other bodies of water. This species migrates from northern nesting sites and is known to nest and winter in San Diego County (Unitt 2004).

While this species was not observed during biological surveys, it is known to winter in Mission Bay (Unitt 2004). Suitable foraging habitat for Canada goose occurs throughout vegetated aquatic and upland areas of Mission Bay, encompassing almost all of the undeveloped portions of the Program area. This species is known as a regular winter visitor and migrant and has a **high** potential to occur in the Program area. It should be noted that, while nesting has been recorded in San Diego County, including in Mission Bay, none of these instances were observed to have taken place in natural habitats and in most cases, the birds were known or presumed to have been planted, though some could have been joined by wild geese that failed to migrate.

3.6.21 Yellow Rail (*Coturnicops noveboracensis*)

Yellow rail (*Coturnicops noveboracensis*) is a CDFW Species of Special Concern. Yellow rail is an extremely secretive, small bird that occurs within dense marsh grass that provides a high degree of cover (Unitt 2004). This species' current breeding range is thought to extend from Canada to northeast California, with limited wintering visitors in Southern California (Unitt 2004). There are only four known records of this species from Southern California, two of which are from San Diego County. The first was a from Santee in 1998 (Unitt 2004), while the second was from an area adjacent to the Kendall-Frost Reserve in 2022.

Yellow rail was not observed during biological surveys. Suitable habitat within the Program area includes areas where coastal marsh vegetation is present, with dense grasses and standing water. Potentially suitable habitat is present in the Kendall-Frost Reserve, Rose Creek, the area of the Tecolote Creek and Fiesta Island Causeway, and the San Diego River. Yellow rail has a **moderate** potential to occur, including to nest, in the Program area.

3.6.22 Southwestern Willow Flycatcher (*Empidonax traillii extimus*)

SWFL (*Empidonax traillii extimus*) is a federally and state listed endangered species and an MSCP-Covered Species. This subspecies has been extirpated from most of its known breeding range in California, which extends from the Mexican border north and inland to the City of Independence in Owen's Valley east of the Sierra Nevada, to the South Fork Kern River in the San Joaquin Valley and coastally to the Santa Ynez River in Santa Barbara County (Craig and Williams 1998). SWFL is a riparian-obligate species restricted to complex streamside vegetation. In California, native broadleaf-dominated riparian forest and mixed native/exotic riparian forests are the primary habitats used by this species (Sogge et al. 1997). The vegetation of occupied sites includes dense patches interspersed with frequent small openings, open water, and a well-developed herbaceous layer, creating a habitat that is not uniformly dense (Sogge et al. 1997).

This species was not observed during focused surveys conducted in 2024 within riparian habitat associated with Rose Creek (Appendix G). In San Diego County there are fewer than 90 breeding pairs, and breeding populations are generally restricted to two colonies in the upper San Luis Rey River and the Santa Margarita River, with scattered small colonies and individual pairs found primarily in northern San Diego County (Unitt 2004). There are no records of this species from the Program vicinity and, based on the negative protocol survey results and the absence of suitable habitat from nearly the entire Program area, this species is **not expected** to occur in the Program area.

3.6.23 Large-Billed Savannah Sparrow (*Passerculus sandwichensis rostratus*)

Large-billed savannah sparrow (*Passerculus sandwichensis rostratus*) is a CDFW Species of Special Concern and an MSCP-Covered Species. This species breeds primarily from northwestern Baja California to northwestern Sonora. Wintering populations occur in southeastern California (Salton Sea) and south-coastal California from July to February (Wheelwright and Rising 2008; Unitt 2004). Within its wintering range, large-billed savannah sparrow occurs on shorelines and within coastal salt marsh and mudflats associated with low coastal strand vegetation dominated by pickleweed, *Allenrolfea* sp., sea-blight, saltbush, and saltgrass (*Distichlis* spp.), where it mixes with BSS.

Large-billed savannah sparrow was not observed during biological surveys, though this species is regularly observed along the San Diego County coast during the winter months (eBird 2025; Unitt 2004). Within the Program area, this species has a **moderate** potential to occur as a winter visitor in salt marsh habitat associated with the Kendall-Frost Reserve, the San Diego River, North Fiesta Island, the Rose Creek Inlet, and the mouth of Tecolote Creek, as well as other coastal habitats such as beaches and jetties.

3.6.24 Yellow Warbler (*Setophaga petechia*)

Yellow warbler (*Setophaga petechia*) is a CDFW Species of Special Concern. Yellow warbler generally occupies riparian vegetation in close proximity to water (Shuford and Gardali 2008). In Southern California, it nests in lowland and foothill riparian woodlands dominated by cottonwoods (*Populus* spp.), alders (*Alnus* spp.), or willows and other small trees and shrubs typical of low, open-canopy riparian woodland (Garrett and Dunn 1981). In San Diego County, yellow warbler has become increasingly common and has been observed in suitable habitat throughout the County, where it occurs as both a breeding summer resident and a migrant (Shuford and Gardali 2008).

This species was observed in Rose Creek during focused southwestern willow flycatcher and LBV surveys conducted in 2024 (Figures 37A–37L). Although there are no records in the CNDDB (CDFW 2024) of this species nesting in the Program area, and the Program area has not been identified as a potential breeding location (Unitt 2004), yellow warbler is known to nest in the San Diego River corridor east of the Program area and the disturbed willow scrub vegetation where this species was observed in Rose Creek could support yellow warbler nesting. Yellow warbler has a **moderate** potential to nest in the Program area, within riparian vegetation in Rose Creek.

3.6.25 Least Bell's Vireo (*Vireo bellii pusillus*)

LBV (*Vireo bellii pusillus*) is federally listed as endangered, state listed as endangered, and is an MSCP-Covered Species. LBV primarily occupy riverine riparian habitats along water, including dry portions of intermittent streams that typically provide dense cover within 1 meter to 2 meters (3.3 feet to 6.6 feet) off the ground, often adjacent to a complex, stratified canopy. LBV nesting habitats in cismontane and coastal areas include southern willow scrub, mulefat scrub, arroyo willow riparian forest edge, wild blackberry thickets, and more rarely cottonwood forest, sycamore alluvial woodland, and southern coast live oak riparian forest. In San Diego County, the population is concentrated in the coastal lowland, especially in the northern portions of the County, but breeding is well documented in the San Diego River corridor, east of the Program area.

LBV was not observed during focused surveys conducted in suitable habitat in Rose Creek in 2024 (see Appendix G) and known populations in the vicinity of the Program area are associated with the San Diego River corridor, east of I-5 (San Diego Management and Monitoring Program 2025b). Nevertheless, the disturbed southern will scrub present in Rose Creek, north of Garnet Avenue, provides potentially suitable nesting habitat for LBV, and this species has a **low** potential to nest in this portion of the Program area.

3.6.26 Southern California Legless Lizard (*Anniella stebbinsi*)

Southern California legless lizard (*Anniella stebbinsi*) is a CDFW Species of Special Concern. It may be found in sparsely vegetated areas with loose or sandy soils in a variety of habitats, including beach dunes, beaches, chaparral, scrub, oak woodlands, pine forests, pine–oak woodland, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks (Stebbins 2003; Zeiner et al. 1990). Soil moisture is considered essential for legless lizards to conserve energy at high temperatures and to also allow shedding to occur (Jennings and Hayes 1994).

This species was not observed during biological surveys conducted in the Program area and the most recent CNDDB record in the Program area is from 1965 (CDFW 2024). Nevertheless, recent CNDDB records exist in the Program vicinity, outside the BSA, and this species was observed in 2016 during surveys conducted for the Final Program EIR for the De Anza Natural Amendment to the Mission Bay Park Master Plan (City of San Diego 2023). There are also several records on iNaturalist from the past 5 years in the Program area (iNaturalist 2025). Southern California legless lizard has a **moderate** potential to occur in sparsely vegetated areas of Fiesta Island, the South Shores Park area, Sea World Drive/San Diego River Site No. 5a Cloverleaf Area, and other portions of the Program area that provide suitable conditions (i.e., loose and moist soils).

3.6.27 Orange-Throated Whiptail (*Cnemidophorus hyperythrus* ssp. *beldingi*)

Orange-throated whiptail (*Cnemidophorus hyperythrus* ssp. *beldingi*) is a CDFW watch list species and an MSCP-Covered Species. This species inhabits low-elevation coastal scrub, chamise-redshank chaparral, mixed chaparral, and valley-foothill hardwood habitats and prefers patches of brush and rocks in washes and other sandy areas while utilizing dense vegetation and surface debris to forage for small arthropods (CDFW 2025a).

Orange-throated whiptail was not observed during biological surveys conducted in the Program area. There are no records of this species occurring in the Program area (CDFW 2024; iNaturalist 2025), but it has been observed east of Mission Bay in Tecolote Creek. Orange-throated whiptail has a **moderate** potential to occur in scrub vegetation and disturbed upland areas where suitable conditions are present (i.e., loose soils and an abundant insect prey base), with the highest potential on Fiesta Island, the South Shores Park area, and at Sea World Drive/San Diego River Site No. 5a Cloverleaf Area.

3.6.28 Green Sea Turtle (*Chelonia mydas*)

Green sea turtle (*Chelonia mydas*) is federally listed as threatened. The Eastern Pacific DPS occurs along the Pacific Coast of North America and can be found locally along open coastlines, protected bays, lagoons, estuaries, and river mouths (Hansen and Shedd 2025). Adult turtles are mostly herbivorous, feeding on algae and seagrasses in the open ocean when migrating as well as in the shallow waters of lagoons, bays, estuaries, mangroves, eelgrass, and seaweed beds, where they are most commonly found when not migrating. Green sea turtles are highly migratory but adults have strong reproductive site fidelity, mostly occurring on the open undisturbed beaches of mainland Mexico, which is the closest known nesting population to San Diego County (Hansen and Shedd 2025; NOAA and USFWS 1998). Mission Bay supports a moderate abundance of foraging/resting green sea turtles, with one stranding noted in 2024, and Mission Bay was included in the proposed rule to designate critical habitat for the Eastern Pacific DPS (88 FR 46572).

Green sea turtle was not observed during biological surveys conducted in the Program area. Potentially suitable foraging habitat for green sea turtle is present within the shallow warm waters of Mission Bay where eelgrass (*Zostera marina)* and other seagrasses occur and this species has a **high** potential to occur in the Program area year-round during migration and/or to forage and rest. Green sea turtle is **not expected** to nest in the Program area.

3.6.29 Crotch's Bumble Bee (*Bombus crotchii*)

Crotch's bumble bee (CBB; *Bombus crotchii*) is a candidate for state listing as endangered. This species is found in open grassland and scrub habitats. It is able to persist in semi-natural habitats surrounded by intensely modified landscapes. This species is a generalist forager and uses a wide array of flowers. The plant families most associated with observations or collections of the species from California include Fabaceae, Apocynaceae, Asteraceae, Lamiaceae, and Boraginaceae (Xerces Society et al. 2018). Nectar plants known to be visited by CBB include the genera *Asclepias*, *Chaenactis*, *Lupinus*, *Medicago*, *Phacelia*, and *Salvia* (Williams et al. 2014; Xerces Society et al. 2018), but it is assumed flowering plants in other genera could also support foraging by this species.

CBB was not observed during biological surveys conducted in the Program area and no records exist from Mission Bay; the closest CNDDB record is from 2019 at the Mission Valley Preserve, approximately 0.7 miles east of the

BSA. However, suitable foraging and nesting habitat is present throughout the Program area and the species has a **moderate** potential to occur. Foraging could occur wherever suitable floral resources are present, with scrub vegetation on Fiesta Island and in the South Shores area providing the greatest abundance of resources. Nest sites are primarily located underground in abandoned holes made by ground squirrels, mice, and rats, but may be aboveground in abandoned bird nests or empty cavities (Osborne et al. 2008; Williams et al. 2014). CBB could nest wherever suitable nesting substrates exist throughout the Program area, although nest sites are most likely to occur where forging resources are nearby.

3.6.30 Salt Marsh Skipper (*Panoquina errans*)

Salt marsh skipper (*Panoquina errans*) is an MSCP-Covered Species. It is a species of butterfly that occurs in coastal marshes and bluffs from Santa Barbara County to Baja California (Greer 2014). Saltgrass is used as the larval host plant and alkali heath is believed to be a likely food source (Greer 2014; Wells et al. 1983); this species is also commonly associated with pickleweed.

Salt marsh skipper was not observed during biological surveys. However, the San Diego River supports one of the known populations in San Diego County and this species has been observed elsewhere within the Program area, including on Fiesta Island, on Enchanted Isle, and at the Kendall-Frost Reserve (City of San Diego 2023; iNaturalist 2025; San Diego Management and Monitoring Program 2025c). Within the Program area, this species has a **high** potential to occur in saltmarsh habitat where saltgrass is present.

3.6.31 Monarch Butterfly (*Danaus plexippus*)

Monarch butterfly (*Danaus plexippus*) is proposed for listing as federally threatened. Distribution of monarch butterflies in the breeding season is determined by availability of its larval host plant, milkweed (*Asclepias* spp.). Overwintering sites in California are associated with wind-protected groves of large trees (primarily eucalyptus or pine) with nectar and water sources nearby, generally near the coast.

Monarch was not observed during biological surveys conducted in the BSA and milkweed, the larval host plant for this species, was not detected during surveys in the Program area. The species was observed during surveys conducted for the Final Program EIR Report for the De Anza Natural Amendment to the Mission Bay Park Master Plan (City of San Diego 2023) and there are many records of this species from the Program area (iNaturalist 2025). Suitable roost trees, such as eucalyptus, are present in the Program area. However, within the proposed component boundaries, these trees do not provide the microhabitat conditions suitable for overwintering monarch (i.e., surrounding windbreak trees to shelter roost trees) and no known overwintering roost sites have been documented within the study area (Pelton et al. 2016; Xerces Society 2017; CDFW 2024). Monarch has a **high** potential to occur as a migrant in the Program area, a low potential to overwinter within the BSA (primarily in De Anza area where tree cover is highest), but is not expected to overwinter within the proposed component areas due to lack of suitable roost site.

3.6.32 Fisheries and Marine Mammals

Mission Bay is designated as EFH for groundfish and coastal pelagic species in the Pacific Coast Groundfish Fishery Management Plan and Coastal Pelagic Species Fisheries Management Plan (NOAA 2025a; PFMC 2024a, 2024b). Mission Bay is also designated as a Habitat Area of Particular Concern (HAPC), which is a subset of EFH, as it is an estuary.

The project overlaps with beach habitat that may function as grunion (*Leuresthes tenuis*) spawning habitat. The California grunion is part of a recreational fishery. They inhabit nearshore waters from the surf to a depth of 60 feet. Spawning occurs from March through August. Eggs are deposited during the highest tides of the month and incubate in the sand during the lower tides. Grunion hatch approximately 10 days later, during the next high tide series, when they are inundated with sea water and agitated by rising surf (CDFW 2025b). Grunion are a vulnerable species and are subject to loss of spawning habitat caused by beach erosion, harbor construction, and pollution. Recent data have shown that the abundance of grunion has declined over the past decade (CDFW 2025b). Due to concerns over the health and long-term sustainability of this fishery, regulatory changes established a bag and possession limit of 30 grunion for recreational fishers and closed the month of June to take of grunion, shortening the open season by 1 month, from July 1 through March 31, for recreational fishing (CFGC 2025). Grunion have a **high** potential to occur in open water and to spawn within beach habitat below the HTL in the BSA.

In addition, three federally protected marine mammal species are known to occur in Mission Bay: common bottlenose dolphin (*Tursiops truncatus*), Pacific harbor seal (*Phoca vitulina*), and California sea lion (*Zalophus californianus*). These marine mammals are protected under the Marine Mammal Protection Act and are present year-round in Mission Bay. Mission Bay does not overlap with any Cetacean Biologically Important Areas (NOAA 2025b). There are no haul-out sites (nonbreeding, moulting, and breeding groups) for pinnipeds or areas of biological significance for cetaceans for these or other marine mammals within the Program area or vicinity, although they have a **high** potential to occur as occasional transients within marine open water areas in the BSA.

3.7 Jurisdictional Aquatic Resources

Results of the aquatic resources delineation are reported below and organized by each jurisdictional authority. Based on the planning-level approach and due to the size of the BSA, not all potentially jurisdictional aquatic resources may have been identified, particularly outside of the Program component areas, as described in Section 2.2.3. An Aquatic Resources Delineation Report was prepared for the Program component areas and is included as Appendix C (Dudek and Schaefer Ecological Solutions 2025).

3.7.1 U.S. Army Corps of Engineers

The BSA includes aquatic resources that are anticipated to be regulated by the USACE, including non-wetland waters and wetlands. Potentially jurisdictional aquatic resources mapped within the BSA are shown on Figures 44A–44L, Potential Jurisdictional Waters of the U.S. and State, and Table 3-6 provides a summary of these resources under the jurisdiction of USACE.

Table 3-6. Potentially USACE Jurisdictional Aquatic Resources Within the BSA

Type	Vegetation Communities and Land Cover Type	Acres	Total
Non-Wetland Waters	Beach	120.19	2,274.66
	Disturbed Coastal and Valley Freshwater Marsh	0.85	
	Disturbed Habitat	<0.01	
	Disturbed Southern Willow Scrub	3.34	
	Disturbed Wetland (Arundo)	0.03	

Table 3-6. Potentially USACE Jurisdictional Aquatic Resources Within the BSA

Type	Vegetation Communities and Land Cover Type	Acres	Total
	Disturbed Wetland (Concrete-Lined Channel)	0.76	
	Non-Native Riparian	0.25	
	Open Water	2,103.40	
	Shallow Bay	12.01	
	Subtidal	32.81	
	Unvegetated Habitat	0.68	
	Urban/Developed	0.32	
Wetlands	Coastal and Valley Freshwater Marsh	0.02	186.85
	Coastal Brackish Marsh	12.54	
	Disturbed Coastal and Valley Freshwater Marsh	0.30	
	Intertidal Estuary	14.10	
	Non-native Riparian	0.81	
	Saltpan/Mudflats	45.91	
	Southern Coastal Salt Marsh	110.82	
	Tidal Channel	2.35	
		Total	**2,461.51**

Note: BSA = biological survey area.

Mission Bay is a tidally influenced body of water with a direct connection to the Pacific Ocean. Upper Mission Bay is also considered a traditional navigable water. Therefore, all of Mission Bay and the San Diego River in the BSA is subject to the regulatory authority of USACE up to the mean high watermark under Section 10 of the Rivers and Harbors Act, and up to the HTL under Section 404 of the CWA. Three-parameter wetlands within and adjacent to Mission Bay, including saltpan/mudflats and coastal salt marshes of the Kendall-Frost Reserve/Northern Wildlife Preserve and coastal salt marsh at the mouth of Tecolote Creek, are all anticipated to be regulated by the USACE due to their direct surface connection to Mission Bay. Cudahy Creek, Rose Creek, San Diego River, Tecolote Creek, and an unnamed stormwater control feature along the western boundary of the Mission Bay Tennis Center, Athletic Fields, and Golf Course are all considered relatively permanent tributaries to Mission Bay based on elevation and the presence of hydrophytic/riparian vegetation. Therefore, these non-wetland waters are anticipated to be regulated by the USACE up to the ordinary high water mark. Three-parameter wetlands within these features are also anticipated to be regulated by the USACE as adjacent wetlands.

Three isolated wetland features on Fiesta Island and one isolated pond feature on Vacation Isle lack a surface connection to Mission Bay or other water of the United States and are therefore not anticipated to be regulated by the USACE.

3.7.2 Regional Water Quality Control Board

All of the previously described USACE-jurisdictional waters of the United States have also been identified as waters of the state. In addition, the RWQCB asserts jurisdiction over isolated surface waters under the Porter–Cologne Water Quality Control Act and any artificial wetland that "resulted from historic human activity, is not subject to

ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape" (SWRCB 2021). Therefore, isolated features not regulated by the USACE are anticipated to be regulated by the RWQCB. Potentially jurisdictional aquatic resources mapped within the BSA are shown on Figures 44A–44L, and Table 3-7 provides a summary of these resources under the jurisdiction of RWQCB.

Table 3-7. Potentially RWQCB Jurisdictional Aquatic Resources Within the BSA

Type	Vegetation Communities and Land Cover Type	Acres	Total
Non-Wetland Waters	Beach	120.19	2,274.66
	Disturbed Coastal and Valley Freshwater Marsh	0.85	
	Disturbed Habitat	<0.01	
	Disturbed Southern Willow Scrub	3.34	
	Disturbed Wetland (Arundo)	0.03	
	Disturbed Wetland (Concrete-Lined Channel)	0.76	
	Non-Native Riparian	0.25	
	Open Water	2,103.40	
	Shallow Bay	12.01	
	Subtidal	32.81	
	Unvegetated Habitat	0.68	
	Urban/Developed	0.32	
Wetlands	Coastal and Valley Freshwater Marsh	0.02	187.22
	Coastal Brackish Marsh	12.54	
	Disturbed Coastal and Valley Freshwater Marsh	0.30	
	Disturbed Southern Coastal Salt Marsh	0.37	
	Intertidal Estuary	14.10	
	Non-native Riparian	0.81	
	Saltpan/Mudflats	45.91	
	Southern Coastal Salt Marsh	110.82	
	Tidal Channel	2.35	
		Total	**2,461.88**

Notes: RWQCB = Regional Water Quality Control Board; BSA = biological survey area.
Totals may not sum precisely due to rounding.

In addition to the USACE-jurisdictional resources described in Section 3.7.1, three isolated features are anticipated to be regulated by the RWQCB. Three three-parameter wetlands occur within Fiesta Island, supporting disturbed southern coastal salt marsh. Portions of these features are barren of vegetation.

3.7.3 California Department of Fish and Wildlife

There are CDFW jurisdictional areas within the BSA, including streambed, and non-tidal wetlands and riparian habitat within or adjacent to a streambed. Tidally influenced features and wetlands not associated with a lake or streambed are excluded from CDFW jurisdiction by regulation. Within the BSA, the extent of CDFW jurisdiction where streambeds enter Mission Bay were preliminarily determined by Dudek staff using distinct road crossing as reasonable approximations of likely CDFW jurisdiction (Rose Creek upstream of Garnet Avenue, Tecolote Creek upstream and including I-5, and the San Diego River upstream and including Sunset Cliffs Boulevard). Future consultation with CDFW staff will be required to determine the exact limits of CDFW jurisdiction in these areas,

taking into consideration riverine and tidal hydrology. Potentially jurisdictional aquatic resources mapped within the BSA are shown on Figures 44A–44L, and Table 3-8 provides a summary of these resources under the jurisdiction of CDFW.

Table 3-8. Potentially CDFW Jurisdictional Aquatic Resources Within the BSA

Type	Vegetation Communities and Land Cover Type	Acres	Total
Wetland	Coastal and Valley Freshwater Marsh	0.01	81.02
	Coastal Brackish Marsh	12.54	
	Disturbed Coastal and Valley Freshwater Marsh	0.01	
	Intertidal Estuary	1.66	
	Saltpan/Mudflats	0.02	
	Southern Coastal Salt Marsh	66.78	
Riparian	Disturbed Southern Willow Scrub	0.46	1.95
	Non-native Riparian	1.49	
Streambed	Coastal and Valley Freshwater Marsh	0.01	91.88
	Disturbed Coastal and Valley Freshwater Marsh	1.15	
	Disturbed Southern Willow Scrub	2.34	
	Disturbed Wetland (Arundo)	0.03	
	Disturbed Wetland (Concrete-Lined Channel)	0.76	
	Non-Native Riparian	0.66	
	Open Water	86.92	
		Total	**174.85**

Note: CDFW = California Department of Fish and Wildlife; BSA = biological survey area.

CDFW jurisdictional areas within the BSA include the Rose Creek streambed and associated riparian and wetlands area north of Garnet Avenue, the Tecolote Creek streambed east of I-5, the San Diego River streambed and associated riparian and wetland areas east of Sunset Cliffs Boulevard, and a constructed ditch along the eastern boundary of the Mission Bay Tennis Center, Athletic Fields, and Golf Course.

3.7.4 California Coastal Commission

Vegetation communities and land cover types classified as wetlands in Table 3-2 are regulated by the City as wetlands, within the COZ. The COZ encompasses the entirety of the BSA, except for the northern portion of Rose Creek. CCC jurisdictional resources are identified in Figures 44A–44L and listed in Table 3-9. These areas may constitute environmentally sensitive habitat areas (ESHA), as defined by CCC. A determination of ESHA status would be made by CCC staff during the Coastal Development Permit review process.

Table 3-9. Potentially CCC Jurisdictional Aquatic Resources Within the BSA

Vegetation Communities and Land Cover Type	Acres
Beach	120.19
Coastal Brackish Marsh	12.54
Disturbed Coastal and Valley Freshwater Marsh	0.42
Disturbed Habitat	<0.01
Disturbed Southern Coastal Salt Marsh	0.37
Disturbed Southern Willow Scrub	1.57
Disturbed Wetland (Arundo)	0.03
Intertidal Estuary	14.10
Non-Native Riparian	0.81
Open Water	2,104.24
Saltpan/Mudflats	45.91
Shallow Bay	12.01
Southern Coastal Salt Marsh	110.95
Subtidal	32.81
Tidal Channel	2.35
Unvegetated Habitat	0.68
Urban/Developed	0.32
Total	**2,459.31**

Note: CCC = California Coastal Commission; BSA = biological survey area.

3.7.5 City of San Diego

Vegetation communities and land cover types classified as wetlands in Table 3-2 are regulated by the City as wetlands. Open water associated with the Model Yacht Pond is not defined as a City wetland as it was constructed for recreation purposes within a developed portion of Mission Bay and is not anticipated to be delineated as a wetland by the USACE or CDFW. The City of San Diego's jurisdiction is identified on Figures 44A–44L and in Table 3-10.

Table 3-10. Potentially City Jurisdictional Aquatic Resources Within the BSA

Vegetation Communities and Land Cover Type	Acres
Beach	120.19
Coastal and Valley Freshwater Marsh	0.02
Coastal Brackish Marsh	12.54
Disturbed Coastal and Valley Freshwater Marsh	1.16
Disturbed Habitat	<0.01
Disturbed Southern Coastal Salt Marsh	0.37
Disturbed Southern Willow Scrub	4.17
Disturbed Wetland (Arundo)	0.03
Disturbed Wetland (Concrete-Lined Channel)	0.76
Intertidal Estuary	14.10
Non-native riparian	2.16

Table 3-10. Potentially City Jurisdictional Aquatic Resources Within the BSA

Vegetation Communities and Land Cover Type	Acres
Open Water	2,104.24
Saltpan/Mudflats	45.91
Shallow Bay	12.01
Southern Coastal Salt Marsh	110.95
Subtidal	32.81
Tidal Channel	2.35
Unvegetated Channel	0.68
Urban/Developed	0.32
Total	2,464.77

Note: BSA = biological survey area.

3.8 Wildlife Corridors, Habitat Linkages, and Nursery Sites

Wildlife movement corridors, also called dispersal corridors or landscape linkages, are linear features whose primary wildlife function is to connect at least two significant habitat areas (Beier and Loe 1992). Typically, a wildlife corridor refers to a specific route that is used for movement and migration of species. A corridor may be different from a "linkage" because it represents a smaller or narrower avenue for movement. "Linkage" typically refers to an area of land (which may include multiple corridors) that supports or contributes to the long-term movement of wildlife and genetic material between separate core habitat areas. A linkage is a habitat area that provides connectivity between habitat patches, and year-round foraging, reproduction, and dispersal habitat for resident plants and animals.

Wildlife corridors and linkages are important features in the landscape, and the viability and quality of a corridor or linkage are dependent on site-specific factors. Topography and vegetative cover are important factors for corridors and linkages and should provide cover for both predator and prey species. Wildlife corridors and linkages should direct animals to areas of contiguous open space or resources and away from humans and development. The corridor or linkage should be buffered from human encroachment and other disturbances (e.g., light, loud noises, domestic animals) associated with developed areas that have caused habitat fragmentation (Schweiger et al. 2000). Wildlife corridors and linkages may function at various levels depending on these factors and, as such, the most successful of wildlife corridors and linkages accommodate all or most of the necessary life requirements of predator and prey species.

Width and connectivity are assumed to be the primary factors of a "good" corridor (Forman 1987); "stepping stone reserves" for pollinators, seed dispersers, and other flying species such as birds, bats, and insects should also be included as "good" factors (Soulé 2003). The level of connectivity needed to maintain a population of a particular species will vary with the demography of the population, including population size, survival and birth rates, and genetic factors such as the level of inbreeding and genetic variance (Rosenberg et al. 1997). Areas not considered functional wildlife dispersal corridors or linkages are typically obstructed or isolated by concentrated development and heavily traveled roads, known as "chokepoints." One of the worst scenarios for dispersing wildlife occurs when a large block of habitat leads animals into "culs-de-sac" of habitat surrounded by development. These habitat culs-de-sac frequently result in adverse human/animal interface.

In an urban context, a wildlife migration corridor is generally a linear landscape feature of sufficient width and buffer to allow wildlife movement between two patches of comparatively undisturbed habitat, or between a patch of habitat and some vital resources. Regional corridors are defined as those linking two or more large patches of habitat, and local corridors are defined as those allowing resident animals to access critical resources (food, cover, and water) in a smaller area that might otherwise be isolated by urban development.

The County MSCP identified biological core and linkage areas at the County-scale. The nearest identified biological core area to the BSA is in Rose Creek and San Clemente Creek canyons approximately two miles northeast of the BSA. A linkage is also identified in the San Diego River, including the eastern portion of the San Diego River within the BSA, and several portions of Mission Bay including the Kendall-Frost Reserve/Northern Wildlife Preserve, northern and southern portions of Fiesta Island, Mariner's Point and Mission Point. The MHPA of the MSCP SAP was designed to capture key biological core and linkage areas within San Diego. The City's MHPA includes a portion of the BSA. To maintain compliance with the MSCP SAP, the City of San Diego's Land Use Adjacency Guidelines (City of San Diego 1997) will be implemented during subsequent Program component entitlements within the BSA and is discussed further in Section 4 of this report. Section 4 also describes Program consistency and implementation of MSCP SAP policies, directives, and guidelines that discuss potential impacts to and protection of wildlife corridors and linkages identified by the MSCP SAP.

The BSA provides an important migratory stopover point for avian species migrating along the coast. The western extent of the BSA occurs along the Pacific coast, and is part of the Pacific flyway, a migratory flight path for avian species in spring and in fall. Migratory stopover points, such as Mission Bay, the San Diego River, and the beaches along the coast of the BSA, provide food sources for wildlife who are traveling to breeding grounds or to overwintering sites. While the BSA is surrounded by development on the north, east, and south, migrating and wintering birds are dependent on the beaches, river, and marshland for roosting sites, foraging grounds, and refugia. Due to the linear aspect of the Pacific coastline and its connection to the waters of Mission Bay, including marshland, mudflats, and land-based roosting sites, the BSA does serve as an important regional or local migration corridor for wildlife movement.

Wildlife nursery sites are areas that are critical to reproduction of wildlife species, including areas where nests, maternity roosts, dens, or other breeding activities regularly occur. In this context, Mission Bay is designated as EFH for groundfish and coastal pelagic species in the Pacific Coast Groundfish Fishery Management Plan and Coastal Pelagic Species Fisheries Management Plan (NOAA 2025; PFMC 2024a, 2024b). Mission Bay is also designated as a Habitat Area of Particular Concern (HAPC), which is a subset of EFH, as it is an estuary. As described in Section 3.6, the BSA does not support marine mammal haul-out sites where breeding may occur and has a low potential to support monarch overwintering, but likely supports nursery functions for other sensitive species associated with intertidal habitats within larger tidal marsh areas (i.e., Kendall-Frost Reserve/Northern Wildlife Preserve and San Diego River).

The project overlaps with beach habitat that may function as grunion (*Leuresthes tenuis*) spawning habitat. The California grunion is part of a recreational fishery and spawning habitat is considered a nursery site. California grunion inhabit nearshore waters from the surf to a depth of 60 feet. Spawning occurs from March through August. Eggs are deposited during the highest tides of the month and incubate in the sand during the lower tides. Grunion hatch approximately 10 days later, during the next high tide series, when they are inundated with sea water and agitated by rising surf (CDFW 2025b). Grunion are a vulnerable species and are subject to loss of spawning habitat caused by beach erosion, harbor construction, and pollution. Recent data have shown that the abundance of grunion has declined over the past decade (CDFW 2025b). Grunion spawning has a **high** potential to occur within beach habitat below the HTL in the BSA.

4 Multiple Species Conservation Program Subarea Plan Consistency

The following Program components are located within or adjacent to the MHPA as delineated by the MSCP SAP (Figures 2–31):

- Wetland and Water Quality Improvements
  - North Fiesta Island – within the MHPA
  - Tecolote Creek and Fiesta Island Causeway – partially within the MHPA
  - North Fiesta Island Stockpile Option 1 – adjacent to the MHPA
- Upland Habitat and Preserve Expansion
  - Fiesta Island Site No. 2 North Central – adjacent to the MHPA
  - Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area – within the MHPA
  - Sea World Drive/San Diego River Site No. 5a Cloverleaf Area – within the MHPA
- Sea World Drive/San Diego River Site 5b Triangle Restoration Area – within the MHPA
- Bicycle and Pedestrian Improvements
  - Fiesta Island Causeway – adjacent to the MHPA
  - Rose Creek Bike Path – within and adjacent to MHPA
  - Ocean Beach Bike Path – within and adjacent to MHPA

The Program has been designed to be consistent with the MSCP SAP's general management directives and specific management policies and directives for the Urban Area and Appendix A of the Subarea Plan (1997). The proposed study area is located within the Urban areas of the MSCP SAP. The Urban habitat areas within the MHPA include existing designated open space such as Mission Bay, Tecolote Canyon, Marian Bear Memorial Park, Rose Canyon, San Diego River, the southern slopes along Mission Valley, Carroll and Rattlesnake Canyons, Florida Canyon, Chollas Creek, and a variety of smaller canyon systems.

The sections below provide an overview of conformance with applicable MSCP SAP general management directives, Area-Specific Management Directives, planning policies and design guidelines, land use adjacency guidelines, conformance with the Mission Bay Park Master Plan (City of San Diego 2021b) and Mission Bay Park Natural Resource Management Plan (City of San Diego 1990), and MSCP SAP conditions of coverage for covered species with moderate to high potential to occur within the Program area.

4.1 General Planning Policies and Design Guidelines

Programmatic conformance with MSCP SAP Section 1.4.2 is provided in Table 4-1.

Table 4-1. Consistency with MSCP SAP General Planning and Policies Section 1.4.2

MSCP SAP Text	Program Component Applicability	Implementation
Roads and Utilities		
All proposed utility lines (e.g., sewer, water, etc.) should be designed to avoid or minimize intrusion into the MHPA. These facilities should be routed through developed or developing areas rather than the MHPA, where possible. If no other routing is feasible, then the lines should follow previously existing roads, easements, rights-of-way and disturbed areas, minimizing habitat fragmentation.		No new utility infrastructure is proposed as part of any Program component within or adjacent to the MHPA. Program components are designed to follow existing developed and disturbed areas to the maximum extent practicable to avoid intrusion into the MHPA or sensitive habitats, where feasible. As individual subsequent Program components are implemented, site-specific analysis of project -specific details, such as upgrades to existing storm drain outfalls and electrical routing for lighting would be designed to avoid and minimize intrusion into the MHPA. Compliance with the MSCP SAP, the San Diego RWQCB Municipal Permit, the City's Stormwater Standards Manual (City of San Diego 2024c), NPDES regulations, and measures **EP-BIO-1, EP-LU-1, EP-WQ-1, and MM-BIO-3** would be demonstrated during subsequent component implementation to avoid any unauthorized intrusion and to reduce direct and indirect impacts to MHPA habitats. Therefore, the Program is consistent with this guideline; additionally, as future projects are reviewed during subsequent environmental analysis, consistency with each applicable MSCP SAP policy and guideline will be demonstrated prior to project approval.
All new development for utilities and facilities within or crossing the MHPA shall be planned, designed, located and constructed to minimize environmental impacts. All such activities must avoid disturbing the habitat of MSCP Covered Species and wetlands. If avoidance is infeasible, mitigation will be required.	▪ North Fiesta Island Wetland ▪ Tecolote Creek and Fiesta Island Causeway ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve ▪ Sea World Drive/San Diego River Site No. 5a Cloverleaf	The Program proposes limited public recreation and drainage facilities within or adjacent to the MHPA. Potential direct impacts to covered species, sensitive habitat and wetlands are avoided or minimized through component siting within existing disturbed and low functioning habitat areas and by limiting proposed infrastructure within or adjacent to the MHPA. The siting of component improvements were identified in the

Table 4-1. Consistency with MSCP SAP General Planning and Policies Section 1.4.2

MSCP SAP Text	Program Component Applicability	Implementation
	▪ Sea World Drive/San Diego River Site 5b Triangle ▪ Rose Creek Bike Path ▪ Ocean Beach Bike Path ▪ Fiesta Island Causeway	MBPMP and NRMP and has been confirmed through coordination with resource agencies as the locations in Mission Bay where restoration is most appropriate (e.g., where CLT nesting is marginal and requires extensive management, where tidal circulation is impaired reducing habitat function). Compliance with the MSCP SAP, the San Diego RWQCB Municipal Permit, the City's Stormwater Standards Manual (City of San Diego 2024c), NPDES regulations, and measures **EP-BIO-1, EP-LU-1, EP-WQ-1, and MM-BIO-3** would be implemented to avoid any unauthorized intrusion and to reduce direct and indirect impacts to MHPA habitats. Therefore, the Program is consistent with this guideline; additionally, as future projects are reviewed during subsequent environmental analysis, consistency with each applicable MSCP SAP policy and guideline will be demonstrated prior to project approval.
Temporary construction areas and roads, staging areas, or permanent access roads must not disturb existing habitat unless determined to be unavoidable. All such activities must occur on existing agricultural lands or in other disturbed areas rather than in habitat. If temporary habitat disturbance is unavoidable, then restoration of, and/or mitigation for, the disturbed area after component completion will be required.	▪ North Fiesta Island Wetland ▪ Tecolote Creek and Fiesta Island Causeway ▪ North Fiesta Island Stockpile Option 1 ▪ Fiesta Island Site No. 2 North Central ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve ▪ Sea World Drive/San Diego River Site No. 5a Cloverleaf ▪ Sea World Drive/San Diego River Site 5b Triangle ▪ Rose Creek Bike Path ▪ Ocean Beach Bike Path ▪ Fiesta Island Causeway	No areas of the MHPA are proposed solely for the purpose of temporary construction or staging. The proposed temporary stockpile option 1 is located adjacent to the MHPA on North Fiesta Island. All proposed components involve temporary construction, but impacts are unavoidable to achieve proposed habitat restoration or improvements to existing infrastructure (outfalls and bike paths). A permanent access road is proposed at the CLT Preserve to provide limited maintenance access but has been conceptually designed in coordination with the regulatory agencies and is an unavoidable impact. Final designs will be subject to resource verification and analysis to ensure conformance with this finding (**EP-BIO-1**). All proposed temporary habitat disturbance will be followed by habitat restoration through implementation of **EP-BIO-3** except for specific, limited utility and access areas. Through implementation of these policies, these projects will be consistent with the MSCP SAP. By requiring subsequent program components to include an MSCP SAP consistency analysis in the

Table 4-1. Consistency with MSCP SAP General Planning and Policies Section 1.4.2

MSCP SAP Text	Program Component Applicability	Implementation
		biological resources report, the Mission Bay Park Improvement Program itself, as a programmatic document that guides project analyses, is consistent with the MSCP SAP.
Construction and maintenance activities in wildlife corridors must avoid significant disruption of corridor usage. Environmental documents and mitigation monitoring and reporting programs covering such development must clearly specify how this will be achieved, and construction plans must contain all the pertinent information and be readily available to crews in the field. Training of construction crews and field workers must be conducted to ensure that all conditions are met. A responsible party must be specified.	▪ North Fiesta Island Wetland ▪ Tecolote Creek and Fiesta Island Causeway ▪ North Fiesta Island Stockpile Option 1 ▪ Fiesta Island Site No. 2 North Central ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve ▪ Sea World Drive/San Diego River Site No. 5a Cloverleaf ▪ Sea World Drive/San Diego River Site 5b Triangle ▪ Rose Creek Bike Path ▪ Ocean Beach Bike Path ▪ Fiesta Island Causeway	Required compliance with the established development standards contained in the City's ESL Regulations, Biology Guidelines, MSCP SAP, and VPHCP would reduce potential impacts during construction. Construction activities will be conducted in accordance with current City standards regarding biological resources protection including displaying the MHPA on construction plans, environmental awareness training, and monitoring. Specifically, these resource protection measures will be conducted through implementation of MM-BIO-3. Through implementation of these policies, these projects will be consistent with the MSCP SAP. By requiring subsequent program components to include an MSCP SAP consistency analysis in the biological resources report, the Mission Bay Park Improvement Program itself, as a programmatic document that guides project analyses, is consistent with the MSCP SAP.
Roads in the MHPA will be limited to those identified in Community Plan Circulation Elements, collector streets essential for area circulation, and necessary maintenance/emergency access roads. Local streets should not cross the MHPA except where needed to access isolated development areas.	▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve	North Fiesta Island includes a new maintenance access road that is required to ensure management of the restored CLT Preserve and restored wetlands and will not be available for public use. Emergency access improvements associated with Mission Bay Boardwalk are located outside of the MHPA. The road locations and design have been developed in coordination with the regulatory agencies to avoid and minimize impacts to the MHPA to the extent feasible. Final designs will be subject to resource verification and analysis to ensure conformance with this finding (EP-BIO-1). Through implementation of this policy, this project will be consistent with the MSCP SAP. By requiring subsequent program components to include an MSCP SAP consistency analysis in the biological resources report, the Mission Bay Park

Table 4-1. Consistency with MSCP SAP General Planning and Policies Section 1.4.2

MSCP SAP Text	Program Component Applicability	Implementation
		Improvement Program itself, as a programmatic document that guides project analyses, is consistent with the MSCP SAP.
Development of roads in canyon bottoms should be avoided whenever feasible. If an alternative location outside the MHPA is not feasible, then the road must be designed to cross the shortest length possible of the MHPA in order to minimize impacts and fragmentation of sensitive species and habitat. If roads cross the MHPA, they should provide for fully functional wildlife movement capability. Bridges are the preferred method of providing for movement, although culverts in selected locations may be acceptable. Fencing, grading and plant cover should be provided where needed to protect and shield animals, and guide them away from roads to appropriate crossings.	▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve	A single road is proposed at North Fiesta Island that is situated in uplands, not within a canyon bottom, adjacent to the CLT preserve and restored wetlands, with a bridge over the new tidal exchange channel. The road is designed for highly limited and restricted use by authorized site managers or researchers only to minimize disturbance to wildlife. The use of bridges instead of culverts ensure wildlife movement within the tidal exchange channel is not restricted; however, culverts may alternatively be used. Based on the location of the road and its limited use, the road would not fragment species or habitat. Habitat restoration adjacent to the road will promote wildlife use and guide unobstructed movement across the road. Final designs will be subject to resource verification and analysis to ensure conformance with this finding **(EP-BIO-1)**. Through implementation of these policies, this project will be consistent with the MSCP SAP. By requiring subsequent program components to include an MSCP SAP consistency analysis in the biological resources report, the Mission Bay Park Improvement Program itself, as a programmatic document that guides project analyses, is consistent with the MSCP SAP.
Where possible, roads within the MHPA should be narrowed from existing design standards to minimize habitat fragmentation and disruption of wildlife movement and breeding areas. Roads must be located in lower quality habitat or disturbed areas to the extent possible.	▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve	The proposed road at North Fiesta Island has been designed based on the minimum safe width for the limited types of vehicular access needed for required CLT and wetlands maintenance and management. Final designs will be subject to resource verification and analysis to ensure conformance with this finding **(EP-BIO-1)**. Through implementation of this policy, this project will be consistent with the MSCP SAP. By requiring subsequent program components to include an MSCP SAP consistency analysis in the biological resources report, the Mission Bay Park Improvement Program itself, as a programmatic document that guides project analyses, is consistent with the MSCP SAP.

Table 4-1. Consistency with MSCP SAP General Planning and Policies Section 1.4.2

MSCP SAP Text	Program Component Applicability	Implementation
For the most part, existing roads and utility lines are considered a compatible use within the MHPA and therefore will be maintained. Exceptions may occur where underutilized or duplicative road systems are determined not to be necessary as identified in the Framework Management.	▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve	The Program does not propose duplicative road systems in the MHPA. Existing utility lines within the MHPA will continue to be maintained. The extent of Fiesta Island Road that borders North Fiesta Island within the MHPA is proposed to be demolished to facilitate creation of the CLT Preserve and North Fiesta Island Wetlands. A limited maintenance access road is proposed within the CLT Preserve for maintenance of the restored areas that will be closed to public access. Fiesta Island Road would be realigned south of the restored habitat areas to reconnect with the existing alignment. These changes are expected to be compatible uses. Subsequent final designs will be subject to resource verification and analysis to ensure conformance with this finding (EP-BIO-1). In addition, as future projects are reviewed during subsequent environmental analysis, consistency with each MSCP policy will be demonstrated prior to project approval.
Fencing, Lighting, and Storage		
Fencing or other barriers will be used where it is determined to be the best method to achieve conservation goals and adjacent to land uses incompatible with the MHPA. For example, use chain link or cattle wire to direct wildlife to appropriate corridor crossings, natural rocks/boulders or split rail fencing to direct public access to appropriate locations, and chain link to provide added protection of certain sensitive species or habitats (e.g., vernal pools).	▪ North Fiesta Island Wetland ▪ Tecolote Creek and Fiesta Island Causeway ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve ▪ Sea World Drive/San Diego River Site No. 5a Cloverleaf ▪ Rose Creek Bike Path	Habitat protection fencing is proposed at the CLT Preserve, North Fiesta Island and Tecolote Creek and will be temporary during the habitat establishment period to the extent feasible (i.e., long-term human encroachment risk is low). Replacement fencing is proposed along the Rose Creek Bikeway and would be more protective of habitat. Existing perimeter fencing will be retained at Site No. 5a while the centerline fence, which acts as a barrier, will be removed. Final designs will be subject to resource verification and analysis to ensure conformance with this finding (EP-BIO-1). Through implementation of these policies, these projects will be consistent with the MSCP SAP. By requiring subsequent program components to include an MSCP SAP consistency analysis in the biological resources report, the Mission Bay Park Improvement Program itself, as a programmatic document that guides project analyses, is consistent with the MSCP SAP.

Table 4-1. Consistency with MSCP SAP General Planning and Policies Section 1.4.2

MSCP SAP Text	Program Component Applicability	Implementation
Lighting shall be designed to avoid intrusion into the MHPA and effects on wildlife. Lighting in areas of wildlife crossings should be of low sodium or similar lighting. Signage will be limited to access and litter control and educational purposes.	▪ Rose Creek Bike Path	Proposed lighting within the MHPA is proposed only as part of the Rose Creek Bikeway Program component and would be designed to be shielded and facing downcast or utilizing other methods to avoid lighting intrusion into habitat within Rose Creek. Subsequent program component implementation proposing new lighting within or adjacent to the MHPA would implement **EP-BIO-4** and **EP-LU-1** to avoid and minimize potential impacts to the MHPA. Signage within the MHPA is limited to access, litter control, and educational purposes in accordance with the signage improvements identified in the Program and within the MBPMP. Through implementation of these policies, this project will be consistent with the MSCP SAP. By requiring subsequent program components to include an MSCP SAP consistency analysis in the biological resources report, the Mission Bay Park Improvement Program itself, as a programmatic document that guides project analyses, is consistent with the MSCP SAP.
Materials Storage		
Prohibit storage of materials (e.g., hazardous or toxic chemicals, equipment, etc.) within the MHPA and ensure appropriate storage per applicable regulations in any areas that may impact the MHPA, especially due to potential leakage.	Fiesta Island Stockpiling Option 1	No permanent materials storages is proposed within the MHPA. However, temporary stockpiling is proposed as part of the Fiesta Island Stockpiling Option 1, adjacent to the MHPA. As subsequent program components implement **EP-BIO-1** the MHPA shall be displayed on all subsequent project-specific construction plans, along with staging and construction areas to ensure avoidance of the MHPA and this requirement is incorporated as **EP-BIO-2**. Additionally, no potentially hazardous excavated material will be stockpiled on Fiesta Island or adjacent to the MHPA. If excavated soil is believed to be contaminated, procedures outlined in the Hazardous Substance Abatement Plan (Appendix Q of the PEIR) shall be implemented, as required by **EP-SW-1**. Through implementation of these policies, this component will be consistent with the MSCP SAP. By requiring subsequent program components to include an MSCP SAP consistency analysis in the biological

Table 4-1. Consistency with MSCP SAP General Planning and Policies Section 1.4.2

MSCP SAP Text	Program Component Applicability	Implementation
		resources report, the Mission Bay Park Improvement Program itself, as a programmatic document that guides project analyses, is consistent with the MSCP SAP
Flood Control		
Flood control should generally be limited to existing agreements with resource agencies unless demonstrated to be needed based on a cost benefit analysis and pursuant to a restoration plan. Floodplains within the MHPA, and upstream from the MHPA if feasible, should remain in a natural condition and configuration in order to allow for the ecological, geological, hydrological, and other natural processes to remain or be restored.	Not applicable	No flood control infrastructure or measure are proposed under the Program. Through subsequent program component implementation, floodplains within the MHPA will be restored to natural conditions and processes. Subsequent program component final design plans will be subject to resource verification and analysis to ensure conformance with this finding **(EP-BIO-1)**. By requiring subsequent program components to include an MSCP SAP consistency analysis in the biological resources report, the Mission Bay Park Improvement Program itself, as a programmatic document that guides project analyses, is consistent with the MSCP SAP
No berming, channelization, or man-made constraints or barriers to creek, tributary, or river flows should be allowed in any floodplain within the MHPA unless reviewed by all appropriate agencies, and adequately mitigated. Review must include impacts to upstream and downstream habitats, flood flow volumes, velocities and configurations, water availability, and changes to the water table level.	Not applicable	The North Fiesta Island wetland component within the MHPA will involve dredging to create tidally influenced channels to restore the area to natural marshland habitat, which will be reviewed and approved by appropriate regulatory agencies prior to construction. The Program does not propose permanent installation of any barrier or constraint to natural flows and is intended to improve water circulation within Mission Bay. Final designs will be subject to resource verification and analysis to ensure conformance with this finding **(EP-BIO-1)**. By requiring subsequent program components to include an MSCP SAP consistency analysis in the biological resources report, the Mission Bay Park Improvement Program itself, as a programmatic document that guides project analyses, is consistent with the MSCP SAP
No riprap, concrete, or other unnatural material shall be used to stabilize river, creek, tributary, and channel banks within the MHPA. River, stream, and channel banks shall be natural, and stabilized where necessary with	▪ North Fiesta Island Wetland ▪ Tecolote Creek and Fiesta Island Causeway ▪ Fiesta Island Site No. 4 California Least	No prohibited materials are proposed as part of Program components for bank stabilization purposes within the MHPA. Bank and other slope stabilization is achieved through appropriately designed grading and habitat restoration. Final designs will be subject to resource

Table 4-1. Consistency with MSCP SAP General Planning and Policies Section 1.4.2

MSCP SAP Text	Program Component Applicability	Implementation
willows and other appropriate native plantings. Rock gabions may be used where necessary to dissipate flows and should incorporate design features to ensure wildlife movement.	Tern (CLT) Preserve Area	verification and analysis to ensure conformance with this finding **(EP-BIO-1)**. By requiring subsequent program components to include an MSCP SAP consistency analysis in the biological resources report, the Mission Bay Park Improvement Program itself, as a programmatic document that guides project analyses, is consistent with the MSCP SAP

Notes: MSCP = Multiple Species Conservation Program; SAP = Subarea Plan; MHPA = Multi-Habitat Planning Area; NPDES = National Pollutant Discharge Elimination System; EP = Environmental Protocol; MM = Mitigation Measure; MBPMP = Mission Bay Park Master Plan; NRMP = Mission Bay Natural Resources Management Plan; CLT = California least tern; RWQCB = Regional Water Quality Control Board.

4.2 Land Use Adjacency Guidelines

The Program components described above within the MHPA would also be adjacent to the MHPA. In addition, the following components are also adjacent to the MHPA:

- Upland habitat and preserve expansion – North Fiesta Island Site No 2 and Sea World Drive/San Diego River Site No. 5c South Shores East
- North Fiesta Island Wetland Stockpile Option 1 – a long-term, but temporary stockpile area intended to store excavated materials from the North Fiesta Island wetland component for intended beneficial re-use, including for the Tecolote Creek and Fiesta Island Causeway and Cudahy Creek components

All of these Program components are designed and will be constructed in a manner that conforms with the MSCP SAP MHPA Land Use Adjacency Guidelines (Table 4-2). Specific implementation of the Land Use Adjacency Guidelines would be assured through conditions of approval within future entitlements for Program components.

Table 4-2. Consistency with MSCP Land Use Adjacency Guidelines Section 1.4.3

MSCP Subarea Plan Text	Program Component Applicability	Implementation
Drainage - All new and proposed parking lots and developed areas in and adjacent to the preserve must not drain directly into the MHPA. All developed and paved areas must prevent the release of toxins, chemicals, petroleum products, exotic plant materials and other elements that might degrade or harm the natural environment or ecosystem processes within the MHPA.	▪ North Fiesta Island Wetland ▪ Tecolote Creek and Fiesta Island Causeway ▪ North Fiesta Island Stockpile Option 1 ▪ Fiesta Island Site No. 2 North Central ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Sea World Drive/San Diego River Site No. 5a Cloverleaf Area	No new parking lots or developed areas (other than limited recreational trails and paths) are proposed adjacent to the MHPA. In addition, at the conclusion of the Program, the expanded marshland habitat would provide a reduction of runoff potential into the preserve. Prior to receiving subsequent Program component entitlements, the MHPA boundary and the limits of ground disturbance would be clearly delineated on the construction documents. Compliance with the MSCP SAP, the San Diego RWQCB Municipal

Table 4-2. Consistency with MSCP Land Use Adjacency Guidelines Section 1.4.3

MSCP Subarea Plan Text	Program Component Applicability	Implementation
	▪ Sea World Drive/San Diego River Site 5b Triangle Restoration Area ▪ Rose Creek Bike Path ▪ Ocean Beach Bike Path ▪ Fiesta Island Causeway	Permit, the City's Stormwater Standards Manual (City of San Diego 2024c), and NPDES regulations and implementation of measures **EP-BIO-1, EP-WQ-1** and **EP-LU-1 and MM-BIO-3** will avoid any unauthorized intrusion and reduce direct and indirect impacts to the MHPA. Therefore, the Program is consistent with this guideline; additionally, as component implementation is reviewed during subsequent environmental analysis, consistency with each applicable MHPA LUAG will be demonstrated prior to project approval.
Toxics – Land uses, such as recreation and agriculture, that use chemicals or generate by-products such as manure, that are potentially toxic or impactive to wildlife, sensitive species, habitat, or water quality need to incorporate measures to reduce impacts caused by the application and/or drainage of such materials into the MHPA.	▪ North Fiesta Island Stockpile Option 1	No permanent land uses are proposed within or adjacent to the MHPA that would introduce chemicals or by-products. North Fiesta Island Stockpile Option 1 is adjacent to the MHPA where excavated material from adjacent component construction may be stored. However, this component as well as all other program components that may involve construction areas proposed for staging, storage of equipment and materials, trash, equipment maintenance, and other construction related activities would be required to be located on previously developed land or disturbed areas and away from the MHPA preserve boundary in compliance with the MSCP SAP, the San Diego RWQCB Municipal Permit, the City's Stormwater Standards Manual (City of San Diego 2024c), NPDES regulations, and implementation of measures **EP-BIO-1, EP-BIO-2, EP-LU-1** and **EP-WQ-1**. Additionally, If excavated soil is believed to be contaminated, procedures outlined in the Hazardous Substance Abatement Plan (Appendix Q of the PEIR) shall be implemented, as required by **EP-SW-1**. Prior to component initiation, through contract bid items specific to the conditions of component implementation, the contractor would be required to prepare and implement certain standards

Table 4-2. Consistency with MSCP Land Use Adjacency Guidelines Section 1.4.3

MSCP Subarea Plan Text	Program Component Applicability	Implementation
		of the City's "Whitebook" that allow the contractor to adequately prepare for encountering hazardous substances throughout the life of the project. The contractor would provide a Community Health and Safety Plan (CHSP) and a Hazardous Substances Management Plan (HSMP) to outline appropriate actions if hazardous substances are encountered. If the material cannot be stockpiled on site, due to the contamination or condition of the material, it would be hauled off the Island to be disposed appropriately. Therefore, the Program is consistent with this guideline; additionally, as component implementation is reviewed during subsequent environmental analysis, consistency with each applicable MHPA LUAG will be demonstrated prior to project approval.
Lighting – Lighting of all developed areas adjacent to the MHPA should be directed away from the MHPA. Where necessary, development should provide adequate shielding with non-invasive plant materials (preferably native), berming, and/or other methods to protect the MHPA and sensitive species from night lighting.	▪ Rose Creek Bike Path ▪ Deferred Maintenance activities adjacent to the MHPA	Subsequent site-specific projects resulting from recommended Program components adjacent or within the MHPA that propose lighting improvements, such as the lighting identified with the Rose Creek Bike Path, would be designed to avoid lighting intrusion into MHPA habitat. Nighttime construction is not expected for any Program component. However, in the event nighttime construction is proposed as part of subsequent program proposals as identified through implementation of **EP-BIO-1**, additional measures would be necessary to ensure nighttime construction activity within undeveloped areas containing or adjacent to sensitive biological resources are minimized whenever feasible. Any new lighting installed as part of the Program would implement **EP-BIO-4** and **EP-LU-1**; therefore, the Program is consistent with this guideline; additionally, as component implementation is reviewed during subsequent environmental analysis, consistency with each applicable MHPA

Table 4-2. Consistency with MSCP Land Use Adjacency Guidelines Section 1.4.3

MSCP Subarea Plan Text	Program Component Applicability	Implementation
		LUAG will be demonstrated prior to project approval.
Noise – Uses in or adjacent to the MHPA should be designed to minimize noise impacts. Berms or walls should be constructed adjacent to commercial areas, recreational areas, and any other use that may introduce noises that could impact or interfere with wildlife utilization of the MHPA. Excessively noisy uses or activities adjacent to breeding areas must incorporate noise reduction measures and be curtailed during the breeding season of sensitive species. Adequate noise reduction measures should also be incorporated for the remainder of the year.	▪ North Fiesta Island Wetland ▪ Tecolote Creek and Fiesta Island Causeway ▪ North Fiesta Island Stockpile Option 1 ▪ Fiesta Island Site No. 2 North Central ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Sea World Drive/San Diego River Site No. 5a Cloverleaf Area ▪ Sea World Drive/San Diego River Site 5b Triangle Restoration Area ▪ Rose Creek Bike Path ▪ Ocean Beach Bike Path ▪ Fiesta Island Causeway	Ambient noise within and adjacent to the MHPA is not expected to increase from Program implementation. Fiesta Island Site No. 2 includes retaining existing recreation trails adjacent to the MHPA. North Fiesta Island Wetland and Fiesta Island Site No. 4 propose limited public access and the installation of natural barriers such as dunes to further shield recreational noise south of the sites. Existing uses will be retained at Rose Creek Bike Path, Ocean Beach Bike Path, and Fiesta Island Causeway and proposed improvements are not expected to increase existing ambient noise levels. Similarly at Sites No. 5a and 5b, habitat restoration activities are not expected to increase existing noise levels. Subsequent program components will implement noise abatement measures, as applicable, to mitigate temporary construction noise impacts within and adjacent to the MHPA. Subsequent projects will demonstrate consistency with and implementation of applicable MSCP SAP and Area-Specific Management Directives for covered and special status species, including CAGN, LBV, CLT, LFRR, BSS, as well as regulatory guidance regarding marine mammals and green sea turtles relating to breeding season avoidance and direct impacts to reduce potential impacts. Further, subsequent Program component implementation would demonstrate compliance with regulations protecting sensitive nesting birds and raptors prior to receiving site-specific entitlements, including conformance with the CFGC and MBTA, and would implement **EP-LU-1, MM-BIO-1, MM-BIO-3, and MM-BIO-8**. Therefore, the Program is consistent with this guideline; additionally, as component implementation is reviewed during subsequent environmental analysis,

Table 4-2. Consistency with MSCP Land Use Adjacency Guidelines Section 1.4.3

MSCP Subarea Plan Text	Program Component Applicability	Implementation
		consistency with each applicable MHPA LUAG will be demonstrated prior to project approval.
Barriers – New development adjacent to the MHPA may be required to provide barriers (e.g., non-invasive vegetation, rocks/boulders, fences, walls, and/or signage) along the MHPA boundaries to direct public access to appropriate locations and reduce domestic animal predation.	▪ North Fiesta Island Wetland ▪ Tecolote Creek and Fiesta Island Causeway ▪ Fiesta Island Site No. 2 North Central ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Sea World Drive/San Diego River Site No. 5a Cloverleaf Area ▪ Sea World Drive/San Diego River Site 5b Triangle Restoration Area ▪ Rose Creek Bike Path ▪ Ocean Beach Bike Path ▪ Fiesta Island Causeway	The proposed programmatic components adjacent to the MHPA incorporate design features such as fences and signage to direct public access away from restoration areas, the MHPA, and other environmentally sensitive areas. All restored habitat areas are recommended to be bordered by fencing or other types of barriers to protect the area from damage and allow for native vegetation to establish. Additionally, designated nesting sites will establish a buffer between the site and nearest recreational use. Final component designs will be subject to resource verification and analysis to ensure conformance with this finding **(EP-BIO-1)**. Therefore, the Program is consistent with this guideline; additionally, as component implementation is reviewed during subsequent environmental analysis, consistency with each applicable MHPA LUAG will be demonstrated prior to project approval.
Invasives – No invasive non-native plant species shall be introduced into areas adjacent to the MHPA.	▪ North Fiesta Island Wetland ▪ Tecolote Creek and Fiesta Island Causeway ▪ North Fiesta Island Stockpile Option 1 ▪ Fiesta Island Site No. 2 North Central ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Sea World Drive/San Diego River Site No. 5a Cloverleaf Area ▪ Sea World Drive/San Diego River Site 5b Triangle Restoration Area ▪ Rose Creek Bike Path ▪ Ocean Beach Bike Path ▪ Fiesta Island Causeway	No invasive or non-native plant species are proposed as part of the Program components within or adjacent to the MHPA. Subsequent Program components and CHRMPs will be reviewed for consistency with Landscape Regulations (LDC 142.0400 and per Table 142-04F, Revegetation and Irrigation Requirements) and be non- invasive. Furthermore, applicable Program components will implement **EP-BIO-3,** which involves, where applicable, permanently revegetating all graded, disturbed, or eroded native habitat areas that would not be permanently paved or covered by structures to discourage intrusion from invasive non-native plant species in accordance with the City's Municipal Code, SDBG and Landscape Regulations

Table 4-2. Consistency with MSCP Land Use Adjacency Guidelines Section 1.4.3

MSCP Subarea Plan Text	Program Component Applicability	Implementation
	▪ Deferred Maintenance	(City of San Diego 2012, 2018), and the City's Municipal Code, Land Development Code—Landscape Standards (City of San Diego 2016) . Final component designs will be subject to resource verification and analysis to ensure conformance with this finding **(EP-BIO-1)**. Therefore, the Program is consistent with this guideline; additionally, as component implementation is reviewed during subsequent environmental analysis, consistency with each applicable MHPA LUAG will be demonstrated prior to project approval.
Brush Management- New residential development located adjacent to and topographically above the MHPA (e.g., along canyon edges) must be set back from slope edges to incorporate Zone 1 brush management areas on the development pad and outside of the MHPA. Zones 2 and 3 will be combined into one zone (Zone 2) and may be located in the MHPA upon granting of an easement to the City (or other acceptable agency) except where narrow wildlife corridors require it to be located outside of the MHPA. Zone 2 will be increased by 30 feet, except in areas with a low fire hazard severity rating where no Zone 2 would be required. Brush management zones will not be greater in size that is currently required by the City's regulations. The amount of woody vegetation clearing shall not exceed 50 percent of the vegetation existing when the initial clearing is done. Vegetation clearing shall be done consistent with City standards and shall avoid/minimize impacts to covered species to the	Not applicable	No residential development or brush management is proposed adjacent to the MHPA. Furthermore, maintenance of restoration and habitat areas will continue in accordance with management directives of the Mission Bay Park, including activities to remove invasives and dead plant material to reduce fuel load. Therefore, the Program is consistent with this guideline; additionally, as component implementation is reviewed during subsequent environmental analysis, consistency with each applicable MHPA LUAG will be demonstrated prior to project approval.

Table 4-2. Consistency with MSCP Land Use Adjacency Guidelines Section 1.4.3

MSCP Subarea Plan Text	Program Component Applicability	Implementation
maximum extent possible. For all new development, regardless of the ownership, the brush management in the Zone 2 area will be the responsibility of a homeowners association or other private party. For existing project and approved projects, the brush management zones, standards and locations, and clearing techniques will not change from those required under existing regulations.		
Grading/Land Development – Manufactured slopes associated with site development shall be included within the development footprint for components within or adjacent to the MHPA.	Not applicable	No manufactured slopes supporting land development are associated with proposed Program components. While manufactured slopes may be constructed to support restoration activities, they would not support future land development. Therefore, the Program is consistent with this guideline; additionally as component implementation is reviewed during subsequent environmental analysis, consistency with each applicable MHPA LUAG will be demonstrated prior to project approval.

Notes: MSCP = Multiple Species Conservation Program; MHPA = Multi-Habitat Planning Area; MM = Mitigation Measure; SAP = Subarea Plan; RWQCB = Regional Water Quality Control Board; NPDES = National Pollutant Discharge Elimination System; EP = Environmental Protocol; LUAG = Land Use Adjacency Guideline; CAGN = coastal California gnatcatcher; LBV = least Bell's vireo; CLT = California least tern; LFRR = light-footed Ridgway's rail; BSS = Belding's savannah sparrow; CFGC = California Fish and Game Code; MBTA = Migratory Bird Treaty Act; LDC = Land Development Code; SDBG = San Diego Biology Guidelines.

4.3 Multiple Species Conservation Program Conditions of Coverage/Area-Specific Management Directives

Implementation of the Program is expected to increase the amount and diversity of covered habitats within the MHPA compared with baseline vegetation mapping completed for the MSCP SAP (largely through the conversion of open water and disturbed/developed lands to upland and wetlands habitats).

Program components in and adjacent to the MHPA are also expected to conform with Area-Specific Management Directives (ASMDs) for all covered species through component design and/or implementation of standard environmental protocols, permit conditions and mitigation measures as identified in the Mitigation, Monitoring and Reporting Program for final Environmental Impact Report.

Plant species covered under the MSCP SAP that are present or have at least moderate potential to occur within the Program area are listed in Table 4-3, along with any ASMDs listed in the Subarea Plan and applicable environmental protocols and mitigation measures to demonstrate conformance provided under the Program.

Table 4-3. Conformance with MSCP Area-Specific Management Directives – Plants

Species/Area-Specific Management Directive	Program Component Applicability	Implementation
Nuttall's lotus – protect against detrimental edge effects	▪ Fiesta Island Site No. 1 South ▪ Fiesta Island Site No. 3 Near Youth Camping ▪ Sea World Drive/San Diego River Site No. 5c South Shores East Area	Habitat restoration proposed under the Program would improve habitat quality and edge conditions (MM-BIO-1a, MM-BIO-2b, EP-LU-1, MM-BIO-3, and MM-BIO-4) as Program components are implemented. As future subsequent Program components are reviewed during project-specific environmental analysis, consistency with each ASMD will be demonstrated prior to project approval.
Aphanisma – none	▪ Fiesta Island Site No. 1 South ▪ Fiesta Island Site No. 2 North Central ▪ Sea World Drive/San Diego River Site No. 5c South Shores East Area ▪ Ocean Beach Bike Path	None required.
Salt marsh bird's beak 1) measures to reduce threats and stabilize populations (e.g., relocation of footpaths, establishment of buffer areas, etc.), 2) address opportunities for reintroduction, and 3) include measures to enhance existing populations (e.g., protect and improve upland habitat for pollinators). There is a federal recovery plan for this species and management activities should to the extent possible help achieve the specified goals. Any newly found populations shall be evaluated for inclusion in the preserve strategy through acquisition, like exchange, etc.	▪ Ocean Beach Bike Path	The Program component areas are designed to avoid potential impacts at one known occurrence (at Dog Beach). Prior to receiving component entitlements and with implementation of EP-BIO- 1, subsequent site specific updated surveys will be conducted to inform project avoidance areas to reduce potential impacts. Additionally, as part of component implementation (MM-BIO-1a and MM-BIO4) any new populations identified will be targeted for conservation and/or enhanced through habitat restoration and identified in a CHRMP.- As future subsequent Program components are reviewed during project-specific environmental analysis, consistency with each ASMD will be

Table 4-3. Conformance with MSCP Area-Specific Management Directives – Plants

Species/Area-Specific Management Directive	Program Component Applicability	Implementation
		demonstrated prior to project approval.
Slender-pod jewelflower – management measures to address the autecology and natural history of the species and to reduce the risk of catastrophic fire. Management measures to accomplish this may include prescribed fire.		Prior to component entitlement and with subsequent component implementation of **EP-BIO- 1,** site-specific updated surveys will be conducted. Subsequent component implementation of mitigation measures ensure that any new populations identified are conserved and/or enhanced through habitat restoration proposed under the Program (**MM-BIO-1a, MM-BIO-2b, MM-BIO-3,** and/or **MM-BIO-4**). As future subsequent Program components are reviewed during project-specific environmental analysis, consistency with each ASMD will be demonstrated prior to project approval.
San Diego barrel cactus – measures to protect this species from edge effects, unauthorized collection, and include appropriate fire management/control practices to protect against a too frequent fire cycle.	Not applicable	The Program does not propose components within known populations at Kendall-Frost Reserve/Northern Wildlife Preserve. Subsequent program components will implement **EP-BIO-1**, to provide updated surveys prior to approvals for specific components. Additionally, implementation of **EP-LU-1** for Program components within or adjacent to the MHPA will further reduce adverse edge effects. Mitigation measures ensure that any new populations identified are conserved and/or enhanced through habitat restoration proposed under the Program (**MM-BIO-1a** and **MM-BIO-4**). As future subsequent Program components are reviewed during project-specific environmental analysis, consistency with each ASMD will be

Table 4-3. Conformance with MSCP Area-Specific Management Directives – Plants

Species/Area-Specific Management Directive	Program Component Applicability	Implementation
		demonstrated prior to project approval.

Notes: MSCP = Multiple Species Conservation Program; ASMD = Area-Specific Management Directive; MM = Mitigation Measure.

MSCP-covered wildlife species present or with a moderate or higher potential to occur are listed below along with any ASMDs listed in the Subarea Plan are provided in Table 4-4.

Table 4-4. Conformance with MSCP Area-Specific Management Directives – Wildlife

Species/Area-Specific Management Directive	Program Component Applicability	Implementation
Coastal California gnatcatcher – ASMDs include reduce edge effects and minimize disturbance during the nesting period, fire protection measures to reduce the potential for habitat degradation due to unplanned fire, and management measures to maintain or improve habitat quality including vegetation structure. No clearing of occupied habitat within the MHPAs may occur between March 1 and August 15.	▪ Fiesta Island Site No. 1 South ▪ Fiesta Island Site No. 3 Near Youth Camping ▪ Sea World Drive/San Diego River Site No. 5b Triangle Restoration Area ▪ Sea World Drive/San Diego River Site No. 5c South Shores East Area	Habitat restoration proposed under the Program would improve habitat quality and edge conditions and mitigation measures required as a condition of component approval will ensure minimization of disturbance during the nesting season (**MM-BIO-1b, MM-BIO-2b, MM-BIO-3, and MM-BIO-8a**). Additionally, implementation of **EP-LU-1** for Program components within or adjacent to the MHPA will further reduce adverse edge effects. As future subsequent Program components are reviewed during project-specific environmental analysis, consistency with each ASMD will be demonstrated prior to project approval.
California least tern – ASMDs include protection of nesting sites from human disturbance during reproductive season, predator control, and specific measures to protect against detrimental edge effects to this species.	▪ North Fiesta Island ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area	Protection and management of CLT nest sites will continue consistent with current practices and be expanded to CLT nest sites restored, established, or enhanced under the Program (**MM-BIO-1d** and **MM-BIO-8c**). Additionally,

Table 4-4. Conformance with MSCP Area-Specific Management Directives – Wildlife

Species/Area-Specific Management Directive	Program Component Applicability	Implementation
		implementation of **EP-LU-1** for Program components within or adjacent to the MHPA will further reduce adverse edge effects. As future subsequent Program components are reviewed during project-specific environmental analysis, consistency with each ASMD will be demonstrated prior to project approval.
Light-footed Ridgway's rail – ASMDs include active management of wetlands to ensure a healthy tidal saltmarsh environment, and specific measures to protect against detrimental edge effects to this species.	▪ North Fiesta Island ▪ North Fiesta Island Stockpile Option 1 ▪ Tecolote Creek and Fiesta Island Causeway ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Rose Creek Bike Path ▪ Fiesta Island Causeway Path	Habitat restoration proposed under the Program would improve habitat quality and edge conditions (**MM-BIO-1e, MM-BIO-2a, MM-BIO-3,** and/or **MM-BIO-8d**). Additionally, implementation of **EP-LU-1** for Program components within or adjacent to the MHPA will further reduce adverse edge effects. As future subsequent Program components are reviewed during project-specific environmental analysis, consistency with each ASMD will be demonstrated prior to project approval.
Western snowy plover – ASMDs include protection of nesting sites from human disturbance during the reproductive season, and specific measures to protect against detrimental edge effects to this species.	▪ North Fiesta Island ▪ Tecolote Creek and Fiesta Island Causeway ▪ Cudahy Creek ▪ Vacation Island Northwest ▪ Vacation Island Northeast ▪ Vacation Island Southwest ▪ Ventura Cove Park ▪ Crown Point ▪ West Sail Bay ▪ Bonita Cove ▪ Bahia Point	Mitigation measures required as a condition of component approval will ensure minimization of disturbance during the nesting season and habitat restoration will reduce edge effects (**MM-BIO-1d, MM-BIO-2a, MM-BIO-3,** and/or **MM-BIO-8c**). Additionally, implementation of **EP-LU-1** for Program components within or adjacent to the MHPA will further reduce

Table 4-4. Conformance with MSCP Area-Specific Management Directives – Wildlife

Species/Area-Specific Management Directive	Program Component Applicability	Implementation
	▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area	adverse edge effects. As future subsequent Program components are reviewed during project-specific environmental analysis, consistency with each ASMD will be demonstrated prior to project approval.
Belding's savannah sparrow – ASMDs include specific measures to protect against detrimental edge effects to this species.	▪ North Fiesta Island ▪ Tecolote Creek and Fiesta Island Causeway ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Rose Creek Bike Path ▪ Fiesta Island Causeway Path	Habitat restoration proposed under the Program would improve edge conditions **(MM-BIO-1e, MM-BIO-2a, MM-BIO-3,** and/or **MM-BIO-8d)**. Additionally, implementation of **EP-LU-1** for Program components within or adjacent to the MHPA will further reduce adverse edge effects. As future subsequent Program components are reviewed during project-specific environmental analysis, consistency with each ASMD will be demonstrated prior to project approval.
Western burrowing owl – ASMDs include burrowing owl surveys (using appropriate protocols) must be conducted in suitable habitat to determine if this species is present and the location of active burrows. If burrowing owls are detected, the following mitigation measures must be implemented: within the MHPA, impacts must be avoided; outside of the MHPA, impacts to the species must be avoided to the maximum extent practicable; any impacted individuals must be relocated out of the impact area using passive or active methodologies approved by the wildlife agencies; mitigation for impacts to occupied habitat (at the Subarea Plan specified ratio) must be through the conservation of occupied burrowing owl habitat or conservation of lands appropriate	▪ North Fiesta Island ▪ North Fiesta Island Stockpile Option 1 ▪ North Fiesta Island Stockpile Option 2 ▪ North Fiesta Island Stockpile Option 3 ▪ Fiesta Island Site No. 1 South ▪ Fiesta Island Site No. 2 North Central ▪ Fiesta Island Site No. 3 Near Youth Camping ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area	Mitigation measures required as conditions of component approval include burrowing owl surveys to ensure impact avoidance during construction. While Mission Bay is not expected to support nesting, habitat restoration under the Program is expected to improve upland habitat **(MM-BIO-1f, MM-BIO-2b, MM-BIO-3,** and/or **MM-BIO-8e)**. Additionally, implementation of **EP-LU-1** for Program components within or adjacent to the

Table 4-4. Conformance with MSCP Area-Specific Management Directives – Wildlife

Species/Area-Specific Management Directive	Program Component Applicability	Implementation
for restoration, management and enhancement of burrowing owl nesting and foraging requirements. Management plans/directives must include: enhancement of known, historical and potential burrowing owl habitat; and management for ground squirrels (the primary excavator of burrowing owl burrows). Enhancement measures may include creation of artificial burrows and vegetation management to enhance foraging habitat. Management plans must also include monitoring of burrowing owl nest sites to determine use and nesting success; predator control; establishing a 300 foot wide impact avoidance area (within the preserve) around occupied burrows.	▪ Sea World Drive/San Diego River Site No 5a Cloverleaf Area ▪ Sea World Drive/San Diego River Site No 5b Triangle Restoration Area ▪ Sea World Drive/San Diego River Site No 5c South Shores East Area ▪ Fiesta Island Causeway Path ▪ Ocean Beach Bike Path	MHPA will reduce adverse edge effects. As future subsequent program components are reviewed during project-specific environmental analysis, consistency with each ASMD will be demonstrated prior to project approval.
Cooper's hawk – Area specific management directives must include 300-foot impact avoidance areas around the active nests, and minimization of disturbance in oak woodlands and oak riparian forests.	▪ Rose Creek Bike Path	Avoidance of active nests will be implemented through **MM-BIO-3**. The Program is expected to comply with this ASMD; however, as component implementation is reviewed during subsequent environmental analysis, consistency with each ASMD will be demonstrated prior to project approval.
Northern harrier – ASMDs include management of agricultural and disturbed lands (which become part of the preserve) within 4 miles of nesting habitat to provide foraging habitat; include an impact avoidance area (900 foot or maximum possible within the preserve) around active nests.	▪ North Fiesta Island ▪ Tecolote Creek and Fiesta Island Causeway ▪ Fiesta Island Site No. 1 South ▪ Fiesta Island Site No. 2 North Central ▪ Fiesta Island Site No. 3 Near Youth Camping ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Sea World Drive/San Diego River Site No. 5c South Shores East Area ▪ Fiesta Island Causeway Path	Habitat restoration under the Program is expected to increase foraging habitat value. Mitigation measures required as conditions of component approval will ensure avoidance of construction impacts to active nests **(MM-BIO-2a, MM-BIO-2b,** and/or **MM-BIO-3)**. The Program is expected to comply with this ASMD; however, as component implementation is reviewed during subsequent environmental analysis, consistency with each ASMD will be

Table 4-4. Conformance with MSCP Area-Specific Management Directives – Wildlife

Species/Area-Specific Management Directive	Program Component Applicability	Implementation
		demonstrated prior to project approval.
Reddish egret – no ASMDs	▪ North Fiesta Island ▪ Tecolote Creek and Fiesta Island Causeway ▪ Cudahy Creek ▪ Vacation Island Northwest ▪ Vacation Island Northeast ▪ Vacation Island Southwest ▪ Ventura Cove Park ▪ Crown Point ▪ West Sail Bay ▪ Bonita Cove ▪ Bahia Point ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Fiesta Island Causeway Path	None required
American peregrine falcon – no ASMDs	All components	None required
Long-billed curlew – no ASMDs	▪ North Fiesta Island ▪ Tecolote Creek and Fiesta Island Causeway ▪ Cudahy Creek ▪ Vacation Island Northwest ▪ Vacation Island Northeast ▪ Vacation Island Southwest ▪ Ventura Cove Park ▪ Crown Point ▪ West Sail Bay ▪ Bonita Cove ▪ Bahia Point	None required
California brown pelican – no ASMDs	Not applicable	None required
White-faced ibis – ASMDs include measures to protect against detrimental edge effects to this species	▪ North Fiesta Island ▪ Tecolote Creek and Fiesta Island Causeway ▪ Cudahy Creek ▪ Vacation Island Northwest ▪ Vacation Island Northeast ▪ Vacation Island Southwest ▪ Ventura Cove Park ▪ Crown Point ▪ West Sail Bay ▪ Bonita Cove ▪ Bahia Point	Habitat restoration proposed under the Program would improve edge conditions (**MM-BIO-2a** and **MM-BIO-3**). Additionally, implementation of **EP-LU-1** for Program components within or adjacent to the MHPA will further reduce adverse edge effects. The Program is expected to comply with this ASMD;

Table 4-4. Conformance with MSCP Area-Specific Management Directives – Wildlife

Species/Area-Specific Management Directive	Program Component Applicability	Implementation
		however, as component implementation is reviewed during subsequent environmental analysis, consistency with each ASMD will be demonstrated prior to project approval.
Elegant tern – ASMDs include protection of nesting sites from human disturbance during reproductive season, and specific measures to protect against detrimental edge effects to this species.	▪ Vacation Island Northwest ▪ Vacation Island Northeast ▪ Vacation Island Southwest ▪ Ventura Cove Park ▪ Crown Point ▪ West Sail Bay ▪ Bonita Cove ▪ Bahia Point	Mitigation measures required as a condition of component approval will ensure minimization of disturbance during the nesting season and habitat restoration will reduce edge effects (**MM-BIO-2a** and **MM-BIO-3**). Additionally, implementation of EP-LU-1 for Program components within or adjacent to the MHPA will further reduce adverse edge effects. The Program is expected to comply with this ASMD; however, as component implementation is reviewed during subsequent environmental analysis, consistency with each ASMD will be demonstrated prior to project approval.
Tricolored blackbird – Project approvals must require avoidance of active nesting areas during the breeding season. Area specific management directives must include measures to avoid impacts to breeding colonies, and specific measures to protect against detrimental edge effects to this species.	Not applicable	None required.
Canada goose – no ASMDs	All components	None required.
Large-billed savannah sparrow - ASMDs include measures to protect against detrimental edge effects to this species	▪ North Fiesta Island ▪ Tecolote Creek and Fiesta Island Causeway ▪ Cudahy Creek ▪ Vacation Island Northwest ▪ Vacation Island Northeast	Habitat restoration proposed under the Program would improve edge conditions (**MM-BIO-2a** and **MM-BIO-3**). Additionally, implementation of EP-LU-1

Table 4-4. Conformance with MSCP Area-Specific Management Directives – Wildlife

Species/Area-Specific Management Directive	Program Component Applicability	Implementation
	▪ Vacation Island Southwest ▪ Ventura Cove Park ▪ Crown Point ▪ West Sail Bay ▪ Bonita Cove ▪ Bahia Point ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Fiesta Island Causeway Path	for Program components within or adjacent to the MHPA will further reduce adverse edge effects. The Program is expected to comply with this ASMD; however, as component implementation is reviewed during subsequent environmental analysis, consistency with each ASMD will be demonstrated prior to project approval.
Least Bell's vireo – ASMDs include measures to provide appropriate successional habitat, upland buffers for all known populations, cowbird control, and specific measures to protect against detrimental edge effects to this species. Any clearing of occupied habitat must occur between September 15 and March 15 (i.e., outside of the nesting period).	▪ Rose Creek Bike Path	Mitigation measures required as a condition of subsequent component approval will ensure minimization of disturbance during the nesting season (MM-BIO-1c and MM-BIO-8b). The Program does not include changes to edge conditions in areas of suitable for the species (i.e., Rose Creek). However, implementation of EP-LU-1 for Program components within or adjacent to the MHPA will reduce adverse edge effects. The Program is expected to comply with this ASMD; however, as component implementation is reviewed during subsequent environmental analysis, consistency with each ASMD will be demonstrated prior to project approval.
Orange-throated whiptail – ASMDs include measures to address edge effects	▪ North Fiesta Island ▪ Tecolote Creek and Fiesta Island Causeway	Habitat restoration proposed under the Program would improve edge conditions (MM-BIO-2b and MM-BIO-3).

Table 4-4. Conformance with MSCP Area-Specific Management Directives – Wildlife

Species/Area-Specific Management Directive	Program Component Applicability	Implementation
	▪ Fiesta Island Site No. 1 South ▪ Fiesta Island Site No. 2 North Central ▪ Fiesta Island Site No. 3 Near Youth Camping ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Sea World Drive/San Diego River Site 5a Cloverleaf Area ▪ Sea World Drive/San Diego River Site No 5c South Shores East Area ▪ Fiesta Island Causeway Path	Additionally, implementation of **EP-LU-1** for Program components within or adjacent to the MHPA will further reduce adverse edge effects. The Program is expected to comply with this ASMD; however, as component implementation is reviewed during subsequent environmental analysis, consistency with each ASMD will be demonstrated prior to project approval.
Salt marsh skipper- Area specific management directives must include measures to: control exotic weeds and invertebrate predators (where appropriate), and control access to saltmarsh habitat.	▪ North Fiesta Island ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Rose Creek Bike Path ▪ Fiesta Island Causeway Path ▪ Tecolote Creek and Fiesta Island Causeway	Restoration of salt marsh proposed as part of the Program would include activities such as removal of exotics weeds and include appropriate barriers to control access (**EP-BIO-1, EP-BIO-2, MM-BIO-2a** and **MM-BIO-3**). The need for invasive predator management will continue through the City's participation with regional partners and appropriate agencies. The Program is expected to comply with this ASMD; however, as component implementation is reviewed during subsequent environmental analysis, consistency with each ASMD will be demonstrated prior to project approval.

Notes: MSCP = Multiple Species Conservation Plan; ASMD = Area-Specific Management Directive; MHPA = Multi-Habitat Planning Area; MM = Mitigation Measure; CLT = California least tern; EP = Environmental Protocol.

4.4 Framework Management Plan – Management Goals and Objectives

Program components in the MHPA are designed in a manner compatible with the management objectives outlined in Section 1.5.1 of the Subarea Plan, including: long-term viability and sustainability of native ecosystem function and natural process, protection and restoration of biological resources while accommodating compatible public recreational uses and enhancing and restoring a full range of native plant associated in strategic locations to provide connectivity and viable habitats. Priority 1 general management guidelines for restoration, public access/trail/recreation, litter/trash and materials storage, adjacency management issues, invasive exotics control and removal, and flood control are all implemented as part of the Program and discussed in this section. No changes to management of the MHPA are proposed and management would continue under the direction of the City of San Diego Park's and Recreation Department and through continued implementation of the Mission Bay Park Master Plan and Mission Bay Park Natural Resources Management Plan. Program components identify opportunities for wetland and upland restoration projects of disturbed areas. Proposed restoration activities include the removal of invasive species, and restoration of covered species habitat, strengthening the ecosystem function of the area. Implementation of subsequent Program components within or adjacent to the MHPA would implement and demonstrate consistency with the MHPA LUAGs as a condition of subsequent project approval. Completion of Program components such as wetland and upland habitat restoration areas would generally result in greater management and removal of exotic and invasive plant species, litter removal and control, official trail maintenance, signage maintenance, erosion control, and other MSCP management priorities.

Analysis of conformance with Section 1.5.2, General Management Directives, of the Subarea Plan is provided in Table 4-5.

Table 4-5. Consistency with MSCP Section 1.5.2 General Management Directives

MSCP Subarea Plan Text	Program Component Applicability	Implementation
Mitigation Mitigation, when required as part of project approvals, shall be performed in accordance with the City of San Diego Environmentally Sensitive Lands Ordinance and Biology Guidelines.	▪ North Fiesta Island Wetland ▪ Tecolote Creek and Fiesta Island Causeway ▪ North Fiesta Island Stockpile Option 1 ▪ Fiesta Island Site No. 2 North Central ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Sea World Drive/San Diego River Site No. 5a Cloverleaf Area ▪ Sea World Drive/San Diego River Site 5b Triangle Restoration Area ▪ Rose Creek Bike Path ▪ Ocean Beach Bike Path ▪ Fiesta Island Causeway	As subsequent components implement **EP-BIO-1**, site-specific potential impacts to biological resources will be identified along with mitigation requirements. The mitigation framework provided in this report outlines applicable mitigation measures for subsequent component implementation. Therefore, at a programmatic level, conformance with this general management directive is met. Subsequent components will implement **MM-BIO-2a/2b, MM-BIO-4, MM-BIO-5, and MM-BIO-8** as part of subsequent entitlement.
Restoration	▪ North Fiesta Island Wetland ▪ Tecolote Creek and Fiesta Island Causeway	Subsequent Program components propose restoration

Table 4-5. Consistency with MSCP Section 1.5.2 General Management Directives

MSCP Subarea Plan Text	Program Component Applicability	Implementation
Restoration or revegetation undertaken in the MHPA shall be performed in a manner acceptable to the City. Where covered species status identifies the need for reintroduction and/or increasing the population, the covered species will be included in restoration/ revegetation plans, as appropriate. Restoration or revegetation proposals will be required to prepare a plan that includes elements addressing financial responsibility, site preparation, planting specifications, maintenance, monitoring and success criteria, and remediation and contingency measures. Wetland restoration/ revegetation proposals are subject to permit authorization by federal and state agencies.	▪ North Fiesta Island Stockpile Option 1 ▪ Fiesta Island Site No. 2 North Central ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Sea World Drive/San Diego River Site No. 5a Cloverleaf Area ▪ Sea World Drive/San Diego River Site 5b Triangle Restoration Area	activities designed to benefit covered species through implementation of Conceptual Habitat Restoration and Monitoring Plans (CHRMPs) that propose site-specific recommendations aimed at restoring habitat. Subsequent site-specific restoration plans will be developed in accordance with the City's Biology Guidelines and Landscape Standards and obtain subsequent permit authorizations as applicable from federal and state agencies and the City of San Diego. CHRMPs have been prepared to guide the proposed restoration/revegetation activities as part of subsequent component design and entitlement. Additionally, in any areas in or adjacent to the MHPA where temporary impacts may occur as a result of Program implementation, site-specific habitat restoration and erosion control treatments could be installed (**EP-BIO-3**) as part of subsequent component entitlement. All restoration and revegetation activities within and adjacent to the MHPA would be required to be conducted in accordance with the SDBG (City of San Diego 2018) and the City's Municipal Code, Land Development Code— Landscape Standards (City of San Diego 2016), with specific native species incorporated, as appropriate (**EP-BIO-3**). Through implementation of these policies, these projects will be consistent with the MSCP Subarea Plan. By requiring subsequent program components to include an MSCP consistency

Table 4-5. Consistency with MSCP Section 1.5.2 General Management Directives

MSCP Subarea Plan Text	Program Component Applicability	Implementation
		analysis in the biological resources report, the Mission Bay Park Improvement Program itself, as a programmatic document that guides project analyses, is consistent with the MSCP Subarea Plan.
Public Access, Trails, and Recreation **Priority 1:** 1. Provide sufficient signage to clearly identify public access to the MHPA. Barriers such as vegetation, rocks/boulders or fencing may be necessary to protect highly sensitive areas. Use an appropriate type of barrier based on location, setting and use. For example, use chain link or cattle wire to direct wildlife movement, and natural rocks/boulders or split rail fencing to direct public access away from sensitive areas. Lands acquired through mitigation may preclude public access in order to satisfy mitigation requirements.	▪ North Fiesta Island Wetland ▪ Tecolote Creek and Fiesta Island Causeway ▪ North Fiesta Island Stockpile Option 1 ▪ Fiesta Island Site No. 2 North Central ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Sea World Drive/San Diego River Site No. 5a Cloverleaf Area ▪ Sea World Drive/San Diego River Site 5b Triangle Restoration Area ▪ Rose Creek Bike Path ▪ Ocean Beach Bike Path ▪ Fiesta Island Causeway	Subsequent site-specific signage will demonstrate conformance with City standards when obtaining project entitlements to ensure public access restrictions are clearly visible to the public. The design of trails, vegetation, and fencing would protect sensitive habitat areas from human encroachment and will be confirmed through implementation of **EP-BIO-1**. The Program is expected to comply with this directive; additionally, as future component implementation is reviewed during subsequent environmental analysis, consistency with each applicable MSCP directive will be demonstrated prior to project approval.
2. Locate trails, view overlooks, and staging areas in the least sensitive areas of the MHPA. Locate trails along the edges of urban land uses adjacent to the MHPA, or the seam between land uses (e.g., agriculture/habitat), and follow existing dirt roads as much as possible rather than entering habitat or wildlife movement areas. Avoid locating trails between two different habitat types (ecotones) for longer than necessary due to the typically heightened resource sensitivity in those locations.	▪ North Fiesta Island Wetland ▪ Tecolote Creek and Fiesta Island Causeway ▪ North Fiesta Island Stockpile Option 1 ▪ Fiesta Island Site No. 2 North Central ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Sea World Drive/San Diego River Site No. 5a Cloverleaf Area ▪ Sea World Drive/San Diego River Site 5b Triangle Restoration Area ▪ Rose Creek Bike Path ▪ Ocean Beach Bike Path ▪ Fiesta Island Causeway	A trail and overlook is proposed at North Fiesta Island and designed to be compatible and protective of adjacent restoration areas. No trails are proposed in ecotone areas. Per subsequent component implementation of **EP-BIO-1**, staging areas will be in the least environmentally sensitive portion of the site, on existing developed or disturbed areas. The Program complies with this MSCP directive; additionally, as future component implementation is reviewed during subsequent environmental analysis, consistency with each applicable MSCP directive will be

Table 4-5. Consistency with MSCP Section 1.5.2 General Management Directives

MSCP Subarea Plan Text	Program Component Applicability	Implementation
		demonstrated prior to project approval.
3. In general, avoid paving trails unless management and monitoring evidence shows otherwise. Clearly demarcate and monitor trails for degradation and off-trail access and use. Provide trail repair/maintenance as needed. Undertake measures to counter the effects of trail erosion including the use of stone or wood crossjoints, edge plantings of native grasses, and mulching of the trail.	▪ North Fiesta Island Wetland ▪ Fiesta Island Site No. 2 North Central ▪ Rose Creek Bike Path ▪ Ocean Beach Bike Path ▪ Fiesta Island Causeway	No new paved trails are proposed as part of Program components. All existing trails will continue to be monitored and repaired/maintained as needed including off-trail access consistent with the NRMP. The Program complies with this MSCP directive; additionally, as future component implementation is reviewed during subsequent environmental analysis, consistency with each applicable MSCP directive will be demonstrated prior to project approval.
4. Minimize trail widths to reduce impacts to critical resources. For the most part, do not locate trails wider than four feet in core areas or wildlife corridors. Exceptions are in the San Pasqual Valley where other agreements have been made, in Mission Trails Regional Park, where appropriate, and in other areas where necessary to safely accommodate multiple uses or disabled access. Provide trail fences or other barriers at strategic locations when protection of sensitive resources is required.	▪ North Fiesta Island Wetland ▪ Fiesta Island Site No. 2 North Central ▪ Rose Creek Bike Path ▪ Ocean Beach Bike Path ▪ Fiesta Island Causeway	Trails widths have been minimized to the minimum safe width. Trail fences and natural barriers are proposed to protect sensitive resources. Final designs will be subject to resource verification and analysis to ensure conformance with this finding (EP-BIO-1). The Program is expected to comply with this policy; however, as future component implementation is reviewed during subsequent environmental analysis, consistency with each applicable MSCP directive will be demonstrated prior to project approval.
5. Limit the extent and location of equestrian trails to the less sensitive areas of the MHPA. Locate staging areas for equestrian uses at a sufficient distance (e.g., 300–500 feet) from areas with riparian and coastal sage scrub habitats to ensure that the biological values are not impaired.	Not applicable	No new equestrian use is proposed as part of the Program components. Existing equestrian use of multi-use trails will continue as allowed under the NRMP. Therefore, the Program and subsequent components are consistent with this MSCP SAP directive.
6. Off-road or cross-country vehicle activity is an incompatible	Not applicable	No off-road or cross-country vehicle access is proposed as

Table 4-5. Consistency with MSCP Section 1.5.2 General Management Directives

MSCP Subarea Plan Text	Program Component Applicability	Implementation
use in the MHPA, except for law enforcement, preserve management or emergency purposes. Restore disturbed areas to native habitat where possible or critical, or allow to regenerate.		part of the programmatic components or allowed under current conditions. Therefore, the Program and subsequent components are consistent with this MSCP SAP directive.
7. Limit recreational uses to passive uses such as birdwatching, photography and trail use. Locate developed picnic areas near MHPA edges or specific areas within the MHPA, in order to minimize littering, feeding of wildlife, and attracting or increasing populations of exotic or nuisance wildlife (opossums, raccoons, skunks). Where permitted, restrain pets on leashes.	▪ North Fiesta Island Wetland ▪ Tecolote Creek and Fiesta Island Causeway ▪ North Fiesta Island Stockpile Option 1 ▪ Fiesta Island Site No. 2 North Central ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Sea World Drive/San Diego River Site No. 5a Cloverleaf Area ▪ Sea World Drive/San Diego River Site 5b Triangle Restoration Area ▪ Rose Creek Bike Path ▪ Ocean Beach Bike Path ▪ Fiesta Island Causeway	Recreation use is limited to the extent feasible. Public beach use is allowed in a portion of North Fiesta Island. A seasonal picnic area is also proposed but is limited in size and located on the edge of the MHPA. Management of the picnic area, consistent with current practices and in accordance with the NRMP will ensure impacts from litter, feeding of wildlife, exotic or nuisance wildlife, and unleashed pets are minimized. Therefore, the Program and subsequent components are consistent with this MSCP SAP directive.
8. Remove homeless and itinerant worker camps in habitat areas as soon as found pursuant to existing enforcement procedures.	▪ North Fiesta Island Wetland ▪ Tecolote Creek and Fiesta Island Causeway ▪ North Fiesta Island Stockpile Option 1 ▪ Fiesta Island Site No. 2 North Central ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Sea World Drive/San Diego River Site No. 5a Cloverleaf Area ▪ Sea World Drive/San Diego River Site 5b Triangle Restoration Area ▪ Rose Creek Bike Path ▪ Ocean Beach Bike Path ▪ Fiesta Island Causeway	Such camps would be removed in accordance with existing City enforcement procedures (SDMC 63.0405). Therefore, the Program and subsequent components are consistent with this MSCP SAP directive.
9. Maintain equestrian trails on a regular basis to remove manure (and other pet feces) from the trails and preserve system in order to control cowbird invasion and predation. Design and maintain trails where possible to drain into a gravel bottom or vegetated (e.g., grass-lined) swale	Not applicable	No new equestrian trails are proposed. All development would meet stormwater standards for control of runoff and removal of pollutants **(EP-WQ-1)**. Final designs will be subject to resource verification and analysis to ensure conformance with this finding **(EP-BIO-1)**. The Fiesta

Table 4-5. Consistency with MSCP Section 1.5.2 General Management Directives

MSCP Subarea Plan Text	Program Component Applicability	Implementation
or basin to detain runoff and remove pollutants.		Island North Central Site No. 2 proposes retaining the existing multi-use trails within the component extent, which currently allow for equestrian use per the MBPMP; however, retaining these designations within the restored habitat areas may be reconsidered during final design approvals. Therefore, the Program and subsequent components are consistent with this MSCP SAP directive.
Litter/Trash and Materials Storage **Priority 1:** 1. Remove litter and trash on a regular basis. Post signage to prevent and report littering in trail and road access areas. Provide and maintain trash cans and bins at trail access points.	▪ North Fiesta Island Wetland ▪ Tecolote Creek and Fiesta Island Causeway ▪ North Fiesta Island Stockpile Option 1 ▪ Fiesta Island Site No. 2 North Central ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Sea World Drive/San Diego River Site No. 5a Cloverleaf Area ▪ Sea World Drive/San Diego River Site 5b Triangle Restoration Area ▪ Rose Creek Bike Path ▪ Ocean Beach Bike Path ▪ Fiesta Island Causeway	Litter and trash are managed by the City's Parks and Recreation Department; proposed new public access areas management would continue to be managed consistent with other portions of Mission Bay Park. The Parks and Recreation Department's minimum standards for park maintenance include daily trash removal by 10:00 a.m. with additional pickup visits scheduled in high use areas or during special events. Littering is prohibited through the enforcement of the general park use rules and regulations, which include charging a fee to permit holders if litter removal is required after their event. Appropriate signage to discourage littering is recommended within component areas consistent with the Parks and Recreation Department's design guidelines and the SDMC. Therefore, the Program and subsequent components are consistent with this MSCP SAP directive.
2. Impose penalties for littering and dumping. Fines should be sufficient to prevent recurrence and also cover reimbursement of costs to remove and dispose of debris, restore the area if	▪ North Fiesta Island Wetland ▪ Tecolote Creek and Fiesta Island Causeway ▪ North Fiesta Island Stockpile Option 1 ▪ Fiesta Island Site No. 2 North Central	Litter and dumping enforcement in accordance with City regulations will continue consistent with current practices in Mission Bay Park. Therefore, the Program and subsequent

Table 4-5. Consistency with MSCP Section 1.5.2 General Management Directives

MSCP Subarea Plan Text	Program Component Applicability	Implementation
needed, and to pay for enforcement staff time.	▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Sea World Drive/San Diego River Site No. 5a Cloverleaf Area ▪ Sea World Drive/San Diego River Site 5b Triangle Restoration Area ▪ Rose Creek Bike Path ▪ Ocean Beach Bike Path ▪ Fiesta Island Causeway	components are consistent with this MSCP SAP directive.
3. Prohibit permanent storage of materials (e.g., hazardous and toxic chemicals, equipment, etc.) within the MHPA and ensure appropriate storage per applicable regulations in any areas that may impact the MHPA, due to potential leakage.	▪ North Fiesta Island Wetland ▪ Tecolote Creek and Fiesta Island Causeway ▪ North Fiesta Island Stockpile Option 1 ▪ Fiesta Island Site No. 2 North Central ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Sea World Drive/San Diego River Site No. 5a Cloverleaf Area ▪ Sea World Drive/San Diego River Site 5b Triangle Restoration Area ▪ Rose Creek Bike Path ▪ Ocean Beach Bike Path ▪ Fiesta Island Causeway	No materials storage is proposed. The construction contractor, with support from the qualified monitoring biologist, shall ensure that all areas for staging, storage of equipment and materials, trash, equipment maintenance, and other construction related activities are conducted in previously developed or disturbed areas and outside the MHPA boundary, wherever possible (**MM BIO-2**). Typical BMPs, such as having trash containers on site, a demarcated limit of work, and contractor education, would limit the potential for trash and other human disturbance. During construction, the qualified monitoring biologist shall verify in writing on the Consultant Site Visit Record Forms that no trash stockpiling or oil dumping, fueling of equipment, storage of hazardous wastes or construction equipment/material, parking or other construction-related activities occurred within sensitive habitat in the MHPA **(MM-BIO-3)**. These activities shall only occur within the designated staging area outside the MHPA and in accordance with a project Water Pollution Control Plan developed in accordance with the City's Storm Water Standards (**EP-WQ-1**). The Program is expected to comply with this MSCP SAP policy; however, as future component implementation is reviewed during subsequent

Table 4-5. Consistency with MSCP Section 1.5.2 General Management Directives

MSCP Subarea Plan Text	Program Component Applicability	Implementation
		environmental analysis, consistency with each applicable MSCP directive will be demonstrated prior to project approval.
4. Keep wildlife corridor undercrossings free of debris, trash, homeless encampments, and all other obstructions to wildlife movement.	▪ North Fiesta Island Wetland ▪ Tecolote Creek and Fiesta Island Causeway ▪ Fiesta Island Causeway	No terrestrial undercrossing are located within or proposed within the Program area. Wildlife movement is not expected to be obstructed due to the creation of the tidal exchange channel proposed at North Fiesta Island and will be facilitated by either bridges or culverts at two locations across the channel. Similarly, a bridge or culvert is proposed for Fiesta Island Causeway that would facilitate wildlife movement. No other wildlife corridor undercrossings are proposed. All undercrossings installed as part of the Program would be monitored and maintained regularly to ensure they remain free of debris and mussel growth. Wildlife undercrossings will be monitored for wildlife movement obstructions during construction through implementation of **MM-BIO-3**. The Program is expected to comply with this MSCP SAP policy; however, as future component implementation is reviewed during subsequent environmental analysis, consistency with each applicable MSCP directive will be demonstrated prior to project approval.
Priority 2: 1. Evaluate areas where dumping recurs for the need for barriers. Provide additional monitoring as needed (possibly by local and recreational groups on a "Neighborhood Watch" type program), and/or enforcement.	To be determined	Dumping enforcement and coordination with local groups will continue consistent with current practices directed by Parks and Recreation Department Standards, the MBPMP, NRMP, and SDMC (SDMC 54.0204). Therefore, the Program and subsequent components are

Table 4-5. Consistency with MSCP Section 1.5.2 General Management Directives

MSCP Subarea Plan Text	Program Component Applicability	Implementation
		consistent with this MSCP SAP directive.
Adjacency Management Issues **Priority 1:** 1. Enforce, prevent and remove illegal intrusions into the MHPA (e.g., orchards, decks, etc.) on an annual basis, in addition to complaint basis.	Not applicable	Enforcement of illegal intrusions into the MHPA will continue consistent with current practices in Mission Bay Park. Therefore, the Program and subsequent components are consistent with this MSCP SAP directive.
2. Disseminate educational information to residents adjacent to and inside the MHPA to heighten environmental awareness, and inform residents of access, appropriate plantings, construction or disturbance within MHPA boundaries, pet intrusion, fire management, and other adjacency issues.	▪ North Fiesta Island Wetland ▪ Tecolote Creek and Fiesta Island Causeway ▪ North Fiesta Island Stockpile Option 1 ▪ Fiesta Island Site No. 2 North Central ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Sea World Drive/San Diego River Site No. 5a Cloverleaf Area ▪ Sea World Drive/San Diego River Site 5b Triangle Restoration Area ▪ Rose Creek Bike Path ▪ Ocean Beach Bike Path ▪ Fiesta Island Causeway	Public outreach and education will continue consistent with current practices in Mission Bay Park. Therefore, the Program and subsequent components are consistent with this MSCP SAP directive.
3. Install barriers (fencing, rocks/boulders, vegetation) and/or signage where necessary to direct public access to appropriate locations.	▪ North Fiesta Island Wetland ▪ Tecolote Creek and Fiesta Island Causeway ▪ North Fiesta Island Stockpile Option 1 ▪ Fiesta Island Site No. 2 North Central ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Sea World Drive/San Diego River Site No. 5a Cloverleaf Area ▪ Sea World Drive/San Diego River Site 5b Triangle Restoration Area ▪ Rose Creek Bike Path ▪ Ocean Beach Bike Path ▪ Fiesta Island Causeway	Appropriate barriers and signage are proposed as discussed above. The Program complies with this MSCP SAP directive; additionally, as future component implementation is reviewed during subsequent environmental analysis, consistency with each applicable MSCP directive will be demonstrated prior to project approval.
Invasive Exotics Control and Removal **Priority 1:** 1. Do not introduce invasive non-native species into the MHPA.	▪ North Fiesta Island Wetland ▪ Tecolote Creek and Fiesta Island Causeway ▪ North Fiesta Island Stockpile Option 1	No invasive or non-native plant species are proposed as part of the Program components within or adjacent to the MHPA. However, during restoration or

Table 4-5. Consistency with MSCP Section 1.5.2 General Management Directives

MSCP Subarea Plan Text	Program Component Applicability	Implementation
Provide information on invasive plants and animals harmful to the MHPA, and prevention methods, to visitors and adjacent residents. Encourage residents to voluntarily remove invasive exotics from their landscaping.	▪ Fiesta Island Site No. 2 North Central ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Sea World Drive/San Diego River Site No. 5a Cloverleaf Area ▪ Sea World Drive/San Diego River Site 5b Triangle Restoration Area ▪ Rose Creek Bike Path ▪ Ocean Beach Bike Path ▪ Fiesta Island Causeway	construction activities there is potential for non-natives or invasives to be introduced. Subsequent Program components and CHRMPs will be reviewed for consistency with Landscape Regulations (LDC 142.0400 and per Table 142-04F, Revegetation and Irrigation Requirements) and be non-invasive. Furthermore, applicable Program components will implement **EP-BIO-3,** which involves, where applicable, permanently revegetating all graded, disturbed, or eroded native habitat areas that would not be permanently paved or covered by structures to discourage intrusion from invasive non-native plant species in accordance with the City's Municipal Code, SDBG and Landscape Regulations (City of San Diego 2012, 2018), and the City's Municipal Code, Land Development Code—Landscape Standards (City of San Diego 2016) . Final component designs will be subject to resource verification and analysis to ensure conformance with this finding (**EP-BIO-1**). Public outreach and education will continue consistent with current practices in Mission Bay Park. Through implementation of these policies, these projects will be consistent with the MSCP SAP. By requiring subsequent Program components to include an MSCP SAP consistency analysis in the biological resources report, the Mission Bay Park Improvement Program itself, as a programmatic document that guides project

Table 4-5. Consistency with MSCP Section 1.5.2 General Management Directives

MSCP Subarea Plan Text	Program Component Applicability	Implementation
		analyses, is consistent with the MSCP SAP.
2. Remove giant reed, tamarisk, pampas grass, castor bean, artichoke thistle, and other exotic invasive species from creek and river systems, canyons and slopes, and elsewhere within the MHPA as funding or other assistance becomes available. If possible, it is recommended that removal begin upstream and/or upwind and move downstream/downwind to control reinvasion. Priorities for removal should be based on invasive species' biology (time of flowering, reproductive capacity, etc.), the immediate need of a specific area, and where removal could increase the habitat available for use by covered species such as the least Bell's vireo. Avoid removal activities during the reproductive seasons of sensitive species and avoid/ minimize impacts to sensitive species or native habitats. Monitor the areas and provide additional removal and apply herbicides if necessary. If herbicides are necessary, all safety and environmental regulations must be observed. The use of heavy equipment, and any other potentially harmful or impact-causing methodologies, to remove the plants may require some level of environmental or biological review and/or supervision to ensure against impacts to sensitive species.	▪ North Fiesta Island Wetland ▪ Tecolote Creek and Fiesta Island Causeway ▪ Fiesta Island Site No. 2 North Central ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Sea World Drive/San Diego River Site No. 5a Cloverleaf Area ▪ Sea World Drive/San Diego River Site 5b Triangle Restoration Area ▪ Rose Creek Bike Path ▪ Ocean Beach Bike Path ▪ Fiesta Island Causeway	Invasive species removal and control are included within proposed CHRMPs and include avoidance and minimization measures to reduce potential impacts to sensitive species or habitats (**EP-BIO-1, EP-BIO-3, EP-LU-1, and MM-BIO-3**). Through implementation of these policies, these projects will be consistent with the MSCP SAP. By requiring subsequent Program components to include an MSCP SAP consistency analysis in the biological resources report, the Mission Bay Park Improvement Program itself, as a programmatic document that guides project analyses, is consistent with the MSCP SAP.
Priority 2: 1. If funding permits, initiate a baseline survey with regular follow-up monitoring to assess invasion or re-invasion by exotics, and to schedule removal. Utilize trained volunteers to monitor and	▪ North Fiesta Island Wetland ▪ Tecolote Creek and Fiesta Island Causeway ▪ Fiesta Island Site No. 2 North Central ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area	Proposed habitat restoration areas will be monitored and managed for control of exotic species. Coordination with local groups will continue consistent with current practices in Mission Bay Park. Through implementation of these policies,

Table 4-5. Consistency with MSCP Section 1.5.2 General Management Directives

MSCP Subarea Plan Text	Program Component Applicability	Implementation
remove exotic species as part of a neighborhood, community, school, or other organization's activities program (such as Friends of Peñasquitos Preserve has done). If done on a volunteer basis, prepare and provide information on methods and timing of removal to staff and the public if requested. For giant reed removal, the Riverside County multi-jurisdictional management effort and experience should be investigated and relevant techniques used. Similarly, tamarisk removal should use The Nature Conservancy's experience in the Southern California desert regions, while artichoke thistle removal should reference The Nature Conservancy's experience in Irvine. Other relevant knowledge and experience is available from the California Exotic Pest Plant Council and the Friends of Los Peñasquitos Canyon Preserve.	▪ Sea World Drive/San Diego River Site No. 5a Cloverleaf Area ▪ Sea World Drive/San Diego River Site 5b Triangle Restoration Area	these projects will be consistent with the MSCP SAP. By requiring subsequent Program components to include an MSCP SAP consistency analysis in the biological resources report, the Mission Bay Park Improvement Program itself, as a programmatic document that guides project analyses, is consistent with the MSCP SAP.
2. Conduct an assessment of the need for cowbird trapping in each area of the MHPA where cattle, horses, or other animals are kept, as recommended by the habitat management technical committee in coordination with the wildlife agencies.	Not applicable	Cowbird trapping is not a current concern in this area. Cowbirds were identified in Rose Creek, but proposed bike/pedestrian trail improvements in that area will continue to not allow equestrian use and, therefore, are not expected to attract cowbirds. By requiring subsequent Program components to include an MSCP SAP consistency analysis in the biological resources report, the Mission Bay Park Improvement Program itself, as a programmatic document that guides project analyses, is consistent with the MSCP SAP.
3. If eucalyptus trees die or are removed from the MHPA area, replace with appropriate native species. Ensure that eucalyptus trees do not spread into new areas, nor increase substantially	To be determined	While Eucalyptus trees are not currently surveyed within the MHPA, there are Eucalyptus within the Program area. As subsequent CHRMP and Program component entitlements are

Table 4-5. Consistency with MSCP Section 1.5.2 General Management Directives

MSCP Subarea Plan Text	Program Component Applicability	Implementation
in numbers over the years. Eventual replacement by native species is preferred.		implemented, site specific projects within the MHPA shall conduct biological surveys as appropriate to identify whether Eucalyptus are on site and if they will be removed (EP-BIO-1). By requiring subsequent Program components to include an MSCP SAP consistency analysis in the biological resources report, the Mission Bay Park Improvement Program itself, as a programmatic document that guides project analyses, is consistent with the MSCP SAP.
4. On a case by case basis some limited trapping of non-native predators may be necessary at strategic locations, and where determined feasible to protect ground and shrub-nesting birds, lizards, and other sensitive species from excessive predation. This management directive may be considered a Priority 1 if necessary to meet the conditions for species coverage. If implemented, the program would only be on a temporary basis and where a significant problem has been identified and therefore needed to maintain balance of wildlife in the MHPA. The program would be operated in a humane manner, providing adequate shade and water, and checking all traps twice daily. A domestic animals release component would be incorporated into the program. Provide signage at access points and noticing of adjacent residents to inform people that trapping occurs, and how to retrieve and contain their pets.	▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area	Non-native predator control is not a concern in this area. Predator control for CLT nesting areas will continue consistent with current practices in the MBPMP and the associated NRMP. Through implementation of these policies, this project will be consistent with the MSCP SAP. By requiring subsequent Program components to include an MSCP SAP consistency analysis in the biological resources report, the Mission Bay Park Improvement Program itself, as a programmatic document that guides project analyses, is consistent with the MSCP SAP.
Flood Control **Priority 1:** 1. Perform standard maintenance, such as clearing	Not applicable	The Program does not include maintenance of flood channels. Some maintenance of storm drain outfalls and tidal channels may be required following

Table 4-5. Consistency with MSCP Section 1.5.2 General Management Directives

MSCP Subarea Plan Text	Program Component Applicability	Implementation
and dredging of existing flood channels, during the non-breeding or nesting season of sensitive bird or wildlife species utilizing the riparian habitat. For the least Bell's vireo, the non-breeding season generally includes mid-September through mid-March.		Program implementation and would be subject to breeding/nesting season restrictions (**MM-BIO-1, MM-BIO-3, MM-BIO-8**). By requiring subsequent Program components to include an MSCP SAP consistency analysis in the biological resources report, the Mission Bay Park Improvement Program itself, as a programmatic document that guides project analyses, is consistent with the MSCP SAP.
Priority 2: 1. Review existing flood control channels within the MHPA periodically (every five to ten years) to determine the need for their retention and maintenance, and to assess alternatives, such as restoration of natural rivers and floodplains.	Not applicable	The Program does not include flood channels within the MHPA. The City of San Diego Stormwater Department periodically reviews stormwater channels and infrastructure within the MHPA per implementation of the City's Municipal Waterways Maintenance Plan. By requiring subsequent Program components to include an MSCP SAP consistency analysis in the biological resources report, the Mission Bay Park Improvement Program itself, as a programmatic document that guides project analyses, is consistent with the MSCP SAP.

Notes: MSCP = Multiple Species Conservation Program; MM= Mitigation Measure; SAP = Subarea Plan; CEQA = California Environmental Quality Act; EP = Environmental Protocol; SDBG = San Diego Biology Guidelines; MHPA = Multi-Habitat Planning Area; NRMP = Mission Bay Natural Resources Management Plan; MBPMP = Mission Bay Park Master Plan; SDMC = San Diego Municipal Code; CLT = California least tern.

Specific Urban Area guidelines for Mission Bay B16, listed in Section 1.2.3 of the Subarea Plan, states "management of the least tern area…pursuant to the adopted Mission Bay Master Plan and associated Natural Resource Management Plan (1990)." All Program components in the MHPA, including restoration and re-designation of the NRMP CLT site, "Cloverleaf," are proposed in conformance with these previous plans with appropriate updates made to conform with more recent planning documents and guidelines. Analysis of conformance with the current Mission Bay Natural Resources Management Plan is provided in Table 4-6.

Table 4-6. Conformance with the Mission Bay Natural Resources Management Plan

Development Guidelines	Program Component Applicability	Implementation
California Least Tern (CLT)		
1. No in-water construction or dredging will be permitted in Mission Bay or the Flood Control Channel from April 1 through September 15, the least tern breeding season. If in-water construction is required during this time, exceptions are possible, upon approval of the City, California Department of Fish and Wildlife, and U.S. Fish and Wildlife Service. Any exception would have to meet the following criteria to preserve least tern nesting and foraging: use of silt curtains or similar devices around in-water construction activity; use of noise reduction or low noise equipment; and use of timing and location restrictions on activity to avoid interfering with breeding sites or major least tern foraging areas.	▪ North Fiesta Island Wetland ▪ Tecolote Creek and Fiesta Island Causeway ▪ Cudahy Creek Wetland ▪ Bonita Cove Restoration ▪ Ventura Cove Park Restoration ▪ Bahia Point Shoreline Restoration ▪ Vacation Island SW Restoration ▪ Vacation Island NW Restoration ▪ Vacation Island NE Restoration ▪ West Sail Bay Restoration ▪ Crown Point Restoration	At the time of future Program component entitlements, site-specific biological surveys will be conducted to identify biological resources (**EP-BIO-1**). If subsequent Program components are proposed during CLT breeding season, (MM-BIO-1 and MM-BIO-8) will be implemented as applicable to ensure dredging would not occur during the CLT breeding season of April 1 through September 15 unless approved by the City, CDFW, and USFWS based on a mitigation plan detailing monitoring surveys, monitoring schedules, construction and noise barriers/buffers, etc.) and proposed measures to be implemented to ensure that the take of birds or eggs or the disturbance of breeding activities is avoided. By requiring subsequent Program components to include an MSCP SAP consistency analysis in the biological resources report, the Mission Bay Park Improvement Program itself, as a programmatic document that guides project analyses, is consistent with the MSCP SAP.
2. No direct impacts to permanently designated least tern nesting sites are permitted. The only exception is the Cloverleaf site, which may be converted in the future to landscaping if no least terns use the site. This land use change would require the approval of a mitigation replacement site by the resource agencies.	▪ North Fiesta Island Wetland ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Sea World Drive/San Diego River Site No. 5a Cloverleaf Area (does not currently support CLT nesting)	Direct impacts to designated CLT nesting sites are limited to restoration activities approved by the City, CDFW and USFWS and implemented in accordance with mitigation measures to ensure neither active nests nor breeding activity is adversely affected during construction (**MM-BIO-1 and MM-BIO-8**). Restoration is proposed at the Cloverleaf Site No. 5a but no change to its designation as a CLT nest site is proposed under the Program (i.e., no land use change is proposed). The Program is expected to comply with this NRMP guideline; additionally, as component implementation is

Table 4-6. Conformance with the Mission Bay Natural Resources Management Plan

Development Guidelines	Program Component Applicability	Implementation
		reviewed during subsequent environmental analysis, consistency with each NRMP guideline will be demonstrated prior to project approval.
3. The following buffer zones for each least tern nesting site will be free of new structures with heights of over six feet, including fencing around the site. This will keep raptors from using a high vantage point to prey on least tern chicks. ▪ North Fiesta Island: 150 feet	▪ North Fiesta Island Wetland ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Sea World Drive/San Diego River Site No. 5a Cloverleaf Area	The Program does not propose new structures in the buffer zones that would be over 6 feet. As future subsequent projects come forward adjacent to or within CLT nesting sites, proposals will be reviewed for consistency with the NRMP to ensure no structures are built within the buffer zone of a nesting site (MM-BIO-1, MM-LU-1). The Program is expected to comply with this NRMP guideline; additionally, as component implementation is reviewed during subsequent environmental analysis, consistency with each NRMP guideline will be demonstrated prior to project approval.
Eelgrass Habitat		
1. No net loss of eelgrass meadows is acceptable. A 1:1 replacement ratio of similar density is required for impacts to eelgrass habitat as delineated in the 1988 survey.	▪ Tecolote Creek and Fiesta Island Causeway ▪ Cudahy Creek Wetland ▪ Vacation Island Northeast ▪ Vacation Island Southwest ▪ Bonita Cove	Mitigation measures will require updated surveys for eelgrass and replacement planting at a minimum ratio of 1:1 in accordance with a mitigation plan. Implementation of the Eelgrass Conceptual Habitat Restoration and Monitoring Plan (CHRMP) and MM-BIO-5 will ensure no net loss of eelgrass habitat. The Program is expected to comply with this NRMP guideline; additionally, as component implementation is reviewed during subsequent environmental analysis, consistency with each NRMP guideline will be demonstrated prior to project approval.
2. Mitigation is required in Mission Bay itself if the impact occurs in Mission Bay. Mitigation is required in the Flood Control Channel or Mission Bay if the impact occurs in the Flood Control Channel.	All	Eelgrass mitigation is proposed in Mission Bay through implementation of the Eelgrass CHRMP and MM-BIO-5. Final requirements are subject to resource agency approval at the

Table 4-6. Conformance with the Mission Bay Natural Resources Management Plan

Development Guidelines	Program Component Applicability	Implementation
		time project-specific approvals are obtained. No impacts are proposed in the San Diego River. The Program is expected to comply with this NRMP guideline; additionally, as component implementation is reviewed during subsequent environmental analysis, consistency with each NRMP guideline will be demonstrated prior to project approval.
3. New sand beaches below Mean Lower Low Water (MLLW) should be replanted with eelgrass whenever the slope is changed by maintenance activities and eelgrass beds are impacted.	Not applicable	The Program does not include maintenance activities that would modify slopes or the installation of new sand beaches. Restoration areas suitable for eelgrass would be planted as part of component mitigation plans, the Eelgrass CHRMP, and MM-BIO-5. The Program is expected to comply with this NRMP guideline; additionally as component implementation is reviewed during subsequent environmental analysis, consistency with each NRMP guideline will be demonstrated prior to project approval.
4. Replanting efforts are best during low energy tides (late summer–early fall).	▪ North Fiesta Island Wetlands ▪ Tecolote Creek and Fiesta Island Causeway ▪ Cudahy Creek Wetland	Subsequent site specific mitigation plans detailing eelgrass planting will be required to conform with this planting guidance (MM-BIO-5). The Program is expected to comply with this NRMP guideline; additionally as component implementation is reviewed during subsequent environmental analysis, consistency with each NRMP guideline will be demonstrated prior to project approval.
5. Any construction or dredging project in Mission Bay or the Flood Control Channel will buoy off areas from which it is restricted prior to the start of activity. This is to limit the extent of direct impacts to existing eelgrass.	▪ North Fiesta Island Wetlands ▪ Tecolote Creek and Fiesta Island Causeway ▪ Cudahy Creek Wetland	During construction and dredging improvements impacting the subsurface substrate, mitigation measures will require that areas of improvements be buoyed off to limit the extent of direct impacts to eelgrass (MM-BIO-5). The Program is expected to comply with this NRMP guideline; additionally, as

Table 4-6. Conformance with the Mission Bay Natural Resources Management Plan

Development Guidelines	Program Component Applicability	Implementation
		component implementation is reviewed during subsequent environmental analysis, consistency with each NRMP guideline will be demonstrated prior to project approval.
6. Any construction or dredging project disturbing the substrate in Mission Bay or the Flood Control Channel will use silt curtains or similar devices around disturbance areas. This will limit any adverse impact to water quality to the immediate construction area; thereby reducing impacts to eelgrass and foraging birds.	▪ North Fiesta Island Wetlands ▪ Tecolote Creek and Fiesta Island Causeway ▪ Cudahy Creek Wetland	Mitigation measures would ensure that silt curtains or similar devices would be used during construction and dredging of substrate in Mission Bay to reduce impacts to eelgrass and foraging birds (**EP-WQ-1, MM-BIO-3, MM-BIO-8**). The Program is expected to comply with this NRMP guideline; additionally, as component implementation is reviewed during subsequent environmental analysis, consistency with each NRMP guideline will be demonstrated prior to project approval.
7. Eelgrass surveys for a project site will be required before and after construction to determine the extent of impact. Mitigation requirements for eelgrass will be based on the amount of actual loss.	▪ North Fiesta Island Wetlands ▪ Tecolote Creek and Fiesta Island Causeway ▪ Cudahy Creek Wetland	Implementation of **EP-BIO-1** and **MM-BIO-1** will require updated surveys for eelgrass and will verify the amount of actual loss proposed in accordance with a mitigation plan (**MM-BIO-5**). The Program is expected to comply with this NRMP guideline; additionally as component implementation is reviewed during subsequent environmental analysis, consistency with each NRMP guideline will be demonstrated prior to project approval.
8. A mitigation program, including maintenance, would be required for impacts to eelgrass habitat.	▪ North Fiesta Island Wetlands ▪ Tecolote Creek and Fiesta Island Causeway ▪ Cudahy Creek Wetland	Implementation of **EP-BIO-1** and **MM-BIO-1** will require updated surveys for eelgrass and will verify the amount of actual loss proposed in accordance with a mitigation plan (**MM-BIO-5**). The Program is expected to comply with this NRMP guideline; additionally as component implementation is reviewed during subsequent environmental analysis, consistency with each NRMP guideline will be demonstrated prior to project approval.

Table 4-6. Conformance with the Mission Bay Natural Resources Management Plan

Development Guidelines	Program Component Applicability	Implementation
Marine and Terrestrial Habitat		
1. No net loss to any salt marsh, salt pan, coastal strand associated with a sensitive species, or open water habitat will be permitted without replacement of equal or greater habitat value. The healthy salt marsh found in the Northern Wildlife Preserve is the last remnant of the once extensive salt marsh in Mission Bay. The salt marsh in the Southern Wildlife Preserve is also flourishing; however, because of its location in a Flood Control Channel, a high flood event could damage portions of the marsh. Because these salt marsh areas are extremely sensitive to disruptive activities, no direct impact is permitted, unless required for protection or enhancement of the marsh. Should protection or enhancement measures become necessary, they should be done outside of least tern, clapper rail, and savannah sparrow nesting seasons and incorporate measures to contain and reduce the impact. Any proposed measure for the Northern Wildlife Preserve must be approved by the University of California at San Diego and the City joint management committee as well as appropriate resource agencies. Any measure proposed in the Southern Wildlife Preserve requires City and appropriate agency approvals.	▪ North Fiesta Island Wetlands ▪ North Fiesta Island Stockpile Option 1 ▪ Tecolote Creek and Fiesta Island Causeway ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Rose Creek Bike Path ▪ Fiesta Island Causeway Path	No work is proposed in the Northern or Southern Wildlife Preserve. Implementation of **MM-BIO-2a** will ensure no net loss of salt marsh, salt pan/panne, or coastal strand habitats. Open water habitat may be reduced but would be replaced with habitats of equal or greater value. Proposed Program component designs provide improved protection and enhancement of CLT, LFRR, and BSS nesting; mitigation measures will ensure protection during construction (**MM-BIO-1, MM-BIO-3, MM-BIO-8**). The Program is expected to comply with this NRMP guideline; additionally as component implementation is reviewed during subsequent environmental analysis, consistency with each NRMP guideline will be demonstrated prior to project approval.
2. Buffer zones serve a biological function by providing a separation and screening of wildlife habitat from human activity associated with human development. Land use within buffer areas will be limited to bikeways, walkways, and passive recreation, such as	▪ North Fiesta Island Wetlands ▪ Tecolote Creek and Fiesta Island Causeway ▪ Cudahy Creek Wetland ▪ Fiesta Island Site No. 1 South ▪ Fiesta Island Site No. 2 North Central	The Program includes designs that place recreational land uses (trails, outlooks) within buffer zones planted with appropriate native vegetation compatible with adjacent habitats. Stormwater design standards are required to ensure control of runoff (**EP-WQ-1**).

Table 4-6. Conformance with the Mission Bay Natural Resources Management Plan

Development Guidelines	Program Component Applicability	Implementation
nature study, viewing, and picnicking. Buffer areas should be planted with appropriate vegetation native to southern California and compatible with the adjacent habitat. Measures should be taken to keep run-off from entering habitat reserves. Buffer zones around terrestrial habitats in Mission Bay Park which exclude any development are as follows: salt marsh – 100 feet; salt pan – 50 feet; and coastal strand – 50 feet. The only exceptions to buffer zone provisions are signs, buoys, boundary fences, and educational or research-oriented structures with City approval on a project-by-project basis. City approval will include environmental review.	▪ Fiesta Island Site No. 3 Near Youth Camping ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Sea World Drive/San Diego River Site No. 5a Cloverleaf Area ▪ Sea World Drive/San Diego River Site No. 5b Triangle Restoration Area ▪ Sea World Drive/San Diego River Site No. 5c South Shores East Area	Limited development is planned within 100 feet of salt marsh, 50 feet of salt pan/panne or coastal strand; these development (e.g., trails, signage, fencing) serve education and protection purposes and are subject to City approval (EP-BIO-1, EP-LU-1, MM-BIO-2a/2b). The Program is expected to comply with this NRMP guideline; additionally as component implementation is reviewed during subsequent environmental analysis, consistency with each NRMP guideline will be demonstrated prior to project approval.
Dredging		
1. Dredging impacts to marine habitat will require a 1:1replacement ratio. Impacts from maintenance dredging will require a one-time mitigation for lost resources. Subsequent maintenance dredging for the original location, which has already mitigated the impact, will not require additional mitigation each time it is dredged.	▪ North Fiesta Island Wetlands ▪ Tecolote Creek and Fiesta Island Causeway ▪ Cudahy Creek Wetland	No maintenance dredging is proposed as part of the Program. Dredging for habitat construction would result in restoration of marine habitats at a minimum 1:1 ratio, in accordance with mitigation measures identified in this report (MM-BIO-2a and MM-BIO-5). The Program is expected to comply with this NRMP guideline; additionally, as component implementation is reviewed during subsequent environmental analysis, consistency with each NRMP guideline will be demonstrated prior to project approval.
2. All dredging activities should comply with permit conditions of the U.S. Army Corps of Engineers, Regional Water Quality Control Board, State Lands Commission, and California Coastal Commission. Permits issued by these agencies may specify additional requirements for timing of in-water construction, spoil	▪ North Fiesta Island Wetlands ▪ Tecolote Creek and Fiesta Island Causeway ▪ Cudahy Creek Wetland	Program components will be required to comply with all permit requirements of the regulating agencies (EP-BIO-1). The Program is expected to comply with this NRMP guideline; additionally, as component implementation is reviewed during subsequent environmental analysis, consistency with each NRMP

Table 4-6. Conformance with the Mission Bay Natural Resources Management Plan

Development Guidelines	Program Component Applicability	Implementation
disposal methods, and dredge sediment material testing.		guideline will be demonstrated prior to project approval.
3. Sand of good quality retrieved in dredging operation will be stockpiled on a non-sensitive, designated site on Fiesta Island upon approval of the City. This sand will be used later in replenishment if it is of the proper grain size for beach stabilization. If room is not available on Fiesta Island, other arrangements for dredge spoil disposal will need to be made and approved by the City and other appropriate resource agencies.	▪ North Fiesta Island Stockpile Option 1 ▪ North Fiesta Island Stockpile Option 2 ▪ North Fiesta Island Stockpile Option 3	The Program includes beneficial reuse provisions, including stockpiling within Fiesta Island. These provisions would be verified through implementation of **EP-BIO-1**. The Program is expected to comply with this NRMP guideline; additionally, as component implementation is reviewed during subsequent environmental analysis, consistency with each NRMP guideline will be demonstrated prior to project approval.
4. If the sand is determined by a qualified expert to be unclean, to contain toxic material, or to be of poor quality, it will be transported to a permitted landfill. Sand containing toxic material will be taken only to a landfill qualified to handle toxic material.	▪ North Fiesta Island Stockpile Option 1 ▪ North Fiesta Island Stockpile Option 2 ▪ North Fiesta Island Stockpile Option 3	This policy will be implemented through **EP-SW-1** for the Program. The Program is expected to comply with this NRMP guideline; additionally, as component implementation is reviewed during subsequent environmental analysis, consistency with each NRMP guideline will be demonstrated prior to project approval.
5. Dredging of the Northern Wildlife Preserve outer boundary as defined on the bathymetry map (Appendix A) is permitted if in the future the outer boundary moves further into the Bay. The future dredge line will be outside the minus ten mean sea level (MSL) contour to preserve as much eelgrass and marsh habitat as possible. Spot elevation checks will be done every two years at nine locations along the proposed dredge line, outlined on the bathymetry map. These elevation checks will be the basis for deciding if the boundary needs dredging. Impacts of the dredging operation will be determined and methods used to minimize impacts (e.g., noise reduction, silt curtains, etc.). Timing is especially	Not applicable	The Program does not propose dredging near the Northern Wildlife Preserve.

Table 4-6. Conformance with the Mission Bay Natural Resources Management Plan

Development Guidelines	Program Component Applicability	Implementation
important to avoid disturbance to nesting birds. Impacts to eelgrass will need to be mitigated the first time the area is dredged but not for subsequent maintenance dredging at the same location.		
7. Sand reclamation and beach grooming and recontouring activity in areas adjacent to eelgrass beds will not require mitigation if silt curtains are utilized to avoid the secondary impact of drifting material and reduced water quality.	▪ North Fiesta Island Wetland ▪ Tecolote Creek and Fiesta Island Causeway ▪ Cudahy Creek Wetland ▪ Bonita Cove Restoration ▪ Ventura Cove Park Restoration ▪ Bahia Point Shoreline Restoration ▪ Vacation Island SW Restoration ▪ Vacation Island NW Restoration ▪ Vacation Island NE Restoration ▪ West Sail Bay Restoration ▪ Crown Point Restoration	Subsequent program component implementation of **EP-BIO-1** and **MM-BIO-3** would ensure that silt curtains would be used to avoid indirect impacts of drifting material and reduced water quality during sand placement.
Beach Maintenance		
Grooming and cleaning activities (smoothing and removing trash from the sand) in the dry sand above Mean Higher High Water (MHHW) will not require mitigation. Removal of debris washed ashore will not require mitigation if the activity occurs above Mean Lower Low Water (MLLW), removes as little sand as possible, and follows responsible construction practices. Smoothing tidal cuts in intertidal areas will not require mitigation if it is done above MLLW, above eelgrass beds, does not add sand, and follows responsible construction practices. Beach replenishment should be done only to replace sand lost in a storm event or to dress a beach prior to the summer visitor season. The City will not require mitigation for beach replenishment (the adding of sand in depleted areas) if it is done above MLLW, above eelgrass beds, and follows responsible	▪ North Fiesta Island Wetland ▪ Tecolote Creek and Fiesta Island Causeway ▪ Cudahy Creek Wetland ▪ Bonita Cove Restoration ▪ Ventura Cove Park Restoration ▪ Bahia Point Shoreline Restoration ▪ Vacation Island SW Restoration ▪ Vacation Island NW Restoration ▪ Vacation Island NE Restoration ▪ West Sail Bay Restoration ▪ Crown Point Restoration	Movement of sand and associated grooming and cleaning activities would be conducted within the sand management area; debris removal and any potential future needs for beach replenishment would be conducted in accordance with local and state laws. The Program is expected to comply with this NRMP guideline; additionally, as component implementation is reviewed during subsequent environmental analysis, consistency with each NRMP guideline will be demonstrated prior to project approval.

Table 4-6. Conformance with the Mission Bay Natural Resources Management Plan

Development Guidelines	Program Component Applicability	Implementation
construction practices. Beach replenishment requires an Arny Corps of Engineers permit and a California Coastal Commission permit.		
Water Quality		
1. All erosion and potential erosion areas should be landscaped, with the exception of the cliffs along Riviera Shores where irrigation runoff would aggravate the problem.	All	The proposed Program would reduce erosion through compliance with the City's Stormwater Standards and Landscape Guidelines (**EP-BIO-3 and EP-WQ-1**). The Program would not conduct any improvements along Riviera Shores. The Program is expected to comply with this NRMP guideline; additionally, as component implementation is reviewed during subsequent environmental analysis, consistency with each NRMP guideline will be demonstrated prior to project approval.
2. Irrigation systems should be designed and properly maintained to avoid the creation of erosion.	▪ North Fiesta Island Wetlands ▪ Tecolote Creek and Fiesta Island Causeway ▪ Cudahy Creek Wetland ▪ Fiesta Island Site No. 1 South ▪ Fiesta Island Site No. 2 North Central ▪ Fiesta Island Site No. 3 Near Youth Camping ▪ Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area ▪ Sea World Drive/San Diego River Site No. 5a Cloverleaf Area ▪ Sea World Drive/San Diego River Site No. 5b Triangle Restoration Area ▪ Sea World Drive/San Diego River Site No. 5c South Shores East Area	The Program does not propose installation of new permanent irrigation systems and maintenance of irrigation systems will continue consistent with current practices. Temporary irrigation installed for the purpose of habitat restoration will be designed to avoid erosion (**EP-BIO-3 and EP-WQ-1**). The Program is expected to comply with this NRMP guideline; additionally, as component implementation is reviewed during subsequent environmental analysis, consistency with each NRMP guideline will be demonstrated prior to project approval.
3. Dry flow interceptor systems should be maintained and operated to minimize dry weather	Not applicable	The Program does not propose dry flow interceptor systems.

Table 4-6. Conformance with the Mission Bay Natural Resources Management Plan

Development Guidelines	Program Component Applicability	Implementation
surface contaminants from entering Mission Bay.		
4. Runoff should be directed away from the Bay wherever possible.	All	The new road proposed at North Fiesta Island is designed to drain inland away from the beach. All components are designed to comply with the City's Stormwater Standards (**EP-WQ-1**). The Program is expected to comply with this NRMP guideline; additionally, as component implementation is reviewed during subsequent environmental analysis, consistency with each NRMP guideline will be demonstrated prior to project approval.
5. Every effort should continue to be made to improve water quality for preserve areas and the Bay. The University of California Natural Reserve System and City of San Diego joint management of the Northern Wildlife Preserve would include efforts to regularly monitor water quality in the Preserve.	All	Major goals of the Program that would improve water quality include improving tidal hydraulic connectivity and enhancing habitat and wetlands. The Program is expected to comply with this NRMP guideline; additionally, as component implementation is reviewed during subsequent environmental analysis, consistency with each NRMP guideline will be demonstrated prior to project approval.

Notes: CDFW = California Department of Fish and Wildlife; USFWS = U.S. Fish and Wildlife Service; MM = Mitigation Measure; NRMP = Mission Bay Natural Resources Management Plan; EP = Environmental Protocol; CLT = California least tern; LFRR = light-footed Ridgway's rail; BSS = Belding's savannah sparrow.

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5 Impacts

5.1 Explanation of Findings of Significance

This section addresses direct, indirect, and cumulative impacts to biological resources that would result from implementation of the proposed Program and provides the significance determinations for potential impacts.

Impacts to special-status vegetation communities, plant and wildlife species, and jurisdictional waters, including wetlands, must be quantified and analyzed to determine whether such impacts are significant under CEQA. CEQA Guidelines Section 15064(b) states that an ironclad definition of "significant" effect is not possible, because the significance of an activity may vary with the setting. However, Appendix G of the CEQA Guidelines does provide "examples of consequences which may be deemed to be a significant effect on the environment" (14 CCR15064[e]). These effects include substantial effects on rare or endangered species of animal or plant or the habitat of the species. Under CEQA Guidelines Section 15065(a), a proposed component may have a significant effect on the environment if the component has the potential to:

(1) Substantially degrade the quality of the environment,

(2) Substantially reduce the habitat of a fish or wildlife species,

(3) Cause a fish or wildlife population to drop below self-sustaining levels,

(4) Threaten to eliminate a plant or animal community,

(5) Reduce the number or restrict the range of a rare or endangered plant or animal, or

(6) Eliminate important examples of a major period of California history or prehistory.

The following are the City's currently adopted Thresholds of Significance (City of San Diego 2022) for biological resources:

Would the proposal result in:

Issue 1: A substantial adverse impact, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in the MSCP [, VPHCP,] or other local or regional plans, policies or regulations, or by the California Department of Fish and Game (CDFG)[1] or U.S. Fish and Wildlife Service (USFWS)?

Issue 2: A substantial adverse impact on any Tier I Habitats, Tier II Habitats, Tier IIIA Habitats, or Tier IIIB Habitats as identified in the Biology Guidelines of the Land Development manual or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFG or USFWS?

Issue 3: A substantial adverse impact on wetlands (including, but not limited to, marsh, vernal pool, riparian, etc.) through direct removal, filling, hydrological interruption, or other means?

[1] CDFG was officially renamed to CDFW in January 2013; elsewhere in this report, we use CDFW, but where quoted text uses the older name (as is the case here), it is retained.

Issue 4: Interfering substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, including linkages identified in the MSCP Plan, or impede the use of native wildlife nursery sites?

Issue 5: A conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan, either within the MSCP plan area or in the surrounding region?

Issue 6: Introducing land use within an area adjacent to the MHPA that would result in adverse edge effects?

Issue 7: A conflict with any local policies or ordinances protecting biological resources?

Issue 8: An introduction of invasive species of plants into a natural open space area?

Lands containing Tier I, II, IIIA, and IIIB habitats (Table 3 from the SDBG) and all wetlands (Tables 2A and 2B from the SDBG) are considered sensitive and declining habitats. As such, impacts to these resources are generally considered significant with the following exceptions (City of San Diego 2018):

a. Total component upland impacts less than 0.10 acre is not considered significant and do not require mitigation.
b. Project impacts to non-native grasslands totaling less than 1.0 acres that are completely surrounded by existing urban developments are not considered significant and do not require mitigation.
c. Total component wetland impacts less than 0.01 acre are not considered significant and do not require mitigation. This does NOT apply to vernal pools, road pools supporting listed fairy shrimp, or wetlands within the COZ.
d. Mitigation is not required for impacts to non-native grassland habitat when impacted for the purpose of wetland or other native habitat creation.
e. Habitat mitigation is not required for impacts to manufactured slopes or areas that have been planted with native species for the purpose of erosion control. In order to qualify for this exception, substantiation of previous permits and mitigation must be provided. This does not apply to noise or wildlife avoidance mitigation requirements, as described in Appendix I of the SDBG.
f. Removal/control of non-native plants is not considered to constitute a significant habitat impact for which compensatory habitat acquisition, preservation, or creation for the area impacted is required. However, mitigation for indirect impacts such as erosion control or off-site infestation by non-native species may still be required.

Lands designated as Tier IV are not considered to have significant habitat value and impacts to these areas would not be considered significant. Additionally, lands that meet the “artificially created wetlands in historically non-wetland areas” definition in the SDBG (please see the SDBG for the complete definition), are regulated by the City as upland habitat or land cover.

Impacts to sensitive plant species may also be considered significant based on the rarity and extent of the species impacted. In general, conformance with the Subarea Plan, including provisions to provide habitat mitigation at

required ratios and adherence to MSCP Area Specific Management Directives for each species, including verification of conformance prior to approval of Program components, would reduce impacts to sensitive plant species covered under the MSCP to a level that is less than significant. For impacts to Narrow Endemic Covered Species and non-Covered Species that are state-listed or federally listed and/or have a CRPR of 1B.1, 1B.2, 2B.1, or 2B.2, a case-by-case review is required to determine significance (e.g., potential for impacts to breeding, amount of suitable habitat loss).

Impacts to sensitive wildlife species may also be considered significant based on the rarity and extent of the species impacted. In general, conformance with the Subarea Plan, including provisions to provide habitat mitigation at required ratios and adherence to MSCP Area Specific Management Directives for each MSCP-covered species, including verification of conformance prior to approval of Program components, would reduce impacts to those MSCP-covered sensitive wildlife species to a level that is less than significant. For other species, impacts require a case-by-case review to determine significance.

5.2 Direct Impacts

A direct impact is a physical change in the environment, which is caused by and immediately related to implementation of a Program component and can result in either permanent loss of on-site habitat and the plant and wildlife species that it contains or temporary loss of these resources. Impacts are considered permanent when a habitat or biological resource is impacted and is not restored to the same or higher value habitat within a short time period (i.e., within a year) following an impact, such that the functions of that habitat for plants and wildlife species are reduced in the long term. These impacts may occur due to construction and/or operations and maintenance. Impacts are considered temporary if the habitat impacted is restored, either passively or actively, to a habitat type of similar or higher value in a short period of time following the impact (e.g., revegetation of a wetland or vegetation community following one-time impacts). These impacts may include conversion of existing habitat areas to different habitat types that are more consistent with historical ecology or adapted to climate change conditions. Project elements may also have a beneficial effect on biological resources through habitat restoration activities resulting in a gain of resources (e.g., conversion of existing disturbed areas or open water to high-functioning native habitats or enhancement of habitat through the removal and control of invasive species). These restoration areas may be credited as mitigation to offset permanent or temporary impacts.

Direct impacts to biological resources would include the following:

- Direct removal of vegetation and habitat during component construction and operational activities by means of excavation, grading, dredging, vegetation clearing/grubbing/crushing;
- Human incursion into sensitive habitats;
- Mortality of sensitive wildlife species from vehicular collision; and
- Destruction or abandonment of nests.

5.2.1 Component Footprint Analysis

The proposed Program includes several components that may be constructed independently or together in accordance with an Implementation Framework. The analysis of impacts to biological resources is programmatic and based primarily on the construction footprint identified for each Program component. These footprints are based on the total area of proposed improvements including grading, infrastructure, staging areas, and

maintenance areas. Existing biological resources within these footprints are assumed to be directly impacted by the construction of each component; those impacts biological resources are identified in the following sections. Potential significant impacts are identified, and mitigation measures are proposed to reduce significant impacts, where feasible. Implementation of several Program components is expected to provide mitigation in the form of habitat restoration. However, precise comparison of impacts and habitat restoration is not included at this stage due to lack of information regarding the timing of impacts relative to habitat restoration, the precise areas of infrastructure improvements and maintenance that would be excluded from mitigation credit, and mitigation agreements with the resource agencies. These additional details are expected to be included in subsequent approvals, as identified in the Implementation Framework.

5.2.2 Wetland and Water Quality Improvements Element

5.2.2.1 North Fiesta Island Component

Direct Impacts to Vegetation Communities and Jurisdictional Aquatic Resources

Direct impacts to vegetation communities and jurisdictional resources are based on an overlay of the component footprint with mapped biological resources (Tables 5-1 and 5-2). This component is expected to also result in the creation of subtidal, mudflat, marsh, and transitional vegetation communities (see Table 1-1 and Figure 5).

Table 5-1. Wetland Vegetation Community and Land Cover Impacts at the North Fiesta Island Component

Vegetation Communities and Land Cover Types	SDBG Wetland Vegetation Community	Jurisdiction	Impacts within MHPA	Impacts Outside of MHPA
Beach	Marine Habitats	USACE/RWQCB/CCC/City	1.40	3.58
Disturbed Southern Coastal Salt Marsh	Saltmarsh	RWQCB/CCC/City	0	0.15
Eelgrass	Eelgrass Beds	USACE/RWQCB/CCC/City	0	1.06
Open Water	Marine Habitats	USACE/RWQCB/CCC/City	0	1.12
		Total[1]	**1.37**	**2.68**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA= Multi-Habitat Planning Area; USACE = United States Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CCC = California Coastal Commission; City = City of San Diego.

[1] Totals may not sum precisely due to rounding.

Table 5-2. Upland Vegetation Community and Land Cover Impacts at the North Fiesta Island Component

Vegetation Communities and Land Cover Types	SDBG Vegetation Community	Habitat Tier	Impacts within MHPA (Acres)	Impacts Outside of MHPA (Acres)
Non-Native Upland Vegetation Communities				
Disturbed Habitat	Disturbed	IV	29.20	9.38
Land Covers				
Beach	Disturbed	IV	0.87	1.10
		Total[1]	**30.07**	**10.48**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area.
[1] Totals may not sum precisely due to rounding.

Implementation of the component would result in direct impacts to beach, disturbed southern coastal salt marsh, and open water comprising aquatic resources potentially under the jurisdiction of USACE, RWQCB, CCC, and/or the City. In addition, eelgrass would be subject to permanent or temporary removal during construction and additional impacts to eelgrass would be assessed for unvegetated areas within 5 meters of mapped eelgrass, to account for fluctuating eelgrass distribution and functional influence around eelgrass cover (NMFS 2014). This component is expected to result in restored habitats that may be suitable as mitigation for significant impacts of this component and other components of the Program, as determined during subsequent environmental analysis, prior to component approval.

Direct Impacts to Sensitive Plant Species

No special-status plant species were detected or have a moderate to high potential to occur within the component footprint. Therefore, direct impacts to special-status plant species are considered less than significant.

5.2.2.1.1 North Fiesta Island Component Stockpile Option 1

Direct Impacts to Vegetation Communities and Jurisdictional Aquatic Resources

Direct impacts to vegetation communities and jurisdictional resources are based on an overlay of the component footprint with mapped biological resources (Tables 5-3 and 5-4). At the time of future project component entitlements, site-specific biological surveys will be conducted to identify the existing locations of any sensitive plant species (REFERNCE EP/MM) and project shall be designed to avoid and minimize any direct impacts to sensitive plant species where feasible.

Table 5-3. Wetland Vegetation Community and Land Cover Impacts at the North Fiesta Island Component Stockpile Option 1

Vegetation Communities and Land Cover Types	SDBG Wetland Vegetation Community	Jurisdiction	Impacts Outside of MHPA (Acres)
Disturbed Southern Coastal Salt Marsh	Salt Marsh	RWQCB/CCC/City	0.17
		Total[1]	**0.17**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area; USACE = U.S. Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CCC = California Coastal Commission; City = City of San Diego.
[1] Totals may not sum precisely due to rounding.

Table 5-4. Upland Vegetation Community and Land Cover Impacts at the North Fiesta Island Component Stockpile Option 1

Vegetation Communities and Land Cover Types	SDBG Vegetation Community	Habitat Tier	Impacts Outside of MHPA (Acres)
Non-Native Upland Vegetation Communities			
Disturbed Habitat	Disturbed	IV	15.72
		Total[1]	**15.72**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area.
[1] Totals may not sum precisely due to rounding.

Implementation of the component would result in direct impacts to disturbed southern coastal salt marsh comprising aquatic resources potentially under the jurisdiction of RWQCB, CCC, and/or the City. RWQCB, CCC, and the City are expected to require mitigation for impacts to disturbed southern coastal salt marsh. Direct impacts to disturbed habitat would be less than significant.

Direct Impacts to Sensitive Plant Species

Two special-status plants were detected within the component footprint: Coast woolly-heads and decumbent goldenbush. No additional special-status species have moderate or high potential to occur within the component footprint. Table 5-5 lists the number of individuals of sensitive plants that would be directly impacted as part of the component.

Table 5-5. Direct Impacts to Special-Status Plants in the North Fiesta Island Component Stockpile Option 1 Footprint

Species	Status (Federal/State/CRPR/ City of San Diego MSCP)	Impacts (Number of Individuals)
Species Observed in the Component Footprint		
Coast woolly-heads	None/None/1B.2/None	2,115
Decumbent goldenbush	None/None/1B.2/None	1

Notes: CRPR = California Rare Plant Rank; MSCP = Multiple Species Conservation Program.
CRPR: California Rare Plant Rank
CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere
Threat Rank

.2 – Moderately threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat)

Coast woolly-heads and decumbent goldenbush are not covered or narrow endemic species but are considered CRPR 1B.2 species and are present throughout the component parcel where these species would be directly impacted by the component. Therefore, impacts to this species would be considered significant and require either avoidance or restoration that supports the species.

5.2.2.1.2 North Fiesta Island Component Stockpile Option 2

Direct Impacts to Vegetation Communities and Jurisdictional Aquatic Resources

Direct impacts to vegetation communities and jurisdictional resources are based on an overlay of the component footprint with mapped biological resources (Table 5-6) and are less than significant.

Table 5-6. Upland Vegetation Community and Land Cover Impacts at the North Fiesta Island Component Stockpile Option 2

Vegetation Communities and Land Cover Types	SDBG Vegetation Community	Habitat Tier	Impacts Outside of MHPA (Acres)
Non-Native Upland Vegetation Communities			
Disturbed Habitat	Disturbed	IV	17.37
		Total[1]	**17.37**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area.
1 Totals may not sum precisely due to rounding.

Direct Impacts to Sensitive Plant Species

No special-status plant species were detected or have a moderate to high potential to occur within the component footprint. Therefore, direct impacts to special-status plant species are considered less than significant.

5.2.2.1.3 North Fiesta Island Component Stockpile Option 3

Direct Impacts to Vegetation Communities and Jurisdictional Aquatic Resources

Direct impacts to vegetation communities and jurisdictional resources are based on an overlay of the component footprint with mapped biological resources (Table 5-7) and are less than significant.

Table 5-7. Upland Vegetation Community and Land Cover Impacts at the North Fiesta Island Component Stockpile Option 3

Vegetation Communities and Land Cover Types	SDBG Vegetation Community	Habitat Tier	Impacts Outside of MHPA (Acres)
Non-Native Upland Vegetation Communities			
Disturbed Habitat	Disturbed	IV	29.33
		Total1	**29.33**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area.
1 Totals may not sum precisely due to rounding.

Direct Impacts to Sensitive Plant Species

No special-status plants were detected within the component footprint, and no additional special-status species have moderate or high potential to occur within the component footprint.

5.2.2.2 Tecolote Creek and Fiesta Island Causeway Component

Direct Impacts to Vegetation Communities and Jurisdictional Aquatic Resources

Direct impacts to vegetation communities and jurisdictional resources are based on an overlay of the component footprint with mapped biological resources (Table 5-8 and 5-9). This component is expected to also result in the creation of subtidal, mudflat, marsh, and transitional vegetation communities (see Table 1-3 and Figure 6).

Table 5-8. Wetland Vegetation Community and Land Cover Impacts at the Tecolote Creek and Fiesta Island Causeway Component

Vegetation Communities and Land Cover Types	SDBG Wetland Vegetation Community	Jurisdiction	Impacts within MHPA	Impacts Outside of MHPA
Beach	Marine Habitats	USACE/RWQCB/CCC/City	0	1.87
Open Water	Marine Habitats	USACE/RWQCB/CCC/City	1.66	13.33
Eelgrass	Eelgrass Beds	USACE/RWQCB/CCC/City	0	0.66
Southern Coastal Salt Marsh	Salt Marsh	USACE/RWQCB/CCC/City	0.42	1.19
		Total[1]	**2.08**	**17.05**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA= Multi-Habitat Planning Area; USACE = United States Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CCC = California Coastal Commission; City = City of San Diego.

[1] Totals may not sum precisely due to rounding.

Table 5-9. Upland Vegetation Community and Land Cover Impacts at the Tecolote Creek and Fiesta Island Causeway Component

Vegetation Communities and Land Cover Types	SDBG Vegetation Community	Habitat Tier	Impacts Within MHPA (Acres)	Impacts Outside of MHPA (Acres)
Non-Native Upland Vegetation Communities				
Disturbed Habitat	Disturbed	IV	0	1.12
Land Covers				
Beach	Disturbed	IV	0.15	3.12
Urban/Developed	NA	None	0	2.62
		Total[1]	**0.15**	**6.86**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area.

[1] Totals may not sum precisely due to rounding.

Implementation of the component would result in direct impacts to beach, open water, and southern coastal salt marsh comprising aquatic resources potentially under the jurisdiction of USACE, RWQCB, CCC, and/or the City. In addition, eelgrass would be subject to permanent or temporary removal during construction and additional impacts

to eelgrass would be assessed for unvegetated areas within 5 meters of mapped eelgrass, to account for fluctuating eelgrass distribution and functional influence around eelgrass cover (NOAA 2014). This component is expected to result in restored habitats that may be suitable as mitigation for significant impacts of this component and other components of the Program, as determined during subsequent environmental analysis, prior to component approval.

Direct Impacts to Sensitive Plant Species

One special-status plant species, estuary seablite, was detected within the component footprint. No additional special-status species have moderate or high potential to occur within the component footprint. Table 5-10 lists the number of individuals of sensitive plants that would be directly impacted as part of the component.

Table 5-10. Direct Impacts to Special-Status Plants in the Tecolote Creek and Fiesta Island Causeway Component Footprint

Species	Status (Federal/State/CRPR/ City of San Diego MSCP)	Impacts (Number of Individuals)
Species Observed in the Component Footprint		
Estuary seablite	None/None/1B.1/None	3*

Notes: CRPR = California Rare Plant Rank; MSCP = Multiple Species Conservation Program.
* Impacts to species are primarily from restoration activities.
CRPR: California Rare Plant Rank :
CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere
Threat Rank
.1 – Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)

Estuary seablite is not a covered or narrow endemic species but is considered a CRPR 1B.1 species and is present within the component parcel where it would be directly impacted by the component. Therefore, impacts to this species would be considered significant and require either avoidance or restoration that supports the species. Southern coastal salt marsh is targeted for restoration at this site.

5.2.2.3 Cudahy Creek Component

Direct Impacts to Vegetation Communities and Jurisdictional Aquatic Resources

Direct impacts to vegetation communities and jurisdictional resources are based on an overlay of the component footprint with mapped biological resources (Tables 5-11 and 5-12). This component is expected to also result in the creation of subtidal, mudflat, marsh, and transitional vegetation communities (see Table 1-3 and Figure 7).

Table 5-11. Wetland Vegetation Community and Land Cover Impacts at the Cudahy Creek Component

Vegetation Communities and Land Cover Types	SDBG Wetland Vegetation Community	Jurisdiction	Impacts Outside of MHPA
Beach	Marine Habitats	USACE/RWQCB/CCC/City	0.78
Open Water[2]	Marine Habitats	USACE/RWQCB/CCC/City	7.27
Eelgrass	Eelgrass Beds	USACE/RWQCB/CCC/City	0.84

Total[1]	**5.88**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA= Multi-Habitat Planning Area; USACE = United States Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CCC = California Coastal Commission; City = City of San Diego.
1 Totals may not sum due to rounding.

Table 5-12. Upland Vegetation Community and Land Cover Impacts at the Cudahy Creek Component

Vegetation Communities and Land Cover Types	SDBG Vegetation Community	Habitat Tier	Impacts Outside of MHPA (Acres)
Land Covers			
Beach	Disturbed	IV	0.14
Urban/Developed	NA	None	0.91
		Total[1]	**1.05**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area.
1 Totals may not sum precisely due to rounding.

Implementation of the component would result in direct impacts to beach and open water comprising aquatic resources potentially under the jurisdiction of USACE, RWQCB, CCC, and/or the City. In addition, eelgrass would be subject to permanent or temporary removal during construction and additional impacts to eelgrass would be assessed for unvegetated areas within 5 meters of mapped eelgrass, to account for fluctuating eelgrass distribution and functional influence around eelgrass cover (NOAA 2014). This component is expected to result in restored habitats that may be suitable as mitigation for significant impacts of this component and other components of the Program, as determined during subsequent environmental analysis, prior to component approval.

Direct Impacts to Sensitive Plant Species

No special-status plants were detected within the component footprint, and no additional special-status species have moderate or high potential to occur within the component footprint.

5.2.3 Restoration of Shoreline Element

5.2.3.1 Vacation Island Northwest Component

Direct Impacts to Vegetation Communities and Jurisdictional Aquatic Resources

Direct impacts to vegetation communities and jurisdictional resources are based on an overlay of the component footprint with mapped biological resources (Tables 5-13 and 5-14).

Table 5-13. Wetland Vegetation Community and Land Cover Impacts at the Vacation Island Northwest Component

Vegetation Communities and Land Cover Types	SDBG Wetland Vegetation Community	Jurisdiction	Impacts Outside of MHPA (Acres)
Beach	Marine Habitats	USACE/RWQCB/CCC/City	0.59
		Total[1]	**0.59**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area; USACE = U.S. Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CCC = California Coastal Commission; City = City of San Diego.
[1] Totals may not sum precisely due to rounding.

Table 5-14. Upland Vegetation Community and Land Cover Impacts at the Vacation Island Northwest Component

Vegetation Communities and Land Cover Types	SDBG Vegetation Community	Habitat Tier	Impacts Outside of MHPA (Acres)
Land Covers			
Beach	Disturbed	IV	0.11
		Total[1]	**0.11**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area.
[1] Totals may not sum precisely due to rounding.

Implementation of the component would result in direct impacts to beach comprising aquatic resources potentially under the jurisdiction of USACE, RWQCB, CCC, and/or the City. Impacts to this jurisdictional resource and City wetland are considered significant but may be adequately offset by shoreline restoration that results in no net loss of City wetlands and enhanced function (e.g., greater shoreline stability), as determined during subsequent environmental analysis, prior to component approval.

Direct Impacts to Sensitive Plant Species

No special-status plants were detected within the component footprint, and no additional special-status species have moderate or high potential to occur within the component footprint.

5.2.3.2 Vacation Island Northeast (i.e., Ski Beach) Component

Direct Impacts to Vegetation Communities and Jurisdictional Aquatic Resources

Direct impacts to vegetation communities and jurisdictional resources are based on an overlay of the component footprint with mapped biological resources (Tables 5-15 and 5-16).

Table 5-15. Wetland Vegetation Community and Land Cover Impacts at the Vacation Island Northeast Component

Vegetation Communities and Land Cover Types	SDBG Wetland Vegetation Community	Jurisdiction	Impacts Outside of MHPA
Beach	Marine Habitats	USACE/RWQCB/CCC/City	0.60
Open Water	Marine Habitats	USACE/RWQCB/CCC/City	0.12
Eelgrass	Eelgrass Beds	USACE/RWQCB/CCC/City	0.02
		Total[1]	**0.74**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA= Multi-Habitat Planning Area; USACE = United States Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CCC = California Coastal Commission; City = City of San Diego.

1 Totals may not sum due to rounding.

Table 5-16. Upland Vegetation Community and Land Cover Impacts at the Vacation Island Northeast Component

Vegetation Communities and Land Cover Types	SDBG Vegetation Community	Habitat Tier	Impacts Outside of MHPA (Acres)
Land Covers			
Beach	Disturbed	IV	0.39
Urban/Developed	NA	None	<0.01
		Total[1]	**0.39**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area.

1 Totals may not sum precisely due to rounding.

Implementation of the component would result in direct impacts to beach and open water comprising aquatic resources potentially under the jurisdiction of USACE, RWQCB, CCC, and/or the City. In addition, eelgrass would be subject to permanent or temporary removal during construction and additional impacts to eelgrass would be assessed for unvegetated areas within 5 meters of mapped eelgrass, to account for fluctuating eelgrass distribution and functional influence around eelgrass cover (NOAA 2014). Impacts to this jurisdictional resource and City wetland are considered significant but may be adequately offset by shoreline restoration that results in no net loss of City wetlands and enhanced function (e.g., greater shoreline stability), as determined during subsequent environmental analysis, prior to component approval.

Direct Impacts to Sensitive Plant Species

No special-status plant species were detected or have a moderate to high potential to occur within the component footprint. Therefore, direct impacts to special-status plant species are considered less than significant.

5.2.3.3 Vacation Island Southwest Component

Direct Impacts to Vegetation Communities and Jurisdictional Aquatic Resources

Direct impacts to vegetation communities and jurisdictional resources are based on an overlay of the component footprint with mapped biological resources (Tables 5-17 and 5-18).

Table 5-17. Wetland Vegetation Community and Land Cover Impacts at the Vacation Island Southwest Component

Vegetation Communities and Land Cover Types	SDBG Wetland Vegetation Community	Jurisdiction	Impacts Outside of MHPA
Beach	Marine Habitats	USACE/RWQCB/CCC/City	0.17
Open Water[2]	Marine Habitats	USACE/RWQCB/CCC/City	0.17
Eelgrass	Eelgrass Beds	USACE/RWQCB/CCC/City	0.08
		Total[1]	**0.42**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA= Multi-Habitat Planning Area; USACE = United States Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CCC = California Coastal Commission; City = City of San Diego.

1 Totals may not sum due to rounding.

Table 5-18. Upland Vegetation Community and Land Cover Impacts at the Vacation Island Southwest Component

Vegetation Communities and Land Cover Types	SDBG Vegetation Community	Habitat Tier	Impacts Outside of MHPA (Acres)
Land Covers			
Beach	Disturbed	IV	0.35
Urban/Developed	Disturbed	None	0.01
		Total[1]	**0.36**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area.

1 Totals may not sum precisely due to rounding.

Implementation of the component would result in direct impacts to beach and open water comprising aquatic resources potentially under the jurisdiction of USACE, RWQCB, CCC, and/or the City. In addition, eelgrass would be subject to permanent or temporary removal during construction and additional impacts to eelgrass would be assessed for unvegetated areas within 5 meters of mapped eelgrass, to account for fluctuating eelgrass distribution and functional influence around eelgrass cover (NOAA 2014). Impacts to this jurisdictional resource and City wetland are considered significant but may be adequately offset by shoreline restoration that results in no net loss of City wetlands and enhanced function (e.g., greater shoreline stability), as determined during subsequent environmental analysis, prior to component approval.

Direct Impacts to Sensitive Plant Species

No special-status plants were detected within the component footprint, and no additional special-status species have moderate or high potential to occur within the component footprint.

5.2.3.4 Ventura Cove Park Component

Direct Impacts to Vegetation Communities and Jurisdictional Aquatic Resources

Direct impacts to vegetation communities and jurisdictional resources are based on an overlay of the component footprint with mapped biological resources (Tables 5-19 and 5-20).

Table 5-19. Wetland Vegetation Community and Land Cover Impacts at the Ventura Cove Park Component

Vegetation Communities and Land Cover Types	SDBG Wetland Vegetation Community	Jurisdiction	Impacts Outside of MHPA (Acres)
Beach	Marine Habitats	USACE/RWQCB/CCC/City	0.03
Open Water	Marine Habitats	USACE/RWQCB/CCC/City	0.01
		Total[1]	**0.05**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area; USACE = U.S. Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CCC = California Coastal Commission; City = City of San Diego.
[1] Totals may not sum precisely due to rounding.

Table 5-20. Upland Vegetation Community and Land Cover Impacts at the Ventura Cove Park Component

Vegetation Communities and Land Cover Types	SDBG Vegetation Community	Habitat Tier	Impacts Outside of MHPA (Acres)
Land Covers			
Beach	Disturbed	IV	0.01
Urban/Developed	NA	None	0.22
		Total[1]	**0.23**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area.
[1] Totals may not sum precisely due to rounding.

Implementation of the component would result in direct impacts to beach and open water comprising aquatic resources potentially under the jurisdiction of USACE, RWQCB, CCC, and/or the City. Impacts to this jurisdictional resources and City wetlands are considered significant but may be adequately offset by shoreline restoration that results in no net loss of City wetlands and enhanced function (e.g., greater shoreline stability), as determined during subsequent environmental analysis, prior to component approval.

Direct Impacts to Sensitive Plant Species

No special-status plants were detected within the component footprint, and no additional special-status species have moderate or high potential to occur within the component footprint.

5.2.3.5 Crown Point Component

Direct Impacts to Vegetation Communities and Jurisdictional Aquatic Resources

Direct impacts to vegetation communities and jurisdictional resources are based on an overlay of the component footprint with mapped biological resources (Tables 5-21 and 5-22).

Table 5-21. Wetland Vegetation Community and Land Cover Impacts at the Crown Point Component

Vegetation Communities and Land Cover Types	SDBG Wetland Vegetation Community	Jurisdiction	Impacts Outside of MHPA (Acres)
Beach	Marine Habitats	USACE/RWQCB/CCC/City	0.59
Open Water	Marine Habitats	USACE/RWQCB/CCC/City	<0.01
		Total[1]	0.59

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area; USACE = U.S. Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CCC = California Coastal Commission; City = City of San Diego.
1 Totals may not sum precisely due to rounding.

Table 5-22. Upland Vegetation Community and Land Cover Impacts at the Crown Point Component

Vegetation Communities and Land Cover Types	SDBG Vegetation Community	Habitat Tier	Impacts Outside of MHPA (Acres)
Land Covers			
Beach	Disturbed	IV	0.10
		Total[1]	0.10

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area.
1 Totals may not sum precisely due to rounding.

Implementation of the component would result in direct impacts to beach and open water comprising aquatic resources potentially under the jurisdiction of USACE, RWQCB, CCC, and/or the City. Impacts to this jurisdictional resource and City wetland are considered significant but may be adequately offset by shoreline restoration that results in no net loss of City wetlands and enhanced function (e.g., greater shoreline stability), as determined during subsequent environmental analysis, prior to component approval.

Direct Impacts to Sensitive Plant Species

No special-status plants were detected within the component footprint, and no additional special-status species have moderate or high potential to occur within the component footprint.

5.2.3.6 West Sail Bay Component

Direct Impacts to Vegetation Communities and Jurisdictional Aquatic Resources

Direct impacts to vegetation communities and jurisdictional resources are based on an overlay of the component footprint with mapped biological resources (Tables 5-23 and 5-24).

Table 5-23. Wetland Vegetation Community and Land Cover Impacts at the West Sail Bay Component

Vegetation Communities and Land Cover Types	SDBG Wetland Vegetation Community	Jurisdiction	Impacts Outside of MHPA (Acres)
Beach	Marine Habitats	USACE/RWQCB/CCC/City	0.69
		Total[1]	0.69

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area; USACE = U.S. Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CCC = California Coastal Commission; City = City of San Diego.
[1] Totals may not sum precisely due to rounding.

Table 5-24. Upland Vegetation Community and Land Cover Impacts at the West Sail Bay Component

Vegetation Communities and Land Cover Types	SDBG Vegetation Community	Habitat Tier	Impacts Outside of MHPA (Acres)
Land Covers			
Beach	Disturbed	IV	0.01
		Total[1]	0.01

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area.
[1] Totals may not sum precisely due to rounding.

Implementation of the component would result in direct impacts to beach comprising aquatic resources potentially under the jurisdiction of USACE, RWQCB, CCC, and/or the City. Impacts to this jurisdictional resource and City wetland are considered significant but may be adequately offset by shoreline restoration that results in no net loss of City wetlands and enhanced function (e.g., greater shoreline stability), as determined during subsequent environmental analysis, prior to component approval.

Direct Impacts to Sensitive Plant Species

No special-status plants were detected within the component footprint, and no additional special-status species have moderate or high potential to occur within the component footprint.

5.2.3.7 Bonita Cove Component

Direct Impacts to Vegetation Communities and Jurisdictional Aquatic Resources

Direct impacts to vegetation communities and jurisdictional resources are based on an overlay of the component footprint with mapped biological resources (Tables 5-25 and 5-26).

Table 5-25. Wetland Vegetation Community and Land Cover Impacts at the Bonita Cove Component

Vegetation Communities and Land Cover Types	SDBG Wetland Vegetation Community	Jurisdiction	Impacts Outside of MHPA
Beach	Marine Habitats	USACE/RWQCB/CCC/City	1.04
Open Water	Marine Habitats	USACE/RWQCB/CCC/City	0.23
Eelgrass	Eelgrass Beds	USACE/RWQCB/CCC/City	0.04
Shallow Bay	Marine Habitats	USACE/RWQCB/CCC/City	0.29
		Total[1]	**1.61**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA= Multi-Habitat Planning Area; USACE = United States Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CCC = California Coastal Commission; City = City of San Diego.

[1] Totals may not sum due to rounding.

Table 5-26. Upland Vegetation Community and Land Cover Impacts at the Bonita Cove Component

Vegetation Communities and Land Cover Types	SDBG Vegetation Community	Habitat Tier	Impacts Outside of MHPA (Acres)
Land Covers			
Beach	Disturbed	IV	0.28
Urban/Developed	NA	None	0.13
		Total[1]	**0.41**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area.

[1] Totals may not sum precisely due to rounding.

Implementation of the component would result in direct impacts to beach and open water comprising aquatic resources potentially under the jurisdiction of USACE, RWQCB, CCC, and/or the City. In addition, eelgrass would be subject to permanent or temporary removal during construction and additional impacts to eelgrass would be assessed for unvegetated areas within 5 meters of mapped eelgrass, to account for fluctuating eelgrass distribution and functional influence around eelgrass cover (NOAA 2014). Impacts to this jurisdictional resource and City wetland are considered significant but may be adequately offset by shoreline restoration that results in no net loss of City wetlands and enhanced function (e.g., greater shoreline stability), as determined during subsequent environmental analysis, prior to component approval.

Direct Impacts to Sensitive Plant Species

No special-status plants were detected within the component footprint, and no additional special-status species have moderate or high potential to occur within the component footprint.

5.2.3.8 Bahia Point Component

Direct Impacts to Vegetation Communities and Jurisdictional Aquatic Resources

Direct impacts to vegetation communities and jurisdictional resources are based on an overlay of the component footprint with mapped biological resources (Tables 5-27 and 5-28).

Table 5-27. Wetland Vegetation Community and Land Cover Impacts at the Bahia Point Component

Vegetation Communities and Land Cover Types	SDBG Wetland Vegetation Community	Jurisdiction	Impacts Outside of MHPA (Acres)
Beach	Marine Habitats	USACE/RWQCB/CCC/City	2.77
Open Water	Marine Habitats	USACE/RWQCB/CCC/City	0.20
		Total[1]	**2.97**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area; USACE = U.S. Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CCC = California Coastal Commission; City = City of San Diego.
[1] Totals may not sum precisely due to rounding.

Table 5-28. Upland Vegetation Community and Land Cover Impacts at the Bahia Point Component

Vegetation Communities and Land Cover Types	SDBG Vegetation Community	Habitat Tier	Impacts Outside of MHPA (Acres)
Land Covers			
Beach	Disturbed	IV	0.20
Urban/Developed	NA	None	0.13
		Total[1]	**0.32**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area.
[1] Totals may not sum precisely due to rounding.

Implementation of the component would result in direct impacts to beach and open water comprising aquatic resources potentially under the jurisdiction of USACE, RWQCB, CCC, and/or the City. Impacts to this jurisdictional resource and City wetland are considered significant but may be adequately offset by shoreline restoration that results in no net loss of City wetlands and enhanced function (e.g., greater shoreline stability), as determined during subsequent environmental analysis, prior to component approval.

Direct Impacts to Sensitive Plant Species

No special-status plants were detected within the component footprint, and no additional special-status species have moderate or high potential to occur within the component footprint.

5.2.4 Upland Habitat and Preserve Expansion Element

5.2.4.1 Fiesta Island Site No. 1 – South

Direct Impacts to Vegetation Communities and Jurisdictional Aquatic Resources

Direct impacts to vegetation communities and jurisdictional resources are based on an overlay of the component footprint with mapped biological resources (Table 5-29). This component is expected to also result in the restoration of Diegan coastal sage scrub, southern foredune, and southern coastal salt marsh vegetation communities (see Figure 18).

Table 5-29. Upland Vegetation Community and Land Cover Impacts at the Fiesta Island Site No. 1 – South Component

Vegetation Communities and Land Cover Types	SDBG Vegetation Community	Habitat Tier	Impacts Outside of MHPA (Acres)
Native Upland Vegetation Communities			
Diegan Coastal Sage Scrub	Coastal Sage Scrub	II	8.96
Non-Native Upland Vegetation Communities			
Disturbed Habitat	Disturbed	IV	31.03
		Total[1]	**39.99**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area.
1 Totals may not sum precisely due to rounding.

Implementation of the component's proposed restoration activities would result in significant direct impacts to Diegan coastal sage scrub, a sensitive vegetation community. Implementation of the component's proposed restoration activities would also result in the conversion of disturbed habitat and Diegan coastal sage scrub to coastal strand and southern coastal salt marsh habitat, vegetation communities with a higher sensitivity ranking (Tier I and Wetland, respectively). This component is expected to result in restored habitats that may be suitable as mitigation for significant impacts of this component and other components of the Program, as determined during subsequent environmental analysis, prior to component approval.

Direct Impacts to Sensitive Plant Species

Two special-status plants were detected within the component footprint: coast woolly-heads and Nuttall's lotus. Seven additional special-status species have moderate or high potential to occur within the component footprint: aphanisma, Coulter's saltbush, south coast saltscale, golden-spined cereus, slender-pod jewelflower, cliff spurge, and Brand's star phacelia. Table 5-30 lists the number of individuals of sensitive plants that would be directly impacted as part of the component.

Table 5-30. Direct Impacts to Special-Status Plants in the Fiesta Island Site No. 1 – South Component Footprint

Species	Status (Federal/State/CRPR/ City of San Diego MSCP)	Impacts (Number of Individuals)
Species Observed in the Component Footprint		
Coast woolly-heads	None/None/1B.2/None	700*
Nuttall's lotus	None/None/1B.2/None	5,007*
Species with Moderate or High Potential to Occur but Not Detected in the Component Footprint		
Aphanisma	None/None/1B.2/Narrow Endemic	N/A
Coulter's saltbush	None/None/1B.2/None	N/A
South coast saltscale	None/None/1B.2/None	N/A
Golden-spined cereus	None/None/2B.2/None	N/A
Slender-pod jewelflower	None/None/None/Covered	N/A
Cliff spurge	None/None/2B.2/None	N/A
Brand's star phacelia	None/None/1B.1/None	N/A

Notes: CRPR = California Rare Plant Rank; MSCP = Multiple Species Conservation Program; N/A = not applicable.
* Impacts to species are primarily from restoration activities.
CRPR: California Rare Plant Rank:
CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere
CRPR 2B: Plants rare, threatened, or endangered in California but more common elsewhere
Threat Rank
.1 – Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
.2 – Moderately threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat)

Slender-pod jewelflower is an MSCP-covered species and aphanisma is an MSCP-covered, narrow endemic species. Nuttall's lotus, coast woolly-heads, Coulter's salt bush, south coast saltscale, and Brand's star phacelia, are not MSCP-covered or narrow endemic species, but are considered CRPR 1B.1 or 2 species and are present or potentially present within the component parcel where these species could be directly impacted by the component. The other species with potential to occur within the component footprint is cliff spurge, which is considered a CRPR 2B.1 species and does have a relatively wide geographic distribution within San Diego County. Impacts to these species would be considered significant, absent mitigation. However, Diegan coastal sage scrub will be targeted for restoration at this site and restored habitats that may be suitable as mitigation for significant impacts of this component and other components of the Program, as determined during subsequent environmental analysis, prior to component approval.

5.2.4.2 Fiesta Island Site No. 2 – North Central

Direct Impacts to Vegetation Communities and Jurisdictional Aquatic Resources

Direct impacts to vegetation communities and jurisdictional resources are based on an overlay of the component footprint with mapped biological resources (Table 5-31). This component is expected to also result in the restoration of southern foredune and southern coastal salt marsh vegetation communities (see Figure 19).

Table 5-31. Upland Vegetation Community and Land Cover Impacts at the Fiesta Island Site No. 2 – North Central Component

Vegetation Communities and Land Cover Types	SDBG Vegetation Community	Habitat Tier	Impacts (Acres)
Native Upland Vegetation Communities			
Southern Foredunes	Southern foredunes	I	3.26
Non-Native Upland Vegetation Communities			
Disturbed Habitat	Disturbed	IV	11.12
		Total[1]	**14.38**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018).
1 Totals may not sum precisely due to rounding.

Implementation of the component's proposed restoration activities would result in significant direct impacts to southern foredune, a sensitive vegetation community. Implementation of the component's proposed restoration activities would also result in the conversion of disturbed habitat to southern foredune and southern coastal salt marsh, vegetation communities with a higher sensitivity ranking (Tier I and Wetland, respectively). This component is expected to result in restored habitats that may be suitable as mitigation for significant impacts of this component and other components of the Program, as determined during subsequent environmental analysis, prior to component approval.

Direct Impacts to Sensitive Plant Species

One special-status plant species was detected within the component footprint, coast woolly-heads. Five additional special-status species have moderate or high potential to occur within the component footprint: aphanisma, Coulter's saltbush, south coast saltscale, Orcutt's pincushion, and Brand's star phacelia. Table 5-32 lists the number of individuals of sensitive plants that would be directly impacted as part of the component.

Table 5-32. Direct Impacts to Special-Status Plants in the Fiesta Island Site No. 2 – North Central Component Footprint

Species	Status (Federal/State/CRPR/ City of San Diego MSCP)	Impacts (Number of Individuals)
Species Observed in the Component Footprint		
Coast woolly-heads	None/None/1B.2/None	2,257*
Species with Moderate or High Potential to Occur but Not Detected in the Component Footprint		
Aphanisma	None/None/1B.2/Narrow Endemic	N/A
Coulter's saltbush	None/None/1B.2/None	N/A
South coast saltscale	None/None/1B.2/None	N/A
Orcutt's pincushion	None/None/1B.1/None	N/A
Brand's star phacelia	None/None/1B.1/None	N/A

Notes: CRPR = California Rare Plant Rank; MSCP = Multiple Species Conservation Program; N/A = not applicable.
* Impacts to species are primarily from restoration activities.
CRPR: California Rare Plant Rank:
CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere

Threat Rank

.1 – Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
.2 – Moderately threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat)

Aphanisma is a MSCP-covered narrow endemic species and CRPR 1B.2 species. Coast woolly-heads, Coulter's salt bush, south coast saltscale, Orcutt's pincushion, and Brand's star phacelia are not MSCP covered, but are considered CRPR 1B.1 or 2 species and are potentially present within the component parcel where these species could be directly impacted by the component. Impacts to these species would be considered significant, absent mitigation. However, southern foredune will be targeted for restoration at this site and restored habitats that may be suitable as mitigation for significant impacts of this component and other components of the Program, as determined during subsequent environmental analysis, prior to component approval.

5.2.4.3 Fiesta Island Site No. 3 – Near Youth Camping

Direct Impacts to Vegetation Communities and Jurisdictional Aquatic Resources

Direct impacts to vegetation communities and jurisdictional resources are based on an overlay of the component footprint with mapped biological resources (Tables 5-33 and 5-34). This component is expected to also result in the restoration of Diegan coastal sage scrub, coastal strand, and southern coastal salt marsh vegetation communities (see Figure 20).

Table 5-33. Wetland Vegetation Community and Land Cover Impacts at the Fiesta Island Site No. 3 – Near Youth Camping Component

Vegetation Communities and Land Cover Types	SDBG Wetland Vegetation Community	Jurisdiction	Impacts Outside of MHPA (Acres)
Beach	Marine Habitats	USACE/RWQCB/CCC/City	0.01
		Total[1]	**0.01**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area; USACE = U.S. Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CCC = California Coastal Commission; City = City of San Diego.
[1] Totals may not sum precisely due to rounding.

Table 5-34. Upland Vegetation Community and Land Cover Impacts at the Fiesta Island Site No. 3 – Near Youth Camping Component

Vegetation Communities and Land Cover Types	SDBG Vegetation Community	Habitat Tier	Impacts Outside of MHPA (Acres)
Native Upland Vegetation Communities			
Diegan Coastal Sage Scrub	Coastal Sage Scrub	II	3.81
Non-Native Upland Vegetation Communities			
Disturbed Habitat	Disturbed	IV	9.58
		Total[1]	**13.40**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area.
[1] Totals may not sum precisely due to rounding.

Implementation of the component would result in direct impacts to beach, comprising aquatic resources potentially under the jurisdiction of USACE, RWQCB, CCC, and/or the City. This component is expected to result in restored habitats that may be suitable as mitigation for significant impacts of this component and other components of the Program, as determined during subsequent environmental analysis, prior to component approval.

Implementation of the component's proposed restoration activities would result in significant direct impacts to Diegan coastal sage scrub, a sensitive vegetation community. Implementation of the component's proposed restoration activities would also result in the conversion of disturbed habitat and Diegan coastal sage scrub to coastal strand and southern coastal salt marsh habitat, vegetation communities with a higher sensitivity ranking (Tier I and Wetland, respectively). This component is expected to result in restored habitats that may be suitable as mitigation for significant impacts of this component and other components of the Program, as determined during subsequent environmental analysis, prior to component approval.

Direct Impacts to Sensitive Plant Species

One special-status plant species was detected within the component footprint: Nuttall's lotus. No additional special-status species have moderate or high potential to occur within the component footprint. Table 5-35 lists the number of individuals of sensitive plants that would be directly impacted as part of the component.

Table 5-35. Direct Impacts to Special-Status Plants in the Fiesta Island Site No. 3 – Near Youth Camping Component Footprint

Species	Status (Federal/State/CRPR/ City of San Diego MSCP)	Impacts (Number of Individuals)
Species Observed in the Component Footprint		
Nuttall's lotus	None/None/1B.2/Covered	30*

Notes: CRPR = California Rare Plant Rank; MSCP = Multiple Species Conservation Program.
* Impacts to species are primarily from restoration activities.
CRPR: California Rare Plant Rank :
CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere
Threat Rank
.2 – Moderately threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat)

Nuttall's lotus is an MSCP-covered and CRPR 1B.2 species and is present within the component parcel where it would be directly impacted by the component. Impacts to this species are considered significant, absent mitigation. However, Diegan coastal sage scrub will be targeted for restoration at this site and restored habitats that may be suitable as mitigation for significant impacts of this component and other components of the Program, as determined during subsequent environmental analysis, prior to component approval.

5.2.4.4 Fiesta Island Site No. 4 – California Least Tern Preserve Area

Direct Impacts to Vegetation Communities and Jurisdictional Aquatic Resources

Direct impacts to vegetation communities and jurisdictional resources are based on an overlay of the component footprint with mapped biological resources (Tables 5-36 and 5-37). This component is expected to also result in the restoration of beach, marsh, and southern foredune vegetation communities (see Figure 21).

Table 5-36. Wetland Vegetation Community and Land Cover Impacts at the Fiesta Island Site No. 4 – California Least Tern (CLT) Preserve Area Component

Vegetation Communities and Land Cover Types	SDBG Wetland Vegetation Community	Jurisdiction	Impacts within MHPA	Impacts Outside of MHPA
Beach[1]	Marine Habitats	USACE/RWQCB/CCC/City	1.01	2.39
Eelgrass	Eelgrass Beds	USACE/RWQCB/CCC/City	0.08	0.79
Disturbed southern coastal salt marsh	Saltmarsh	RWQCB/CCC/City	0	0.05
Open Water[2]	Marine Habitats	USACE/RWQCB/CCC/City	0	0.06
		Total[1]	**1.09**	**3.29**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA= Multi-Habitat Planning Area; USACE = United States Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CCC = California Coastal Commission; City = City of San Diego.

1 Totals may not sum precisely due to rounding.

Table 5-37. Upland Vegetation Community and Land Cover Impacts at the Fiesta Island Site No. 4 – California Least Tern (CLT) Preserve Area Component

Vegetation Communities and Land Cover Types	SDBG Vegetation Community	Habitat Tier	Impacts Within MHPA (Acres)	Impacts Outside of MHPA (Acres)
Non-Native Upland Vegetation Communities				
Disturbed Habitat	Disturbed	IV	12.76	6.62
Land Covers				
Beach	Disturbed	IV	2.55	2.92
		Total[1]	**15.31**	**9.54**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area.

1 Totals may not sum precisely due to rounding.

Implementation of the component would result in direct impacts to beach, disturbed southern coastal salt marsh, and open water comprising aquatic resources potentially under the jurisdiction of USACE, RWQCB, CCC, and/or the City. In addition, eelgrass would be subject to permanent or temporary removal during construction and additional impacts to eelgrass would be assessed for unvegetated areas within 5 meters of mapped eelgrass, to account for fluctuating eelgrass distribution and functional influence around eelgrass cover (NMFS 2014). This component is expected to result in restored habitats that may be suitable as mitigation for significant impacts of this component and other components of the Program, as determined during subsequent environmental analysis, prior to component approval.

Direct Impacts to Sensitive Plant Species

No special-status plants were detected within the component footprint, and no additional special-status species have moderate or high potential to occur within the component footprint.

5.2.4.5 Sea World Drive/San Diego River Site No. 5a – Cloverleaf Area

Direct Impacts to Vegetation Communities and Jurisdictional Aquatic Resources

Direct impacts based on an overlay of the component footprint with mapped biological resources are limited to land covers (Table 5-38). This component is expected to result in the restoration of coastal strand and southern coastal salt marsh vegetation communities that may be suitable as mitigation for other components of the Program, as determined during subsequent environmental analysis, prior to component approval (Figure 22).

Table 5-38. Upland Vegetation Community and Land Cover Impacts at the Sea World Drive/San Diego River Site No. 5a – Cloverleaf Area Component

Vegetation Communities and Land Cover Types	SDBG Vegetation Community	Habitat Tier	Impacts Within MHPA (Acres)	Impacts Outside of MHPA (Acres)
Non-Native Upland Vegetation Communities				
Disturbed	Disturbed	IV	12.93	4.42
Land Cover Type				
Urban/Developed	N/A	None	0	0.03
		Total[1]	**12.93**	**4.45**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area.
1 Totals may not sum precisely due to rounding.

Direct Impacts to Sensitive Plant Species

No special-status plants were detected within the component footprint, and no additional special-status species have moderate or high potential to occur within the component footprint.

5.2.4.6 Sea World Drive/San Diego River Site No. 5b – Triangle Restoration Area

Direct Impacts to Vegetation Communities and Jurisdictional Aquatic Resources

Direct impacts to vegetation communities and jurisdictional resources are based on an overlay of the component footprint with mapped biological resources (Table 5-39). This component is expected to also result in the restoration of Diegan coastal sage scrub (see Figure 23).

Table 5-39. Upland Vegetation Community and Land Cover Impacts at the Sea World Drive/San Diego River Site No. 5b – Triangle Restoration Area Component

Vegetation Communities and Land Cover Types	SDBG Vegetation Community	Habitat Tier	Impacts Within MHPA (Acres)	Impacts Outside of MHPA (Acres)
Native Upland Vegetation Communities				
Diegan Coastal Sage Scrub	Coastal Sage Scrub	II	4.34	1.64
Non-Native Upland Vegetation Communities				
Disturbed Habitat	Disturbed	IV	0.46	0.31
		Total[1]	**4.80**	**1.95**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area.
1 Totals may not sum precisely due to rounding.

Implementation of the component's proposed restoration activities would result in significant direct impacts to Diegan coastal sage scrub, a sensitive vegetation community. This component is expected to result in restored habitat that may be suitable as mitigation for this component or other components of the Program, as determined during subsequent environmental analysis, prior to component approval.

Direct Impacts to Sensitive Plant Species

Seven additional special-status species have moderate or high potential to occur within the component footprint: aphanisma, Coulter's saltbush, south coast saltscale, golden-spined cereus, slender-pod jewelflower, cliff spurge, and Brand's star phacelia. Table 5-40 lists the number of individuals of sensitive plants that would be directly impacted as part of the component.

Table 5-40. Direct Impacts to Special-Status Plants in the Sea World Drive/San Diego River Site No. 5b – Triangle Restoration Area Component Footprint

Species	Status (Federal/State/CRPR/ City of San Diego MSCP)	Impacts (Number of Individuals)*
Species with Moderate or High Potential to Occur but Not Detected in the Component Footprint		
Aphanisma	None/None/1B.2/Narrow Endemic	N/A
Coulter's saltbush	None/None/1B.2/None	N/A
South coast saltscale	None/None/1B.2/None	N/A
Golden-spined cereus	None/None/2B.2/None	N/A
Slender-pod jewelflower	None/None/None/Covered	N/A
Cliff spurge	None/None/2B.2/None	N/A
Brand's star phacelia	None/None/1B.1/None	N/A

Notes: CRPR = California Rare Plant Rank; MSCP = Multiple Species Conservation Program; N/A = not applicable.
* Impacts to species are primarily from restoration activities.
CRPR: California Rare Plant Rank:
CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere
CRPR 2B: Plants rare, threatened, or endangered in California but more common elsewhere
Threat Rank
.1 – Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
.2 – Moderately threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat)

Slender-pod jewelflower and aphanisma are MSCP-covered and narrow endemic species, respectively. Coulter's salt bush, south coast saltscale, and Brand's star phacelia are not covered or narrow endemic species, but are considered CRPR 1B.1 or 1B.2 species and are potentially present within the component parcel where these species could be directly impacted by the component. The other species with potential to occur within the component footprint are cliff spurge and golden-spined cereus, which are considered CRPR 2B.1 species and have a relatively wide geographic distribution within San Diego County. Impacts to these species would be considered significant, absent mitigation. However, Diegan coastal sage scrub will be targeted for restoration at this site and restored habitats that may be suitable as mitigation for significant impacts of this component and other components of the Program, as determined during subsequent environmental analysis, prior to component approval.

5.2.4.7 Sea World Drive/San Diego River Site No. 5c – South Shores East Area

Direct Impacts to Vegetation Communities and Jurisdictional Aquatic Resources

Direct impacts to vegetation communities and jurisdictional resources are based on an overlay of the component footprint with mapped biological resources (Table 5-41). This component is expected to also result in the restoration of coastal strand, Diegan coastal sage scrub, and southern foredune vegetation communities (see Figure 24).

Table 5-41. Upland Vegetation Community and Land Cover Impacts at the Sea World Drive/San Diego River Site No. 5c – South Shores East Area Component

Vegetation Communities and Land Cover Types	SDBG Vegetation Community	Habitat Tier	Impacts Outside of MHPA (Acres)
Native Upland Vegetation Communities			
Diegan Coastal Sage Scrub	Coastal Sage Scrub	II	5.03
Non-Native Upland Vegetation Communities			
Disturbed Habitat	Disturbed	IV	45.65
Land Covers			
Urban/Developed	N/A	None	0.89
		Total[1]	**51.57**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area.
1 Totals may not sum precisely due to rounding.

Implementation of the component's proposed restoration activities would result in significant direct impacts to Diegan coastal sage scrub, a sensitive vegetation community. Implementation of the component's proposed restoration activities would also result in the conversion of disturbed habitat and Diegan coastal sage scrub to coastal strand, southern foredune, and southern coastal salt marsh habitat, vegetation communities with a higher sensitivity ranking (Tier I or Wetland). This component is expected to result in restored habitats that may be suitable as mitigation for significant impacts of this component and other components of the Program, as determined during subsequent environmental analysis, prior to component approval.

Direct Impacts to Sensitive Plant Species

Two special-status plants were detected within the component footprint: coast woolly-heads and Nuttall's lotus. Seven additional special-status species have moderate or high potential to occur within the component footprint: aphanisma, Coulter's saltbush, south coast saltscale, golden-spined cereus, California mustard, cliff spurge, and Brand's star phacelia. Table 5-42 lists the number of individuals of sensitive plants that would be directly impacted as part of the component.

Table 5-42. Direct Impacts to Special-Status Plants in the Sea World Drive/San Diego River Site No. 5c – South Shores East Component Footprint

Species	Status (Federal/State/CRPR/ City of San Diego MSCP)	Impacts (Number of Individuals)
Species Observed in the Component Footprint		
Coast woolly-heads	None/None/1B.2/None	3,235*
Nuttall's lotus	None/None/1B.2/None	525*
Species with Moderate or High Potential to Occur but Not Detected in the Component Footprint		
Aphanisma	None/None/1B.2/Narrow Endemic	N/A
Coulter's saltbush	None/None/1B.2/None	N/A
South coast saltscale	None/None/1B.2/None	N/A
Golden-spined cereus	None/None/2B.2/None	N/A
Slender-pod jewelflower	None/None/None/Covered	N/A
Cliff spurge	None/None/2B.2/None	N/A
Brand's star phacelia	None/None/1B.1/None	N/A

Notes: CRPR = California Rare Plant Rank; MSCP = Multiple Species Conservation Program; N/A = not applicable.
* Impacts to species are primarily from restoration activities.
CRPR: California Rare Plant Rank:
CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere
CRPR 2B: Plants rare, threatened, or endangered in California but more common elsewhere
Threat Rank
.1 – Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
.2 – Moderately threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat)

Slender-pod jewelflower is an MSCP-covered species and aphanisma is an MSCP-covered, narrow endemic species. Coast woolly-heads, Nuttall's lotus, Coulter's salt bush, south coast saltscale, and Brands star phacelia are not MSCP-covered or narrow endemic species but are considered CRPR 1B.1 or 2 species and are potentially present within the component parcel where these species could be directly impacted by the component. The other species with potential to occur within the component footprint are cliff spurge and golden-spined cereus, which are considered CRPR 2B.1 species and have a relatively wide geographic distribution within San Diego County. Impacts to these species would be considered significant, absent mitigation. However, upland native habitats targeted for restoration at this site and restored habitats that may be suitable as mitigation for significant impacts of this component and other components of the Program, as determined during subsequent environmental analysis, prior to component approval.

5.2.5 Bicycle and Pedestrian Improvements Element

5.2.5.1 Rose Creek Bike Path

Direct Impacts to Vegetation Communities and Jurisdictional Aquatic Resources

Direct impacts to vegetation communities and jurisdictional resources are based on an overlay of the component footprint with mapped biological resources (Tables 5-43 and 5-44).

Table 5-43. Wetland Vegetation Community and Land Cover Impacts at the Rose Creek Bike Path Component

Vegetation Communities and Land Cover Types	SDBG Wetland Vegetation Community	Jurisdiction	Impacts Within MHPA (Acres)	Impacts Outside of MHPA (Acres)
Disturbed Southern Willow Scrub	Riparian Scrub	USACE/RWQCB/CCC/City	0.01	<0.01
Disturbed Southern Willow Scrub	Riparian Scrub	CDFW/CCC/City	0.01	<0.01
Disturbed Southern Willow Scrub	Riparian Scrub	USACE/RWQCB/CDFW/City	0.01	0
Disturbed Southern Willow Scrub	Riparian Scrub	CDFW/City	0.20	0
Disturbed Wetland (Concrete-Lined Channel)	Non-Vegetated Channel or Floodway	USACE/RWQCB/CDFW/City	0	0.03
Non-native Riparian	Disturbed	CDFW/City	0.15	0.08
Non-native Riparian	Disturbed	USACE/RWQCB/CDFW/City	0.01	0
Open Water	Marine Habitats	USACE/RWQCB/CCC/City	0	<0.01
Saltpan/Mudflats	Coastal Mudflats and Salt Pannes	USACE/RWQCB/CCC/City	0	0.04
Saltpan/Mudflats	Coastal Mudflats and Salt Pannes	USACE/RWQCB/CDFW/CCC/City	0	<0.01
Southern Coastal Salt Marsh	Saltmarsh	USACE/RWQCB/CCC/City	0.01	<0.01
Southern Coastal Salt Marsh	Saltmarsh	USACE/RWQCB/CDFW/CCC/City	0.02	0.01
		Total[1]	**0.42**	**0.17**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area; USACE = U.S. Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CCC = California Coastal Commission; City = City of San Diego.

[1] Totals may not sum precisely due to rounding.

Table 5-44. Upland Vegetation Community and Land Cover Impacts at the Rose Creek Bike Path Component

Vegetation Communities and Land Cover Types	SDBG Vegetation Community	Habitat Tier	Impacts Outside of MHPA (Acres)
Land Covers			
Urban/Developed	N/A	None	1.45
		Total[1]	**1.45**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area; N/A = not applicable.
1 Totals may not sum precisely due to rounding.

Implementation of the component would result in significant direct impacts to disturbed southern willow scrub, non-native riparian, open water, saltpan/mudflats, and southern coastal salt marsh comprising aquatic resources potentially under the jurisdiction of USACE, RWQCB, CDFW, CCC, and/or the City.

Direct Impacts to Sensitive Plant Species

One special-status plant species was detected within the component footprint, estuary seablite. No additional special-status species have moderate or high potential to occur within the component footprint. Table 5-45 lists the number of individuals of sensitive plants that would be directly impacted as part of the component.

Table 5-45. Direct Impacts to Special-Status Plants in the Rose Creek Bike Path Component Footprint

Species	Status (Federal/State/CRPR/ City of San Diego MSCP)	Impacts (Number of Individuals)
Species Observed in the Component Footprint		
estuary seablite	None/None/1B.1/None	86

Notes: CRPR = California Rare Plant Rank; MSCP = Multiple Species Conservation Program.
CRPR: California Rare Plant Rank:
CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere
Threat Rank
.1 – Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)

Estuary seablite is not covered or narrow endemic species but is considered a CRPR 1B.1 species and is present within the component parcel where it would be directly impacted by the component. Therefore, impacts to this species would be considered significant.

5.2.5.2 Fiesta Island Causeway Path

Direct Impacts to Vegetation Communities and Jurisdictional Aquatic Resources

Direct impacts to vegetation communities and jurisdictional resources are based on an overlay of the component footprint with mapped biological resources (Tables 5-46 and 5-47).

Table 5-46. Wetland Vegetation Community and Land Cover Impacts at the Fiesta Island Causeway Path Component

Vegetation Communities and Land Cover Types	SDBG Wetland Vegetation Community	Jurisdiction	Impacts Outside of MHPA (Acres)
Beach	Marine Habitats	USACE/RWQCB/CCC/City	0.02
Open Water	Marine Habitats	USACE/RWQCB/CCC/City	0.06
Southern Coastal Salt Marsh	Saltmarsh	USACE/RWQCB/CCC/City	0.27
		Total[1]	**0.35**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area; USACE = U.S. Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CCC = California Coastal Commission; City = City of San Diego.
[1] Totals may not sum precisely due to rounding.

Table 5-47. Upland Vegetation Community and Land Cover Impacts at the Fiesta Island Causeway Path Component

Vegetation Communities and Land Cover Types	SDBG Vegetation Community	Habitat Tier	Impacts Outside of the MHPA (Acres)
Native Upland Vegetation Communities			
Disturbed	Disturbed	IV	0.36
Land Covers			
Beach	Disturbed	IV	0.33
Urban/Developed	N/A	None	0.26
		Total[1]	**0.95**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area.
[1] Totals may not sum precisely due to rounding.

Implementation of the component would result in significant direct impacts to beach, open water, and southern coastal salt marsh comprising aquatic resources potentially under the jurisdiction of USACE, RWQCB, CCC, and/or the City.

Direct Impacts to Sensitive Plant Species

No special-status plants were detected within the component footprint, and no additional special-status species have moderate or high potential to occur within the component footprint.

5.2.5.3 Ocean Beach Bike Path

Direct Impacts to Vegetation Communities and Jurisdictional Aquatic Resources

Direct impacts to vegetation communities and jurisdictional resources are based on an overlay of the component footprint with mapped biological resources (Table 5-48).

Table 5-48. Upland Vegetation Community and Land Cover Impacts at the Ocean Beach Bike Path Component

Vegetation Communities and Land Cover Types	SDBG Vegetation Community	Habitat Tier	Impacts Within MHPA (Acres)	Impacts Outside of MHPA (Acres)
Native Upland Vegetation Communities				
Diegan Coastal Sage Scrub	Coastal Sage Scrub	II	0.08	<0.01
Southern Foredunes	Southern Foredunes	I	<0.01	0
Land Covers				
Beach	Disturbed	IV	0.25	0.21
Urban/Developed	N/A	None	0.16	1.92
		Total[1]	**0.49**	**2.13**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area; N/A = not applicable.
[1] Totals may not sum precisely due to rounding.

Impacts to Tier I and II uplands are below the 0.10-acre SDBG threshold, located on the edge of development in a high public use area, and therefore less than significant.

Direct Impacts to Sensitive Plant Species

Five special-status species have moderate or high potential to occur within the component footprint: aphanisma, Coulter's saltbush, south coast saltscale, Orcutt's pincushion, and Brand's star phacelia. Table 5-49 lists the number of individuals of sensitive plants that would be directly impacted as part of the component.

Table 5-49. Direct Impacts to Special-Status Plants in the Ocean Beach Bike Path Component Footprint

Species	Status (Federal/State/CRPR/ City of San Diego MSCP)	Impacts (Number of Individuals)
Species with Moderate or High Potential to Occur but Not Detected in the Component Footprint		
aphanisma	None/None/1B.2/Narrow Endemic	N/A
Coulter's saltbush	None/None/1B.2/None	N/A
south coast saltscale	None/None/1B.2/None	N/A
Orcutt's pincushion	None/None/1B.1/None	N/A
Brand's star phacelia	None/None/1B.1/None	N/A

Notes: CRPR = California Rare Plant Rank; MSCP = Multiple Species Conservation Program; N/A = not applicable.
CRPR: California Rare Plant Rank:
CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere
Threat Rank
.1 – Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
.2 – Moderately threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat)

Aphanisma is a narrow endemic species and CRPR 1B.2 species. Coulter's salt bush, south coast saltscale, Orcutt's pincushion, and Brand's star phacelia are not covered or narrow endemic species but are considered CRPR 1B.1 or 1B.2 species with potential to occur within the component parcel. Habitat for these species would be directly

impacted by the component, and individuals of these species could be directly impacted by the component if present during component implementation. Therefore, impacts to these species would be considered **potentially significant**.

5.2.6 Restoration of the Seawall Bulkhead Element

Direct Impacts to Vegetation Communities and Jurisdictional Aquatic Resources

Direct impacts based on an overlay of the element footprint with mapped biological resources are limited to disturbed habitat (Table 5-50).

Table 5-50. Upland Vegetation Community and Land Cover Impacts at the Restoration of the Seawall Bulkhead Element

Vegetation Communities and Land Cover Types	SDBG Vegetation Community	Habitat Tier	Impacts Outside of MHPA (Acres)
Land Covers			
Beach	Disturbed	IV	4.39
		Total[1]	**4.39**

Notes: SDBG = San Diego Biology Guidelines (City of San Diego 2018); MHPA = Multi-Habitat Planning Area.
[1] Totals may not sum precisely due to rounding.

Direct Impacts to Sensitive Plant Species

No special-status plants were detected within the element footprint, and no additional special-status species have moderate or high potential to occur within the element footprint.

5.2.7 Wetland Impacts in the Coastal Overlay Zone

The SDBG (City of San Diego 2018) and ESL Regulations state that impacts to wetlands should be avoided and unavoidable impacts should be minimized to the maximum extent practicable. Program implementation would result in the disturbance and modification of City-regulated wetlands within the COZ. Since Program-related disturbance to City wetlands would result from proposed Wetland and Water Quality, Upland Habitat and Preserve Expansion, Restoration of Shoreline, and Bicycle and Pedestrian Improvements with incidental public service infrastructure improvements that are required to support long-term sustainable wetland restoration and public coastal access recreation, the proposed disturbance to City wetlands is permissible under Section 143.0130(d) of ESL Regulations.

Section 143.0130(e) limited uses within wetland buffer areas to public access paths, fences, restoration and enhancement activities, and other improvements necessary to protect wetlands. The Program proposes to maintain and enhance existing physical wetland buffers. No new parking lots or developed areas (other than limited recreational trails and paths) are proposed adjacent to wetlands. Substantial expanded wetlands are proposed under the Wetland and Water Quality Improvements element that will enhance existing buffers. These elements include appropriate fencing, signage, and grade separate to reduce potential for wetland physical disturbance, noise, domestic animal intrusion, or human encroachment. Although not directly related to the creation of physical buffers, the Program has incorporated outfall and drainage improvements that will manage freshwater input to

protect wetland functions and reduce erosion. As such, through conformance with ESL Regulations, the Program impacts to coastal wetlands and wetland buffers are **less than significant**.

5.2.8 Direct Impacts to Sensitive Wildlife Species

This section analyzes the potential for Program implementation to directly impact federally and/or state listed and candidate species individually along with additional groups of wildlife species. In general, the assessment of wildlife impacts is programmatic and therefore does not include acreages of habitat loss or counts of individuals potentially harmed. These details are expected to be provided as part of subsequent environmental analysis, prior to component approvals.

5.2.8.1 Listed Special-Status Wildlife Species

Coastal California Gnatcatcher (Polioptila californica)

Focused surveys for coastal CAGN conducted in 2019 within the Program area were negative. However, this species is known to occur in areas near the Program vicinity (CDFW 2024) and was incidentally observed within the Program area during reconnaissance surveys of the South Shores area in 2024 (Figure 37). CAGN could occur and could breed within potentially suitable habitat in the Program area in the future. Potentially suitable habitat for this species is present in the Program area where Diegan coastal sage scrub and disturbed Diegan coastal sage scrub were mapped (Figure 37).

Upland Habitat and Preserve Expansion components at the following sites have the potential to directly impact CAGN should the species occupy these sites in the future: Fiesta Island Site No. 1 South, Fiesta Island Site No. 3 Near Youth Camping, Sea World Drive/San Diego River Site No. 5b Triangle Restoration Area, and Sea World Drive/San Diego River Site No. 5c South Shores East Area. These components could impact CAGN individuals if the species were nesting in the impact footprint during component implementation. At Fiesta Island Sites No. 1 and 3 and Sea World Drive/San Diego River Site No. 5c, restoration activities would result in the temporary loss of potentially suitable nesting habitat for CAGN. In addition, portions of these component areas that were mapped as Diegan coastal sage scrub would be converted to other habitat types, resulting in a permanent loss of suitable CAGN habitat. However, in the long-term, these components would result in a substantial increase in quantity and quality of potentially suitable CAGN habitat (Diegan coastal sage scrub) within the Program area, through expansion and/or enhancement of existing Diegan coastal sage scrub vegetation (see Figure 18, Figure 19, and Figure 24). At Sea World Drive/San Diego River Site No. 5b Triangle Restoration Area, Diegan coastal sage scrub restoration activities would include enhancement of existing Diegan coastal sage scrub vegetation through non-native species removal and native species container planting and seeding.

Direct impacts to CAGN, as a result of the loss of or harm to individuals during Program implementation, or as a result of the loss of occupied habitat, would be **potentially significant** absent mitigation.

California Least Tern (*Sternula antillarum browni*)

Within the Program boundary, CLT is expected to nest in the existing preserves on Fiesta Island, on FAA Island, and at Mariner's Point, and may establish nesting colonies where suitable habitat persists or develops elsewhere in the Program area in future years. The proposed Program is not expected to result in impacts on FAA Island, Mariner's Point, or the CLT preserve at Stony Point, on the southwestern corner of Fiesta Island. The proposed Program could

directly impact CLT in other locations in the Program area as a result of both the Wetland and Water Quality Improvements element and the Upland Habitat and Preserve Expansion element.

On Fiesta Island, the North Fiesta Island component would directly impact portions of the existing 28-acre CLT preserve (Site No. 4), which is located at the northeast corner of Fiesta Island. Currently, approximately half (13.9 acres) of the existing preserve is managed for CLT nesting habitat, with the remaining half vegetated by disturbed southern coastal salt marsh and not suitable for CLT nesting. As a part of the Upland Habitat and Preserve Expansion element, the CLT preserve area would be relocated to a 28.7-acre site on the northwest portion of Fiesta Island, all of which would be managed for CLT nesting. The proposed Fiesta Island CLT preserve design is consistent with the MBPMP (City of San Diego 2002) and recommendations provided by the City and the CCC. The component would result in an approximately 14.1-acre (104%) expansion of the Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area. Implementation of the North Fiesta Island component and the North Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area would result in the loss of potentially suitable CLT breeding habitat currently present in these areas; however, in the long-term, the Program would result in an expansion of and improvement to CLT nesting habitat on North Fiesta Island, which has supported limited or no nesting in recent years (CDFW 2024; Jackson 2022). In addition, nesting opportunities elsewhere in Mission Bay, which have been preferred by this species in recent years, would remain available during component implementation. In addition to the temporary loss of potentially suitable habitat, the North Fiesta Island component and the upland habitat and preserve expansion at North Fiesta Island could directly impact CLT individuals if these Program elements were implemented during the breeding season and CLT nests were present in the impact footprint during construction.

Direct impacts to CLT, as result of the loss of or harm to individuals during Program implementation, or as a result of the temporary loss of occupied habitat, would be **potentially significant** absent mitigation.

Western Snowy Plover (*Anarhynchus* [formerly *Charadrius*] *nivosus nivosus*)

WSP has a high potential to winter and roost in beach habitats in the Program area but is not expected to nest. The CLT preserve expansion, the North Fiesta Island component, the Cudahy Creek component, the Tecolote Creek and Fiesta Island Causeway component, the Fiesta Island Causeway component, and all of the Shoreline Restoration and Seawall Bulkhead Restoration components would result in impacts to beach habitat. Because this species is highly mobile, individual component implementation is not expected to result in the loss of or harm to individuals, but these components would result in the temporary loss of potentially suitable wintering and roosting habitat for WSP. However, the amount of habitat lost during individual component implementation would be relatively small compared to the abundance of available habitat in Mission Bay as a whole. In addition, in the long-term, the Program's restoration of beach habitat would substantially increase the quantity and quality of potentially suitable habitat for this species within the Program area.

Direct impacts to western snowy plover, as a result of the temporary loss of occupied habitat, would be **less than significant**. Although nesting is not expected, because this is a listed species and the timing of implementation of the Program is undetermined, the potential direct or indirect impact to active WSP nest is considered **potentially significant** absent mitigation**.**

Belding's Savannah Sparrow (*Passerculus sandwichensis beldingi*) and Light-Footed Ridgway's Rail (*Rallus obsoletus levipes*)

Within the Program area, BSS and LFRR are expected to nest at the Kendall-Frost Reserve and in portions of the San Diego River and have a low potential to occur (including to nest) in other areas throughout Mission Bay that

support suitable coastal salt marsh habitat, including on North Fiesta Island, in the Rose Creek Inlet, and at the mouth of Tecolote Creek; potentially suitable habitat for BSS and LFRR is identified on Figure 12 and Figure 14, respectively. The proposed Program is not expected to result in impacts at the Kendall-Frost Reserve but could directly impact these species in other locations in the Program area as a result of the Bicycle and Pedestrian Improvements element, the Wetland and Water Quality Improvements element, and the Upland Habitat and Preserve Expansion element.

The Fiesta Island Causeway Path component, the Rose Creek Bike Path component, the Tecolote Creek and Fiesta Island Causeway component, the North Fiesta Island component, and the CLT preserve expansion on North Fiesta Island will result in the loss of areas mapped as disturbed southern coastal salt marsh and/or southern coastal salt marsh, which could support BSS and/or LFRR nesting. These components could result in direct impacts to BSS and/or LFRR individuals if the species were nesting in the impact footprint during component implementation. The Rose Creek Bike Path and the CLT preserve expansion components would result in the permanent loss of potentially suitable nesting habitat for these species and the North Fiesta Island and Tecolote Creek and Fiesta Island Causeway components would result in the temporary loss of potentially suitable nesting habitat for these species. However, in the long-term, the Program would result in a no-net loss of wetland habitat and these components, along with restoration activities associated with the Cudahy Creek component, would result in a substantial increase in quantity and quality of potentially suitable BSS and LFRR nesting habitat in the Program area.

Direct impacts to BSS and LFRR, as a result of the loss of or harm to individuals during Program implementation, or as a result of the loss of occupied habitat, would be **potentially significant** absent mitigation.

Western Burrowing Owl (*Athene cunicularia*)

Within the Program area, BUOW is expected to be present during wintering, migration, and/or dispersal, but it is not expected to nest. This species has the potential to occur in most non-developed upland areas in the Program area, including Fiesta Island, the South Shores area, and other portions of the Program area where burrows or burrow surrogates are present (Figure 42). BUOW has also been observed in the riprap bordering the San Diego River.

All of the Upland Habitat and Preserve Expansion components, the North Fiesta Island component, and all of the Bicycle and Pedestrian Improvements components (with the exception of the Rose Creek Bike Path component) have the potential to directly impact BUOW. Should this species winter in the Program area in the future, these components could result in the temporary loss of wintering and foraging habitat. However, Program implementation is expected to result in no net loss of upland habitats in the long-term.

Direct impacts to BUOW as a result of the loss of occupied habitat would be **potentially significant** absent mitigation.

Least Bell's Vireo (*Vireo bellii pusillus*)

Focused surveys for LBV conducted in 2024 within Rose Creek were negative (Appendix G). However, the disturbed southern willow scrub present in Rose Creek, north of Garnet Avenue, provides potentially suitable nesting habitat for LBV, and this species could nest in this portion of the Program area in the future.

The Rose Creek Bike Path component has the potential to directly impact LBV should the species occupy suitable habitat within the component footprint in the future. This component could impact LBV individuals if the species were nesting in the impact footprint during component implementation and has the potential to result in the permanent loss of occupied habitat.

Direct impacts to LBV, as a result of the loss of or harm to individuals during Program implementation, or as a result of the loss of occupied habitat, would be **potentially significant** absent mitigation.

Green Sea Turtle (*Chelonia mydas*)

Within the Program area, green sea turtle is expected to occur in the open water and shallow bay areas identified on Figure 33. In particular, they are expected to forage within shallow subtidal eelgrass beds. Green sea turtle is not expected to nest in the Program area. The proposed Program could result in direct impacts to green sea turtle as a result of the Wetland and Water Quality Improvements element, the Restoration of Shoreline element, and the Bicycle and Pedestrian Improvements element. Specifically, the North Fiesta Island component, the Tecolote Creek and Fiesta Island Causeway component, the Cudahy Creek component, the Rose Creek Bike Path, the Fiesta Island Causeway Path, and components within the Restoration of Shoreline element that require in-water work could disturb green sea turtles via direct contact with equipment. These components also have the potential to result in the loss or degradation of nearshore marine habitat that may be suitable for sea turtle resting or foraging, although the amount of habitat lost during individual component implementation would be relatively small compared to the abundance of available habitat in Mission Bay as a whole. In addition, in the long-term, implementation of the proposed Program will result in a substantial increase in overall water quality through improved tidal exchange and reduced erosion, which will increase green sea turtle habitat quality in the Program area. Increased water quality also is likely to result in increased food abundance, such as eelgrass beds, thereby increasing foraging opportunities for green sea turtle in Mission Bay.

Direct impacts to green sea turtle, as a result of the loss of or harm to individuals during Program implementation, or as a result of habitat loss, would be **potentially significant** absent mitigation.

Crotch's Bumble Bee (*Bombus crotchii*)

Although not listed, CBB is a candidate for state listing as endangered and, as such, is afforded the protections of CESA and is therefore analyzed along with other listed species that have the potential to occur in the Program area. This species could forage within the Program area wherever suitable floral resources are present and could nest in the Program area wherever suitable nesting substrates are present. The greatest abundance of foraging resources in the Program area occur in areas mapped as Diegan coastal sage scrub and disturbed Diegan coastal sage scrub, including within Upland Habitat and Preserve Expansion components at the following sites have the potential to directly impact CBB should the species occupy these sites in the future: Fiesta Island Site No. 1 South, Fiesta Island Site No. 3 Near Youth Camping, Sea World Drive/San Diego River Site No. 5b Triangle Restoration Area, and Sea World Drive/San Diego River Site No. 5c South Shores East Area (Figures 34A–34L). Nesting could also occur in disturbed areas where small mammal burrows or other nesting substrates are present and foraging resources are nearby, including within all of the Upland Habitat and Preserve Expansion components, within the North Fiesta Island component boundary and the North Fiesta Island Stockpile Options 1 through 3.

These components could impact Crotch's bumble bee individuals if the species were nesting in the impact footprint during construction. At each of these component sites, restoration activities would result in the temporary loss of potentially suitable nesting and foraging habitat for Crotch's bumble bee. In addition, at Fiesta Island Sites No. 1 and No. 3 and Sea World Drive/San Diego River Site No. 5c, portions of these component areas that were mapped as Diegan coastal sage scrub would be converted to other habitat types, resulting in a permanent loss of potential foraging resources. However, in the long term, these components would result in a substantial increase in potential foraging resources in the Program area, through expansion and/or enhancement of existing Diegan coastal sage

scrub vegetation (see Figure 18, Figure 19, and Figure 24) and Program implementation is expected to result in no-net loss of upland habitats. At site 5b, Diegan coastal sage scrub restoration activities would include enhancement of existing Diegan coastal sage scrub vegetation through non-native species removal and native species container planting and seeding, which would also increase the potential foraging resources available for this species.

Direct impacts to Crotch's bumble bee as a result of the loss of or harm to individuals during Program implementation, or as a result of the loss of occupied habitat, would be **potentially significant** absent mitigation.

5.2.8.2 Non-Listed Special-Status Wildlife Species

The proposed Program has the potential to directly impact the non-listed, special-status species in Table 5-51, which were either observed or determined to have a moderate or high potential to occur in the Program area.

Table 5-51. Non-Listed Wildlife Species Observed or with a Moderate or High Potential to Occur

Potential to Occur	MSCP Covered Species	Not Covered Under the MSCP
Observed	American peregrine falcon, California brown pelican, Cooper's hawk, elegant tern, long-billed curlew, northern harrier, reddish egret, white-faced ibis	brant, California horned lark, osprey, white-tailed kite, yellow warbler
High Potential to Occur	Canada goose, salt marsh skipper	grunion, bottlenose dolphin, Pacific harbor seal, California sea lion
Moderate Potential to Occur	large-billed savannah sparrow, orange-throated whiptail	Southern California legless lizard, yellow rail

Note: MSCP = Multiple Species Conservation Program.

Nonbreeding Special-Status Avian Species

The following non-listed, special-status avian species have at least a moderate potential to occur in the Program area but are not expected to breed within the Program area: brant, California brown pelican, long-billed curlew, reddish egret, white-faced ibis, and large-billed savannah sparrow. Because nesting is not expected, individual component implementation is not expected to result in the loss of or harm to individuals since individuals of these species are highly mobile and are unlikely to be killed or injured during construction. However, implementation of the proposed Program would have the potential to temporarily disrupt foraging and/or roosting behaviors and would temporarily and permanently remove potentially suitable wintering and foraging habitat for some of these species.

Brant, long-billed curlew, reddish egret, and white-faced ibis all forage in the shallow waters of estuaries and bays. Reddish egret also utilizes salt marsh habitats, which is the preferred habitat of large-billed savannah sparrow. Each of these species could be impacted by the loss of foraging resources and wintering habitat during Program implementation. Specifically, the North Fiesta Island component, the Tecolote Creek and Fiesta Island Causeway component, the Cudahy Creek component, and components within the Restoration of Shoreline element that require in-water work could result in the loss or degradation of nearshore marine habitats. The Fiesta Island Causeway Path component, the Tecolote Creek and Fiesta Island Causeway component, the North Fiesta Island component, and the CLT preserve expansion on North Fiesta Island will result in the loss of salt marsh and mudflat habitat.

The loss of potentially suitable habitat during individual component implementation would be relatively small compared to the abundance of habitat available to these species in Mission Bay. In addition, in the long-term, implementation of the Water Quality Improvements and Restoration of Shoreline elements will result in a substantial increase in overall water quality through improved tidal exchange and reduced erosion, which is likely to result in increased food abundance, such as eelgrass beds, thereby increasing foraging opportunities for these species in Mission Bay. The Water Quality Improvements components will also result in a substantial increase in quantity and quality of saltmarsh habitat within the Program area. Nevertheless, direct impacts to brant, long-billed curlew, reddish egret, white-faced ibis, and large-billed savannah sparrow, as a result of the temporary loss of suitable foraging and roosting habitat, would be **potentially significant** absent mitigation.

California brown pelican primarily feeds in ocean waters and foraging is not tied to the shallow nearshore marine environments that would be affected by Program implementation. Individual components are therefore not expected to result in the loss of foraging and wintering habitat for this species and direct impacts to California brown pelican would be **less than significant**.

Breeding Special-Status Avian Species

Nine non-listed special-status avian species have the potential to nest in the Program area. Suitable nesting sites for American peregrine falcon, osprey, and white-tailed kite are not present within the impact footprint for any individual components. The proposed Program would result in impacts to areas that could support nesting by California horned lark, Canada goose, northern harrier, yellow rail, elegant tern, and/or yellow warbler. Individual adults of each of these species are unlikely to be directly killed or injured during construction activities because they are highly mobile and would likely leave the area during construction. The exception to this would be if active nests of these species are present during construction; direct impacts to active nests are **potentially significant** absent mitigation.

As with the nonbreeding avian species, most of the special-status breeding avian species could also be directly impacted by the loss of potentially suitable habitat. The Rose Creek Bike Path component would result in the permanent loss of riparian habitat, absent mitigation, that could support nesting yellow warbler and Cooper's hawk. The Fiesta Island Causeway Path component, the Tecolote Creek and Fiesta Island Causeway component, the North Fiesta Island component, and the CLT preserve expansion will result in the loss of potentially suitable marsh habitat for yellow rail and northern harrier. All of the Upland Habitat and Preserve Expansion components and the Wetland and Water Quality Improvements components on Fiesta Island would result in the temporary loss of potentially suitable nesting and foraging habitat for California horned lark, northern harrier, and Canada goose, and of potentially suitable foraging habitat for white-tailed kite, should it nest in trees nearby.

Despite the temporary loss of potentially suitable habitat, for upland species, Program implementation is expected to result in no-net loss of upland and wetland habitats. In addition, the proposed restoration components would result in a substantial increase in potential nesting and foraging opportunities in the Program area, over the long-term, through the expansion and/or enhancement of native upland habitats, and by substantially increasing the overall quantity and quality of wetland habitats. Nevertheless, direct impacts to American peregrine falcon, California horned lark, Canada goose, Cooper's hawk, northern harrier, white-tailed kite, yellow rail, elegant tern, and yellow warbler as a result of the temporary loss of potentially suitable nesting and foraging habitat, would be **potentially significant** absent mitigation.

Osprey was observed nesting in two locations in the Program area, outside of any component footprint, and forages over open water portions of the bay that would not be directly impacted by any individual component. Program implementation would not result in the loss of suitable nesting or foraging habitat for osprey and direct impacts to this species are **less than significant**.

Special-Status Invertebrates

Within the Program area, salt marsh skipper could occur in salt marsh habitats where saltgrass is present, including at the Kendall-Frost Reserve, in portions of the San Diego River, on North Fiesta Island, in the Rose Creek Inlet, and at the mouth of Tecolote Creek. Impacts to salt marsh skipper could occur as a result of the Bicycle and Pedestrian Improvements element, the Wetland and Water Quality Improvements element, and the Upland Habitat and Preserve Expansion element. Specifically, the Fiesta Island Causeway Path component, the Rose Creek Bike Path component, the Tecolote Creek and Fiesta Island Causeway component, the North Fiesta Island component, and the CLT preserve expansion on North Fiesta Island will result in the loss of areas mapped as disturbed southern coastal salt marsh and/or southern coastal salt marsh. These components could result in direct impacts to salt marsh skipper from the loss of or harm to individuals, should the species be present during component implementation and from the permanent and temporary loss of potentially suitable salt marsh habitat. However, in the long-term, the Program would result in no net loss of wetland habitat and these components, along with restoration activities associated with the Cudahy Creek component, would result in a substantial increase in quantity and quality of potentially suitable habitat for salt marsh skipper in the Program area.

Direct impacts to salt marsh skipper, as a result of the loss of or harm to individuals during Program implementation, or as a result of the loss of occupied habitat, would be **potentially significant** absent mitigation.

Special-Status Reptiles

Within the Program area, orange-throated whiptail and Southern California legless lizard both have a moderate potential to occur on Fiesta Island, the South Shores Park area, and at Sea World Drive/San Diego River Site No. 5a Cloverleaf Area, where suitable microhabitat conditions are present (loose soils and an abundant insect prey base for orange-throated whiptail and loose/moist soils for Southern California legless lizard). All of the Upland Habitat and Preserve Expansion components and the Wetland and Water Quality Improvements components on Fiesta Island would have the potential to directly impact these species. At each of these component sites, restoration activities would result in the temporary loss of potentially suitable habitat for these species. In addition to impacts from habitat loss, these species are vulnerable to injury and mortality during construction because they tend to be cryptic, slow moving, and belowground or under rocks or debris during cooler periods. Therefore, the proposed Program has the potential to result in direct impacts to these species due to the potential for individuals to be harmed or killed during individual component implementation. However, in the long term, Program implementation would result in no net loss of upland habitats and the proposed restoration components would substantially increase habitat quality through enhancement of native upland habitats. Nevertheless, direct impacts to orange-throated whiptail and Southern California legless lizard as a result of the loss of or harm to individuals during Program implementation, or the temporary loss of potentially suitable habitat, would be **potentially significant** absent mitigation.

Protected Marine Mammals

Within the Program area, protected marine mammals (bottlenose dolphin, Pacific harbor seal, and California sea lion) have a high potential to occur as transients in open water throughout Mission Bay. These Program components

include in-water work that may have direct effects on open water suitable for protected marine mammals, including all Wetland and Water Quality Improvement areas (not including upland stockpile locations). In addition, several components involving shoreline or in-water construction could directly impact marine mammals, particularly if seals or sea lions enter work areas; these components include all Wetland and Water Quality Improvements element areas (not including upland stockpile locations), Restoration of Shoreline element areas, and the Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area. Therefore, the proposed Program has the potential to result in direct impacts to these species due to the potential for individuals to be harmed or killed during individual component implementation. However, in the long-term, Program implementation would result in less than significant loss of open water for these wide-ranging species and the proposed restoration components would substantially increase habitat quality through enhancement of tidal wetlands. Nevertheless, potential direct impacts to marine mammals, as a result of the loss of or harm to individuals during Program implementation would be **potentially significant** absent mitigation.

Managed Fishery (*Grunion)*

Within the Program area, grunion is a managed fishery that has a high potential to spawn on beaches below the HTL throughout Mission Bay including all Wetland and Water Quality Improvement areas (not including upland stockpile locations), Restoration of Shoreline areas, and Fiesta Island Site No. 4-California Least Tern Preserve. At each of these component sites, construction would result in the temporary loss of potentially suitable spawning habitat for grunion. In addition to impacts from habitat loss, these species are vulnerable to injury and mortality if construction occurs during spawning. The utilization of heavy equipment below the highest HTL will crush the sensitive eggs deposited in the sand. Therefore, the proposed Program has the potential to result in direct impacts to these species due to the potential for individuals to be harmed or killed during individual component implementation. However, in the long-term, Program implementation would result in less than significant loss of beach for this wide-ranging species and the proposed restoration components would substantially increase habitat quality through enhancement of tidal wetlands. Nevertheless, direct impacts to grunion spawning areas during Program implementation would be **potentially significant** absent mitigation.

5.2.9 Direct Impacts to Wildlife Corridors, Habitat Linkages, and Nursery Sites

The Program components include areas within the MHPA, which acts as a local habitat linkage, an important stopover on the Pacific Flyway, a coastal migratory route.

The Program's conformance with the MSCP and Mission Bay Natural Resources Management Plan are detailed in Chapter 4 and are subject to verification during subsequent environmental analysis, prior to component approvals. This conformance is intended to ensure that the MHPA continues to function as a local habitat linkage during and following construction. Since this conformance requires measures that ensure minimization of adverse biological impacts (e.g., lighting, noise, trash, hazards) during construction and to verify habitat restoration benefits following construction, and therefore impacts would be **potentially significant** absent mitigation. The function of the Program area as a stopover on the Pacific Flyway would be similarly impacted and is therefore considered **potentially significant** absent mitigation.

5.3 Indirect Impacts

Indirect impacts are reasonably foreseeable effects caused by Program implementation on remaining or adjacent biological resources outside the direct component footprint area, such as downstream effects. Indirect impacts include short-term effects immediately related to Program activities and long-term or chronic effects occurring after implementation as a result of new land uses or conditions. Indirect impacts that would result in loss of area or function of wetlands, Tier I–III uplands, or sensitive species may be considered significant.

5.3.1 Indirect Impacts on Sensitive Vegetation Communities and Plant Species Occurrences

Implementation of the Program may indirectly affect sensitive wetland and upland vegetation communities and sensitive plant species occurrences located adjacent to the disturbance footprints. Indirect impacts to these vegetation communities could include fugitive dust, hydrologic changes (e.g., overspray, erosion), pollutant discharges or water quality degradation (e.g., turbidity, vehicle oil), and trampling from increased human presence in the area during the construction and restoration phases. As detailed in Section 1.4, all construction will be subject to implementation of Environmental Protocols, which include elements such as dust control, stormwater BMPs, and landscape standards that would reduce the potential for indirect adverse impacts to **less than significant**. Requirements for a Stormwater Pollution Prevention Plan or Water Pollution Control Plan are particularly important to ensure that indirect impacts during in-water construction activities (e.g., turbidity) are avoided and minimized to the extent feasible utilized BMPs. In addition, the Program's conformance with the MSCP and Mission Bay Natural Resources Management Plan are detailed in Chapter 4 and include measures to minimize indirect impacts to sensitive vegetation communities and plant species occurrences. Conformance is subject to verification during subsequent environmental analysis, prior to component approvals.

Long-term operational indirect impacts to sensitive vegetation communities and plant species may result from rehabilitated or created adjacent infrastructure (e.g., bike paths, trails) or even maintenance of restored habitats. These long-term indirect impacts may include introduction of chemicals (e.g., fertilizers) and human encroachment (e.g., trampling). Program elements have been designed to minimize human encroachment into open space areas supporting sensitive vegetation communities through perimeter fencing and signage and minimize the need for ongoing maintenance (i.e., development of resilient habitats) such that long-term indirect impacts would be expected to be reduced compared to current conditions and is therefore **less than significant**. In addition, the Program's conformance with the MSCP and Mission Bay Natural Resources Management Plan are detailed in Chapter 4 and include measures to minimize indirect impacts to sensitive vegetation communities and plant species occurrences. Conformance is subject to verification during subsequent environmental analysis, prior to component approvals.

5.3.2 Indirect Impacts on Jurisdictional Resources

Temporary indirect impacts on jurisdictional resources may result from the degradation of waterways through the accidental discharge or oil, grease, and/or chemicals that may temporarily impound and/or degrade the volume, character, and/or quality of flows within the BSA during construction. Furthermore, potentially significant permanent indirect impacts that may result from Program development include downstream habitat loss, alteration, or conversion resulting from the alteration of the flow regime within the BSA. Additionally, the BSA is host to invasive

species, which, if transported or otherwise dispersed off site, may result in long-term conversion or degradation of additional jurisdictional areas.

Program component designs have considered a range of scenarios to avoid adverse indirect impacts from altered flow regimes. Proposed habitat restoration and shoreline elements are designed to reduce adverse existing conditions and would provide more stable and resilient conditions along Mission Bay. The Program does not include planting of native invasive species and standard City construction monitoring requirements will minimize the potential that existing invasive species are transported or otherwise dispersed off site by having a qualified biological monitor present and coordinating with construction crews. Given these design and construction parameters, potential indirect impacts to jurisdictional resources are **less than significant**. In addition, the Program's conformance with the MSCP and Mission Bay Natural Resources Management Plan are detailed in Chapter 4 and include measures to minimize indirect impacts to jurisdictional aquatic resources. Conformance is subject to verification during subsequent environmental analysis, prior to component approvals.

5.3.3 Indirect Impacts to Special-Status Wildlife Species

As a result of Program implementation, special-status wildlife species may be indirectly impacted by short-term impacts during construction and restoration activities and by long-term impacts that could occur during operation and maintenance of the restoration areas. Potential indirect impacts can affect special-status wildlife species through habitat degradation and/or loss of or harm to individuals.

Potential short-term indirect impacts that could impact special-status wildlife species generally include increased noise and vibration; nighttime lighting; construction-related fugitive dust; accidental clearing/grading; litter; increased human presence; and pollutant discharges or water quality degradation due to accidental spills and/or increased erosion or sedimentation. These short-term impacts could remove or degrade wildlife habitats or result in the death or injury of special-status wildlife species present in areas adjacent to Program activities.

Potential long-term indirect impacts associated with the operation and maintenance of individual component sites would include similar impacts to those that could occur during construction and restoration, including noise, vibration, lighting, and fugitive dust generated by operations and maintenance activities, as well as accidental clearing or trampling of habitats during these activities. These impacts could impact special-status wildlife species present in or adjacent to the restoration component sites. The proposed Program also has the potential to cause habitat loss, alteration, and/or conversion due to the introduction or spread of non-native, invasive plant species, and in areas downstream of or adjacent to individual component footprints as a result of altered hydrologic regimes within the Program area, especially in areas where nearshore habitats are being altered.

Short-Term Indirect Impacts

Construction activities could indirectly impact nonbreeding special-status avian species foraging near component work areas. Any disruption would be temporary and these birds are likely to move to other suitable foraging habitat nearby, which is abundant in the Program area. However, if component implementation were to result in increased trash, avian and terrestrial predators could be attracted to the Program area, which could result in impacts to many of the special-status species potentially present in the Program area, including nonbreeding bird species.

Special-status avian species, and other birds protected under the Migratory Bird Treaty Act and California Fish and Game Code, that are actively nesting in areas adjacent to construction or restoration activities could be indirectly

impacted by individual component implementation. Construction-related impacts such as noise, vibration, and increased human presence can temporarily disturb bird breeding activities, potentially resulting in nest abandonment or reduced productivity. Accidental clearing outside of the designated impact footprint could also result in the destruction of nests, indirectly impacting nesting bird species.

Construction vibration may also temporarily disturb species that occupy burrows, including reptiles and CBB, and may cause the collapse of occupied burrows, potentially crushing individuals.

The North Fiesta Island wetland component, the Tecolote Creek and Fiesta Island Causeway component, and the Restoration of the Seawall Bulkhead component include drilling components that may increase subtidal vibration or have hydroacoustic impacts (e.g., injury or behavioral disturbance) or water quality effects (e.g., increased turbidity temporarily reducing foraging resources), and have the potential to disturb green sea turtles and/or marine mammals. A hydroacoustic analysis was prepared by Merkel & Associates for the Fiesta Island Amendment and is utilized to establish thresholds whereby construction may result in significant indirect impacts to marine fish, green sea turtles, and marine mammals (Table 5-52).

Table 5-52. Summary of Potentially Significant In-Water Sound Pressure Level Impacts

Assumed Component Noise Levels (>5 Meters of Water)	Impact Threshold for Marine Fish (206 dB Peak and 187 dB Accumulated SEL)	Impact Threshold for Marine Mammals (160 dB_{rms} for Impact; 120 dB_{rms} for Vibratory)	Impact Threshold for Green Sea Turtles (166 dB_{rms})
	Potentially Significant Hydroacoustic Impacts?		
76–188 dB_{peak}	No	N/A	N/A
146–166 dB_{SEL}	Maybe[1]	N/A	N/A
166–176 dB_{rms}	N/A	Yes	Yes

Source: Merkel & Associates 2017.
Notes: dB = decibels; SEL = sound exposure level; rms = root mean square; N/A = not applicable.
1 Accumulated SEL is derived from the number of pile strikes ($SEL_{cumulative}$ = SEL + 10*log [# strikes]); as such, the starting SEL would dictate the number of pile strikes possible prior to exceeding the threshold of 187 dB $SEL_{cumulative}$.

The impacts of increased lighting on wildlife include disorientation; avoidance of certain areas; disturbance of nighttime rest and sleep periods of diurnal birds; simulated increased day length, which affects reproductive cycles by triggering premature reproductive activity; and increased risk of predation. Construction activities requiring nighttime lighting could indirectly impact all special-status wildlife species potentially present in the Program area.

As detailed in Section 1.4, all construction will be subject to Environmental Protocols, which include elements such as biological resource verification, dust control, stormwater BMPs, and landscape standards that would reduce the potential for indirect impacts to special-status wildlife species during construction and restoration activities. Individual components would be required to comply with the San Diego RWQCB Municipal Permit, the City's Stormwater Standards Manual (City of San Diego 2024c), and National Pollutant Discharge Elimination System (NPDES) regulations, through implementation of site design, source control, and incorporation of construction and permanent BMPs. Adherence to these standards and regulations would reduce the potential for indirect impacts related to trash, increased human presence, and accidental clearing during construction to below a level of significance. However, short-term indirect impacts to special-status wildlife species related to vibration, hydroacoustic effects, and lighting would be **potentially significant** absent mitigation.

Long-Term Indirect Impacts

Many of the construction-related impacts discussed in the short-term indirect impacts analysis above, such as increased noise and vibration, nighttime lighting, and human presence, could have similar indirect impacts during long-term operation and maintenance activities at Wetland and Water Quality Improvement sites, Shoreline Restoration sites, and Upland Habitat and Preserve Expansion sites, should special-status wildlife species be present in or adjacent to areas subject to maintenance. Operations and maintenance activities at these Program sites include ground-disturbing activities such as grading at Wetland and Water Quality Improvement sites, beach renourishment and grooming at Shoreline Restoration sites, and weed control at Upland Habitat and Preserve Expansion sites. While these activities have the potential to indirectly impact special-status wildlife species present within or adjacent to maintenance work areas, all operations and maintenance is planned in conformance with the Mission Bay Natural Resources Management Plan (see Section 4.3), which ensures protection of habitat and species in designated preserves, including the MHPA, subject to verification during subsequent environmental analysis, prior to component approvals. Therefore, potential long-term indirect impacts related to operations and maintenance would be **less than significant**.

Upon completion of the Restoration of the Seawall Bulkhead element, operation and maintenance activities would be minimal and consistent with the City's standard routine maintenance requirements. Operation of the Bicycle and Pedestrian paths would generally be limited to cleaning, clearing, and repairs as necessary. Operation and maintenance associated with these two Program elements are expected to be minimal and similar to baseline maintenance activities; therefore, long-term indirect impacts at these locations are expected to be **less than significant**.

As discussed previously, the proposed Program has the potential to cause habitat loss, alteration, and/or conversion due to the introduction or spread of non-native, invasive plant species, and in areas downstream of or adjacent to individual component footprints as a result of altered hydrologic regimes within the Program area. The Program does not include planting of native invasive species and standard City construction monitoring requirements will minimize the potential that existing invasive species are transported or otherwise dispersed off site. In addition, Program component designs have considered a range of scenarios to avoid adverse indirect impacts from altered flow regimes. Proposed habitat restoration and shoreline elements are designed to reduce adverse existing conditions and would provide more stable and resilient conditions along Mission Bay and implementation of the proposed Program is expected to greatly increase the quality and quantity of available suitable habitat for special-status wildlife species in Mission Bay. In addition, the Program's conformance with the MSCP and Mission Bay Natural Resources Management Plan are detailed in Chapter 4 and include measures to minimize indirect impacts to special-status wildlife. Conformance is subject to verification during subsequent environmental analysis, prior to component approvals. Therefore, long-term indirect impacts related to habitat degradation and loss would be **less than significant**.

5.3.4 Indirect Impacts to Wildlife Corridor, Habitat Linkages, and Nursery Sites

As discussed in Section 5.2.9, the Program is designed to offer beneficial effects to wildlife corridor, habitat linkage, and nursery site functions. Similarly, indirect effects (e.g., edge effects) are expected to be improved through proposed habitat restoration and improved infrastructure in areas of wildlife movement, subject to verification during subsequent environmental analysis, prior to component approvals. As discussed in Chapters 1 and 4, the

project is consistent with the MSCP, including the MHPA Land Use Adjacency Guidelines. As such, the Program would have **no indirect impact** to wildlife corridors or habitat linkages.

The Program proposes to conduct tidal channel dredging, which is a bottom disturbing activity that has the potential to spread an invasive algae, genus *Caulerpa*, if the algae is present in the vicinity where dredging will occur. If *Caulerpa* is present in the Project area, it could cause adverse impacts to native foundational species that create important habitats and provide ecological functions, ecosystem services, and support diverse species. *Caulerpa* can grow quickly and rapidly out-compete native species, including native eelgrass, and may be inedible to native marine herbivorous fish and invertebrates and thus potentially interfering with wildlife nursery sites. As such, impacts from the potential spread of *Caulerpa* during construction are considered **potentially significant** absent mitigation.

5.4 Cumulative Impacts

The MSCP is a long-term regional conservation plan established to protect sensitive species and habitats in San Diego County. The proposed Program area is within the City of San Diego Subarea Plan area and partially inside the MHPA.

As previously discussed, the proposed Program is within the Urban area of the City's MSCP boundary. The MHPA is a "hard line" preserve developed by the City in cooperation with the Wildlife Agencies, property owners, developers, and environmental groups. The MHPA identifies biological core resource areas and corridors targeted for conservation, in which only limited development may occur (City of San Diego 1997). Preservation and restoration of habitat, in accordance with the biological resource conservation goals of the MSCP, and limitation of impacts in accordance with the MSCP are intended to mitigate cumulative biological resource impacts. Although sections of the proposed Program are inside the City's designated MHPA boundary, the habitat restoration activities proposed in these areas are compatible uses within the MHPA boundary, in accordance with the City's SDBG and Section 143.0130 of the ESL Regulations. In addition, since work would occur within and adjacent to the MHPA, the proposed Program implementation requires demonstration of consistency with the MSCP's Land Use Adjacency Guidelines. The Program's conformance with the MSCP and Mission Bay Natural Resources Management Plan is detailed in Chapter 4 and is subject to verification during subsequent environmental analysis, prior to component approvals. With these measures, the proposed Program is consistent with the MSCP and cumulative impacts to all sensitive vegetation communities and MSCP-covered sensitive plant and wildlife species are considered **less than significant**.

Special-status plant and wildlife species not covered by the MSCP are expected to be protected and enhanced through Program implementation as the measures required for MSCP-covered species (e.g., dust control and noise attenuation during construction, and effective habitat restoration implemented as part of the Program) would benefit non-covered species through protection and expansion of species and habitat. The MSCP covers all projects in the City of San Diego and similar resource protection programs are in place throughout the region, resulting in similar habitat and species protections of populations outside the City. Cumulative impacts are expected to be **less than significant** because the Program is not expected to result in reductions of habitat that could, with consideration of other projects in the region, result in substantive loss of species occurrences or habitat suitability.

6 Mitigation Measures

Mitigation measures are proposed below to reduce significant impacts identified in Chapter 5, to the extent feasible. Tables 6-1 and 6-2 provide a summary of mitigation measure applicability to each Program component. Actual mitigation requirements will be determined during subsequent approvals of each component based on project-specific final designs and updated survey data, pursuant to the Program Implementation Framework. Subsequent approval of each component may include a Site Development Permit, other permits, or award of a construction contract where no permit is required.

Table 6-1. Summary of Mitigation Measures and Program Component Applicability

Location	Program Component Applicability by Mitigation Measure[1]							
	MM-BIO-1A	MM-BIO-2A	MM-BIO-2B	MM-BIO-3	MM-BIO-4	MM-BIO-5	MM-BIO-6	MM-BIO-7
Wetland and Water Quality Improvements								
North Fiesta Island	No	Yes	No	Yes	No	Yes	Yes	No
North Fiesta Island Stockpile Option 1	Yes	Yes	No	Yes	Yes	No	No	No
North Fiesta Island Stockpile Option 2	No	No	No	No	No	No	No	No
North Fiesta Island Stockpile Option 3	No	No	No	No	No	No	No	No
Tecolote Creek and Fiesta Island Causeway	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Cudahy Creek	No	Yes	No	Yes	No	Yes	Yes	Yes
Restoration of Shoreline								
Vacation Island Northwest	No	Yes	No	Yes	No	No	No	No
Vacation Island Northeast (i.e., Ski Beach)	No	Yes	No	Yes	No	Yes	Yes	Yes
Vacation Island Southwest	No	Yes	No	Yes	No	Yes	Yes	Yes
Ventura Cove Park	No	Yes	No	Yes	No	No	No	No
Crown Point	No	Yes	No	Yes	No	No	No	No
West Sail Bay	No	Yes	No	Yes	No	No	No	No
Bonita Cove	No	Yes	No	Yes	No	Yes	Yes	Yes
Bahia Point	No	Yes	No	Yes	No	No	No	No
Upland Habitat and Preserve Expansion								
Fiesta Island Site No. 1 South	Yes	No	Yes	Yes	Yes	No	No	No
Fiesta Island Site No. 2 North Central	Yes	No	Yes	Yes	Yes	No	No	No
Fiesta Island Site No. 3 Near Youth Camping	Yes	Yes	Yes	Yes	Yes	No	No	No
Fiesta Island Site No. 4 California Least Tern (CLT) Preserve Area	No	Yes	No	Yes	No	No	Yes	No

Table 6-1. Summary of Mitigation Measures and Program Component Applicability

Location	Program Component Applicability by Mitigation Measure[1]							
	MM-BIO-1A	MM-BIO-2A	MM-BIO-2B	MM-BIO-3	MM-BIO-4	MM-BIO-5	MM-BIO-6	MM-BIO-7
Sea World Drive/San Diego River Site No. 5a Cloverleaf Area	No	No	No	No	No	No	No	No
Sea World Drive/San Diego River Site No. 5b Triangle Restoration Area	Yes	No	Yes	Yes	Yes	No	No	No
Sea World Drive/San Diego River Site No. 5c South Shores East Area	Yes	No	Yes	Yes	Yes	No	No	No
Bicycle and Pedestrian Improvements								
Rose Creek Bike Path	Yes	Yes	No	Yes	Yes	No	No	No
Fiesta Island Causeway Path	No	Yes	No	Yes	No	No	No	No
Ocean Beach Bike Path	Yes	No	No	No	Yes	No	No	No
Restoration of the Seawall Bulkhead								
Replacement Segments A and B	No	No	No	No	No	No	No	No
New Segment C	No	No	No	No	No	No	No	No

Note:

[1] This table does not include **MM-BIO-1B–MM-BIO-1G** (Focused Biological Species Surveys) or **MM-BIO-8** (Avoidance of Listed Species Take); see Table 6-2 for these mitigation measures.

Table 6-2. Summary of Listed Wildlife Species Mitigation Measures and Program Component Applicability

Location	Program Component Applicability by Mitigation Measure and Wildlife Species							
	MM-BIO-1B, MM-BIO-8A: CAGN	BIO-1C, BIO-8B: LBV	BIO-1D, BIO-8C: CLT, WSP	BIO-1E, BIO-8D: LFRR, BSS	BIO-1F, BIO-8E: BUOW	BIO-1G, BIO-8F; CBB	BIO-8G: FPS	BIO-8H: Marine
Wetland and Water Quality Improvements								
North Fiesta Island	No	No	Yes	Yes	Yes	Yes	Yes	Yes
North Fiesta Island Stockpile Option 1	No	No	No	Yes	Yes	Yes	Yes	No
North Fiesta Island Stockpile Option 2	No	No	No	No	Yes	Yes	Yes	No
North Fiesta Island Stockpile Option 3	No	No	No	No	Yes	Yes	Yes	No
Tecolote Creek and Fiesta Island Causeway	No	No	No	Yes	No	No	Yes	Yes
Cudahy Creek	No	No	No	No	No	No	Yes	Yes

Table 6-2. Summary of Listed Wildlife Species Mitigation Measures and Program Component Applicability

Location	Program Component Applicability by Mitigation Measure and Wildlife Species							
	MM-BIO-1B, MM-BIO-8A: CAGN	BIO-1C, BIO-8B: LBV	BIO-1D, BIO-8C: CLT, WSP	BIO-1E, BIO-8D: LFRR, BSS	BIO-1F, BIO-8E: BUOW	BIO-1G, BIO-8F; CBB	BIO-8G: FPS	BIO-8H: Marine
Restoration of Shoreline								
Vacation Island Northwest	No	No	Yes	No	No	No	Yes	Yes
Vacation Island Northeast (i.e., Ski Beach)	No	No	Yes	No	No	No	Yes	Yes
Vacation Island Southwest	No	No	Yes	No	No	No	Yes	Yes
Ventura Cove Park	No	No	Yes	No	No	No	Yes	Yes
Crown Point	No	No	Yes	No	No	No	Yes	Yes
West Sail Bay	No	No	Yes	No	No	No	Yes	Yes
Bonita Cove	No	No	Yes	No	No	No	Yes	Yes
Bahia Point	No	No	Yes	No	No	No	Yes	Yes
Upland Habitat and Preserve Expansion								
Fiesta Island Site No. 1 South	Yes	No	No	No	Yes	Yes	Yes	No
Fiesta Island Site No. 2 North Central	No	No	No	No	Yes	Yes	Yes	No
Fiesta Island Site No. 3 Near Youth Camping	Yes	No	No	No	Yes	Yes	Yes	No
Fiesta Island Site No. 4 California Least Tern (CLT) Preserve	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Sea World Drive/San Diego River Site No. 5a Cloverleaf Area	No	No	No	No	Yes	Yes	Yes	No
Sea World Drive/San Diego River Site No. 5b Triangle Restoration Area	Yes	No	No	No	Yes	Yes	Yes	No
Sea World Drive/San Diego River Site No. 5c South Shores East Area	Yes	No	No	No	Yes	Yes	Yes	No
Bicycle and Pedestrian Improvements								
Rose Creek Bike Path	No	Yes	No	Yes	No	No	Yes	Yes

Table 6-2. Summary of Listed Wildlife Species Mitigation Measures and Program Component Applicability

Location	Program Component Applicability by Mitigation Measure and Wildlife Species							
	MM-BIO-1B, MM-BIO-8A: CAGN	BIO-1C, BIO-8B: LBV	BIO-1D, BIO-8C: CLT, WSP	BIO-1E, BIO-8D: LFRR, BSS	BIO-1F, BIO-8E: BUOW	BIO-1G, BIO-8F; CBB	BIO-8G: FPS	BIO-8H: Marine
Fiesta Island Causeway Path	No	No	No	Yes	Yes	No	Yes	Yes
Ocean Beach Bike Path	No	No	No	No	Yes	No	No	Yes
Restoration of Seawall Bulkhead								
Replacement Segments A and B	No	No	No	No	No	No	No	No
New Segment C	No	No	No	No	No	No	No	No

Notes: CAGN = coastal California gnatcatcher, LBV = least Bell's vireo, CLT = California least tern, WSP = western snowy plover; LFRR = light-footed Ridgway's rail, BSS = Belding's savannah sparrow, BUOW = western burrowing owl; CBB = Crotch's bumble bee, FPS = fully protected species, Marine = green sea turtle and marine mammals.

MM-BIO-1 Focused Biological Species Surveys. Within 24 months prior to receiving the Notice to Proceed and as part of the project-specific environmental review pursuant to CEQA, focused surveys for future site-specific development shall be conducted, as applicable, in suitable habitat, to determine presence/absence of sensitive biological species within the proposed survey area. These surveys shall be in addition to suitable habitat/vegetation community mapping and jurisdictional aquatic resources delineation surveys conducted pursuant to EP-BIO-1. Focused surveys shall be conducted within suitable habitat according to the following protocols, or more current agency-approved protocols at the time of the surveys. Individual protocols may require a survey(s) of the proposed development footprint plus a buffer. A survey report shall be prepared in accordance with the SDBG and include a map and description of the location and extent of observed sensitive species that would be impacted within the areas of potential effect for each project site. If significant impacts to these species are unavoidable, the impact to the species shall be reduced to a less than significant level through implementation of MM-BIO-2 (habitat-based mitigation), MM-BIO-3 (avoidance and minimization during construction), MM-BIO-4 (sensitive plant mitigation), MM-BIO-5 (eelgrass mitigation), and/or MM-BIO-8 (avoidance of listed species take).

MM-BIO-1A Special-Status Plant Species. Prior to subsequent project-level approval, as part of project-specific environmental review pursuant to CEQA, a qualified botanist shall survey suitable habitat proposed to be impacted to determine presence/absence of special-status plant species. Surveys shall be conducted in accordance with the California Department of Fish and Wildlife (CDFW 2018) and US Fish and Wildlife Service (USFWS 2011). CDFW (2018) provides botanical field surveyor qualifications. Multiple surveys may be required and timed according to blooming periods of target species and reference checks to ensure detectability.

MM-BIO-1B Coastal California Gnatcatcher (CAGN). Prior to subsequent project-level approval, as part of project-specific environmental review pursuant to CEQA, a biologist possessing a valid Endangered

Species Act Section 10[a][1][a] Recovery Permit shall survey those suitable habitat areas within the MHPA that are proposed to be impacted (permanently or temporarily) to determine presence/absence of CAGN. Surveys for this species shall be conducted pursuant to the protocol survey guidelines established by the U.S. Fish and Wildlife Service (USFWS 1997).

MM-BIO-1C Least Bell's Vireo (LBV). Prior to subsequent project-level approval, as part of project-specific environmental review pursuant to CEQA, a qualified biologist shall survey suitable habitat areas that are proposed to be impacted (permanently or temporarily) to determine presence/absence of LBV. Surveys for this species shall be conducted pursuant to the protocol survey guidelines established by the U.S. Fish and Wildlife Service (USFWS 2001).

MM-BIO-1D California Least Tern (CLT) and Western Snowy Plover (WSP). Prior to submitting applications for the implementation of location-specific components recommended by the Improvement Program, a qualified biologist shall survey those suitable habitat areas that are proposed to be impacted (permanently or temporarily) to determine presence/absence of CLT and WSP. Surveys for this species shall be conducted pursuant to requirements established by the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife.

MM-BIO-1E Light-Footed Ridgway's Rail and Belding's Savannah Sparrow (LFRR/BSS). Prior to submitting applications for the implementation of location-specific components recommended by the Improvement Program a biologist possessing a valid Endangered Species Act Section 10[a][1][a] Recovery Permit and state Scientific Collecting Permit and/or Memorandum of Understanding shall survey those suitable habitat areas that are proposed to be impacted (permanently or temporarily) to determine presence/absence of LFRR and/or BSS. Surveys for this species shall be conducted pursuant to the protocol survey guidelines established by the U.S. Fish and Wildlife Service, and for BSS by California Department of Fish and Wildlife.

MM-BIO-1F Western Burrowing Owl (BUOW). Prior to submitting applications for the implementation of location-specific components recommended by the Improvement Program a biologist possessing a valid state Scientific Collecting Permit and/or Memorandum of Understanding shall survey those suitable habitat areas that are proposed to be impacted (permanently or temporarily) to determine presence/absence of BUOW. Surveys for this species shall be conducted pursuant to the recommendations of the California Department of Fish and Wildlife (CDFG 2012).

MM-BIO-1G Crotch's Bumble Bee (CBB). Prior to submitting applications for the implementation of location-specific components recommended by the Improvement Program a biologist possessing a valid state Scientific Collecting Permit and/or Memorandum of Understanding shall survey those suitable habitat areas that are proposed to be impacted (permanently or temporarily) to determine presence/absence of CBB. Surveys for this species shall be conducted pursuant to the recommendations of the California Department of Fish and Wildlife (CDFW 2023).

MM-BIO-2 Habitat-Based Mitigation. Habitat-based mitigation would be required for direct impacts to wetlands (see MM-BIO-2A) or sensitive uplands (see MM-BIO-2B).

MM-BIO-2A Compensatory Wetlands Mitigation. Prior to subsequent project-level approval, as part of subsequent project-specific environmental review pursuant to CEQA, any direct impacts to wetlands, including jurisdictional aquatic resources, would require mitigation to comply with City of San Diego, state and/or federal authorizations, in accordance with the City of San Diego's Biology Guidelines (or the most current adopted guidelines at the time of review), provided below. Significant impacts to sensitive wetlands could occur from Program activities, including habitat restoration, construction staging, access and stockpiling, and infrastructure improvements including storm drain outfalls, bike and pedestrian paths, and seawalls. Mitigation required as part of any federal (Clean Water Act Section 404) or state (California Fish and Game Code Sections 1601 and 1603, California Coastal Act) permit shall supersede and shall not be in addition to any mitigation identified in the California Environmental Quality Act (CEQA) document for those wetland areas covered by any federal or state permits, consistent with the City's Biology Guidelines. Mitigation acreage for other impacts to habitat (e.g., type conversion due to grading to restore lands to a higher value habitat type) will be evaluated through a Habitat Mitigation and Monitoring Plan (HMMP), subject to review and approval by applicable regulatory agencies (e.g., California Coastal Commission, U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, U.S. Army Corps of Engineers, San Diego Regional Water Quality Control Board).

Land Development Manual – Biology Guidelines **February 2018**

TABLE 2A
WETLAND MITIGATION RATIOS
INCLUDING BIOLOGICALLY SUPERIOR DESIGN

HABITAT TYPE	MITIGATION RATIO
Coastal Wetlands:	
- Salt marsh	4:1
- Salt panne	4:1
Riparian Habitats:	
- Oak riparian forest	3:1
- Riparian forest or woodland	3:1
- Riparian scrub	2:1
- Riparian scrub in the Coastal Overlay Zone	3:1
Freshwater Marsh	2:1
Freshwater Marsh in the Coastal Overlay Zone	4:1
Natural Flood Channel	2:1
Disturbed Wetland	2:1
Vernal Pools	2:1 to 4:1*
Marine Habitats	2:1
Eelgrass Beds	2:1

Notes:
Any impacts to wetlands must be mitigated "in-kind" and achieve a "no-net loss" of wetland function and values except as provided for in Section 3B (Economic Viability Option).

* Mitigation for vernal pool impacts consistent with the VPHCP shall be 2:1 for listed fairy shrimp or when no listed plant species are present, 3:1 for San Diego button celery, and 4:1 when listed species with very limited distributions (e.g., *Spreading navarretia, San Diego mesa mint, California Orcutt grass, and Otay mesa mint*) are present. While ratio is applied to the basin area, the mitigation site must include appropriate watershed to support restored and/or enhanced basins.

Impacts shall be mitigated in one of the following two equally suitable options pursuant to the City's Biology Guidelines: (1) implementation of habitat creation, restoration, enhancement, and/or preservation through an approved Habitat Mitigation and Monitoring Plan (HMMP) or (2) acquisition of approved mitigation credits, including approved City of San Diego (City) Advanced Permittee Responsible Mitigation (APRM) sites. Impacts occurring within the Coastal Overlay Zone shall be mitigated within the Coastal Overlay Zone unless alternative mitigation is approved through California Coastal Commission action.

Option 1: Prior to subsequent approval of a Program component(s), as part of subsequent project-specific environmental review pursuant to CEQA, an HMMP shall be prepared and approved by the City's Environmental Designee (ED), in accordance with the City of San Diego Municipal Code, Land Development Code—Biology Guidelines (SDBG). Mitigation shall conform with the SDBG, including definitions for creation (re-establishment), restoration (including rehabilitation), enhancement, and/or acquisition identified under environmentally sensitive lands (ESL), satisfaction of no net loss by including at least a 1:1 ratio of creation or restoration for all areas of permanent loss to wetlands , and the protection and notice and management elements.

When proposed mitigation involves habitat enhancement, restoration, or creation, the HMMP shall include the following information in addition to information required under Attachment B of the SDBG:

- Conceptual planting plan including planting zones, grading, and irrigation
- Seed mix/planting palette
- Planting specifications
- Monitoring program, including success criteria
- Long-term maintenance and preservation plan
- For mitigation that involves habitat acquisition, the HMMP shall include the following:
- Location of proposed acquisition
- Description of the biological resources to be acquired, including support for the conclusion that the acquired habitat mitigates for the specific maintenance impact
- Documentation that the mitigation area would be adequately preserved and maintained in perpetuity

Option 2: Prior to subsequent approval of a Program component(s), as part of subsequent project-specific environmental review pursuant to CEQA, allocation of mitigation site credits, approved by the ED, that shall include the following:

- A description of the location of the approved mitigation site and referenced on a map identifying the regional vicinity.
- Description of the mitigation credits to be acquired, including support for the conclusion that the acquired habitat mitigates for the specific impact. At a minimum, a description of the proposed habitat impacts, and the type (creation/restoration/enhancement) and quantity of mitigation credits requested.
- Documentation that the credits are associated with a mitigation bank or APRM site that has been approved by the appropriate Resource Agencies.
- Documentation in the form of a current mitigation credit ledger.

MM-BIO-2B Compensatory Uplands Habitat Mitigation

Prior to subsequent project-level approval, as part of subsequent projects specific environmental review pursuant to CEQA, any direct impacts to sensitive upland vegetation would require mitigation to comply with City of San Diego with the City of San Diego's Biology Guidelines Table 3 (or the most current adopted guidelines at the time of review), provided below. Significant impacts to sensitive uplands (Tiers I–III) could occur from Program activities, including habitat restoration, construction staging, access and stockpiling, and infrastructure improvements including storm drain outfalls, bike and pedestrian paths, and seawalls. Mitigation acreage for permanent loss of habitats (e.g., infrastructure improvements) shall adhere to mitigation ratios established under Table 3 of the City of San Diego Municipal Code, Land Development Code—Biology Guidelines. Mitigation required as part of any federal (Clean Water Act Section 404) or state (California Fish and Game Code Sections 1601 and 1603, California Coastal Act) permit shall supersede and shall not be in addition to any mitigation identified in the California Environmental Quality Act (CEQA) document for those upland areas covered by any federal or state permits. Mitigation acreage for other impacts to habitat (e.g.,

type conversion due to grading to restore lands to a higher value habitat type) will be evaluated through a Habitat Mitigation and Monitoring Plan (HMMP).

Land Development Manual – Biology Guidelines **February 2018**

TABLE 3
UPLAND MITIGATION RATIOS[1]

TIER	HABITAT TYPE	MITIGATION RATIOS
TIER I[2] **(rare uplands)**	Southern Foredunes Torrey Pines Forest Coastal Bluff Scrub Maritime Succulent Scrub Maritime Chaparral Scrub Oak Chaparral Native Grassland Oak Woodlands	Location of Preservation Location of Impact: Inside — Inside 2:1, Outside 3:1; Outside — Inside 1:1, Outside 2:1
TIER II[3] **(uncommon uplands)**	Coastal Sage Scrub (CSS) CSS/Chaparral	Location of Preservation Location of Impact: Inside — Inside 1:1, Outside 2:1; Outside — Inside 1:1, Outside 1.5:1
TIER IIIA[3] **(common uplands)**	Mixed Chaparral Chamise Chaparral	Location of Preservation Location of Impact: Inside — Inside 1:1, Outside 1.5:1; Outside — Inside 0.5:1, Outside 1:1
TIER IIIB[3] **(common uplands)**	Non-Native Grasslands[4]	Location of Preservation Location of Impact: Inside — Inside 1:1, Outside 1.5:1; Outside — Inside 0.5:1, Outside 1:1
TIER IV **(other uplands)**	Disturbed Land Agriculture Eucalyptus Woodland Ornamental Plantings	Location of Preservation Location of Impact: Inside — Inside 0:1, Outside 0:1; Outside — Inside 0:1, Outside 0:1

NOTES:

1. No mitigation would be required for impacts within the base development area (25%) occurring inside the MHPA. Mitigation for any impacts from development in excess of the 25% base development area for community plan public facilities or for projects processed through the deviation process would be required at the indicated ratios.

2. For all Tier I impacts, the mitigation could (1) occur within the MHPA portion of Tier I (in Tier) or (2) occur outside of the MHPA within the affected habitat type (in-kind).

3. For impacts to Tier II, III A and III B habitats, the mitigation could (1) occur within the MHPA portion of Tiers I – III (out-of-kind) or (2) occur outside of the MHPA within the affected habitat type (in-kind).

4. Mitigation for impacts to occupied burrowing owl habitat (at the subarea plan specified ratio) must be through the conservation of occupied burrowing owl habitat or conservation of lands appropriate for restoration, management, and enhancement of burrowing owl nesting and foraging requirements.

Impacts shall be mitigated in one of the following four equally suitable options pursuant to the City's Biology Guidelines: (1) off-site acquisition; (2) on-site preservation; (3) habitat restoration; or (4) monetary compensation. Implementation of habitat creation, restoration, enhancement, and/or preservation through an approved HMMP may utilize methods 1 through 3 listed above. Acquisition of approved mitigation credits, including approved City of San Diego (City) Advanced Permittee Responsible Mitigation (APRM) sites or payment into a habitat acquisition fund, may utilize methods 1 or 4.

Option 1: Prior to subsequent project-level approval, as part of subsequent projects specific environmental review pursuant to CEQA, an HMMP shall be prepared and approved by the City, in accordance with the City of San Diego Municipal Code, Land Development Code—Biology Guidelines (SDBG). Mitigation shall conform with the SDBG, including definitions for preservation and/or restoration of Tier I-III uplands and satisfaction of mitigation ratios for sensitive uplands based on location of permanent loss, mitigation habitat relative to the Multi Habitat Planning Area (see Table 3 of the SDBG), and the protection and notice and management elements.

When proposed mitigation involves habitat restoration, the HMMP shall include the following information in addition to information required under Attachment B of the SDBG:

- Conceptual planting plan including planting zones, grading, and irrigation
- Seed mix/planting palette
- Planting specifications
- Monitoring program, including success criteria
- Long-term maintenance and preservation plan
- For mitigation that involves habitat preservation or acquisition, the HMMP shall include the following:
  - Location of proposed acquisition
  - Description of the biological resources to be acquired, including support for the conclusion that the acquired habitat mitigates for the specific maintenance impact
  - Documentation that the mitigation area would be adequately preserved and maintained in perpetuity

Option 2: Preference shall be given for the purchase of mitigation credits for impacts to Tier II or III upland habitats at the Marron Valley Cornerstone Mitigation Bank. All allocations of mitigation site credits at the Marron Valley Cornerstone Mitigation Bank or another suitable mitigation bank, approved by the City's ED, shall include the following:

- A description of the location of the approved mitigation site and referenced on a map identifying the regional vicinity.
- Description of the mitigation credits to be acquired, including support for the conclusion that the acquired habitat mitigates for the specific maintenance impact. At a minimum, a description of the proposed habitat impacts, and the type (creation/restoration/enhancement) and quantity of mitigation credits requested.
- Documentation that the credits are associated with a mitigation bank or APRM site that has been approved by the appropriate Resource Agencies.
- Documentation in the form of a current mitigation credit ledger.

Mitigation monies may also be deposited in the City's Habitat Acquisition Fund as mitigation acreage credit, based on the current estimate of land costs and administration, as approved by the City's ED.

MM-BIO-3 Biological Resource Protection During Construction. The following measures will be included in the construction plans for each Program component that is within or adjacent to sensitive wetlands or sensitive uplands (Tier I–III):

Prior to Construction

A **Biologist Verification –** At least 7 days prior to the start of Project activities, the Project Biologist shall submit a letter to the City of San Diego (City) Environmental Designee (ED) that a Project Biologist (Qualified Biologist), as defined in the City of San Diego's Biological Guidelines (2018), has been retained to implement the project's biological monitoring program. The letter shall include the names and contact information of all persons involved in the biological monitoring of the project.

B **Biological Documents** – Prior to the issuance of the Notice to Proceed and/or first preconstruction meeting, The Qualified Biologist shall submit all required documentation to the ED verifying that any special mitigation reports, including, but not limited to, maps, plans, surveys, survey timelines, or buffers, are completed or scheduled per City Biology Guidelines, Multiple Species Conservation Program (MSCP), Environmentally Sensitive Lands (ESL) Ordinance, project permit conditions; California Environmental Quality Act (CEQA); endangered species acts (ESAs); and/or other local, state, or federal requirements.

Prior to the start of construction within or immediately adjacent to the Multi-Habitat Planning Area (MHPA), the ED shall verify that all MHPA boundaries and limits of work have been delineated on all construction documents.

C **BCME** – Prior to the issuance of the Notice to Proceed and/or first preconstruction meeting, The Qualified Biologist shall present a Biological Construction Mitigation/Monitoring Exhibit (BCME), which includes the biological documents in C above. In addition, the BCME shall

include the limits of work, proposed monitoring schedule, restoration/revegetation plans, plant salvage/relocation requirements, avian or other wildlife surveys/survey schedules (including general avian nesting and U.S. Fish and Wildlife Service [USFWS] protocol), timing of surveys, wetland buffers, avian construction avoidance areas/noise buffers/ barriers, other impact avoidance areas, and any subsequent requirements determined by the Qualified Biologist and the ED. The BCME shall include a site plan, a written and graphic depiction of the project's biological mitigation/monitoring program, and a schedule. The BCME shall be approved by the ED and referenced in the construction documents. The BCME shall be approved by the ED prior to the start of construction.

D Avian Protection Requirements – To avoid any direct impacts to any species identified as a listed, candidate, sensitive, or special-status species in the MSCP, removal of habitat that supports active nests of native species in the proposed area of disturbance shall occur outside of the breeding season for these species (February 1 to September 15). If removal of habitat in the proposed area of disturbance must occur during the breeding season, the Qualified Biologist shall conduct a pre-construction survey to determine the presence or absence of nesting birds on the proposed area of disturbance. The pre-construction survey shall be conducted within 10 calendar days prior to the start of construction activities (including removal of vegetation). The applicant shall submit the results of the pre-construction survey to the ED for review and approval prior to initiating any construction activities. If nesting bird activities are detected, a letter report in conformance with the City's Biology Guidelines (i.e., appropriate follow-up surveys, monitoring schedules, construction and noise barriers/buffers, etc.) shall be prepared and include proposed measures to be implemented to ensure that take of birds or eggs or disturbance of breeding activities is avoided. The report shall be submitted to the City for review and approval and implemented to the satisfaction of the City. The City's ED and Biologist shall verify and approve that all measures identified in the report are in place prior to and/or during construction.

E Resource Delineation – Prior to construction activities, the Qualified Biologist shall supervise the placement of orange construction fencing or equivalent along the limits of disturbance adjacent to sensitive biological habitats and verify compliance with any other project conditions as shown on the BCME to ensure crews remain in the approved work areas. These demarcations will not be required for locations with existing structures, such as chain-link fencing, along the limits of work or areas that are adjacent to non-sensitive habitat areas. In-water work areas shall be buoyed off to limit the extent of direct impacts to eelgrass. This phase shall include flagging plant specimens and delimiting buffers to protect sensitive biological resources (e.g., habitats/flora and fauna species, including nesting birds) during construction. Appropriate care shall be taken to minimize attraction of nest predators to the site.

F Cover Trenches. The qualified monitoring biologist shall oversee the construction site so that cover and/or escape routes for wildlife from excavated areas shall be provided daily. All steep trenches, holes, and excavations during construction shall be covered at night with backfill, plywood, metal plates, or other means, and if plastic sheeting is used, the edges must be covered with soils such that small wildlife cannot access the excavated hole. Soil piles shall be covered at night to prevent wildlife from burrowing in. The edges of the sheeting shall be weighed down by sandbags. These areas may also be fenced to prevent wildlife from gaining access. Exposed trenches, holes, and excavations shall be inspected twice daily (i.e., each morning and before sealing the exposed area) by the qualified monitoring biologist to monitor

for wildlife entrapment. Excavations shall provide an earthen ramp to allow for a wildlife escape route. The qualified monitoring biologist shall verify that the contractor

G Pre-Construction Meeting/Education – Prior to construction, a pre-construction meeting shall be held on site with the following in attendance: the City's Project Manager (PM; or equivalent personnel), an Engineering & Capital Projects (ECP) Environmental representative, the Project Contractor (PC) (if applicable), and the Qualified Monitoring Biologist (QMB). At this meeting, the QMB shall identify and discuss the mitigation measures that apply to project activities and the sensitive nature of the adjacent habitat with the crew and PC.

At the pre-construction meeting, the QMB shall submit to the City ED and PM a copy of the BCME that identifies areas to be protected, fenced, and monitored. This data shall include all planned locations and design of noise attenuation walls or other devices, if applicable.

Prior to commencement of utility undergrounding activities, the QMB shall also meet with the PC and the construction crew and conduct an on-site educational session regarding the need to avoid impacts outside of the approved work area and to protect sensitive flora and fauna that may occur at the project location (e.g., explain the avian and wetland buffers and the flag system for removal of invasive species or retention of sensitive plants and clarify acceptable access routes/methods and staging areas).

During Construction

A Monitoring & Reporting – All construction (including access/staging areas) shall be restricted to areas previously identified, proposed for development/staging, or previously disturbed as shown on "Exhibit A" and/or the BCME. The Qualified Biologist shall monitor construction activities as needed to ensure that construction activities do not encroach into biologically sensitive areas, or cause other similar damage, and that the work plan has been amended to accommodate any sensitive species located during the pre-construction surveys. In addition, the Qualified Biologist shall document field activity via the Consultant Site Visit Record. The Consultant Site Visit Record shall be emailed to the ED on the first day of monitoring, the first week of each month, the last day of monitoring, and immediately in the case of any undocumented condition or discovery.

B Subsequent Resource Identification – The Qualified Biologist shall note/act to prevent any new disturbances to habitat, flora, and/or fauna on site (e.g., flag plant specimens for avoidance during access). If active nests or other previously unknown sensitive resources are detected, all project activities that directly impact the resource shall be delayed until species-specific local, state, or federal regulations have been determined and applied by the Qualified Biologist.

Post Construction

A Final Monitoring Report - If no deviations from the approved construction plan occur during work, no additional documentation is required. If deviations from the approved construction plan do occur, such as unanticipated impacts to sensitive vegetation communities or unanticipated discharge of pollutants, a Final Monitoring Report shall be prepared within 30 days following the completion of mitigation monitoring efforts detailing construction and monitoring that occurred and any remedial or compensatory measures taken.

B **Unintended Impact Mitigation** - In the event that impacts exceed previously allowed amounts, additional impacts shall be mitigated in accordance with City Biology Guidelines, ESL and MSCP, State CEQA, and other applicable local, state, and federal laws. The Qualified Biologist shall submit a final BCME/report to the satisfaction of the ED within 30 days of construction completion.

MM-BIO-4 Species-Specific Sensitive Plant Mitigation. Prior to subsequent project-level approval, as part of subsequent project-specific environmental review pursuant to CEQA, any direct impacts to the following special-status plant species would require mitigation in the form of an approved Conceptual Restoration Plan that would be implemented if any of the following species are identified within the proposed construction area: coast woolly-heads, decumbent goldenbush, estuary seablite, Nuttall's lotus, aphanisma, Coulter's saltbush, south coast saltscale, golden-spined cereus, cliff spurge, Orcutt's pincushion, or Brand's phacelia.

The approved Conceptual Restoration Plan can be combined with the project Habitat Mitigation and Monitoring Plan and shall be prepared in accordance with Attachment B of the City's Biology Guidelines and implemented in accordance with the City's Biology Guidelines. The plan shall include the following:

- Provisions to salvage Impacted plants for restoration following construction (i.e., transplantation), if feasible
- Soil shall be salvaged and reused within on-site or off-site restoration areas, where appropriate, to capture seed bank and/or transfer soil conditions
- Seeds from impacted plants would be collected for grow-out and use in on-site or off-site restoration following construction, if feasible
- Conceptual planting plan, including grading and temporary irrigation if necessary to create appropriate habitat conditions to support the species
- Planting specifications (e.g., seed source, soil suitability, container size)
- Monitoring program, including success criteria (e.g., a minimum number of sensitive plant individuals, a minimum percent cover of native species, a maximum percent cover of non-native species)
- Long-term maintenance and preservation plan (e.g., sensitive plant monitoring, fencing and signage, adaptive management actions, site security from trespass or vandalism)

MM-BIO-5 Eelgrass Mitigation. Prior to subsequent project-level approval, as part of subsequent project-specific environmental review pursuant to CEQA, focused eelgrass surveys shall be conducted within suitable habitat and in accordance with the California Eelgrass Mitigation Policy and Implementing Guidance (NOAA 2014). Where it is determined that eelgrass will be impacted by fill activities, an Eelgrass Mitigation and Monitoring Plan (Mitigation Plan) shall be prepared for review and approval by the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) and the California Department of Fish and Wildlife (CDFW). The Mitigation Plan shall describe the approach for compensatory mitigation for the loss of eelgrass habitat. Such mitigation shall be implemented in accordance with the NOAA Fisheries California Eelgrass Mitigation Policy, including site selection; initial and long-term habitat area replacement ratios; methods for and timing of transplantation activities; and monitoring, performance, and reporting

requirements. In addition, mitigation shall comply with City of San Diego's Biology Guidelines Table 2A (or the most current adopted guidelines at the time of review).

Preference shall be given to in-kind replacement of the eelgrass habitat. At a minimum, the no net loss creation mitigation (1:1) for eelgrass beds habitat shall be required to occur within Mission Bay itself per the Mission Bay Park Natural Resource Management Plan to the greatest extent feasible. Should in-kind mitigation within Mission Bay not be feasible, consideration shall be given to in-kind mitigation first in areas in close proximity to Mission Bay, then in locations within the Southern California region. If in-kind mitigation is not feasible, mitigation banks or in-lieu fee conservation programs shall be given preference over out-of-kind mitigation**.** All mitigation shall conform with the wetland restoration provisions of the City's Biology Guidelines.

MM-BIO-6 Grunion Monitoring and Avoidance Plan. As part of the subsequent project-specific environmental review pursuant to CEQA it shall be determined if project activities are necessary below the high tide line during the grunion spawning season (March 1 through August 31 of any year), the project site and a 100-foot buffer shall be surveyed for spawning grunion during high tide of a full or new moon for 3 nights, beginning with the nearest grunion run prior to commencement of sand placement activities. Monitoring shall be conducted by a qualified biologist and the California Department of Fish and Wildlife (CDFW) published dates for grunion runs should be utilized. Project activities below the high tide line shall not occur within the 4 days of a full or new moon event (see CDFW grunion run calendar). Grunion monitoring shall be conducted by a qualified biologist for 30 minutes prior to, and 2 hours following, the predicted start of each daily spawning event. Sufficient qualified biologists shall be employed to ensure that the entire proposed sand placement site is monitored during the predicted grunion run. Monitoring is not necessary in areas where there is no sand, such as areas supporting 100% cobble or marshlands with no sand exposed during high tide.

The magnitude and extent of a spawning event shall be defined in 300-foot segments of beach using the Walker Scale. Every individual fish (males and females) shall be counted each night (3 nights total), with the greatest numbers being utilized to determine the Walker Scale value (e.g., 0, 1, 2, 3, 4, or 5) of each 300-foot segment within the proposed work area. Project activities shall be modified according to the following plan:

If a grunion run consisting of 0–100 individual fish per 300-foot segment (Walker Scale 0) is reported within 2 weeks prior to, or during, project work, the Contractor does not need to take any avoidance action for grunion eggs. No mature grunion may be intentionally buried or harmed as a result of project activities.

Within 2 weeks prior to proposed work, if a grunion run consisting of 100 or more individual fish per 300-foot segment (Walker Scale 1, 2, 3, 4, or 5) is reported, the Contractor shall avoid work on the respective beach segment(s) and truck route and additionally, shall avoid a 100-foot buffer on either side of the segment(s) and route for a minimum of 2 weeks, to ensure that no grunion eggs are buried or disturbed. These areas shall be memorialized through multiple GPS coordinates and marked with irrigation flags for a minimum of 2 weeks or when the next scheduled grunion run will be monitored. The Contractor shall adapt the project schedule to avoid operations on such beach

segments and their associated buffers. No mature grunion may be intentionally harmed as a result of project activities.

If project activities have already commenced, and a grunion run consisting of 100 to 500 individual fish in one or more 300-foot segments (Walker Scale 2) in the work area is reported, the Contractor shall avoid impacts to grunion eggs to the greatest extent feasible and then shall minimize impacts to grunion eggs through such measures as alteration of the truck route, sediment discharge points, spreading areas, and placement locations.

If project activities have already commenced, and a grunion run consisting of 500 or more individual fish per segment (Walker Scale 3, 4, or 5) is reported, the Contractor shall avoid work on the respective beach segment(s) and truck route and additionally, shall avoid a 100-foot buffer on either side of the segment(s) and route for a minimum of 2 weeks, to ensure that no grunion eggs are buried or disturbed. These areas shall be memorialized through multiple GPS coordinates and marked with irrigation flags for a minimum of 2 weeks when the next scheduled grunion run will be monitored. The Contractor shall adapt the project schedule to avoid operations on such beach segments and their associated buffers. No mature grunion may be intentionally harmed as a result of project activities.

MM-BIO-7 *Caulerpa* Management. Prior to subsequent project-level approval, as part of subsequent project-specific environmental review pursuant to CEQA, the City shall retain a certified Caulerpa surveyor as per NOAA Fisheries Certified Caulerpa Surveyors List to identify the potential existence of invasive Caulerpa spp. within the Program component areas that have potential to support invasive Caulerpa spp., as identified during subsequent review and approvals, through surveys conducted in accordance with the Caulerpa Control Protocol: https://media.fisheries.noaa.gov/2021-12/caulerpacontrol-protocol-v5.pdf (October 2021) prior to construction in those Program component areas. Any sightings of Caulerpa spp. shall be reported within 24 hours to CDFW (Caulerpa@wildlife.ca.gov) and the National Oceanic and Atmospheric Administration (NOAA) Fisheries at (562) 980-4037 and nmfs.wcr.caulerpa@noaa.gov.

MM-BIO-8 Avoidance of Listed Species Take. Prior to subsequent project-level approval, as part of subsequent project-specific environmental review pursuant to CEQA, an analysis of listed wildlife species that have a moderate or high potential to occur within or adjacent to individual project components must be conducted. The analysis shall be based on life history and distribution of each species and presence of suitable habitat within or adjacent to the project and survey results collected through implementation of MM-BIO-1, to determine the applicability of measures below that shall be implemented.

MM-BIO-8A Coastal California Gnatcatcher (CAGN). Prior to any project pre-construction meeting associated with the Program, the Environmental Designee (ED) shall verify that Multi-Habitat Planning Area (MHPA) as well as any appropriate requirements regarding CAGN, as specified below, are shown on the project's biological monitoring exhibit(s).

No construction activities shall occur within or adjacent to suitable habitat during the breeding seasons of coastal CAGN (March 1 to August 15) until the following requirements have been met to the satisfaction of the ED:

1 A Qualified Biologist (possessing a valid Endangered Species Act Section 10[a][1][a] Recovery Permit) shall survey those suitable habitat areas within the MHPA that would be subject to construction noise levels exceeding 60 A-weighted decibels (dBA) hourly average for the presence of CAGN. Surveys for this species shall be conducted pursuant to the protocol survey guidelines established by the U.S. Fish and Wildlife Service (USFWS) within the breeding season prior to the commencement of any construction. If CAGN is present, then the following conditions must be met:

   A From March 1 through August 15, no clearing, grubbing, or grading of occupied habitat shall be permitted within the MHPA. Areas restricted from such activities shall be staked or fenced under the supervision of the qualified monitoring biologist; and

   B From March 1 through August 15 no construction activities shall occur within any portion of the site where construction activities would result in noise levels exceeding 60 dBA hourly average at the edge of occupied habitat in the MHPA. An analysis showing that noise generated by construction activities would not exceed 60 dBA hourly average at the edge of occupied habitat must be completed by a Qualified Biologist (with experience operating a noise meter and interpreting noise data) and approved by the ED at least 2 weeks prior to the commencement of construction activities. Prior to the commencement of construction activities during the breeding season, areas restricted from such activities shall be staked or fenced under the supervision of the qualified monitoring biologist; or

   C At least 2 weeks prior to the commencement of construction activities, under the direction of a Qualified Acoustician, attenuation measures (e.g., berms, walls) shall be implemented to ensure that noise levels resulting from construction activities would not exceed 60 dBA hourly average at the edge of habitat occupied by CAGN and located in the MHPA. Concurrent with the commencement of construction activities and the construction of necessary noise attenuation facilities, noise monitoring shall be conducted at the edge of the occupied habitat area in the MHPA to ensure that levels do not exceed 60 dBA hourly average. If the noise attenuation techniques implemented are determined to be inadequate by the Qualified Biologist, then the associated construction activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season (August 16). Construction noise monitoring shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the construction activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dBA hourly average or to the ambient noise level if it already exceeds 60 dBA hourly average. If not, other measures shall be implemented in consultation with the biologist and the ED, as necessary, to reduce noise levels to below 60 dBA hourly average or to the ambient noise level if it already exceeds 60 dBA hourly average. Such measures may include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

2 If CAGN are not detected during the protocol survey, the permitted biologist shall submit substantial evidence to the ED and applicable resource agencies that demonstrates whether

or not mitigation measures such as noise walls are necessary between March 1 through August 15 and adherence to the following is required:

A If this evidence indicates that the potential is high for CAGN, to be present based on historical records or site conditions, then Condition 1(a) through 1(c) shall be adhered to as specified above.

B If this evidence concludes that no impacts to the applicable species are anticipated, no additional mitigation measures would be necessary.

MM-BIO-8B: Least Bell's Vireo (LBV). Prior to any project pre-construction meeting associated with the Program, Environmental Designee (ED) verify that appropriate requirements regarding LBV, as specified below, are shown on the project's biological monitoring exhibit(s).

No construction activities shall occur within or adjacent to suitable habitat during the breeding seasons of LBV (March 15 to September 15) until the following requirements have been met to the satisfaction of the ED:

1 A Qualified Biologist (possessing a valid Endangered Species Act Section 10[a][1][a] Recovery Permit) shall survey those habitat areas that would be subject to construction noise levels exceeding 60 A-weighted decibels (dBA) hourly average for the presence of LBV. Surveys for this species shall be conducted pursuant to the protocol survey guidelines established by the U.S. Fish and Wildlife Service (USFWS) within the breeding season prior to the commencement of any construction. If LBV is present, then the following conditions must be met:

A From March 15 through September 15 no clearing, grubbing, or grading of occupied habitat shall be permitted. Areas restricted from such activities shall be staked or fenced under the supervision of the qualified monitoring biologist; and

B From March 15 through September 15 no construction activities shall occur within any portion of the site where construction activities would result in noise levels exceeding 60 dBA hourly average at the edge of occupied habitat. An analysis showing that noise generated by construction activities would not exceed 60 dBA hourly average at the edge of occupied habitat must be completed by a Qualified Biologist (with experience operating a noise meter and with monitoring noise level experience with listed animal species) and approved by the ED at least 2 weeks prior to the commencement of construction activities. Prior to the commencement of construction activities during the breeding season, areas restricted from such activities shall be staked or fenced under the supervision of the qualified monitoring biologist; or

C At least 2 weeks prior to the commencement of construction activities, under the direction of a Qualified Biologist attenuation measures (e.g., berms, walls) shall be implemented to ensure that noise levels resulting from construction activities would not exceed 60 dBA hourly average at the edge of habitat occupied by LBV. Concurrent with the commencement of construction activities and the construction of necessary noise attenuation facilities, noise monitoring shall be conducted at the edge of the occupied habitat area to ensure that levels do not exceed 60 dBA hourly average. If the noise attenuation techniques implemented are determined to be inadequate by the Qualified Biologist, then the associated construction activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season (September 16). Construction noise monitoring shall continue to

be monitored at least twice weekly on varying days, or more frequently depending on the construction activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dBA hourly average or to the ambient noise level if it already exceeds 60 dBA hourly average. If not, other measures shall be implemented in consultation with the biologist and the ED, as necessary, to reduce noise levels to below 60 dBA hourly average or to the ambient noise level if it already exceeds 60 dBA hourly average. Such measures may include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

2 If LBV are not detected during the protocol survey, the permitted biologist shall submit substantial evidence to the ED and applicable resource agencies that demonstrates whether or not mitigation measures such as noise walls are necessary between March 15 through September 15 and adherence to the following is required:

A If this evidence indicates that the potential is high for LBV to be present based on historical records or site conditions, then Condition 1(a) through 1(c) shall be adhered to as specified above.

B If this evidence concludes that no impacts to the applicable species are anticipated, no additional mitigation measures would be necessary.

MM-BIO-8C California Least Tern (CLT)/Western Snowy Plover (WSP). In order to prevent impacts to CLT and WSP, no clearing, grubbing or grading, or active wetland creation/restoration shall take place within or adjacent to the MHPA, CLT preserves as identified in the current Mission Bay Park Natural Resources Management Plan at the time of construction, or coastal salt marsh habitats during the City's general avian breeding season of February 1 to September 15.

Additionally, the following requirements from the Mission Bay Park Natural Resource Management Plan (City of San Diego 1990) and Mission Bay Park Master Plan Update (City of San Diego 2002) for the CLT shall be met:

1 In-water construction or dredging shall not be permitted in Mission Bay from April 1 through September 15, unless otherwise approved in writing by the City of San Diego, California Department of Fish and Wildlife, and U.S. Fish and Wildlife Service. Any exception would have to meet the following criteria to preserve CLT nesting and foraging: use of silt curtains or similar devices around in-water construction activity, use of noise reduction or low noise equipment, and use of timing and location restrictions on activity to avoid interfering with breeding sites or major CLT foraging areas.

2 Direct impacts to permanently designated CLT nesting sites shall not be permitted.

3 The 150-foot buffer zone for each CLT nesting site shall be free of structures with heights over 6 feet, including fencing, to avoid providing raptors perches from which to prey on CLT chicks.

4 Any existing noise attenuation berms to prevent any significant noise from reaching the Multi-Habitat Planning Area and CLT preserve shall remain in accordance with the Mission Bay Park Natural Resource Management Plan and Mission Bay Park Master Plan.

5 If construction activities take place during the CLT breeding season, significant impacts may occur to CLT in the Multi-Habitat Planning Area. To avoid significant noise impacts to breeding

CLT, construction within 500 feet of CLT preserves shall take place outside the CLT breeding season, which ranges from April 1 to September 15.

Additionally, the following requirements for the CLT shall be met:

1 Beginning April 1 and ending September 15, a CLT biologist shall monitor daily for the arrival of CLT to Mission Bay and immediately notify the USFWS upon their arrival. Notification to the USFWS shall occur via email on a daily basis as to the presence or absence of CLT in Mission Bay. The CLT biologist shall be present throughout the period of in-water construction and will note the present of CLT in Mission Bay and the work area.

2 A biological monitor with CLT experience shall be present on all days when in-water work is conducted after CLT arrive in Mission Bay. The biological monitor shall be present throughout the period of in-water construction and shall note the presence of CLT in Mission Bay and the work area, and any project-generated surface turbidity. Surface turbidity is defined as an obvious discoloration of the top 10 feet of the water column visible to the human eye. Project-generated surface turbidity shall not exceed 500 feet in length or width or persist longer than 1 hour.

3 The biological monitoring shall provide daily field reports to the ED and USFWS within 24 hours of each monitoring date. The daily field reports shall include photographs showing the best management practices surrounding the work area taken during in-water work, and any incidences of plume escape or expansion outside of the silt curtain. The biological monitoring shall also submit a final summary report of monitoring to the ED and USFWS within 30 days of completion of in-water work.

In addition, if work is proposed where CLT or WSP has a moderate or high potential to nest, a USFWS and CDFW-approved biologist will perform the following duties prior to the start of construction of those Program component areas:

1 The USFWS-CDFW biologist shall survey those suitable habitat areas that would be subject to construction noise levels exceeding 60 dBA hourly average for the presence of CLT and/or WSP. As required by species, surveys shall be conducted pursuant to any approved protocol survey guidelines established by USFWS, CDFW or other authorized agency within the breeding season prior to the commencement of any construction. If CLT and/or WSP are determined to be present, then the following conditions must be met:

   A From March 1 to September 15 for WSP and April 1 to September 15 for CLT, no clearing, grubbing, or grading of occupied habitat shall be permitted. Areas restricted from such activities shall be staked or fenced under the supervision of the qualified monitoring biologist. No construction activities shall occur within any portion of the site where construction activities would result in noise levels exceeding 60 dBA hourly average at the edge of occupied habitat. An analysis showing that noise generated by construction activities would not exceed 60 dBA hourly average at the edge of occupied habitat must be completed by a Qualified Acoustician (possessing current noise engineer license or registration with monitoring noise level experience with listed animal species) and approved by the Environmental Designee (ED) at least 2 weeks prior to the commencement of construction activities. Prior to the commencement of construction activities during the

breeding season, areas restricted from such activities shall be staked or fenced under the supervision of the qualified monitoring biologist; or

B At least 2 weeks prior to the commencement of construction activities, under the direction of a Qualified Acoustician, attenuation measures (e.g., berms, walls) shall be implemented to ensure that noise levels resulting from construction activities would not exceed 60 dBA hourly average at the edge of habitat occupied by CLT and/or WSP. Concurrent with the commencement of construction activities and the construction of necessary noise attenuation facilities, noise monitoring shall be conducted at the edge of the occupied habitat area to ensure that levels do not exceed 60 dBA hourly average. If the noise attenuation techniques implemented are determined to be inadequate by the Qualified Acoustician or Biologist, then the associated construction activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season (September 16). Construction noise monitoring shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the construction activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dBA hourly average or to the ambient noise level if it already exceeds 60 dBA hourly average. If not, other measures shall be implemented in consultation with the biologist and the ED, as necessary, to reduce noise levels to below 60 dBA hourly average or to the ambient noise level if it already exceeds 60 dBA hourly average. Such measures may include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

2 If CLT and/or WSP are not detected during the required survey(s), the permitted biologist shall submit substantial evidence to the ED and applicable resource agencies that demonstrates whether or not mitigation measures such as noise walls are necessary during the specific breeding seasons for these species, and adherence to the following is required:

A If this evidence indicates that the potential is high for CLT and/or WSP to be present based on historical records or site conditions, then Condition 1(a) through 1(c) shall be adhered to as specified above.

B If this evidence concludes that no impacts to this species are anticipated, no additional mitigation measures would be necessary.

MM-BIO-8D Light-Footed Ridgway's Rail (LFRR) and Belding's Savannah Sparrow (BSS). If work is proposed where light-footed Ridgway's rail (LFRR) or Belding's savannah sparrow (BSS) has a moderate or high potential to nest, a USFWS (for LFRR only) and CDFW (for LFRR and BSS) approved biologist will perform the following duties prior to the start of construction of those Program component areas:

1 The approved biologist shall survey those suitable habitat areas that would be subject to construction noise levels exceeding 60 dBA hourly average for the presence of LFRR and/or BSS. As required by species, surveys shall be conducted pursuant to any approved protocol survey guidelines established by USFWS, CDFW or other authorized agency within the breeding season prior to the commencement of any construction. If LFRR and/or BSS are determined to be present, then the following conditions must be met:

A From March 1 to September 15 for LFRR and February 1 to August 1 for BSS, no clearing, grubbing, or grading of occupied habitat shall be permitted. Areas restricted from such

activities shall be staked or fenced under the supervision of the qualified monitoring biologist; and

B From March 1 to September 15 for LFRR and February 1 to August 1 for BSS, no construction activities shall occur within any portion of the site where construction activities would result in noise levels exceeding 60 dBA hourly average at the edge of occupied habitat. An analysis showing that noise generated by construction activities would not exceed 60 dBA hourly average at the edge of occupied habitat must be completed by a Qualified Acoustician (possessing current noise engineer license or registration with monitoring noise level experience with listed animal species) and approved by the Environmental Designee (ED) at least 2 weeks prior to the commencement of construction activities. Prior to the commencement of construction activities during the breeding season, areas restricted from such activities shall be staked or fenced under the supervision of the qualified monitoring biologist; or

C At least 2 weeks prior to the commencement of construction activities, under the direction of a Qualified Acoustician, attenuation measures (e.g., berms, walls) shall be implemented to ensure that noise levels resulting from construction activities would not exceed 60 dBA hourly average at the edge of habitat occupied by LFRR and/or BSS. Concurrent with the commencement of construction activities and the construction of necessary noise attenuation facilities, noise monitoring shall be conducted at the edge of the occupied habitat area to ensure that levels do not exceed 60 dBA hourly average. If the noise attenuation techniques implemented are determined to be inadequate by the Qualified Acoustician or Biologist, then the associated construction activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season (September 16 for LFRR and August 2 for BSS). Construction noise monitoring shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the construction activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dBA hourly average or to the ambient noise level if it already exceeds 60 dBA hourly average. If not, other measures shall be implemented in consultation with the biologist and the ED, as necessary, to reduce noise levels to below 60 dBA hourly average or to the ambient noise level if it already exceeds 60 dBA hourly average. Such measures may include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

2 If LFRR and/or BSS are not detected during the required survey(s), the permitted biologist shall submit substantial evidence to the ED and applicable resource agencies that demonstrates whether or not mitigation measures such as noise walls are necessary during the specific breeding seasons for these species, and adherence to the following is required:

A If this evidence indicates that the potential is high for LFRR and/or BSS to be present based on historical records or site conditions, then Condition 1(a) through 1(c) shall be adhered to as specified above.

B If this evidence concludes that no impacts to this species are anticipated, no additional mitigation measures would be necessary.

MM-BIO-8E Western Burrowing Owl (BUOW). Prior to subsequent project-level approval, as part of subsequent project-specific environmental review pursuant to CEQA, it shall be determined if work is proposed at a project location where BUOW have been identified during subsequent review to

have a moderate or high potential to occur, the following species-specific mitigation measure is required.

Prior to issuance of any construction permits, the Environmental Designee (ED) shall verify that the following project requirements regarding BUOW are shown on the construction plans and/or included in t=he contract specifications:

Prior to Permit or Notice to Proceed Issuance:

1 As Program component areas have been determined to have BUOW occupation potential, the Applicant Department or Permit Holder shall submit evidence to the Environmental Designee (ED) and MSCP staff, to the satisfaction of the City, verifying that a Biologist possessing qualifications pursuant to the California Department of Fish and Game (CDFG) 2012 Staff Report on BUOW Mitigation (hereafter referred as the CDFG 2012 Staff Report) has been retained to implement a BUOW construction impact avoidance program.
2 The qualified BUOW biologist (or their designated biological representative) shall attend the pre-construction meeting to inform construction personnel about the City's BUOW requirements and subsequent survey schedule.

Prior to Start of Construction:

1 The Applicant Department or Permit Holder and Qualified Biologist must ensure that initial pre-construction/take avoidance surveys of the component construction "site" are completed between 14 and 30 days before initial construction activities, including brushing, clearing, grubbing, or grading of the site, regardless of the time of the year. "Site" means the component construction site and the area within a radius of 450 feet of the component construction site. A report detailing the results of the surveys shall be submitted and approved by the Wildlife Agencies (i.e., USFWS and the California Department of Fish and Wildlife [CDFW]) and/or City MSCP staff prior to construction or BUOW eviction(s) and shall include maps of the component site and BUOW locations on aerial photos.
2 The pre-construction survey shall follow the methods described in the CDFG 2012 Staff Report Appendix D.
3 24 hours prior to commencement of ground-disturbing activities, the Qualified Biologist shall verify results of pre-construction/take avoidance surveys via review of the Survey Report (see report requirements in CDFG 2012, Staff Report – Appendix D 3) that is to be provided to the City and Wildlife Agencies. Written verification via the Survey Report shall be provided to the City's ECP ED and MSCP Sections, and to the satisfaction of these sections. If results of the pre-construction surveys have changed and BUOW are present in areas not previously identified, immediate notification to the City and Wildlife Agencies shall be provided prior to ground-disturbing activities.

During Construction:

1 Best management practices shall be employed, as BUOWs are known to use open pipes, culverts, excavated holes, and other burrow-like structures at construction sites. Legally permitted active construction projects that are occupied by BUOW and have followed all

protocol in this mitigation section, or sites within 450 feet of occupied BUOW areas, shall undertake measures to discourage BUOWs from recolonizing previously occupied areas or colonizing new portions of the site. Such measures include, but are not limited to, ensuring that the ends of all pipes and culverts are covered when they are not being worked on and covering rubble piles, dirt piles, ditches, and berms.

2 Ongoing BUOW detection – If BUOWs or active burrows are not detected during the pre-construction surveys, Section "A" below shall be followed. IF BUOWS OR BURROWS ARE DETECTED DURING THE PRE-CONSTRUCTION SURVEYS, SECTION "B" SHALL BE FOLLOWED. NEITHER THE MSCP SUBAREA PLAN NOR THIS MITIGATION SECTION ALLOWS FOR ANY BUOWS TO BE INJURED OR KILLED OUTSIDE **OR** WITHIN THE MHPA; IN ADDITION, IMPACTS TO BUOWS WITHIN THE MHPA MUST BE AVOIDED.

A Post-Survey Follow-Up if BUOWs and/or Signs of Active Natural or Artificial Burrows Are Not Detected During the Initial Pre-Construction Survey – Monitoring the site for new burrows is required using the protocol in CDFG 2012 Staff Report Appendix D for the period following the initial pre-construction survey, until construction is scheduled to be complete and is complete. *(NOTE: Using a projected completion date [that is amended if needed] will allow development of a monitoring schedule that adheres to the required number of surveys in the detection protocol.)*

i If no active burrows are found but BUOWs are observed to occasionally (1–3 sightings) use the site for roosting or foraging, they shall be allowed to do so with no changes in the construction or construction schedule.

ii If no active burrows are found but BUOWs are observed, during follow-up monitoring or repeatedly (4 or more sightings), using the site for roosting or foraging, the ED shall be notified, and any portion of the site where owls have been sighted and that has not been graded or otherwise disturbed shall be avoided until further notice.

iii If a BUOW begins using a burrow on the site at any time after the initial pre-construction survey, procedures described in Section "b" must be followed.

iv Any actions other than these require the approval of the City and the Wildlife Agencies.

B Post-Survey Follow Up if BUOWs and/or Active Natural or Artificial Burrows Are Detected During the Initial Pre-Construction Survey – Monitoring the site for new burrows is required using the protocol in CDFG 2012 Staff Report Appendix D for the period following the initial pre-construction survey, until construction is scheduled to be complete and is complete. (*NOTE: Using a projected completion date [that is amended if needed] will allow development of a monitoring schedule that adheres to the required number of surveys in the detection protocol.)* This section (B) applies only to sites (including biologically defined territory) wholly outside of the MHPA; ALL DIRECT AND INDIRECT IMPACTS TO BUOWS WITHIN THE MHPA SHALL BE AVOIDED.

i If one or more BUOWs are using any burrows (including pipes, culverts, debris piles, etc.) on or within 300 feet of the proposed construction area, the ED and MSCP shall be immediately contacted. The City's ED and MSCP shall contact the Wildlife Agencies regarding eviction/collapsing burrows and enlist the appropriate City biologist for ongoing coordination with the Wildlife Agencies and the qualified consulting BUOW biologist. No construction shall occur within 300 feet of an active burrow without

written concurrence from the Wildlife Agencies. This distance may increase or decrease, depending on the burrow's location in relation to the site's topography, and other physical and biological characteristics.

a Outside the Breeding Season – If the BUOW is using a burrow on site outside the breeding season (i.e., September 1 to January 31), the BUOW may be evicted after the qualified BUOW biologist has determined via fiber optic camera or other appropriate device, that no eggs, young, or adults are in the burrow. Eviction requires preparation of an Exclusion Plan prepared in accordance with CDFG 2012 Staff Report Appendix E (or most recent guide available) for review and submittal to the Wildlife Agencies. Written concurrence from the Wildlife Agencies is required prior to Exclusion Plan implementation.

b During Breeding Season – If a BUOW is using a burrow on site during the breeding season (February 1 to August 31), construction shall not occur within 300 feet of the burrow until the young have fledged and are no longer dependent on the burrow, at which time the BUOWs can be evicted. Eviction requires preparation of an Exclusion Plan prepared in accordance with CDFG 2012 Staff Report, Appendix E (or most recent guidance available) for review and submittal to Wildlife Agencies and City of San Diego (ECP ED and MSCP). Written concurrence from the Wildlife Agencies prior to Exclusion Plan implementation.

C Survey Reporting During Construction – Details of construction surveys and evictions (if applicable) conducted shall be immediately (within 5 working days or sooner) reported to the ECP ED, MSCP and the Wildlife Agencies and must be provided in writing (as by email) and acknowledged to have been received by the required Wildlife Agencies and ECP staff member(s).

Post Construction:

1 Details of all the surveys and actions undertaken on site with respect to BUOWs (i.e., occupation, eviction, locations, etc.) shall be reported to the ECP ED and the Wildlife Agencies within 21 days post-construction. This report must include summaries of all previous reports for the site and maps of the site and BUOW locations on aerial photos.

MM-BIO-8F: Crotch's Bumble Bee (CBB). Prior to subsequent project-level approval, as part of subsequent project-specific environmental review pursuant to CEQA,, it shall be determined if work is proposed at a Program component location where CBB have been identified during subsequent review to have a moderate or high potential to occur, the following species-specific mitigation measure is required to minimize the potential for take of this state candidate endangered species. Should this species no longer be a state candidate for listing or state listed as threatened or endangered at the time of the pre-construction meeting or protocol surveys are completed and determine the species is absent from the Program component site, then this mitigation measures shall not be required.

1 Prior to the issuance of a Notice to Proceed (NTP) for any construction, the City's Environmental Designee (ED) shall review and approve construction documents (plans, specification, details, etc.) to ensure the applicable mitigation monitoring and reporting program (MMRP) requirements are incorporated into the design.

A To avoid impacts on CBB, removal of habitat in the proposed area of disturbance must occur outside of the Colony Active Period between April 1 and August 31. If the removal of habitat in the proposed area of disturbance must occur during the Colony Active Period, a Qualified Biologist shall conduct a pre-activity survey no more than 3 days prior to the initiation of construction activities to determine the presence or absence of CBB within the proposed area of disturbance.

B Surveys must be conducted by a Qualified Biologist meeting the qualifications discussed in the CDFW guidance (i.e., Survey Considerations for CESA Candidate Bumble Bee Species, dated June 6, 2023).

C The pre-activity survey shall consist of photographic surveys following CDFW guidance (i.e., Survey Considerations for CESA Candidate Bumble Bee Species, dated June 6, 2023). In coordination with CDFW, the Qualified Biologist may be required to send all photo vouchers to a CDFW-approved taxonomist to confirm the identifications of the bumble bees encountered during surveys. The surveys shall consist of passive methods unless a Memorandum of Understanding is obtained from CDFW. If additional activities (e.g., capture or handling) are deemed necessary to identify bumble bees of an unknown species that may be CBB, then the Qualified Biologist shall obtain the required authorization via a Memorandum of Understanding or Scientific Collecting Permit pursuant to the CDFW 2023 Survey Considerations for CESA Candidate Bumble Bee Species. Survey methods that involve lethal take of species are not acceptable. Survey results will be considered valid until the start of the next Colony Active Period.

D If pre-activity surveys identify CBB individuals on site, the Qualified Biologist shall notify and consult with CDFW to establish, monitor, and maintain no-work buffers around the associated floral resources or nest, as appropriate. The size and configuration of the no-work buffer shall be based on the best professional judgment of the Qualified Biologist in consultation with CDFW. Construction activities shall not occur within the no-work buffers until the bees appear no longer active (i.e., associated floral resources appear desiccated and no bees are seen flying for three consecutive days indicating dispersal from the area).

E If CBB is identified during species-specific surveys, the City shall pursue an Incidental Take Permit from CDFW. Take of any endangered, threatened, or candidate species that results from the project is prohibited, except as authorized by state law (California Fish and Game Code Sections 86, 2062, 2067, 2068, 2080, 2085; 14 CCR 786.9) under the California Endangered Species Act (CESA). Mitigation for direct impacts to Crotch's bumble bee will be fulfilled through compensatory mitigation at a minimum 1:1 nesting habitat replacement of equal or better functions and values to those impacted by the project, or as otherwise determined through the Incidental Take Permit process.

F Survey data shall be submitted by the Qualified Biologist to the California Natural Diversity Database (CNDDB) in accordance with the Memorandum of Understanding with CDFW, or Scientific Collecting Permit requirements, as applicable.

MM-BIO-8G CDFW Fully Protected Species. Take of CDFW fully protected species, including white-tailed kite, light-footed Ridgway's rail (LFRR), and California least tern (CLT) may not occur except with take permit authorization from CDFW, and only under specific circumstances. LFRR and CLT are also listed as endangered by USFWS and would require federal take authorization if take is unavoidable.

If work is proposed at a component location where fully protected species have been identified during subsequent review to have a moderate or high potential, focused wildlife surveys would be required.

1 Prior to the issuance of any NTP, or pre-construction meeting, the ECP ED shall verify that the following project requirements regarding the fully protected species are shown on the construction plans where such construction occurs within suitable habitat for these species:

A Impacts to fully protected species shall be fully avoided. For construction sites that support suitable habitat for fully protected species, a qualified biologist shall remain on site during all vegetation clearing and perform periodic site inspections (1–2 times/week) during grading and vegetation removal activities. Should a fully protected species nest be detected, a buffer of a minimum of 500 feet shall be established, and no activity shall occur within the buffer zone until the biologist determines and CDFW confirms that all chicks have fledged and are no longer reliant on the nest site.

MM-BIO-8H Marine Mammals and Green Sea Turtles. Prior to subsequent project-level approval, as part of subsequent project-specific environmental review pursuant to CEQA, a hydroacoustic study would be required to determine if project components that require in-water pile driving have the potential to generate sound exposure levels exceeding the thresholds described in the following table.

Summary of Potentially Significant In-Water Sound Pressure Level Impacts

Assumed Component Noise Levels (>5 Meters of Water)	Impact Threshold for Marine Fish (206 dB peak and 187 dB accumulated SEL)	Impact Threshold for Marine Mammals (160 dB_{rms} for impact; 120 dB_{rms} for vibratory)	Impact Threshold for Green Sea Turtles (166 dB_{rms})
	Potentially Significant Hydroacoustic Impacts?		
76–188 dB_{peak}	No	N/A	N/A
146–166 dB_{SEL}	Maybe[1]	N/A	N/A
166–176 dB_{rms}	N/A	Yes	Yes

Source: M&A 2017.
Notes: dB = decibels; SEL = sound exposure level; rms = root mean square; N/A = not applicable.
[1] Accumulated SEL is derived from the number of pile strikes ($SEL_{cumulative}$ = SEL + 10*log [# strikes]); as such, the starting SEL would dictate the number of pile strikes possible prior to exceeding the threshold of 187 dB $SEL_{cumulative}$.

Should pile driving be found to result in sound exposure levels that would cause indirect hydroacoustic impacts on marine species through exceedance of approved thresholds in the table above, the following measures shall be followed, or similar measures as may be required by the National Oceanic and Atmospheric Administration (NOAA) Fisheries:

A Employ protected species observers (PSO). PSOs must be qualified, NOAA Fisheries–approved PSOs.

B Monitoring must take place from 30 minutes prior to initiation of pile driving activity (i.e., pre-start clearance monitoring) through 30 minutes post-completion of pile driving activity.

C Pre-start clearance monitoring must be conducted during periods of visibility sufficient for the lead PSO to determine that the shutdown zones (as determined by hydroacoustic analysis) are clear of marine mammals and green sea turtles. Pile driving may commence following 30

minutes of observation when the determination is made that the shutdown zones are clear of marine mammals.

D If marine mammals or green sea turtles are observed entering or within the shutdown zones, pile driving activity must be delayed or halted.

E If pile driving is delayed or halted due to the presence of a marine mammal or green sea turtle, the activity may not commence or resume until either the animal has voluntarily exited and been visually confirmed beyond the shutdown zone or 15 minutes have passed without re-detection of the animal.

F Use soft start techniques when impact pile driving. Soft start requires contractors to provide an initial set of three strikes at reduced energy, followed by a 30-second waiting period, then two subsequent reduced energy strike sets. A soft start must be implemented at the start of each day's impact pile driving and at any time following cessation of impact pile driving for a period of 30 minutes or longer.

G Noise attenuation: a bubble curtain must be used during impact pile driving. The bubble curtain must be operated as necessary to achieve optimal performance. At a minimum, the following performance standards shall be met:

  i The bubble curtain must distribute air bubbles around 100 percent of the piling circumference for the full depth of the water column.

  ii The lowest bubble ring must be in contact with the substrate for the full circumference of the ring, and the weights attached to the bottom ring shall ensure 100 percent substrate contact. No parts of the ring or other objects shall prevent full substrate contact.

  iii Air flow to the bubblers must be balanced around the circumference of the pile.

H Construction staff must avoid direct physical interaction with marine mammals or green sea turtles during construction activity. If a marine mammal or green sea turtle comes within 10 meters of such activity, operations must cease and vessels must reduce speed to the minimum level required to maintain steerage and safe working conditions, as necessary to avoid direct physical interaction.

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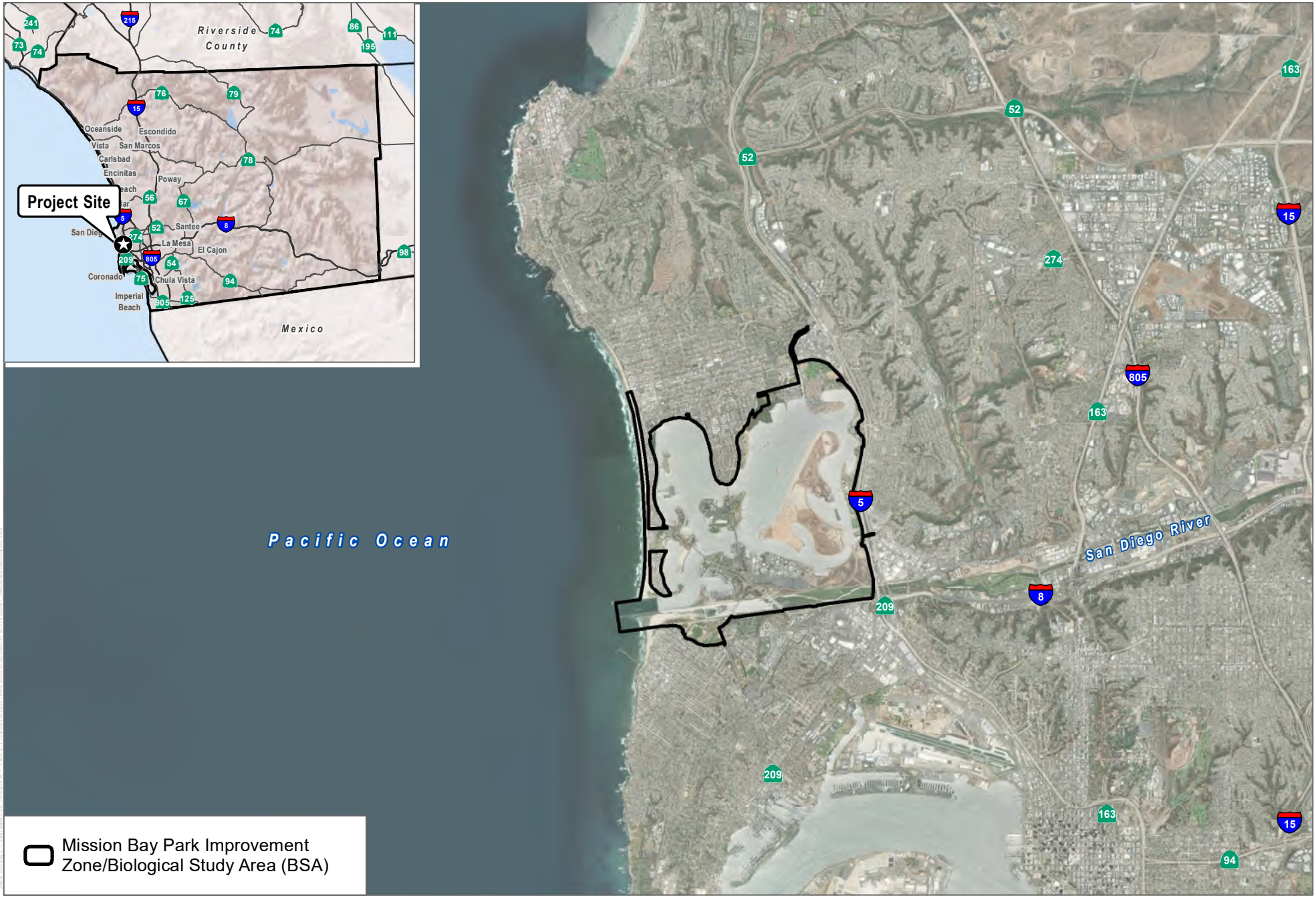
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SOURCE: ESRI 2024

DUDEK

0 4,200 8,400 Feet

FIGURE 1

Mission Bay Park Improvements Program - Location

Mission Bay Park Improvements Program

INTENTIONALLY LEFT BLANK



SOURCE: SANGIS 2023

DUDEK

0 900 1,800 Feet

FIGURE 2

Biological Study Area

Mission Bay Park Improvements Program

INTENTIONALLY LEFT BLANK



SOURCE: SANGIS 2023

DUDEK

0 900 1,800 Feet

FIGURE 3

Mission Bay Park Improvements Program Overview and Elements Locations

Mission Bay Park Improvements Program

INTENTIONALLY LEFT BLANK



SOURCE: SANGIS 2023

DUDEK

0 900 1,800 Feet

FIGURE 4

Mission Bay Park Improvements Program Elements - Wetland and Water Quality Improvements

Mission Bay Park Improvements Program

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SOURCE: City of San Diego 2025.

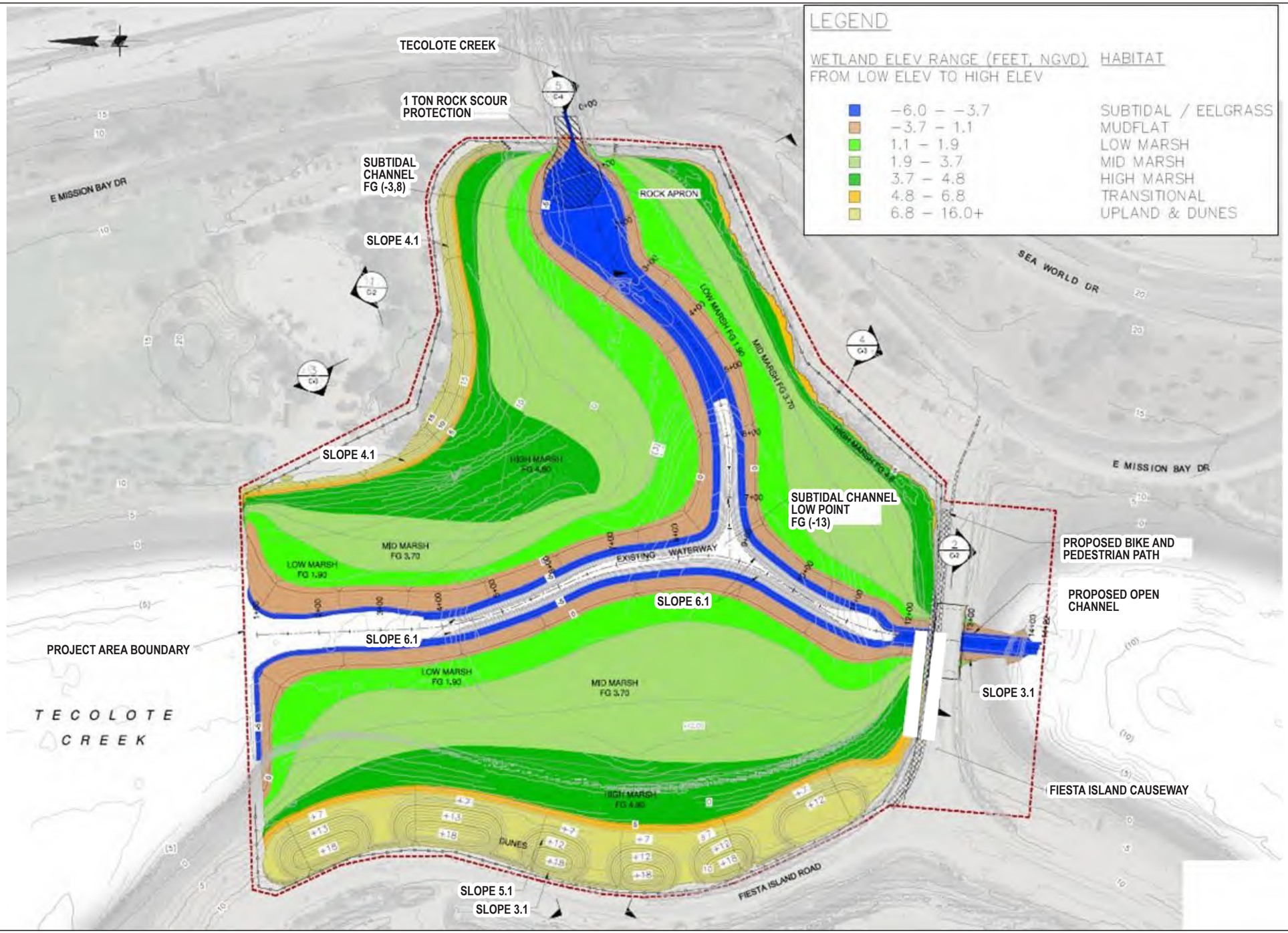
FIGURE 5

North Fiesta Island Wetland

Mission Bay Park Improvements Program

DUDEK

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SOURCE: Moffatt & Nichol. 2021. Preliminary Engineering Report Tecolote Creek Wetland Restoration & Fiesta Island Causeway

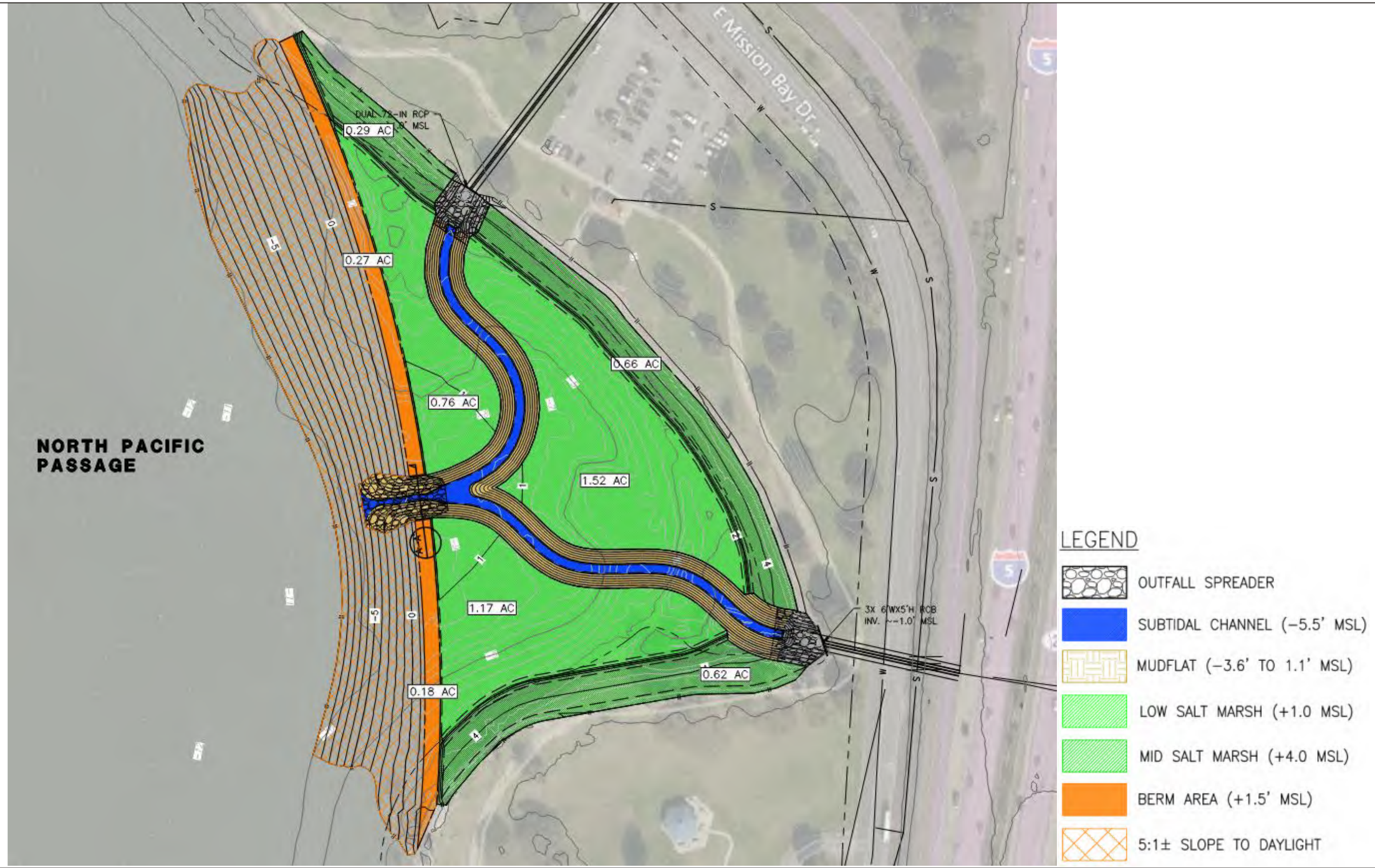
FIGURE 6

Tecolote Creek and Fiesta Island Causeway

Mission Bay Park Improvements Program

DUDEK

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SOURCE: RICK Engineering. 2024. Preliminary Engineering Report Cudahy Creek (Leisure Lagoon) Wetland Restoration

FIGURE 7

Cudahy Creek

Mission Bay Park Improvements Program

DUDEK

INTENTIONALLY LEFT BLANK



SOURCE: SANGIS 2023

DUDEK

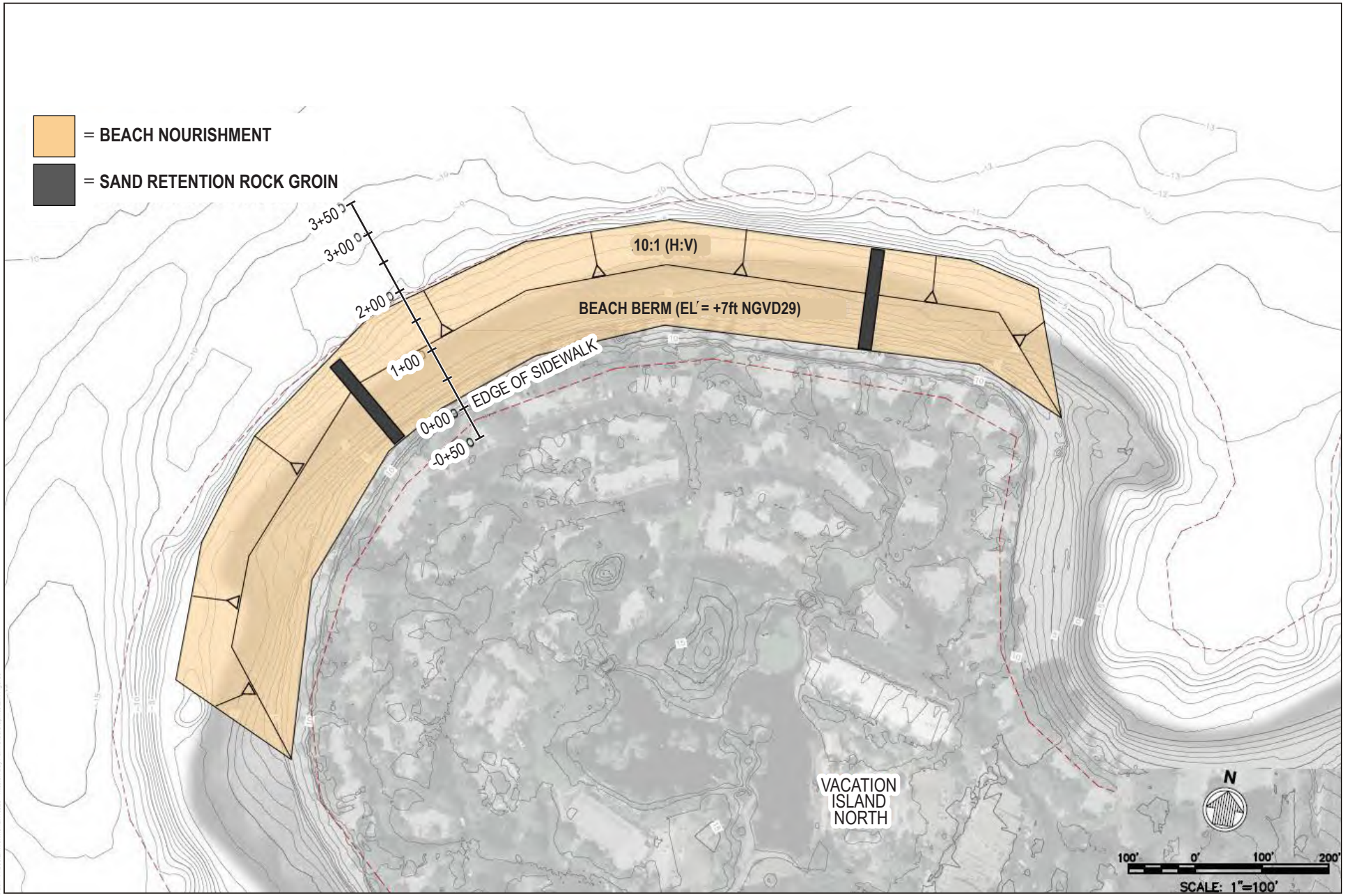
0 900 1,800 Feet

FIGURE 8

Mission Bay Park Improvements Program Elements - Restoration of Shoreline

Mission Bay Park Improvements Program

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SOURCE: Moffatt & Nichol. 2021. Preliminary Engineering Report Mission Bay PEIR Restoration of Shoreline.

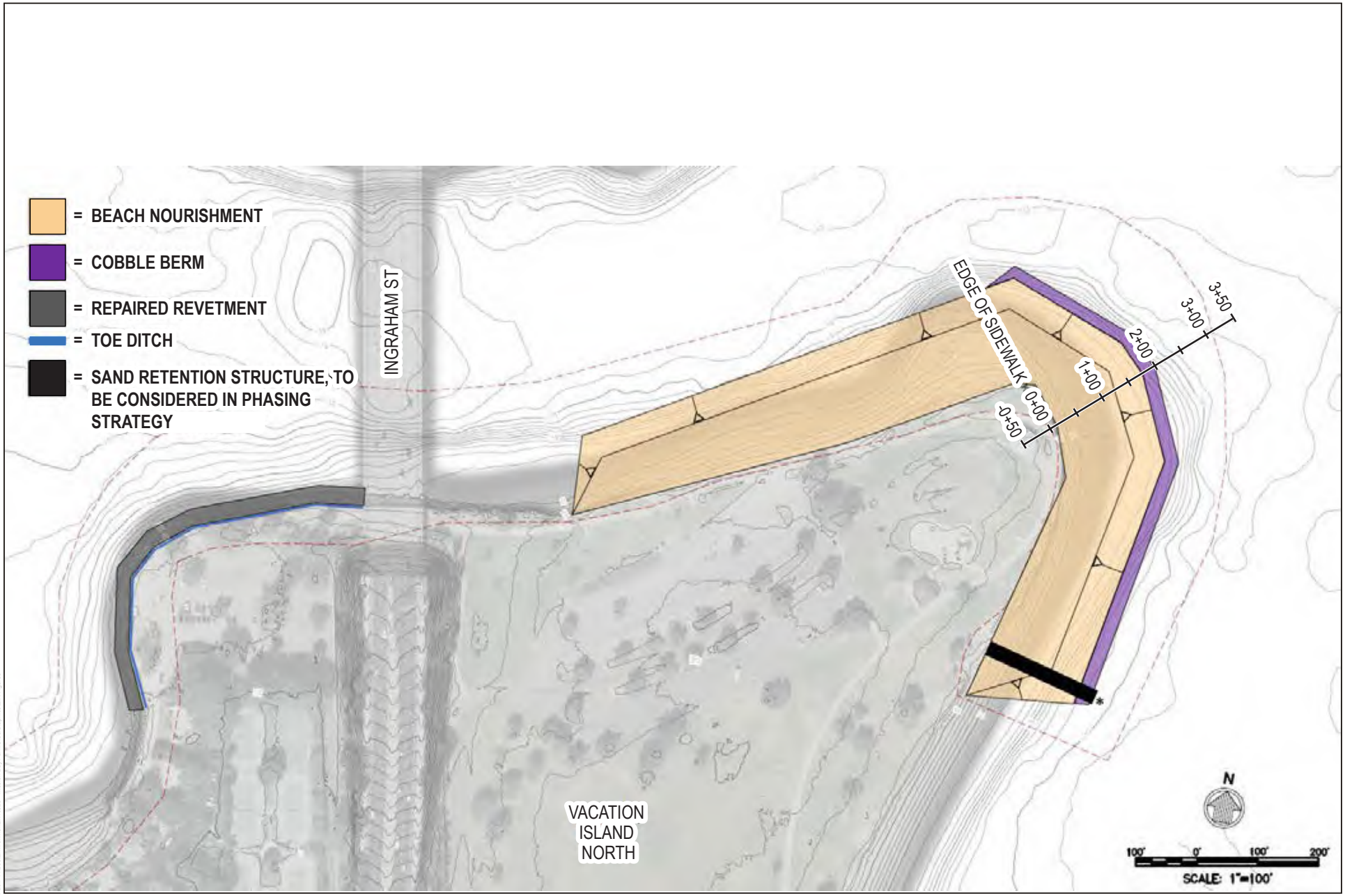
FIGURE 9

Vacation Island NW Shoreline Restoration

Mission Bay Park Improvements Program

DUDEK

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SOURCE: Moffatt & Nichol. 2021. Preliminary Engineering Report Mission Bay PEIR Restoration of Shoreline.

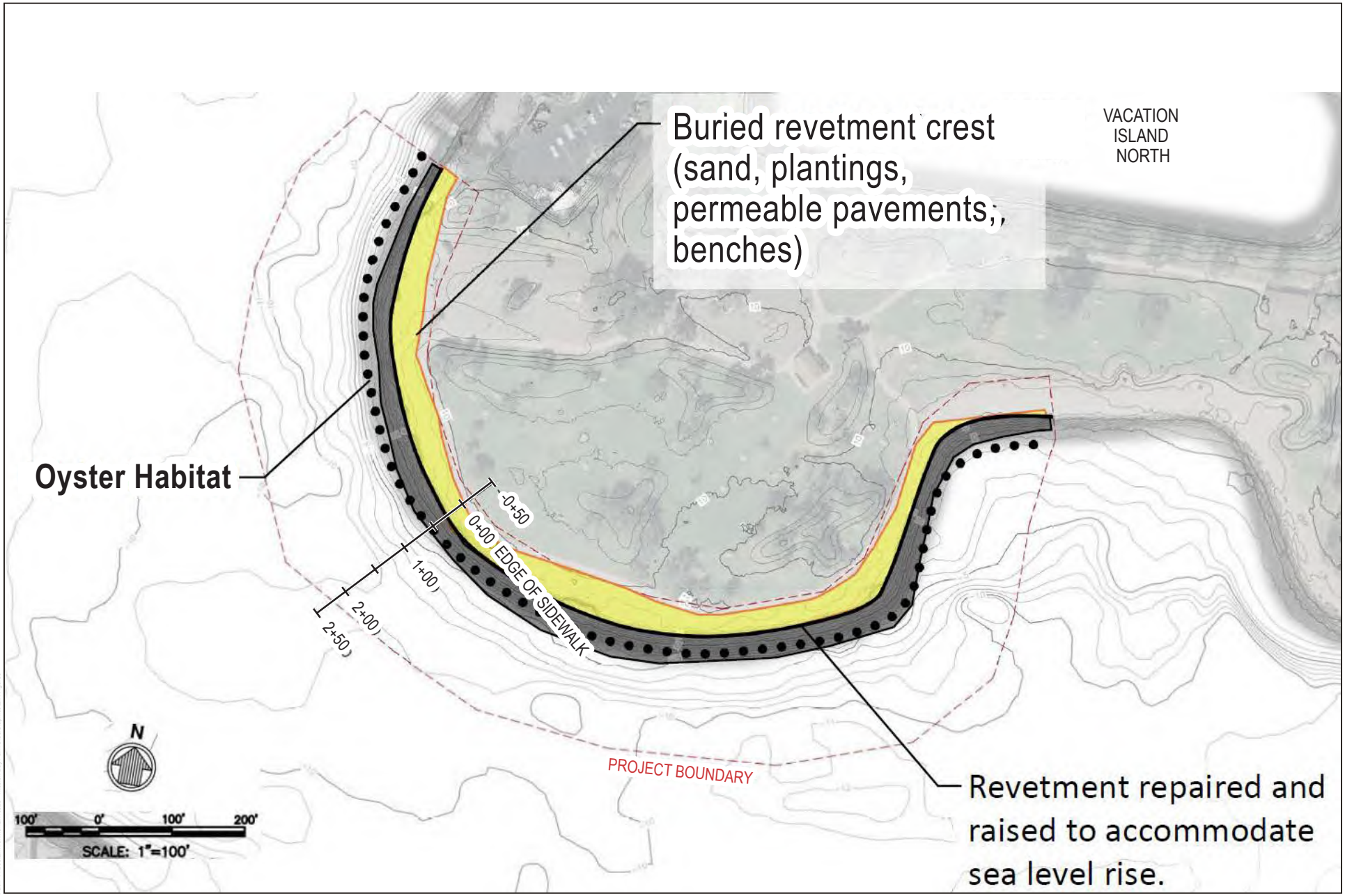
FIGURE 10

Vacation Island NE Shoreline Restoration

Mission Bay Park Improvements Program

DUDEK

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SOURCE: Moffatt & Nichol. 2021. Preliminary Engineering Report Mission Bay PEIR Restoration of Shoreline.

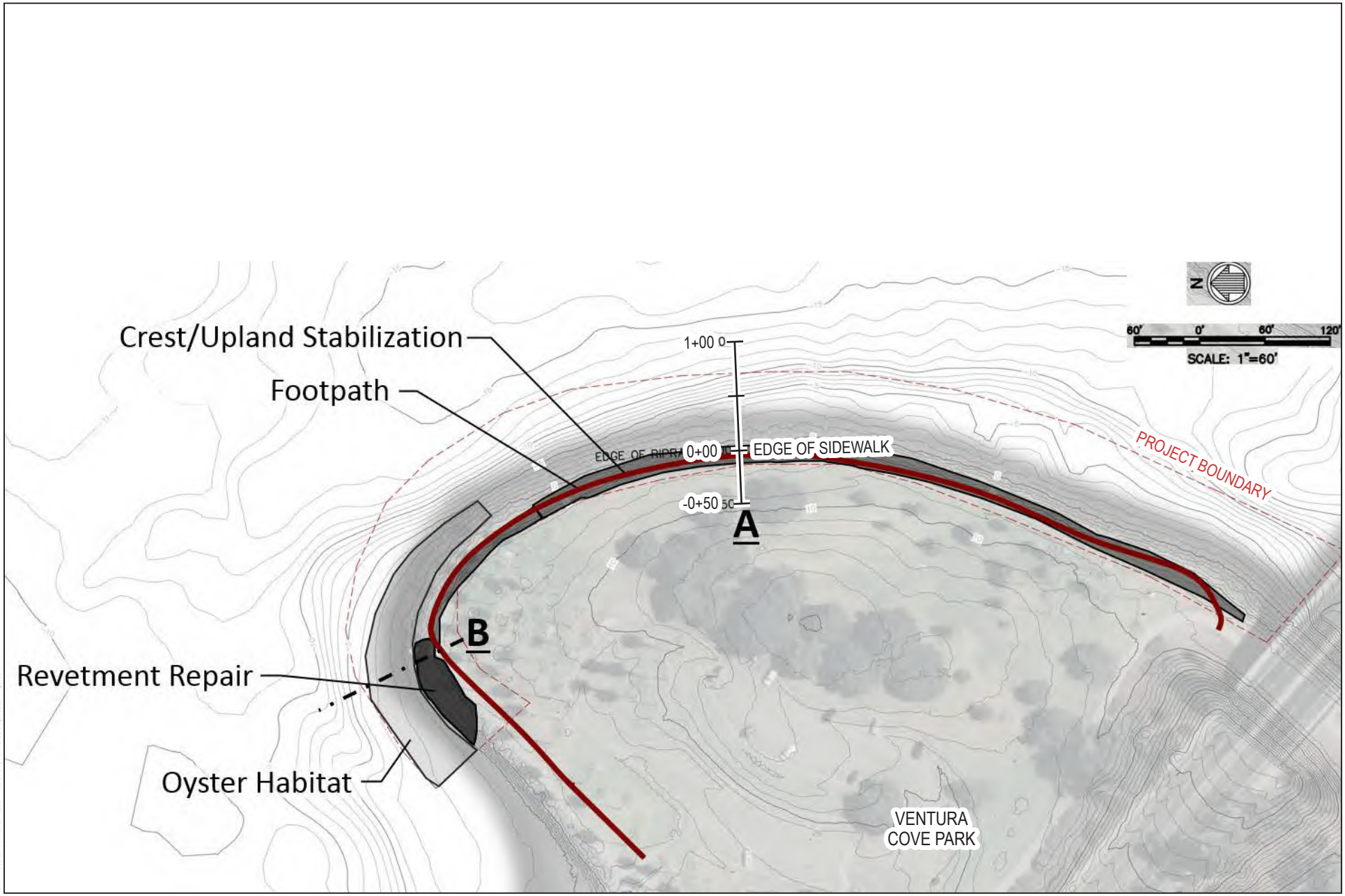
FIGURE 11

Vacation Island SW Shoreline Restoration

Mission Bay Park Improvements Program

DUDEK

INTENTIONALLY LEFT BLANK



SOURCE: Moffatt & Nichol. 2021. Preliminary Engineering Report Mission Bay PEIR Restoration of Shoreline.

FIGURE 12

Ventura Cove Shoreline Restoration

Mission Bay Park Improvements Program

DUDEK

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SOURCE: SANGIS 2023

DUDEK

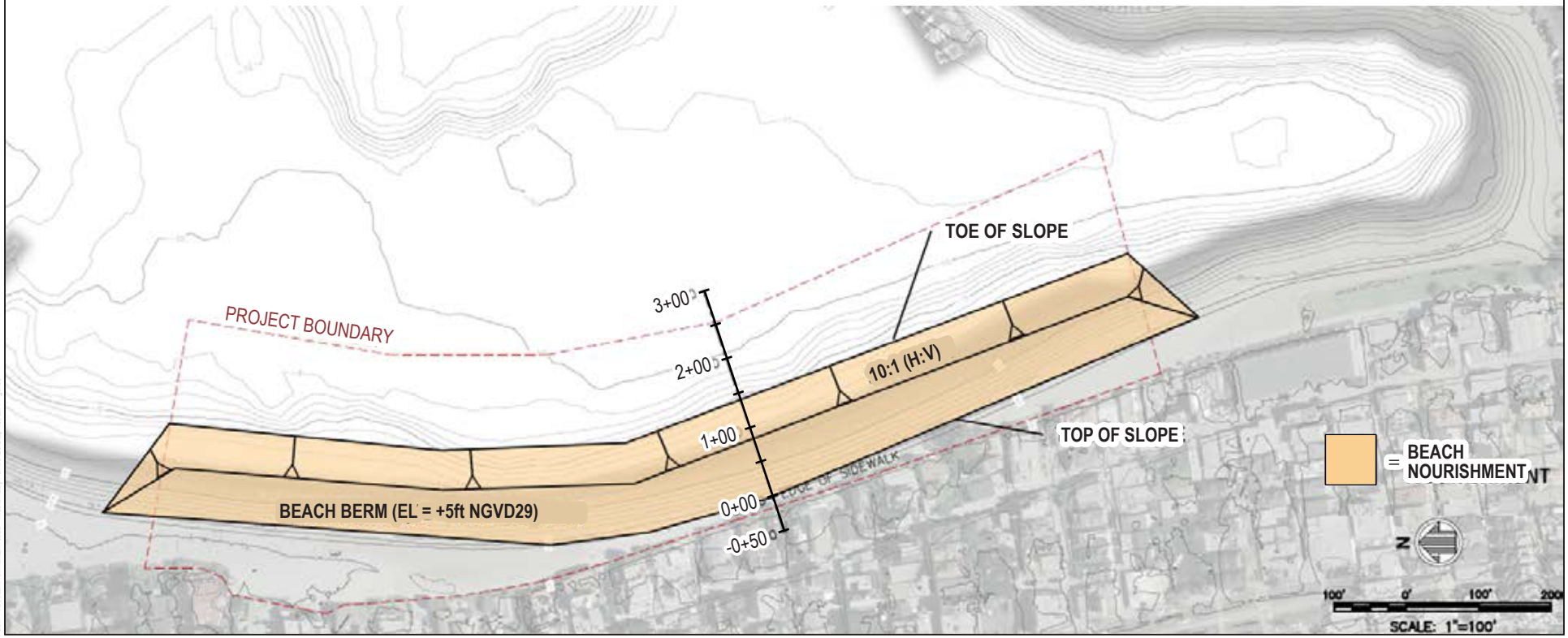
0 62.5 125 Feet

FIGURE 13

Crown Point

Mission Bay Park Improvements Program

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SOURCE: Moffatt & Nichol. 2021. Preliminary Engineering Report Mission Bay PEIR Restoration of Shoreline.

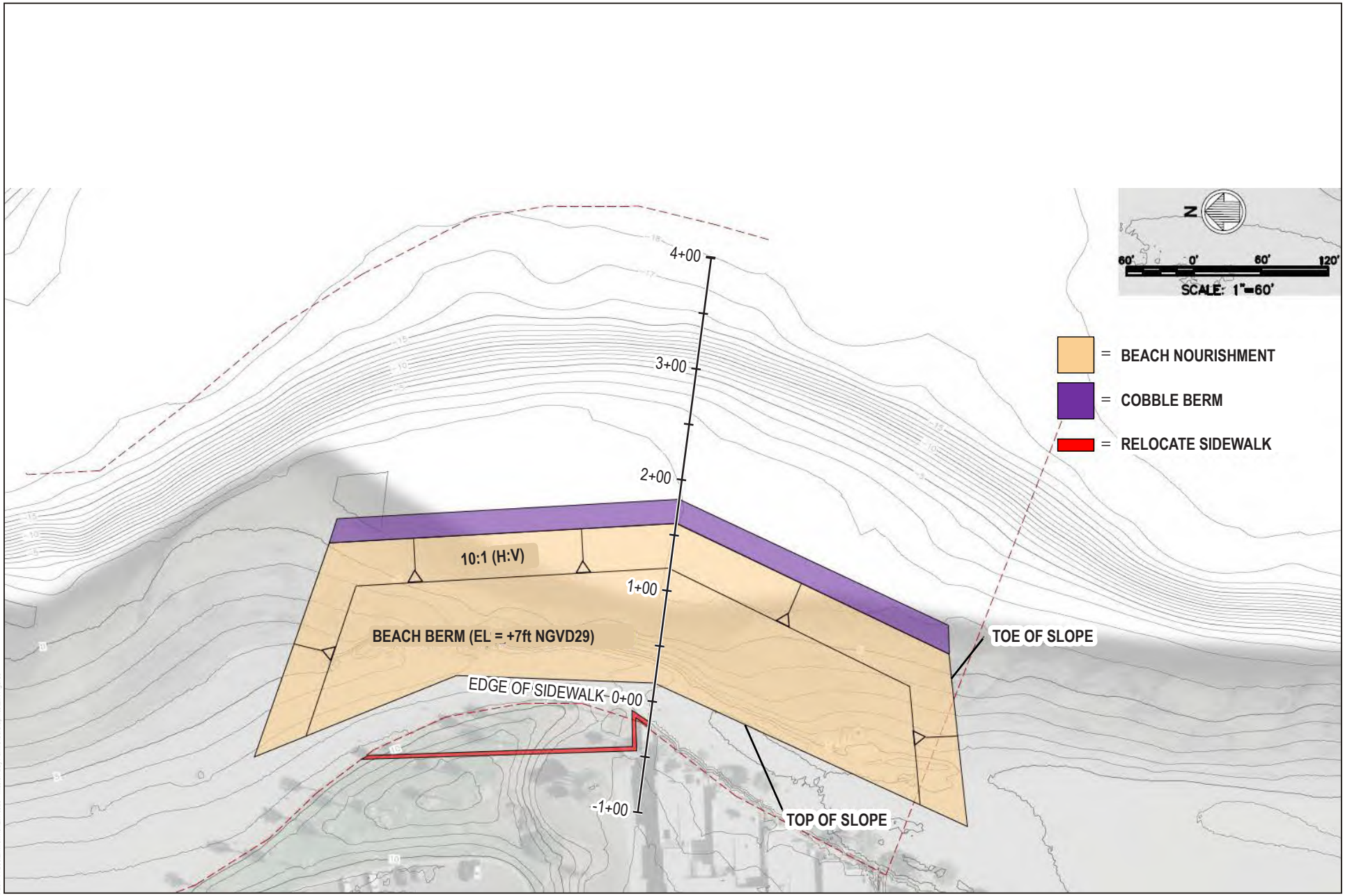
FIGURE 14

West Sail Bay Shoreline Restoration

Mission Bay Park Improvements Program

DUDEK

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SOURCE: Moffatt & Nichol. 2021. Preliminary Engineering Report Mission Bay PEIR Restoration of Shoreline.

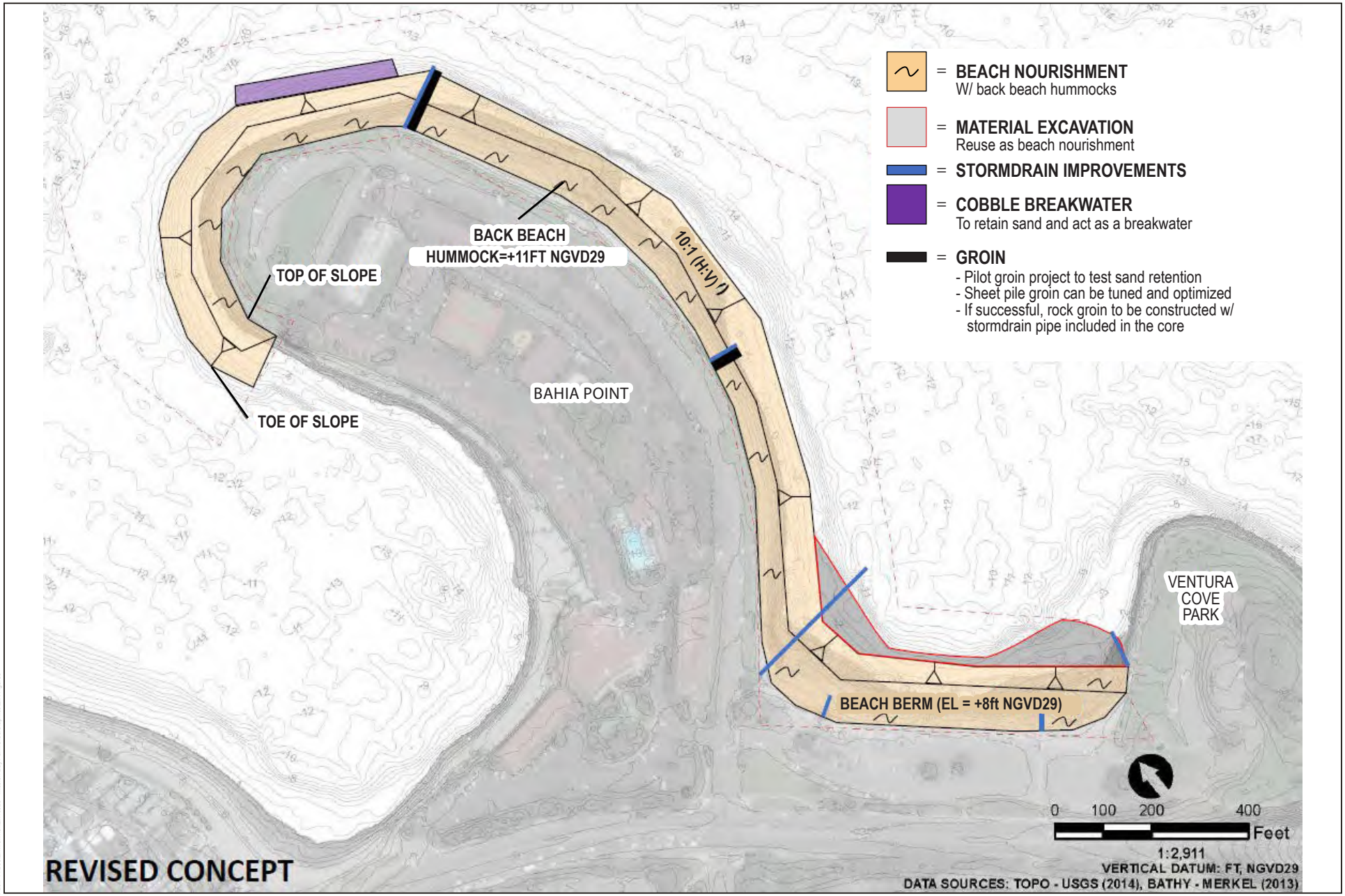
FIGURE 15

Bonita Cove Shoreline Restoration

Mission Bay Park Improvements Program

DUDEK

INTENTIONALLY LEFT BLANK



SOURCE: Moffatt & Nichol. 2021. Preliminary Engineering Report Mission Bay PEIR Restoration of Shoreline.

FIGURE 16

Bahia Point Shoreline Restoration

Mission Bay Park Improvements Program

DUDEK

INTENTIONALLY LEFT BLANK



SOURCE: SANGIS 2023

DUDEK

0 412.5 825 Feet

FIGURE 17

Upland Habitat and Preserves Expansion Element

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Soil Sample Location

Informal Trails

Haul Route

Limits of Original Proposed Upland Habitat Expansion Preserve Areas (as identified in the Fiesta Island Concept Plan) (Expanded Habitat)

Existing Sand Replenishment Maintenance Area

Adjusted Expansion Area Restoration Treatments

Coastal Sage Scrub Restoration and Enhancement

Coastal Salt Marsh Enhancement

Coastal Strand Berm Revegetation

Potential Nuttall's acmispon Expansion Area

Vegetation Communities/Land Cover

BCH, Beach

DCSS, Diegan Coastal Sage Scrub

DEV, Urban/Developed

DH, Disturbed Habitat

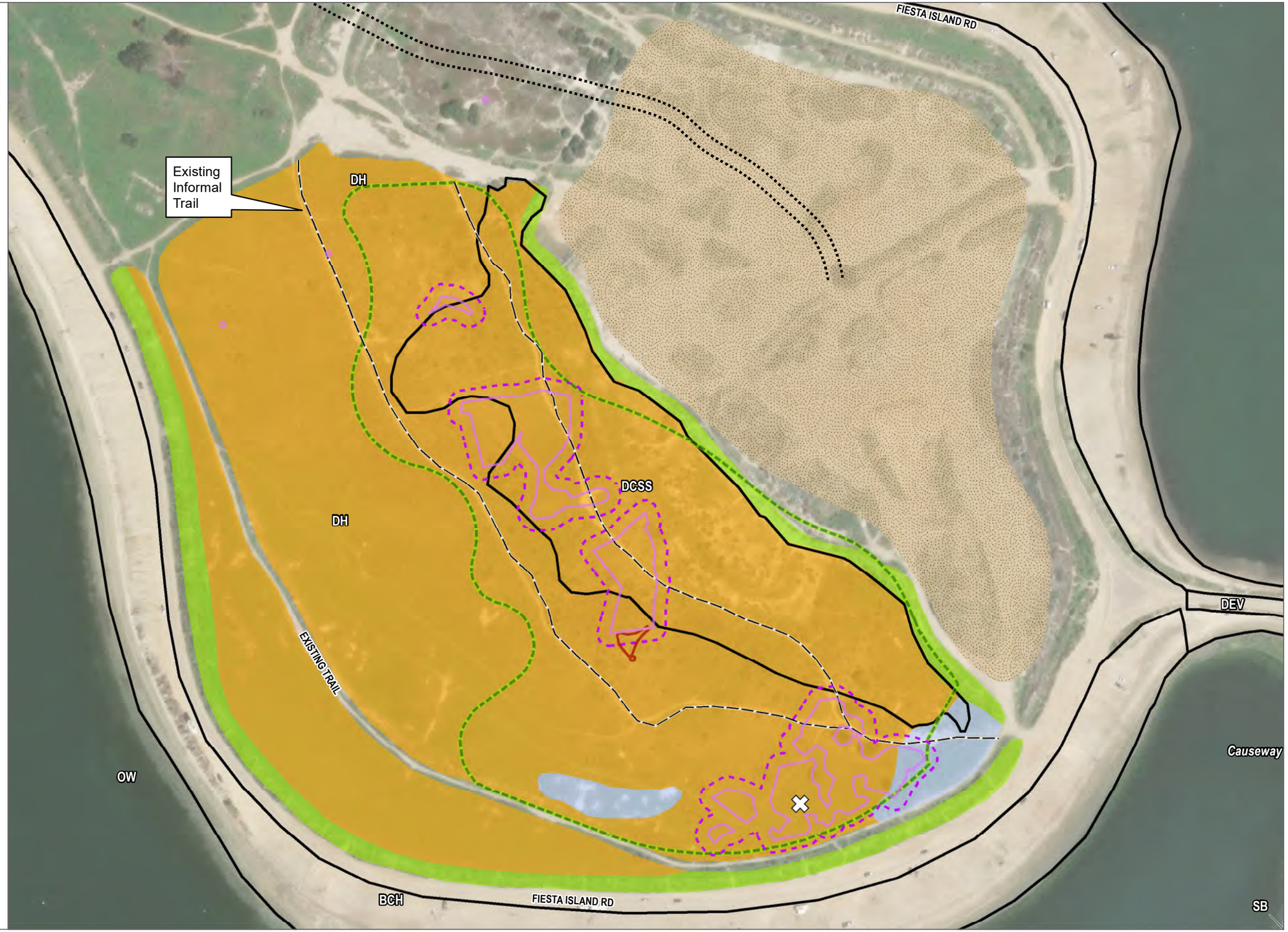
OW, Open Water

SB, Shallow Bay

Special-status Plants

Nuttall's lotus

Coast woolly-heads



SOURCE: ESRI 2024; City of San Diego 2018

DUDEK

0 100 200 Feet

FIGURE 18

Fiesta Island Site No. 1 - South

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Soil Sample Location

Haul Route

Limits of Original Proposed Upland Habitat Expansion Preserve Areas (as identified in the Fiesta Island Concept Plan) (Expanded Habitat)

Adjusted Expansion Area Restoration Treatments

Coastal Sage Scrub Restoration and Enhancement

Non-Tidal Coastal Salt Marsh Enhancement and Revegetation

Sand Import/Coastal Strand Revegetation and Least Tern Enhancement

Vegetation Communities/Land Cover

BCH, Beach

DCSS, Diegan Coastal Sage Scrub

DEV, Urban/Developed

DH, Disturbed Habitat

OW, Open Water

SF, Southern Foredunes

Special-status Plants

Nuttall's lotus

Coast woolly-heads



SOURCE: ESRI 2024; City of San Diego 2018

DUDEK

0 80 160 Feet

FIGURE 19

Fiesta Island Site No. 2 - North Central

Mission Bay Park Improvements Program

INTENTIONALLY LEFT BLANK

- Mission Bay Park Improvement Zone/Biological Study Area (BSA)
- North Fiesta Island Stockpile Option 1
- North Fiesta Island Wetland Restoration Project
- Soil Sample Location
- Proposed Grading Contours
- Road
- Informal Trails
- Haul Route
- Toe of Berm
- Original Proposed Upland Habitat Expansion Preserve Areas (Fiesta Island Concept Plan)

Upland Habitat Expansion Restoration Treatments

- Coastal Sage Scrub Restoration and Enhancement
- Non-Tidal Coastal Salt Marsh Enhancement and Revegetation
- Coastal Salt Marsh/Wetland Revegetation and Enhancement
- Sand Import/Coastal Strand Revegetation and Least Tern Enhancement
- Southern Foredune Restoration and Enhancement
- Vegetation Communities/Land Cover
  - BCH, Beach
  - DCSS, Diegan Coastal Sage Scrub
  - DH, Disturbed Habitat
  - OW, Open Water
  - SF, Southern Foredunes
  - dSCSM, Disturbed Southern Coastal Salt Marsh
- Nuttall's acmispon

Special-status Plants

- Nuttall's lotus
- Coast woolly-heads
- Decumbent goldenbush



SOURCE: ESRI 2024; City of San Diego 2018

DUDEK 0 112.5 225 Feet

FIGURE 20

Fiesta Island Site No. 3 - Near Youth Camping

Preliminary Engineering Report Mission Bay Park Upland Habitat Expansion and Preservation

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- Mission Bay Park Improvement Zone/Biological Study Area (BSA)
- North Fiesta Island Stockpile Option 1
- North Fiesta Island Wetland Restoration Project
- Soil Sample Location
- Proposed Grading Contours
- Temporary Down Slope
- Road
- CCC Approved Boundary/Site Protection Fence
- Haul Route
- Toe of Berm
- Low Marsh
- Mid Marsh
- High Marsh
- Mudflat
- Transitional
- Subtidal
- Upland

Upland Habitat Expansion Restoration Treatments

- Southern Foredune Restoration and Enhancement
- Vegetation Communities/Land Cover
  - BCH, Beach
  - DEV, Urban/Developed
  - DH, Disturbed Habitat
  - OW, Open Water
  - dSCSM, Disturbed Southern Coastal Salt Marsh



SOURCE: ESRI 2024; City of San Diego 2018

DUDEK 0 125 250 Feet

FIGURE 21

Fiesta Island Site No. 4 - California Least Tern Preserve

Preliminary Engineering Report Mission Bay Park Upland Habitat Expansion and Preservation

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Proposed Grading Contours

Upland Habitat Expansion Restoration Treatments

Non-Tidal Coastal Salt Marsh Enhancement and Revegetation

Coastal Strand Revegetation and Enhancement

Sand Import and Coastal Strand Enhancement Revegetation

Vegetation Communities/Land Cover

DEV, Urban/Developed

DH, Disturbed Habitat

EST, Intertidal Estuary

OW, Open Water

SCSM, Southern Coastal Salt Marsh

Special-status Plants

Nuttall's lotus



SOURCE: ESRI 2024; City of San Diego 2018

DUDEK

0 125 250 Feet

FIGURE 22

Sea World Drive/San Diego River Site No. 5a - Cloverleaf

Preliminary Engineering Report Mission Bay Park Upland Habitat Expansion and Preservation

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- Mission Bay Park Improvement Zone/Biological Study Area (BSA)
- Proposed Grading Contours
- Original Proposed Upland Habitat Expansion Preserve Areas (Fiesta Island Concept Plan)
- San Diego Audubon Society Revegetation Area (San Diego River/Sea World Dr. Site #3a)

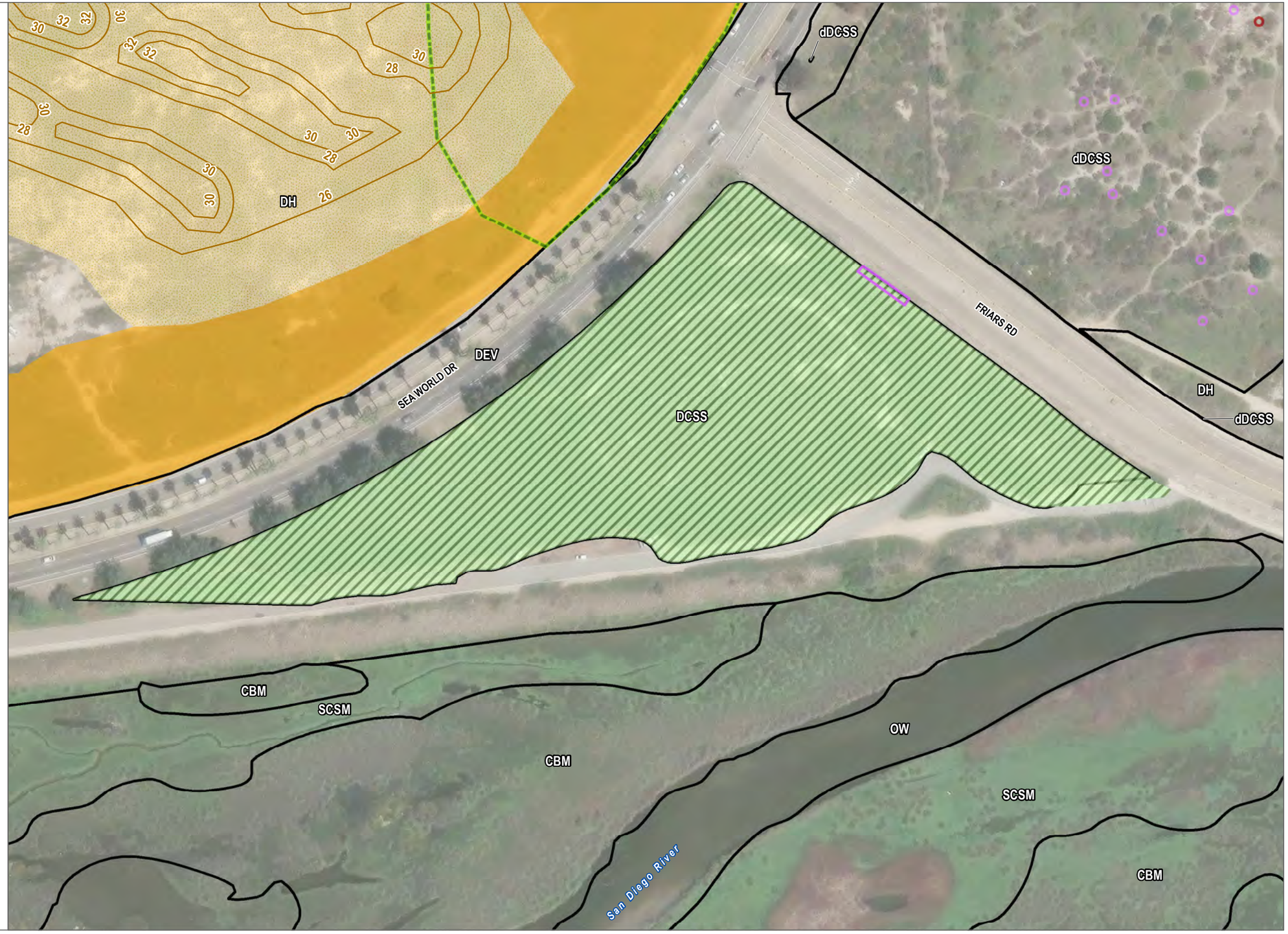
Upland Habitat Expansion Restoration Treatments

- Coastal Sage Scrub Restoration and Enhancement
- Sand Import/Coastal Strand Revegetation and Least Tern Enhancement

- Vegetation Communities/Land Cover
  - CBM, Coastal Brackish Marsh
  - DCSS, Diegan Coastal Sage Scrub
  - DEV, Urban/Developed
  - DH, Disturbed Habitat
  - OW, Open Water
  - SCSM, Southern Coastal Salt Marsh
  - dDCSS, Disturbed Diegan Coastal Sage Scrub
- Nuttall's acmispon

Special-status Plants

- Nuttall's lotus
- Coast woolly-heads



SOURCE: ESRI 2024; City of San Diego 2018

DUDEK

0 62.5 125 Feet

FIGURE 23

Sea World Drive/San Diego River Site No. 5b - Triangle Restoration Area

Preliminary Engineering Report Mission Bay Park Upland Habitat Expansion and Preservation

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Soil Sample Location

Proposed Grading Contours

Informal Trails

Original Proposed Upland Habitat Expansion Preserve Areas (Fiesta Island Concept Plan)

San Diego Audubon Society Revegetation Area (San Diego River/Sea World Dr. Site #3a)

Upland Habitat Expansion Restoration Treatments

Coastal Sage Scrub Restoration and Enhancement

Coastal Salt Marsh Enhancement

Coastal Strand Berm Revegetation

Sand Import/Coastal Strand Revegetation and Least Tern Enhancement

Southern Foredune Restoration and Enhancement

Potential Nuttall's acmispon Expansion Area

Potential Nuttall's acmispon Expansion Area

Vegetation Communities/Land Cover

BCH, Beach

CBM, Coastal Brackish Marsh

DCSS, Diegan Coastal Sage Scrub

DEV, Urban/Developed

DH (Rip-Rap), Disturbed Habitat

DH, Disturbed Habitat

OW, Open Water

SB, Shallow Bay

SCSM, Southern Coastal Salt Marsh

dDCSS, Disturbed Diegan Coastal Sage Scrub

Nuttall's acmispon

Special-status Plants

Nuttall's lotus

Coast woolly-heads



SOURCE: ESRI 2024; City of San Diego 2018

DUDEK

0 125 250 Feet

FIGURE 24

Sea World Drive/San Diego River Site No. 5c - South Shores East

Preliminary Engineering Report Mission Bay Park Upland Habitat Expansion and Preservation

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SOURCE: SANGIS 2023

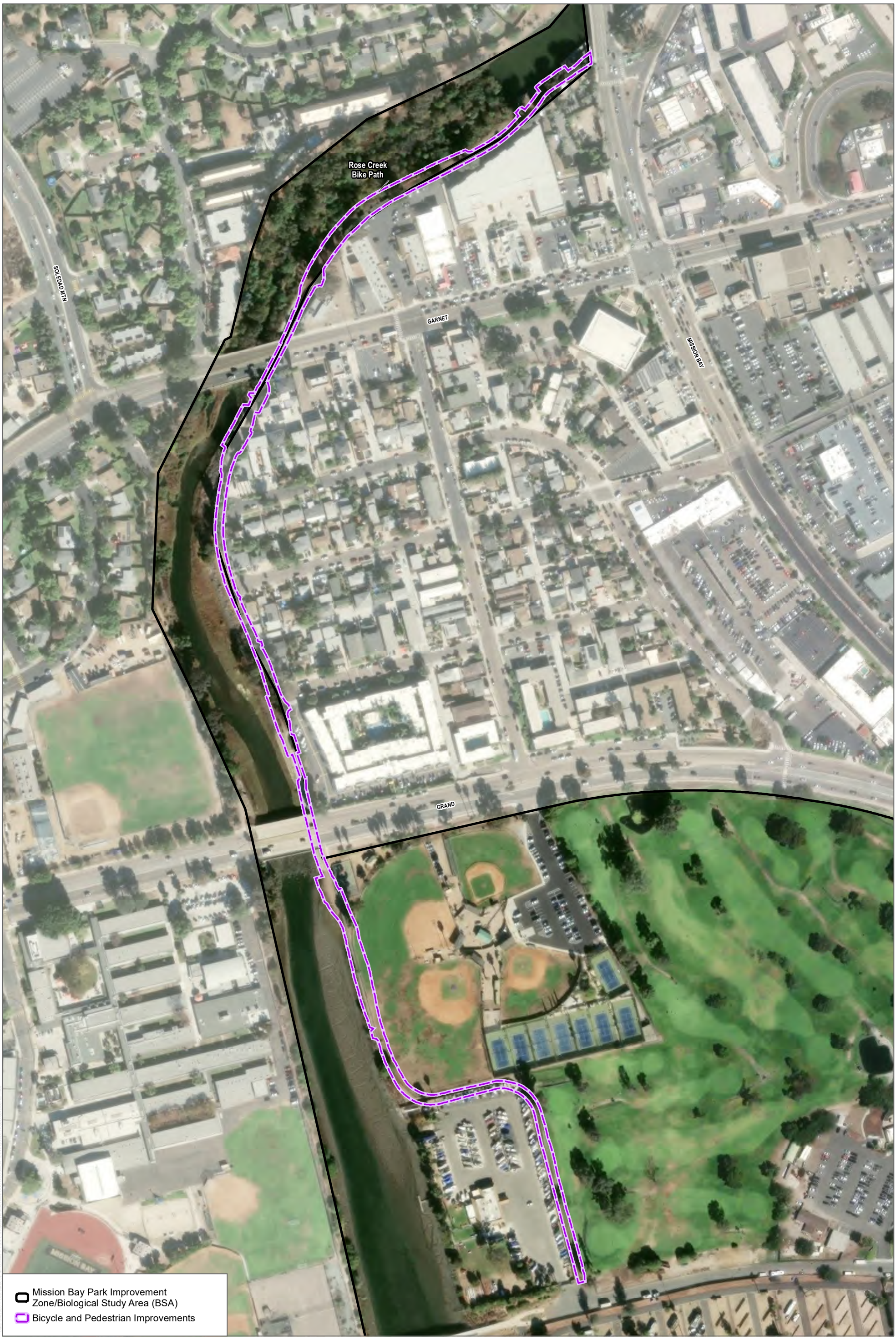
DUDEK

0 900 1,800 Feet

FIGURE 25

Mission Bay Park Improvements Program Elements - Bicycle and Pedestrian Improvements

INTENTIONALLY LEFT BLANK



SOURCE: SANGIS 2023

DUDEK

0 115 230 Feet

FIGURE 26

Rose Creek Bike Path

Mission Bay Park Improvements Program

INTENTIONALLY LEFT BLANK



SOURCE: SANGIS 2023

DUDEK

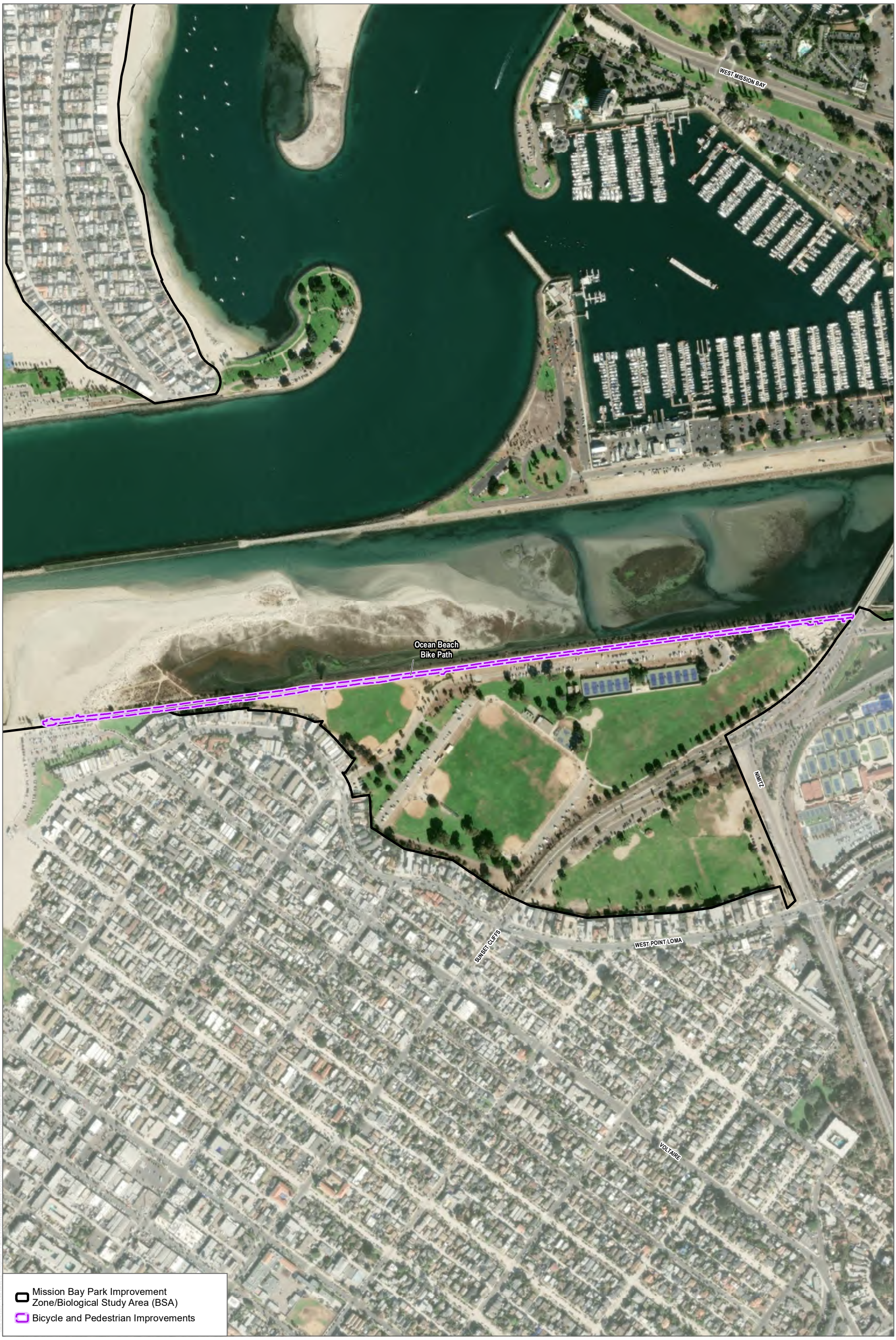
0 45 90 Feet

FIGURE 27

Fiesta Island Causeway Path

Mission Bay Park Improvements Program

INTENTIONALLY LEFT BLANK



SOURCE: SANGIS 2023

DUDEK

0 270 540 Feet

FIGURE 28

Ocean Beach Bike Path

Mission Bay Park Improvements Program

INTENTIONALLY LEFT BLANK



SOURCE: SANGIS 2023

DUDEK

0 462.5 925 Feet

FIGURE 29

Mission Bay Park Improvements Program Elements - Restoration of Seawall Bulkhead Element

Mission Bay Park Improvements Program

INTENTIONALLY LEFT BLANK



SOURCE: SANGIS 2023

DUDEK

0 75 150 Feet

FIGURE 30A

Replacement Segments A and B

Mission Bay Park Improvements Program

INTENTIONALLY LEFT BLANK



SOURCE: SANGIS 2023

DUDEK

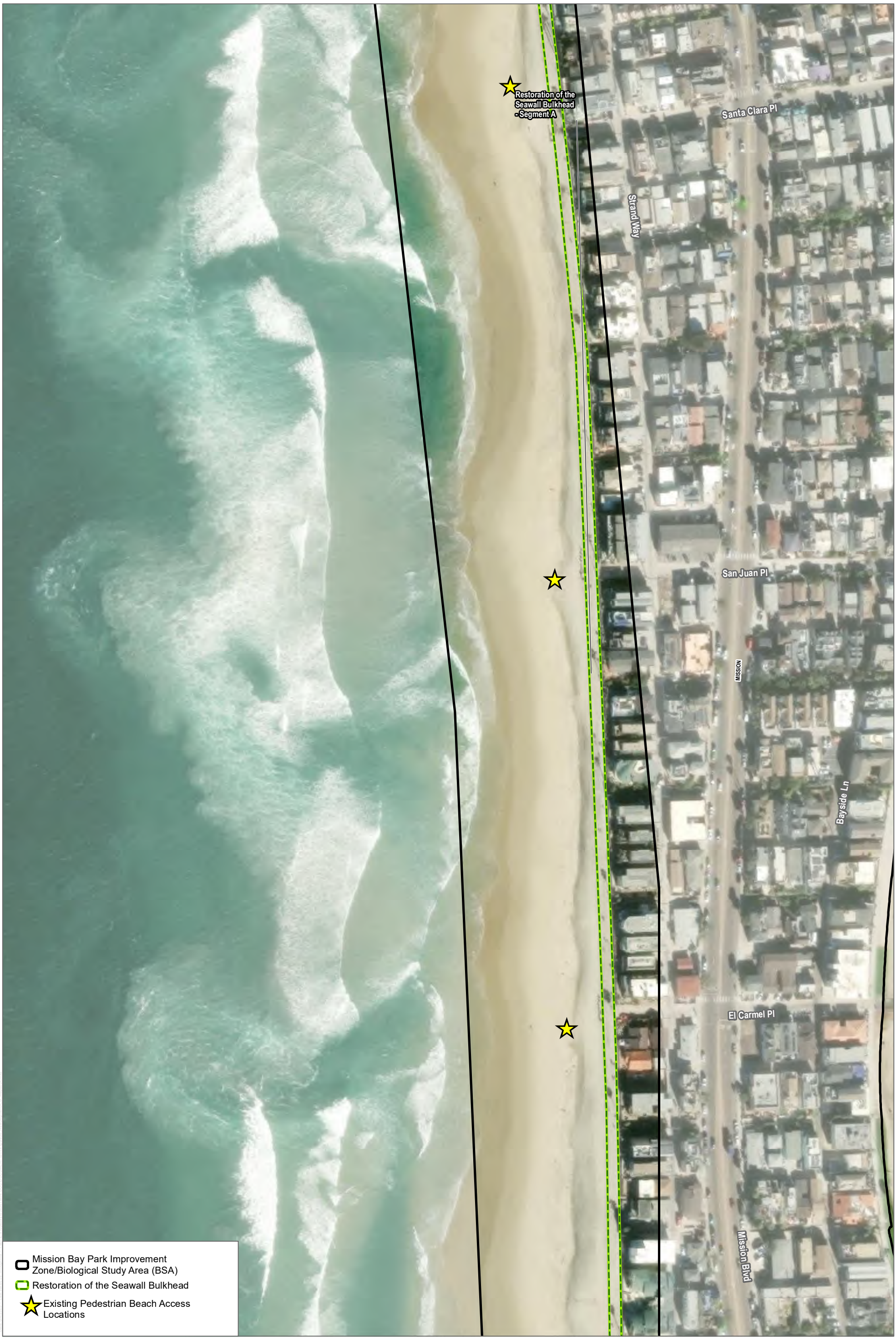
0 75 150 Feet

FIGURE 30B

Replacement Segments A and B

Mission Bay Park Improvements Program

INTENTIONALLY LEFT BLANK



SOURCE: SANGIS 2023

DUDEK

0 75 150 Feet

FIGURE 30C

Replacement Segments A and B

Mission Bay Park Improvements Program

INTENTIONALLY LEFT BLANK



SOURCE: SANGIS 2023

DUDEK

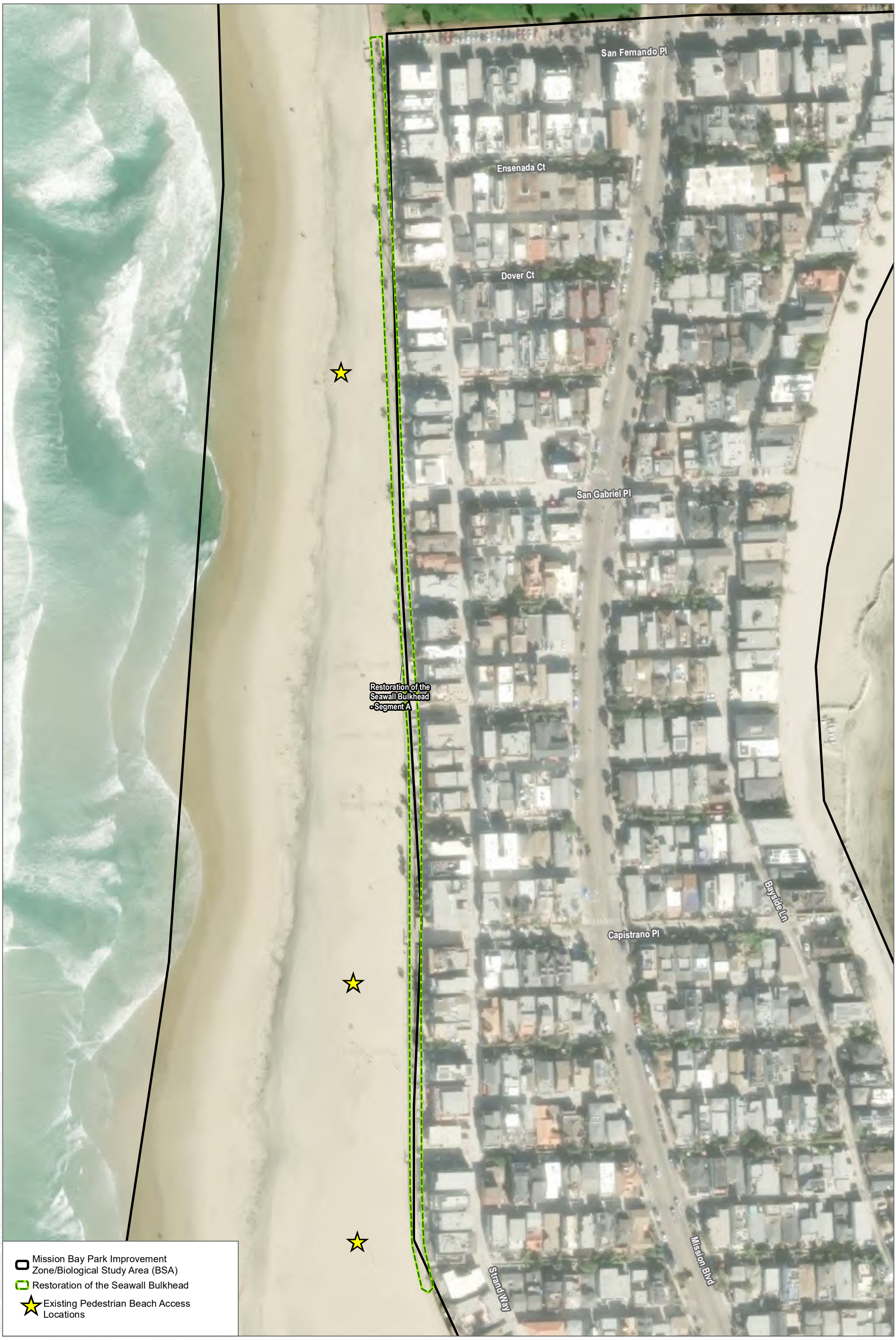
0 75 150 Feet

FIGURE 30D

Replacement Segments A and B

Mission Bay Park Improvements Program

INTENTIONALLY LEFT BLANK



SOURCE: SANGIS 2023

DUDEK

0 75 150 Feet

FIGURE 30E

Replacement Segments A and B

Mission Bay Park Improvements Program

INTENTIONALLY LEFT BLANK



SOURCE: SANGIS 2023

DUDEK

0 50 100 Feet

FIGURE 31

New Segment C

Mission Bay Park Improvements Program

INTENTIONALLY LEFT BLANK



SOURCE: SANGIS 2023; City of San Diego 2018; USDA 2018

DUDEK

0 900 1,800 Feet

FIGURE 32

Soils

Mission Bay Park Improvements Program

INTENTIONALLY LEFT BLANK



SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

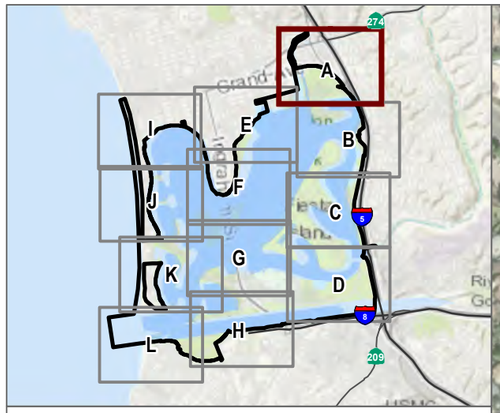
0 900 1,800 Feet

FIGURE 33

Hydrology

Mission Bay Park Improvements Program

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- Bicycle and Pedestrian Improvements
- Mission Bay Park Improvement Zone/Biological Study Area (BSA)
- Eelgrass
- Vegetation Communities/Land Covers

Bog and Marsh

- Coastal and Valley Freshwater Marsh
- Disturbed Coastal and Valley Freshwater Marsh
- Southern Coastal Salt Marsh

Disturbed or Developed

- Urban/Developed
- Disturbed Wetland (Arundo)

Riparian and Bottomland Habitat

- Disturbed Southern Willow Scrub
- Non-Native Riparian
- Open Water
- Saltpan/Mudflats

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

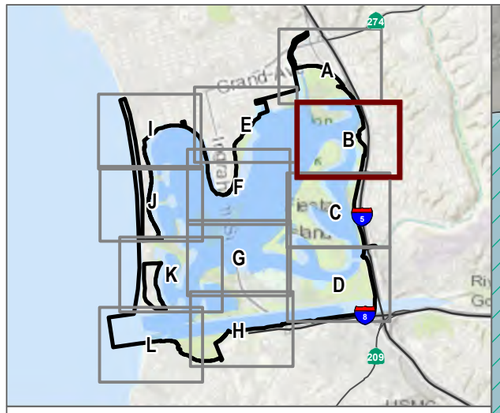
0 250 500 Feet

FIGURE 34A

Vegetation Communities/Eelgrass

Mission Bay Park Improvements Program

INTENTIONALLY LEFT BLANK



- Wetland and Water Quality Improvements
- Upland Habitat and Preserve Expansion
- Mission Bay Park Improvement Zone/Biological Study Area (BSA)
- Eelgrass
- Vegetation Communities/Land Covers

Bog and Marsh

- Disturbed Southern Coastal Salt Marsh

Disturbed or Developed

- Urban/Developed
- Disturbed Habitat

Dunes

- Southern Foredunes

Riparian and Bottomland Habitat

- Beach
- Open Water
- Saltpan/Mudflats
- Shallow Bay
- Unvegetated Habitat

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

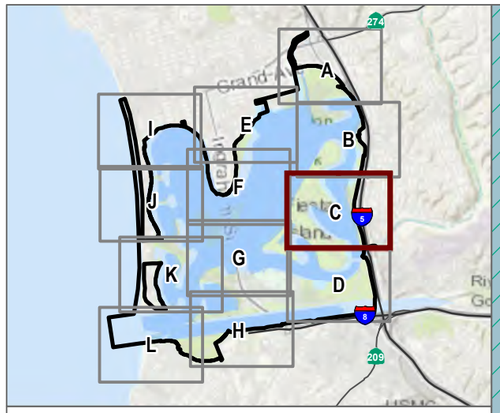
0 250 500 Feet

FIGURE 34B

Vegetation Communities/Eelgrass

Mission Bay Park Improvements Program

INTENTIONALLY LEFT BLANK



- Wetland and Water Quality Improvements
- Upland Habitat and Preserve Expansion
- Mission Bay Park Improvement Zone/Biological Study Area (BSA)
- Eelgrass
- Vegetation Communities/Land Covers

Bog and Marsh
- Disturbed Southern Coastal Salt Marsh
- Southern Coastal Salt Marsh

Disturbed or Developed
- Urban/Developed
- Disturbed Habitat

Dunes
- Southern Foredunes

Riparian and Bottomland Habitat
- Beach
- Open Water
- Unvegetated Habitat

Scrub and Chaparral
- Diegan Coastal Sage Scrub

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

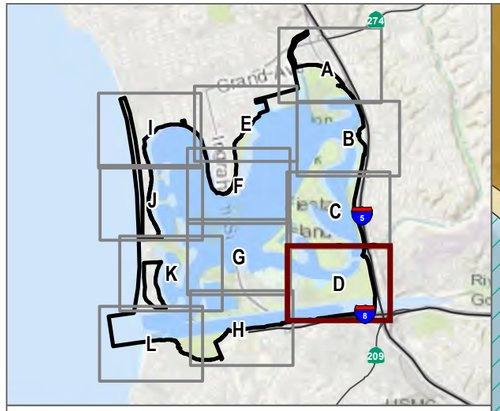
0 250 500 Feet

FIGURE 34C

Vegetation Communities/Eelgrass

Mission Bay Park Improvements Program

INTENTIONALLY LEFT BLANK



- Wetland and Water Quality Improvements
- Upland Habitat and Preserve Expansion
- Bicycle and Pedestrian Improvements
- Mission Bay Park Improvement Zone/Biological Study Area (BSA)
- Eelgrass
- Vegetation Communities/Land Covers

Bog and Marsh
- Coastal Brackish Marsh
- Southern Coastal Salt Marsh

Disturbed or Developed
- Urban/Developed
- Disturbed Habitat

Riparian and Bottomland Habitat
- Beach
- Intertidal Estuary
- Non-Native Riparian
- Open Water
- Shallow Bay

Scrub and Chaparral
- Diegan Coastal Sage Scrub
- Disturbed Diegan Coastal Sage Scrub

North Fiesta Island Stockpile Option 2

Fiesta Island No. 1 - South

Tecolote Creek and Fiesta Island Causeway

Fiesta Island Causeway Path

MISSION BAY

TECOLOTE

MORENA

PACIFIC

SeaWorld Drive/San Diego River Site No. 5c - South Shores East Area

SeaWorld Drive/San Diego River Site No. 5b - Triangle Restoration Area

SEA WORLD

FRIARS

SeaWorld Drive/San Diego River Site No. 5a - Cloverleaf Area

San Diego River

San Diego River

HANCOCK

5

8

209

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

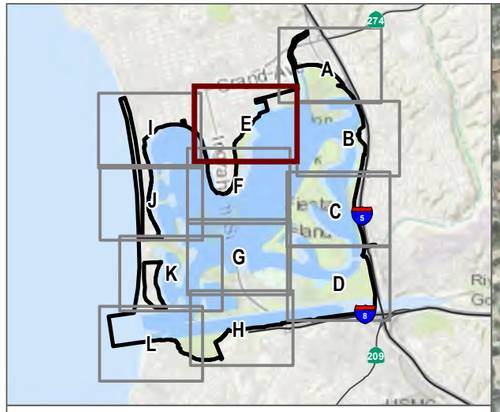
0 250 500 Feet

FIGURE 34D

Vegetation Communities/Eelgrass

Mission Bay Park Improvements Program

INTENTIONALLY LEFT BLANK



Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Eelgrass

Vegetation Communities/Land Covers

Bog and Marsh

Southern Coastal Salt Marsh

Disturbed or Developed

Urban/Developed

Disturbed Habitat

Dunes

Southern Foredunes

Riparian and Bottomland Habitat

Beach

Open Water

Saltpan/Mudflats

Tidal Channel

Scrub and Chaparral

Diegan Coastal Sage Scrub

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

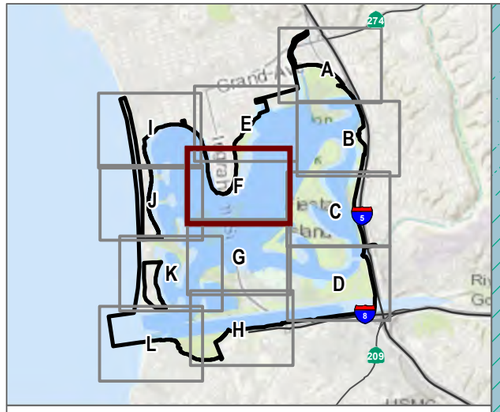
0 250 500 Feet

FIGURE 34E

Vegetation Communities/Eelgrass

Mission Bay Park Improvements Program

INTENTIONALLY LEFT BLANK



- Wetland and Water Quality Improvements
- Restoration of Shoreline
- Mission Bay Park Improvement Zone/Biological Study Area (BSA)
- Eelgrass
- Vegetation Communities/Land Covers

Disturbed or Developed

- Urban/Developed
- Disturbed Habitat

Riparian and Bottomland Habitat

- Beach
- Open Water
- Saltpan/Mudflats

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

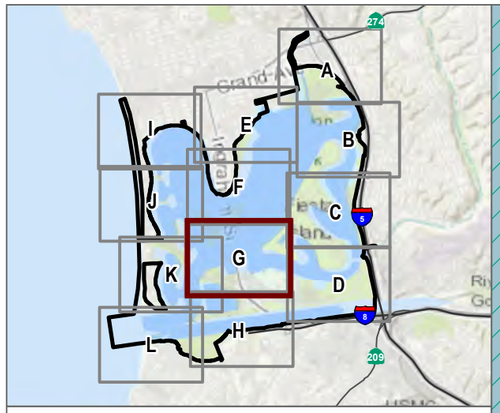
0 250 500 Feet

FIGURE 34F

Vegetation Communities/Eelgrass

Mission Bay Park Improvements Program

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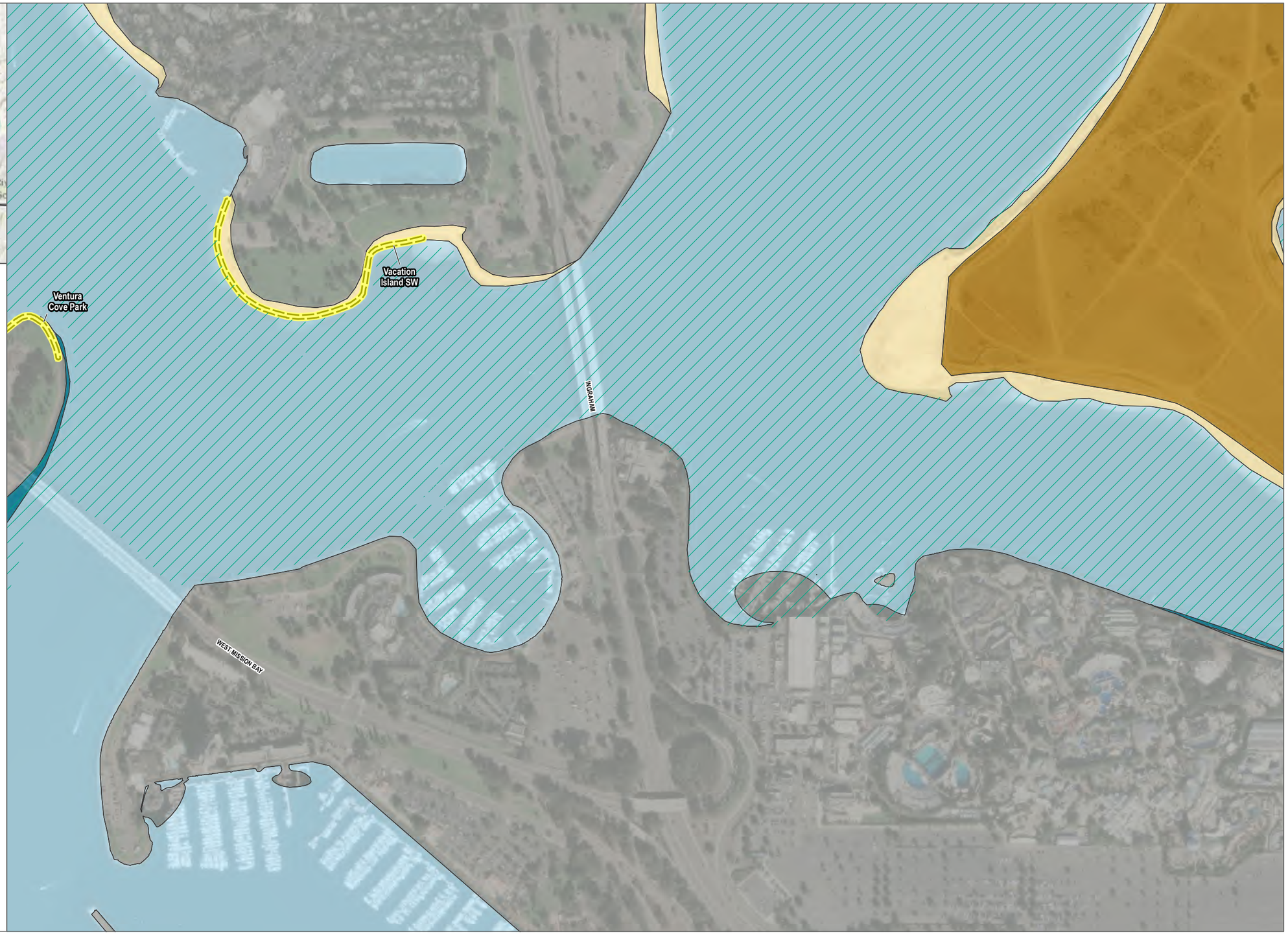
- Wetland and Water Quality Improvements
- Restoration of Shoreline
- Mission Bay Park Improvement Zone/Biological Study Area (BSA)
- Eelgrass
- Vegetation Communities/Land Covers

Disturbed or Developed

- Urban/Developed
- Disturbed Habitat

Riparian and Bottomland Habitat

- Beach
- Open Water
- Shallow Bay



SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

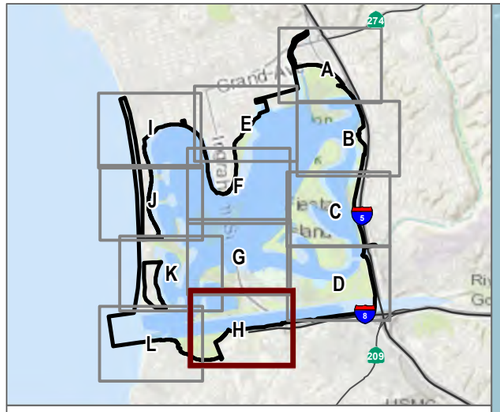
0 250 500 Feet

FIGURE 34G

Vegetation Communities/Eelgrass

Mission Bay Park Improvements Program

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- Upland Habitat and Preserve Expansion
- Bicycle and Pedestrian Improvements
- Mission Bay Park Improvement Zone/Biological Study Area (BSA)
- Eelgrass
- Vegetation Communities/Land Covers

Bog and Marsh

- Southern Coastal Salt Marsh

Disturbed or Developed

- Urban/Developed
- Disturbed Habitat

Riparian and Bottomland Habitat

- Beach
- Intertidal Estuary
- Open Water
- Saltpan/Mudflats

Scrub and Chaparral

- Diegan Coastal Sage Scrub

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

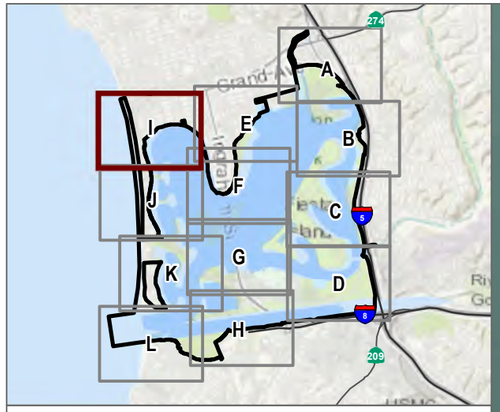
0 250 500 Feet

FIGURE 34H

Vegetation Communities/Eelgrass

Mission Bay Park Improvements Program

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- Restoration of the Seawall Bulkhead
- Restoration of Shoreline
- Mission Bay Park Improvement Zone/Biological Study Area (BSA)
- Eelgrass
- Vegetation Communities/Land Covers

Disturbed or Developed

- Urban/Developed

Riparian and Bottomland Habitat

- Beach
- Open Water

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

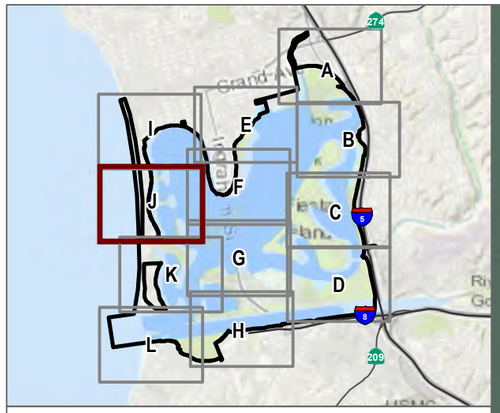
0 250 500 Feet

FIGURE 34I

Vegetation Communities/Eelgrass

Mission Bay Park Improvements Program

INTENTIONALLY LEFT BLANK



- Restoration of the Seawall Bulkhead
- Restoration of Shoreline
- Mission Bay Park Improvement Zone/Biological Study Area (BSA)
- Eelgrass
- Vegetation Communities/Land Covers

Disturbed or Developed

- Urban/Developed

Riparian and Bottomland Habitat

- Beach
- Open Water

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

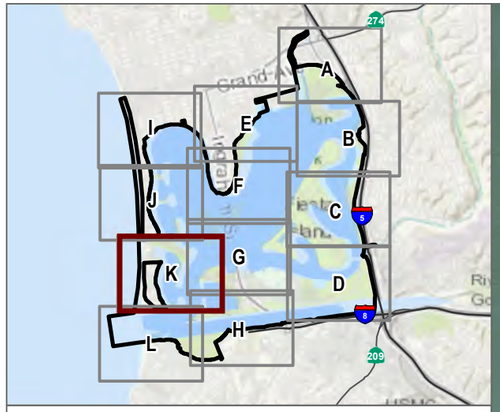
0 250 500 Feet

FIGURE 34J

Vegetation Communities/Eelgrass

Mission Bay Park Improvements Program

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- Restoration of the Seawall Bulkhead
- Restoration of Shoreline
- Mission Bay Park Improvement Zone/Biological Study Area (BSA)
- Eelgrass
- Vegetation Communities/Land Covers

Disturbed or Developed

- Urban/Developed

Riparian and Bottomland Habitat

- Beach
- Open Water
- Shallow Bay

Scrub and Chaparral

- Diegan Coastal Sage Scrub



SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

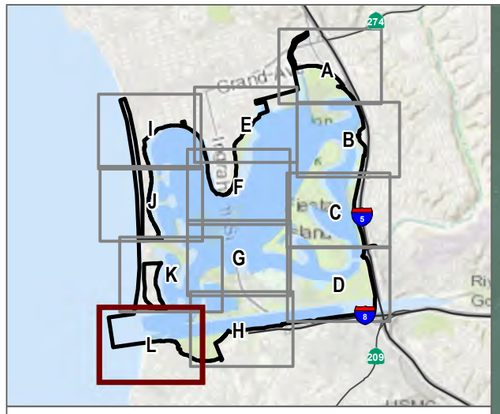
0 250 500 Feet

FIGURE 34K

Vegetation Communities/Eelgrass

Mission Bay Park Improvements Program

INTENTIONALLY LEFT BLANK



- Bicycle and Pedestrian Improvements
- Mission Bay Park Improvement Zone/Biological Study Area (BSA)
- Vegetation Communities/Land Covers

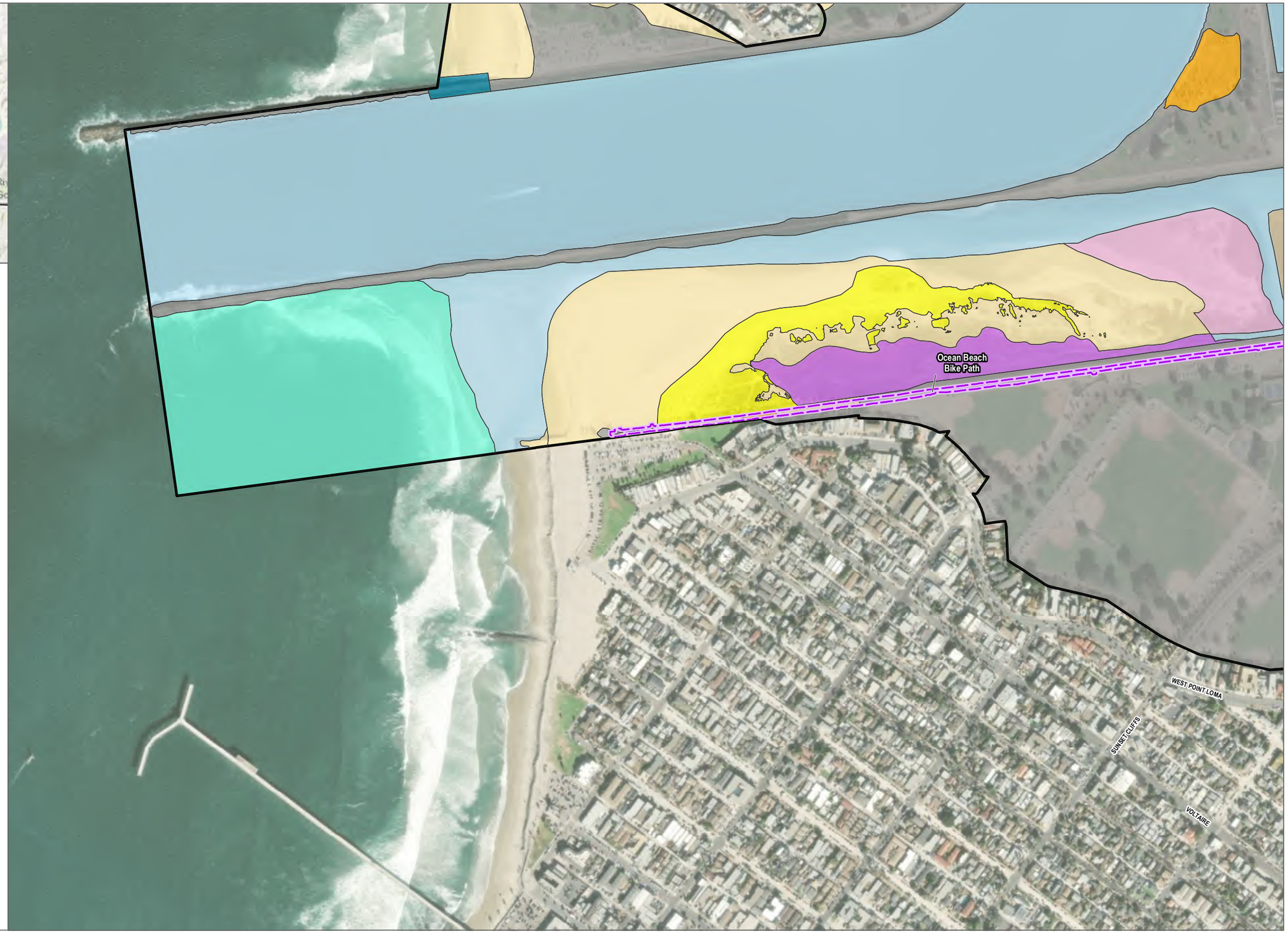
Bog and Marsh
- Southern Coastal Salt Marsh

Disturbed or Developed
- Urban/Developed

Dunes
- Southern Foredunes

Riparian and Bottomland Habitat
- Beach
- Intertidal Estuary
- Open Water
- Saltpan/Mudflats
- Shallow Bay
- Subtidal

Scrub and Chaparral
- Diegan Coastal Sage Scrub



SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

0 250 500 Feet

FIGURE 34L

Vegetation Communities/Eelgrass

Mission Bay Park Improvements Program

INTENTIONALLY LEFT BLANK

Mission Bay Park Improvement Zone/Biological Study Area (BSA)

SANBIOS Species

- Belding's savannah sparrow
- California least tern
- Light footed clapper rail

CNDDB Wildlife Species

- 1, western spadefoot
- 2, burrowing owl
- 3, California black rail
- 4, Belding's savannah sparrow
- 5, light-footed Ridgway's rail
- 6, California least tern
- 7, Mexican long-tongued bat
- 8, pocketed free-tailed bat
- 9, big free-tailed bat
- 10, Southern California legless lizard
- 11, California glossy snake
- 12, orange-throated whiptail

CNDDB Plant Species

- 1, Nuttall's acmispon
- 2, aphanisma
- 3, wart-stemmed ceanothus
- 4, Orcutt's pincushion
- 5, salt marsh bird's-beak
- 6, San Diego sand aster
- 7, sticky dudleya
- 8, beach goldenaster
- 9, decumbent goldenbush
- 10, San Diego marsh-elder
- 11, Coulter's goldfields
- 12, coast woolly-heads
- 13, Brand's star phacelia
- 14, chaparral ragwort
- 15, oil neststraw
- 16, estuary seablite

SOURCE: SANGIS 2023, 2025; CNDDB 2025

DUDEK

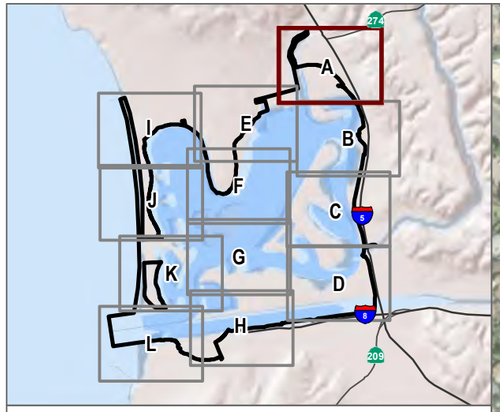
0 900 1,800 Feet

FIGURE 35

CNDDB Results

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Bicycle and Pedestrian Improvements

MHPA

Special-Status Plant Survey Area

Special-status Plants

Coulter's goldfields

San Diego marsh-elder

Estuary seablite

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

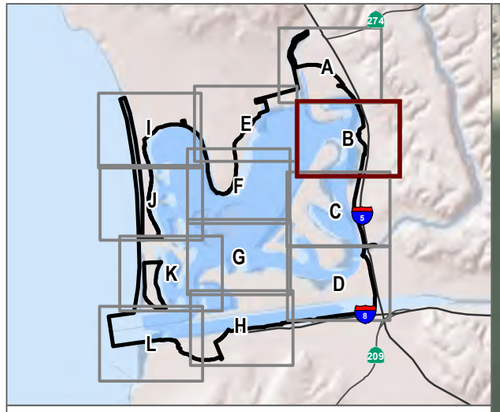
0 250 500 Feet

FIGURE 36A

Special-Status Plant Species

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Wetland and Water Quality Improvements

Upland Habitat and Preserve Expansion

MHPA

Special-Status Plant Survey Area

Special-status Plants

Nuttall's lotus

Coast woolly-heads

Estuary seablite



SOURCE: SANGIS 2023; City of San Diego 2018

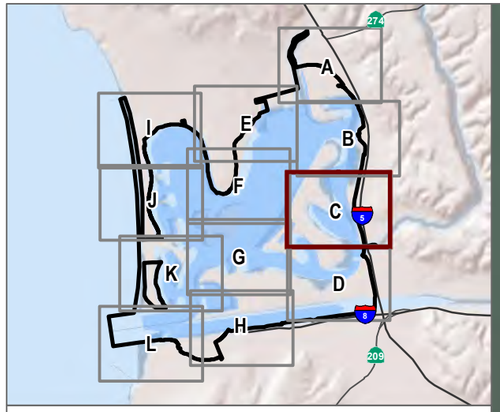
DUDEK 0 250 500 Feet

FIGURE 36B

Special-Status Plant Species

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Wetland and Water Quality Improvements

Upland Habitat and Preserve Expansion

MHPA

Special-Status Plant Survey Area

Special-status Plants

Nuttall's lotus

Coast woolly-heads

Decumbent goldenbush

Estuary seablite

North Fiesta Island Stockpile Option 1

Fiesta Island No. 2 - North Central

Fiesta Island No. 3 - Near Youth Camping

North Fiesta Island Stockpile Option 3

North Fiesta Island Stockpile Option 2

Fiesta Island No. 1 - South

Tecolote Creek and Fiesta Island Causeway

MORENA

MISSION BAY

TECOLOTE

5

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

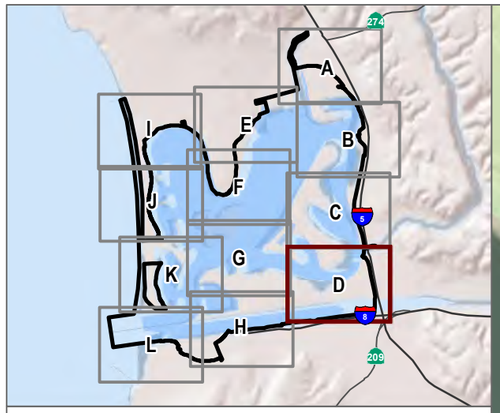
0 250 500 Feet

FIGURE 36C

Special-Status Plant Species

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Wetland and Water Quality Improvements

Upland Habitat and Preserve Expansion

Bicycle and Pedestrian Improvements

MHPA

Special-Status Plant Survey Area

Special-status Plants

Nuttall's lotus

Coast woolly-heads

Estuary seablite

North Fiesta Island Stockpile Option 2

Tecolote Creek and Fiesta Island Causeway

Fiesta Island No. 1 - South

Fiesta Island Causeway Path

SeaWorld Drive/San Diego River Site No. 5c - South Shores East Area

SeaWorld Drive/San Diego River Site No. 5b - Triangle Restoration Area

San Diego River

San Diego River

MISSION BAY

SEA WORLD

PACIFIC

TECOLOTE

MORENA

FRIARS

HANCOCK

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

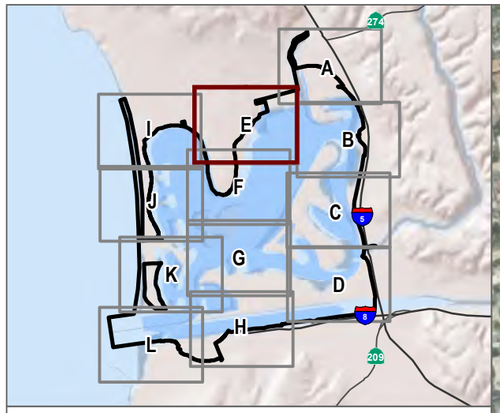
0 250 500 Feet

FIGURE 36D

Special-Status Plant Species

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

MHPA

Special-Status Plant Survey Area

Special-status Plants

Nuttall's lotus

Palmer's frankenia

San Diego barrel cactus

Estuary seablite



SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

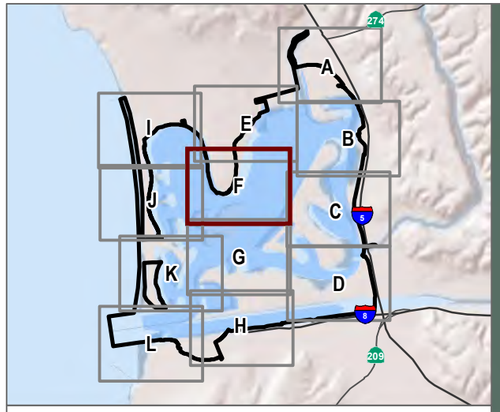
0 250 500 Feet

FIGURE 36E

Special-Status Plant Species

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Wetland and Water Quality Improvements

Restoration of Shoreline

MHPA

Special-Status Plant Survey Area

Special-status Plants

Nuttall's lotus

Coast woolly-heads

Estuary seablite

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

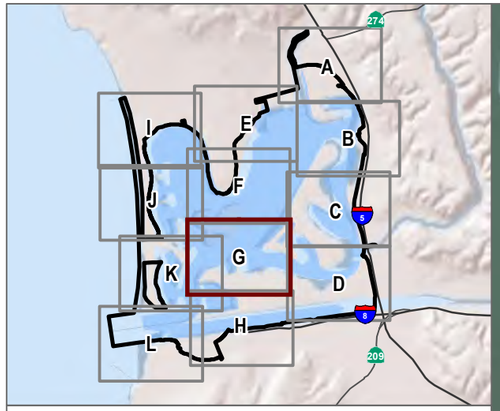
0 250 500 Feet

FIGURE 36F

Special-Status Plant Species

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Wetland and Water Quality Improvements

Restoration of Shoreline

MHPA

Special-Status Plant Survey Area

Special-status Plants

Nuttall's lotus

Coast woolly-heads

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

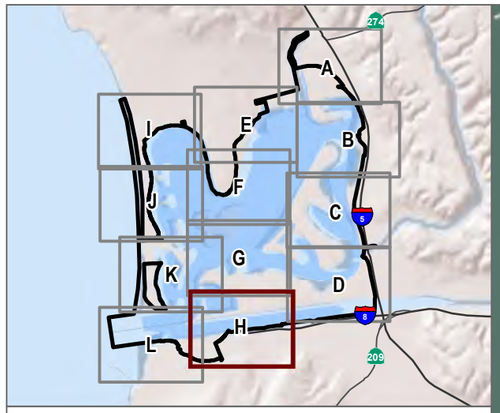
0 250 500 Feet

FIGURE 36G

Special-Status Plant Species

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Upland Habitat and Preserve Expansion

Bicycle and Pedestrian Improvements

MHPA

Special-Status Plant Survey Area

Special-status Plants

Nuttall's lotus

Estuary seablite

SeaWorld Drive/San Diego River Site No. 5a - Cloverleaf Area

Ocean Beach Bike Path

San Diego River

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

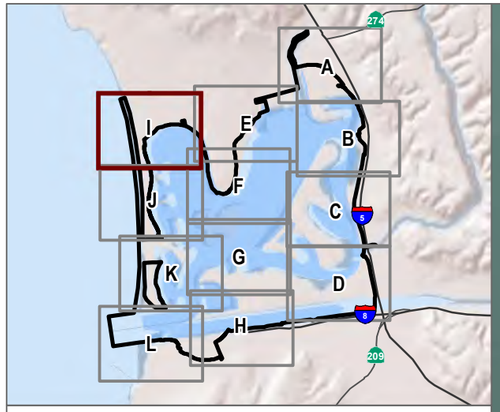
0 250 500 Feet

FIGURE 36H

Special-Status Plant Species

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Restoration of the Seawall Bulkhead

Restoration of Shoreline

Special-Status Plant Survey Area

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

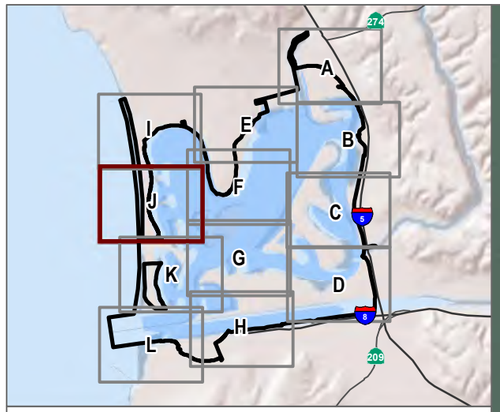
0 250 500 Feet

FIGURE 36I

Special-Status Plant Species

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Restoration of the Seawall Bulkhead

Restoration of Shoreline

Special-Status Plant Survey Area

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

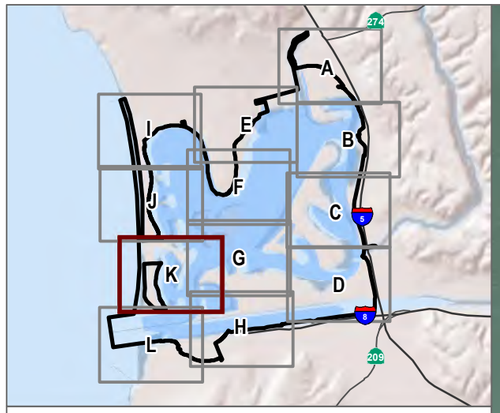
0 250 500 Feet

FIGURE 36J

Special-Status Plant Species

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Restoration of the Seawall Bulkhead

Restoration of Shoreline

MHPA

Special-Status Plant Survey Area

Special-status Plants

Nuttall's lotus

Coast woolly-heads

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

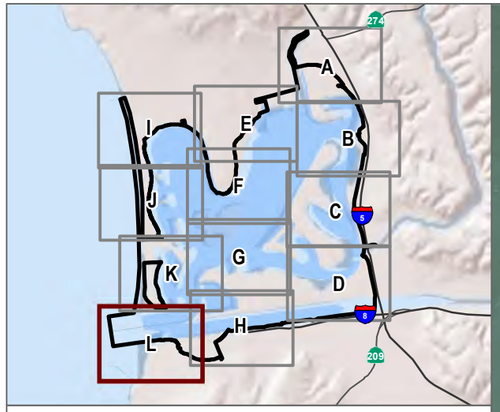
0 250 500 Feet

FIGURE 36K

Special-Status Plant Species

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Bicycle and Pedestrian Improvements

MHPA

Special-Status Plant Survey Area

Special-status Plants

Nuttall's lotus

beach goldenaster

Coast woolly-heads

Decumbent goldenbush

Estuary seablite

Salt marsh bird's-beak

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

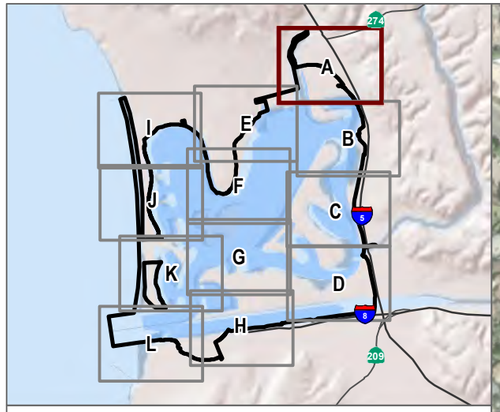
0 250 500 Feet

FIGURE 36L

Special-Status Plant Species

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Bicycle and Pedestrian Improvements

Balk Special-status Wildlife

Osprey

White-faced ibis

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

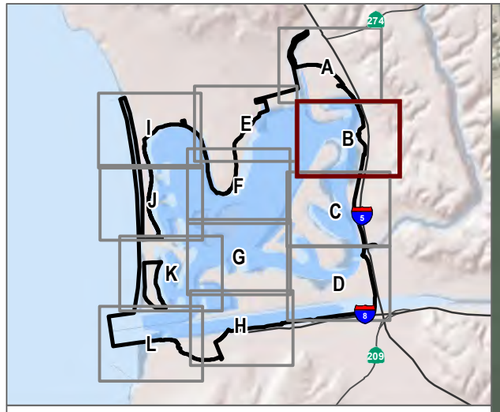
0 250 500 Feet

FIGURE 37A

Sensitive Wildlife Species Observations

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Wetland and Water Quality Improvements

Upland Habitat and Preserve Expansion

Balk Special-status Wildlife

California least tern

Northern harrier

Redhead

Jackson Special-status Wildlife

California least tern

City of San Diego Special-status Wildlife

California least tern



SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

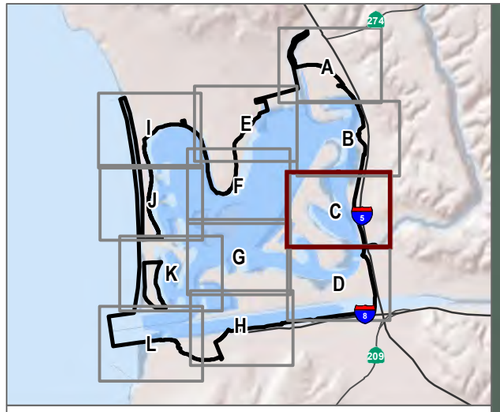
0 250 500 Feet

FIGURE 37B

Sensitive Wildlife Species Observations

Mission Bay Park Improvements Program

INTENTIONALLY LEFT BLANK



- Mission Bay Park Improvement Zone/Biological Study Area (BSA)
- Wetland and Water Quality Improvements
- Upland Habitat and Preserve Expansion

Balk Special-status Wildlife

- Belding's savannah sparrow
- California least tern
- Western burrowing owl

City of San Diego Special-status Wildlife

- Western burrowing owl

North Fiesta Island Stockpile Option 1
Fiesta Island No. 2 - North Central
Fiesta Island No. 3 - Near Youth Camping
North Fiesta Island Stockpile Option 3
North Fiesta Island Stockpile Option 2
Fiesta Island No. 1 - South
Tecolote Creek and Fiesta Island Causeway
MISSION BAY
MORENA
TECOLOTE
5

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

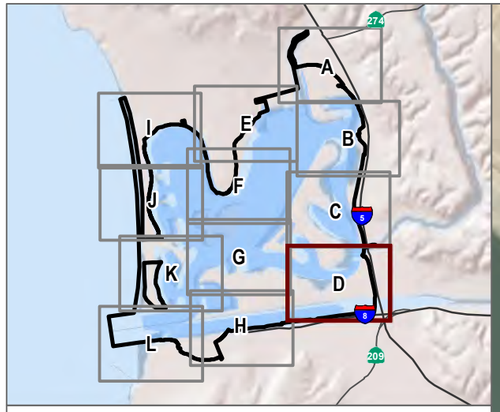
0 250 500 Feet

FIGURE 37C

Sensitive Wildlife Species Observations

Mission Bay Park Improvements Program

INTENTIONALLY LEFT BLANK



- Mission Bay Park Improvement Zone/Biological Study Area (BSA)
- Wetland and Water Quality Improvements
- Upland Habitat and Preserve Expansion
- Bicycle and Pedestrian Improvements

Balk Special-status Wildlife

- Belding's savannah sparrow
- Double-crested cormorant
- California horned lark
- White-tailed kite

City of San Diego Special-status Wildlife

- Belding's savannah sparrow
- Western burrowing owl

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

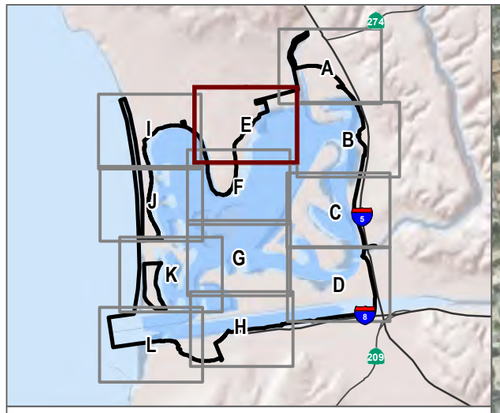
0 250 500 Feet

FIGURE 37D

Sensitive Wildlife Species Observations

Mission Bay Park Improvements Program

INTENTIONALLY LEFT BLANK



Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Balk Special-status Wildlife

- Belding's savannah sparrow
- California gull
- Brant
- Elegant tern
- Long-billed curlew
- Western snowy plover

City of San Diego Special-status Wildlife

- Belding's savannah sparrow



SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

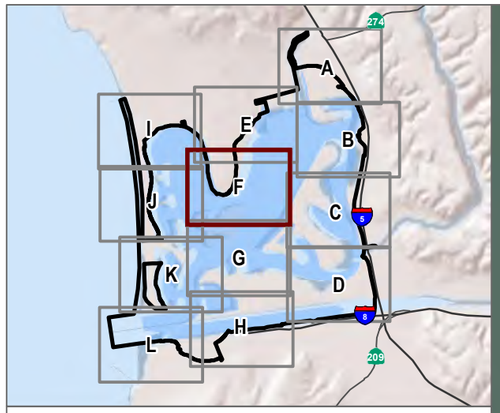
0 250 500 Feet

FIGURE 37E

Sensitive Wildlife Species Observations

Mission Bay Park Improvements Program

INTENTIONALLY LEFT BLANK



- Mission Bay Park Improvement Zone/Biological Study Area (BSA)
- Wetland and Water Quality Improvements
- Restoration of Shoreline

Balk Special-status Wildlife

- California least tern

Jackson Special-status Wildlife

- California least tern

City of San Diego Special-status Wildlife

- California least tern
- Snowy Plover



SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

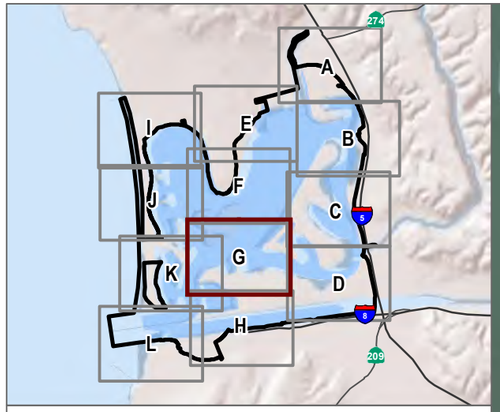
0 250 500 Feet

FIGURE 37F

Sensitive Wildlife Species Observations

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Wetland and Water Quality Improvements

Restoration of Shoreline

Balk Special-status Wildlife

- Black skimmer
- California brown pelican
- White-tailed kite

Jackson Special-status Wildlife

- California least tern

City of San Diego Special-status Wildlife

- Belding's savannah sparrow
- Western burrowing owl
- California least tern



SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

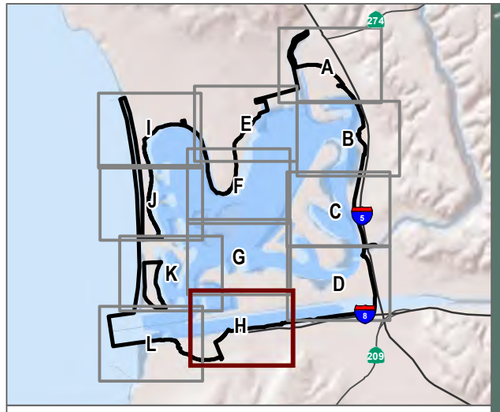
0 250 500 Feet

FIGURE 37G

Sensitive Wildlife Species Observations

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Upland Habitat and Preserve Expansion

Bicycle and Pedestrian Improvements

Balk Special-status Wildlife

- American white pelican
- California least tern
- Cooper's hawk
- Osprey
- Reddish egret

City of San Diego Special-status Wildlife

- Belding's savannah sparrow
- Western burrowing owl
- California least tern
- Light-footed Rail
- Snowy Plover

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

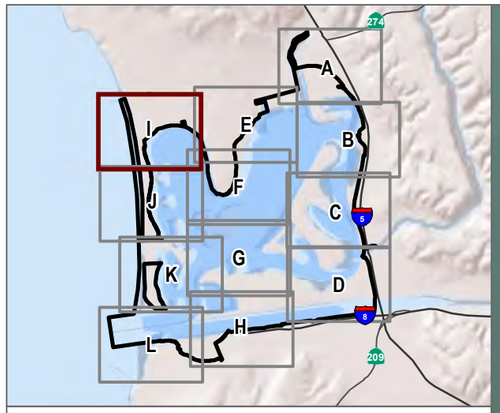
0 250 500 Feet

FIGURE 37H

Sensitive Wildlife Species Observations

Mission Bay Park Improvements Program

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- Mission Bay Park Improvement Zone/Biological Study Area (BSA)
- Restoration of the Seawall Bulkhead
- Restoration of Shoreline

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

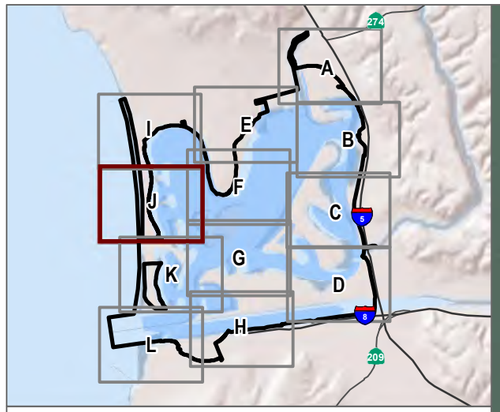
0 250 500 Feet

FIGURE 37I

Sensitive Wildlife Species Observations

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Restoration of the Seawall Bulkhead

Restoration of Shoreline

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

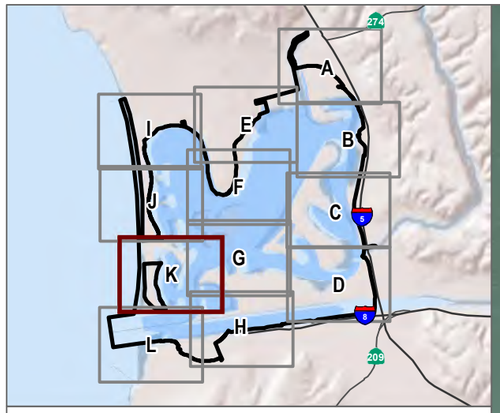
0 250 500 Feet

FIGURE 37J

Sensitive Wildlife Species Observations

Mission Bay Park Improvements Program

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- Mission Bay Park Improvement Zone/Biological Study Area (BSA)
- Restoration of the Seawall Bulkhead
- Restoration of Shoreline

Balk Special-status Wildlife

- California least tern
- California brown pelican
- Long-billed curlew
- Western snowy plover
- White-tailed kite

Jackson Special-status Wildlife

- California least tern

City of San Diego Special-status Wildlife

- Belding's savannah sparrow
- Western burrowing owl
- California least tern
- Snowy Plover

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

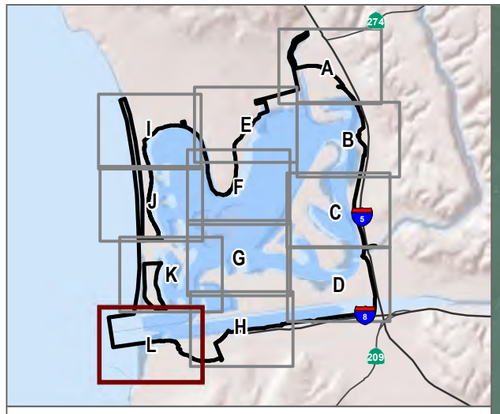
0 250 500 Feet

FIGURE 37K

Sensitive Wildlife Species Observations

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Bicycle and Pedestrian Improvements

Balk Special-status Wildlife

- American white pelican
- American peregrine falcon
- Belding's savannah sparrow
- California gull
- California least tern
- Cooper's hawk
- Double-crested cormorant
- Elegant tern
- California horned lark
- Osprey
- Western snowy plover

City of San Diego Special-status Wildlife

- Belding's savannah sparrow
- Western burrowing owl
- California least tern
- Light-footed Rail
- Snowy Plover

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

0 250 500 Feet

FIGURE 37L

Sensitive Wildlife Species Observations

Mission Bay Park Improvements Program

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SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

0 900 1,800 Feet

FIGURE 38

Coastal California Gnatcatcher Suitable Habitat, Survey Area, and Survey Results

Mission Bay Park Improvements Program

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SOURCE: SANGIS 2024; City of San Diego 2018

DUDEK

0 900 1,800 Feet

FIGURE 39

California Least Tern Suitable Habitat, Survey Area, and Survey Results

Mission Bay Park Improvements Program

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SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

0 900 1,800 Feet

FIGURE 40

Light-footed Ridgway's Rail Suitable Habitat, Survey Area, and Survey Results

Mission Bay Park Improvements Program

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SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

0 900 1,800 Feet

FIGURE 41

Western Snowy Plover Suitable Habitat, Survey Area, and Survey Results

Mission Bay Park Improvements Program

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SOURCE: SANGIS 2024; City of San Diego 2018

DUDEK

0 900 1,800 Feet

FIGURE 42

Belding's Savannah Sparrow Suitable Habitat, Survey Area, and Survey Results

Mission Bay Park Improvements Program

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SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

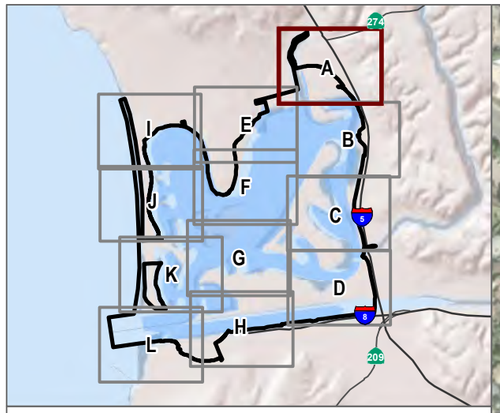
0 900 1,800 Feet

FIGURE 43

Western Burrowing Owl Suitable Habitat, Survey Area, and Survey Results

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Bicycle and Pedestrian Improvements

Jurisdictional Delineation

- USACE/RWQCB/CDFW/CCC/City
- USACE/RWQCB/CDFW/City
- USACE/RWQCB/CCC/City
- CDFW/CCC/City
- CDFW/City

SOURCE: SANGIS 2023; City of San Diego 2018

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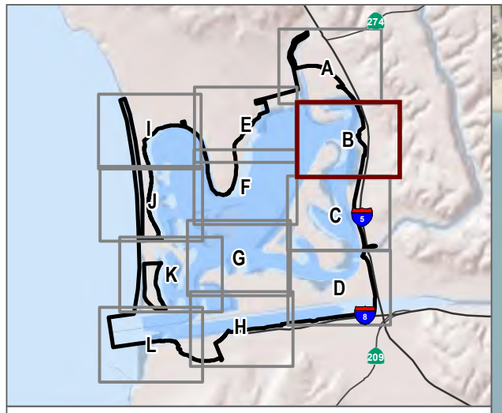
0 250 500 Feet

FIGURE 44A

Potential Jurisdictional Waters of the U.S. and State

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Wetland and Water Quality Improvements

Upland Habitat and Preserve Expansion

Jurisdictional Delineation

USACE/RWQCB/CDFW/CCC/City

USACE/RWQCB/CCC/City

RWQCB/CCC/City

Fiesta Island No. 4 - California Least Tern Preserve

North Fiesta Island

Fiesta Island No. 2 - North Central

North Fiesta Island Stockpile Option 1

Cudahy Creek Wetland

MORENA

CLAIREMONT

MISSION BAY

5

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

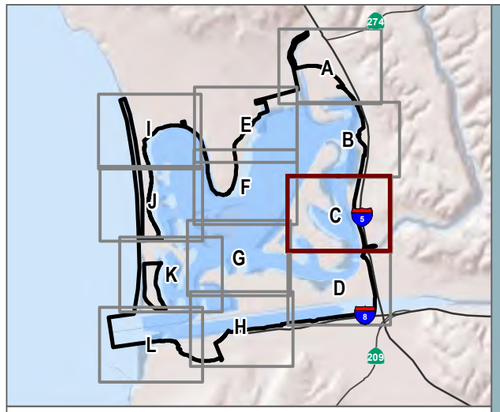
0 250 500 Feet

FIGURE 44B

Potential Jurisdictional Waters of the U.S. and State

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Wetland and Water Quality Improvements

Upland Habitat and Preserve Expansion

Jurisdictional Delineation

USACE/RWQCB/CDFW/CCC/City

USACE/RWQCB/CCC/City

RWQCB/CCC/City

CDFW/CCC/City



SOURCE: SANGIS 2023; City of San Diego 2018

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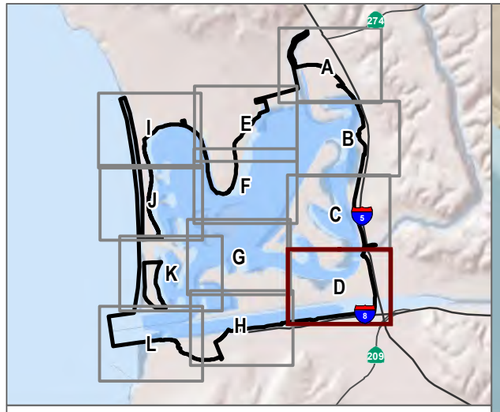
0 250 500 Feet

FIGURE 44C

Potential Jurisdictional Waters of the U.S. and State

Mission Bay Park Improvements Program

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- Mission Bay Park Improvement Zone/Biological Study Area (BSA)
- Wetland and Water Quality Improvements
- Upland Habitat and Preserve Expansion
- Bicycle and Pedestrian Improvements

Jurisdictional Delineation

- USACE/RWQCB/CDFW/CCC/City
- USACE/RWQCB/CCC/City
- CDFW/CCC/City

North Fiesta Island Stockpile Option 2
Tecolote Creek and Fiesta Island Causeway
Fiesta Island Causeway Path
Fiesta Island No. 1 - South
SeaWorld Drive/San Diego River Site No. 5c - South Shores East Area
SeaWorld Drive/San Diego River Site No. 5b - Triangle Restoration Area
San Diego River
San Diego River
MISSION BAY
SEA WORLD
PACIFIC
FRIARS
HANCOCK
KURTZ
TECOLOTE
MORENA

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

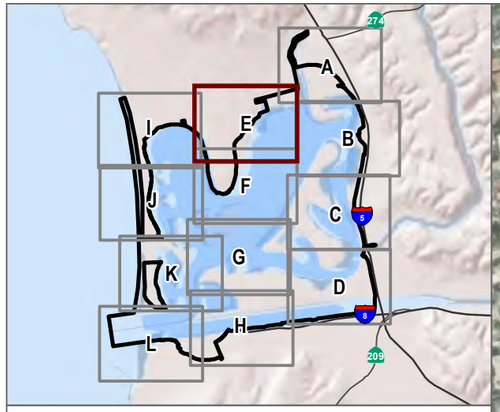
0 250 500 Feet

FIGURE 44D

Potential Jurisdictional Waters of the U.S. and State

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Jurisdictional Delineation

USACE/RWQCB/CCC/City

SOURCE: SANGIS 2023; City of San Diego 2018

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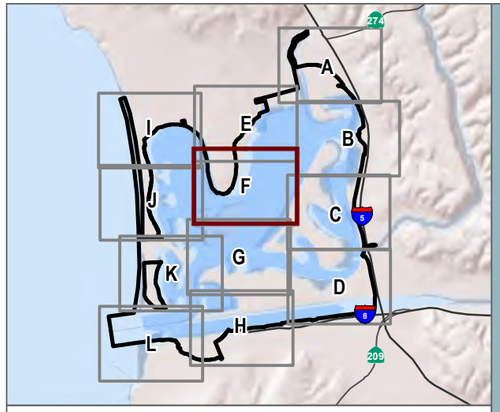
0 250 500 Feet

FIGURE 44E

Potential Jurisdictional Waters of the U.S. and State

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Wetland and Water Quality Improvements

Upland Habitat and Preserve Expansion

Restoration of Shoreline

Jurisdictional Delineation

USACE/RWQCB/CCC/City



SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

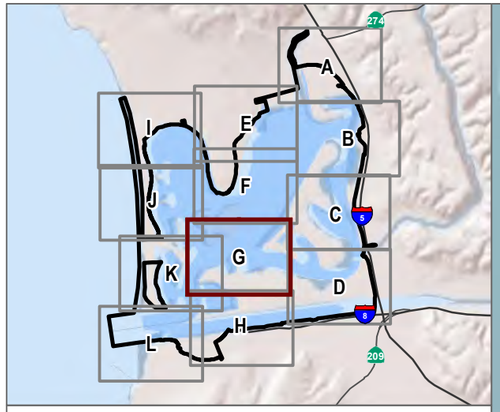
0 250 500 Feet

FIGURE 44F

Potential Jurisdictional Waters of the U.S. and State

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Wetland and Water Quality Improvements

Restoration of Shoreline

Jurisdictional Delineation

USACE/RWQCB/CCC/City

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

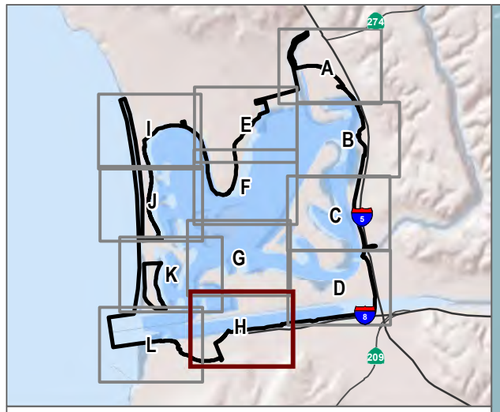
0 250 500 Feet

FIGURE 44G

Potential Jurisdictional Waters of the U.S. and State

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Upland Habitat and Preserve Expansion

Bicycle and Pedestrian Improvements

Jurisdictional Delineation

USACE/RWQCB/CDFW/CCC/City

USACE/RWQCB/CCC/City

CDFW/CCC/City

SeaWorld Drive/San Diego River Site No. 5a - Cloverleaf Area

Ocean Beach Bike Path

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

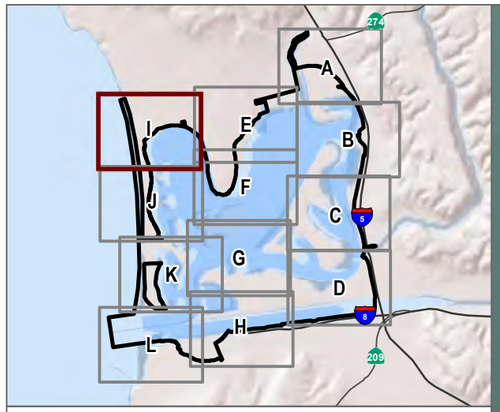
0 250 500 Feet

FIGURE 44H

Potential Jurisdictional Waters of the U.S. and State

Mission Bay Park Improvements Program

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- Mission Bay Park Improvement Zone/Biological Study Area (BSA)
- Restoration of the Seawall Bulkhead
- Restoration of Shoreline

Jurisdictional Delineation

- USACE/RWQCB/CCC/City

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

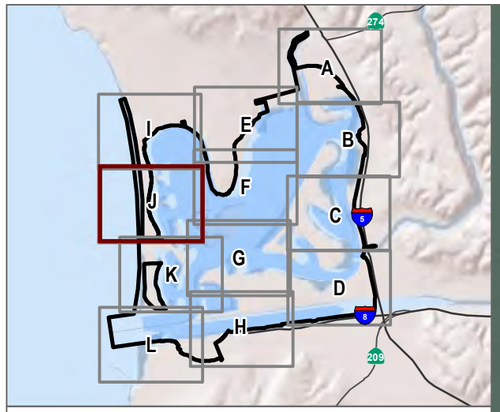
0 250 500 Feet

FIGURE 44I

Potential Jurisdictional Waters of the U.S. and State

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Restoration of the Seawall Bulkhead

Restoration of Shoreline

Jurisdictional Delineation

USACE/RWQCB/CCC/City

SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

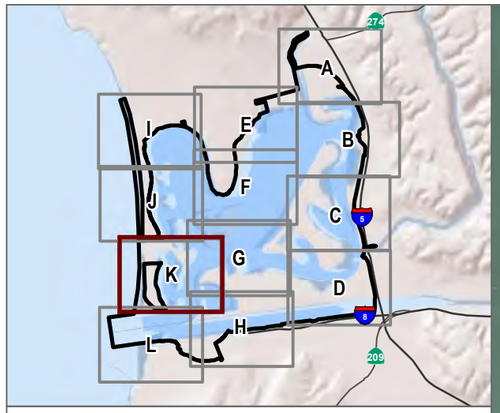
0 250 500 Feet

FIGURE 44J

Potential Jurisdictional Waters of the U.S. and State

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Restoration of the Seawall Bulkhead

Restoration of Shoreline

Jurisdictional Delineation

USACE/RWQCB/CCC/City

SOURCE: SANGIS 2023; City of San Diego 2018

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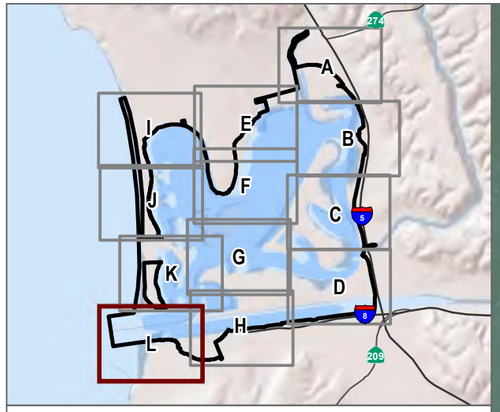
0 250 500 Feet

FIGURE 44K

Potential Jurisdictional Waters of the U.S. and State

Mission Bay Park Improvements Program

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Mission Bay Park Improvement Zone/Biological Study Area (BSA)

Bicycle and Pedestrian Improvements

Jurisdictional Delineation

USACE/RWQCB/CCC/City



SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

0 250 500 Feet

FIGURE 44L

Potential Jurisdictional Waters of the U.S. and State

Mission Bay Park Improvements Program

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Appendix A
Plant Species Compendium

Vascular Species

Eudicots

ACANTHACEAE—ACANTHUS FAMILY

* *Avicennia marina*—gray mangrove

AIZOACEAE—FIG-MARIGOLD FAMILY

* *Aptenia cordifolia*—heartleaf iceplant
* *Carpobrotus chilensis*—sea fig
* *Carpobrotus edulis*—Hottentot fig
* *Drosanthemum floribundum*—showy dewflower
* *Malephora crocea*—coppery mesemb
* *Mesembryanthemum crystallinum*—common iceplant

AMARANTHACEAE—AMARANTH FAMILY

* *Amaranthus albus*—prostrate pigweed

ANACARDIACEAE—SUMAC OR CASHEW FAMILY

Malosma laurina—laurel sumac
Rhus integrifolia—lemonade berry
* *Schinus molle*—Peruvian peppertree
* *Schinus terebinthifolius*—Brazilian peppertree
Toxicodendron diversilobum—poison oak

APIACEAE—CARROT FAMILY

* *Apium graveolens*—wild celery
* *Conium maculatum*—poison hemlock

ASTERACEAE—SUNFLOWER FAMILY

Amblyopappus pusillus—dwarf coastweed
Ambrosia chamissonis—silver bur ragweed
Ambrosia dumosa—white bursage
Ambrosia psilostachya—western ragweed
Artemisia californica—California sagebrush
Artemisia palmeri—San Diego sagewort
Baccharis pilularis—coyote brush
Baccharis salicifolia—mulefat
Baccharis sarothroides—desertbroom
Bahiopsis laciniata—San Diego County viguiera
* *Bidens pilosa*—hairy beggarticks

* *Carduus pycnocephalus*—Italian plumeless thistle
* *Centaurea melitensis*—Maltese star-thistle
* *Cotula australis*—Australian waterbuttons
* *Cotula coronopifolia*—brass buttons
* *Dimorphotheca sinuata*—glandular cape marigold
* *Dittrichia graveolens*—stinkwort
  Encelia californica—California brittle bush
* *Erigeron bonariensis*—asthmaweed
  Erigeron canadensis—Canadian horseweed
* *Erigeron sumatrensis*—asthmaweed
* *Gazania linearis*—treasureflower
* *Glebionis coronaria*—crowndaisy
* *Hedypnois rhagadioloides*—Crete weed
* *Helminthotheca echioides*—bristly oxtongue
  Heterotheca grandiflora—telegraphweed
  Heterotheca sessiliflora ssp. *sessiliflora*—beach goldenaster
* *Hypochaeris glabra*—smooth cat's ear
  Isocoma menziesii var. *decumbens*—decumbent goldenbush
  Isocoma menziesii var. *menziesii*—Menzies' goldenbush
  Iva hayesiana—San Diego marsh-elder
  Jaumea carnosa—marsh jaumea
* *Lactuca serriola*—prickly lettuce
  Laennecia coulteri—Coulter's horseweed
  Lasthenia glabrata ssp. *coulteri*—Coulter's goldfields
* *Logfia gallica*—narrowleaf cottonrose
  Matricaria discoidea—disc mayweed
* *Oncosiphon piluliferum*—stinknet
  Pluchea odorata—sweetscent
  Pluchea sericea—arrow weed
  Pseudognaphalium biolettii—two-color rabbit-tobacco
  Pseudognaphalium canescens—Wright's cudweed
* *Pseudognaphalium luteoalbum*—Jersey cudweed
* *Sonchus asper*—spiny sowthistle
* *Sonchus oleraceus*—common sowthistle
* *Taraxacum officinale*—common dandelion
  Xanthium orientale—cocklebur

BATACEAE—SALTWORT FAMILY

Batis maritima—turtleweed

BORAGINACEAE—BORAGE FAMILY

Amsinckia intermedia—common fiddleneck
Heliotropium curassavicum—salt heliotrope

BRASSICACEAE—MUSTARD FAMILY

* *Brassica nigra*—black mustard
* *Brassica tournefortii*—Tournefort's mustard
* *Cakile maritima*—European searocket
* *Hirschfeldia incana*—shortpod mustard
* *Lepidium latifolium*—perennial pepper weed

Lepidium nitidum—shining pepperweed
Lepidium virginicum var. *robinsonii*—Robinson's pepper-grass

* *Lobularia maritima*—sweet alyssum
* *Raphanus sativus*—cultivated radish
* *Sisymbrium irio*—London rocket
* *Sisymbrium orientale*—Indian hedgemustard

CACTACEAE—CACTUS FAMILY

Ferocactus viridescens—San Diego barrel cactus

* *Opuntia ficus-indica*—Barbary fig

CARYOPHYLLACEAE—PINK FAMILY

* *Silene gallica*—common catchfly
* *Spergula arvensis*—corn spurry
* *Spergularia bocconi*—Boccone's sandspurry

Spergularia marina—saltmarsh sand-spurrey

CHENOPODIACEAE—GOOSEFOOT FAMILY

Atriplex canescens—fourwing saltbush
Atriplex lentiformis—quailbush
Atriplex leucophylla—beach saltbush

* *Atriplex semibaccata*—Australian saltbush

Atriplex watsonii—Watson's saltbush

* *Bassia hyssopifolia*—fivehorn smotherweed
* *Chenopodium album*—lambsquarters
* *Chenopodium murale*—nettleleaf goosefoot
* *Dysphania ambrosioides*—Mexican tea
* *Dysphania pumilio*—clammy goosefoot

Salicornia pacifica—Pacific swampfire

* *Salsola tragus*—prickly Russian thistle

Suaeda esteroa—estuary seablite
Suaeda taxifolia—woolly seablite

CLEOMACEAE—CLEOME FAMILY

Cleomella arborea—bladderpod

CONVOLVULACEAE—MORNING-GLORY FAMILY

Cressa truxillensis—alkali weed
Cuscuta salina—saltmarsh dodder
Cuscuta subinclusa—canyon dodder

CRASSULACEAE—STONECROP FAMILY

Crassula aquatica—water pygmyweed
Crassula connata—sand pygmyweed
Dudleya edulis—fingertips

EUPHORBIACEAE—SPURGE FAMILY

Euphorbia albomarginata—whitemargin sandmat
* *Euphorbia maculata*—spotted sandmat
* *Euphorbia peplus*—petty spurge
* *Ricinus communis*—castorbean

FABACEAE—LEGUME FAMILY

* *Acacia longifolia*—Sydney golden wattle
Acmispon glaber—deerweed
Acmispon prostratus—Nuttall's acmispon
Acmispon strigosus—strigose bird's-foot trefoil
Acmispon tomentosus—Heermann's bird's-foot trefoil
Astragalus trichopodus—Santa Barbara milkvetch
Lupinus succulentus—hollowleaf annual lupine
* *Medicago polymorpha*—burclover
* *Melilotus albus*—yellow sweetclover
* *Melilotus indicus*—annual yellow sweetclover
* *Robinia pseudoacacia*—black locust
* *Trifolium hirtum*—rose clover
* *Trifolium repens*—white clover

FAGACEAE—OAK FAMILY

Quercus agrifolia—coast live oak
* *Quercus ilex*—holly oak

FRANKENIACEAE—FRANKENIA FAMILY

Frankenia palmeri—Palmer's frankenia

Frankenia salina—alkali heath

GERANIACEAE—GERANIUM FAMILY

* *Erodium botrys*—longbeak stork's bill
* *Erodium cicutarium*—redstem stork's bill
* *Geranium dissectum*—cutleaf geranium

LAMIACEAE—MINT FAMILY

Salvia apiana—white sage

Salvia clevelandii—fragrant sage

Salvia mellifera—black sage

MALVACEAE—MALLOW FAMILY

* *Malva nicaeensis*—bull mallow
* *Malva parviflora*—cheeseweed mallow

MYRSINACEAE—MYRSINE FAMILY

* *Lysimachia arvensis*—scarlet pimpernel

MYRTACEAE—MYRTLE FAMILY

* *Eucalyptus camaldulensis*—river redgum
* *Eucalyptus conferruminata*—no common name
* *Eucalyptus polyanthemos*—redbox
* *Melaleuca viminalis*—weeping bottlebrush

NYCTAGINACEAE—FOUR O'CLOCK FAMILY

Abronia maritima—red sand-verbena

Abronia umbellata var. *umbellata*—pink sand verbena

Mirabilis laevis—desert wishbone-bush

OLEACEAE—OLIVE FAMILY

Fraxinus dipetala—California ash

* *Olea europaea*—olive

ONAGRACEAE—EVENING PRIMROSE FAMILY

Camissoniopsis bistorta—southern suncup

Camissoniopsis cheiranthifolia—beach suncup

Camissoniopsis lewisii—Lewis' evening-primrose

* *Oenothera laciniata*—cutleaf evening primrose

OROBANCHACEAE—BROOM-RAPE FAMILY

Chloropyron maritimum ssp. *maritimum*—salt marsh bird's-beak

OXALIDACEAE—OXALIS FAMILY

* *Oxalis pes-caprae*—Bermuda buttercup

PLANTAGINACEAE—PLANTAIN FAMILY

Antirrhinum nuttallianum—violet snapdragon

Nuttallanthus texanus—Texas toadflax

PLATANACEAE—PLANE TREE, SYCAMORE FAMILY

Platanus racemosa—California sycamore

PLUMBAGINACEAE—LEADWORT FAMILY

Limonium californicum—marsh rosemary

* *Limonium duriusculum*—no common name

* *Limonium perezii*—Perez's sea lavender

* *Limonium sinuatum*—wavyleaf sea lavender

POLYGONACEAE—BUCKWHEAT FAMILY

* *Emex spinosa*—spiny threecornerjack

Eriogonum fasciculatum—California buckwheat

Eriogonum parvifolium—seacliff buckwheat

Nemacaulis denudata var. *denudata*—coast woolly-heads

* *Polygonum aviculare*—prostrate knotweed

* *Rumex crispus*—curly dock

ROSACEAE—ROSE FAMILY

Prunus ilicifolia ssp. *lyonii*—hollyleaf cherry

Rubus ursinus—California blackberry

RUBIACEAE—MADDER FAMILY

Galium aparine—stickywilly

SALICACEAE—WILLOW FAMILY

Populus fremontii—Fremont cottonwood

Salix exigua—sandbar willow

Salix lasiolepis—arroyo willow

SAURURACEAE—LIZARD'S-TAIL FAMILY

Anemopsis californica—yerba mansa

SCROPHULARIACEAE—FIGWORT FAMILY

* *Myoporum laetum*—myoporum

SIMAROUBACEAE—QUASSIA OR SIMAROUBA FAMILY

* *Ailanthus altissima*—tree of heaven

SOLANACEAE—NIGHTSHADE FAMILY

Datura wrightii—sacred thorn-apple

Lycium andersonii—Anderson's boxthorn

Lycium californicum—California box-thorn

* *Nicotiana glauca*—tree tobacco
* *Solanum rostratum*—buffalobur nightshade

TAMARICACEAE—TAMARISK FAMILY

* *Tamarix ramosissima*—tamarisk

TROPAEOLACEAE—NASTURTIUM FAMILY

* *Tropaeolum majus*—nasturtium

URTICACEAE—NETTLE FAMILY

* *Urtica urens*—dwarf nettle

Gymnosperms and Gnetophytes

PINACEAE—PINE FAMILY

Pinus torreyana ssp. *torreyana*—Torrey pine

Monocots

ARECACEAE—PALM FAMILY

* *Washingtonia robusta*—Washington fan palm

ASPHODELACEAE—ASPHODEL FAMILY

* *Asphodelus fistulosus*—onionweed

CYPERACEAE—SEDGE FAMILY

Cyperus eragrostis—tall flatsedge

Schoenoplectus americanus—American bulrush

Schoenoplectus californicus—California bulrush

JUNCACEAE—RUSH FAMILY

Juncus acutus ssp. *leopoldii*—southwestern spiny rush

* *Juncus bufonius* var. *congestus*—toad rRush

JUNCAGINACEAE—ARROW-GRASS FAMILY

Triglochin maritima—seaside arrowgrass

POACEAE—GRASS FAMILY

* *Arundo donax*—giant reed
* *Avena barbata*—slender oat
* *Brachypodium distachyon*—purple false brome
* *Bromus diandrus*—ripgut brome
* *Bromus hordeaceus*—soft brome
* *Bromus madritensis*—compact brome
* *Bromus rubens*—red brome
* *Bromus tectorum*—cheatgrass
* *Cortaderia selloana*—Uruguayan pampas grass
* *Cynodon dactylon*—Bermudagrass

Distichlis littoralis—shoregrass

Distichlis spicata—salt grass

* *Festuca myuros*—rat-tail fescue
* *Hainardia cylindrica*—barbgrass
* *Hordeum marinum*—seaside barley
* *Lamarckia aurea*—goldentop grass
* *Parapholis incurva*—curved sicklegrass
* *Pennisetum clandestinum*—kikuyugrass
* *Phalaris minor*—littleseed canarygrass
* *Polypogon monspeliensis*—annual rabbitsfoot grass
* *Schismus barbatus*—common Mediterranean grass

Spartina foliosa—California cordgrass

* *Stipa miliacea* var. *miliacea*—smilograss

TYPHACEAE—CATTAIL FAMILY

Typha latifolia—broadleaf cattail

ZOSTERACEAE—SEAGRASS FAMILY

Phyllospadix torreyi—Torrey's surfgrass

Zostera marina—eelgrass

* Signifies introduced (non-native) species

Appendix B
Wildlife Species Compendium

Birds

Blackbirds, Orioles and Allies

ICTERIDAE—BLACKBIRDS

Agelaius phoeniceus—red-winged blackbird
Icterus cucullatus—hooded oriole
* *Molothrus ater*—brown-headed cowbird
Sturnella neglecta—western meadowlark

Bushtits

AEGITHALIDAE—LONG-TAILED TITS AND BUSHTITS

Psaltriparus minimus—bushtit

Cardinals, Grosbeaks and Allies

CARDINALIDAE—CARDINALS AND ALLIES

Pheucticus melanocephalus—black-headed grosbeak
Piranga ludoviciana—western tanager

Chickadees and Titmice

PARIDAE—CHICKADEES AND TITMICE

Baeolophus inornatus—oak titmouse

Cormorants

PHALACROCORACIDAE—CORMORANTS

Nannopterum auritum—double-crested cormorant

Falcons

FALCONIDAE—CARACARAS AND FALCONS

Falco peregrinus anatum—American peregrine falcon
Falco sparverius—American kestrel

Finches

FRINGILLIDAE—FRINGILLINE AND CARDUELINE FINCHES AND ALLIES

Haemorhous mexicanus—house finch
Spinus psaltria—lesser goldfinch

Flycatchers

TYRANNIDAE—TYRANT FLYCATCHERS

Empidonax difficilis—western flycatcher
Empidonax traillii—willow flycatcher
Myiarchus cinerascens—ash-throated flycatcher
Sayornis nigricans—black phoebe
Sayornis saya—Say's phoebe
Tyrannus vociferans—Cassin's kingbird

Grebes

PODICIPEDIDAE—GREBES

Podiceps nigricollis—eared grebe
Podilymbus podiceps—pied-billed grebe
Aechmophorus clarkii—Clark's grebe

Hawks

ACCIPITRIDAE—HAWKS, KITES, EAGLES, AND ALLIES

Accipiter cooperii—Cooper's hawk
Buteo jamaicensis—red-tailed hawk
Buteo lineatus—red-shouldered hawk
Elanus leucurus—white-tailed kite
Circus hudsonius—northern harrier

PANDIONIDAE—OSPREYS

Pandion haliaetus—osprey

Herons and Bitterns

ARDEIDAE—HERONS, BITTERNS, AND ALLIES

Ardea alba—great egret
Ardea herodias—great blue heron
Butorides virescens—green heron

Egretta rufescens—reddish egret
Egretta thula—snowy egret
Egretta caerulea—little blue heron
Nycticorax nycticorax—black-crowned night heron
Nyctanassa violacea—yellow-crowned night heron

Hummingbirds

TROCHILIDAE—HUMMINGBIRDS

Archilochus alexandri—black-chinned hummingbird
Calypte anna—Anna's hummingbird
Selasphorus sp.—Allen's/rufous hummingbird

Ibises and Spoonbills

THRESKIORNITHIDAE—IBISES AND SPOONBILLS

Plegadis chihi—white-faced ibis

Jays, Magpies and Crows

CORVIDAE—CROWS AND JAYS

Corvus brachyrhynchos—American crow
Corvus corax—common raven

Kingfishers

ALCEDINIDAE—KINGFISHERS

Megaceryle alcyon—belted kingfisher

Mockingbirds and Thrashers

MIMIDAE—MOCKINGBIRDS AND THRASHERS

Mimus polyglottos—northern mockingbird

Larks

ALAUDIDAE—LARKS

Eremophila alpestris—California horned lark

New World Vultures

CATHARTIDAE—NEW WORLD VULTURES

Cathartes aura—turkey vulture

Old World Sparrows

PASSERIDAE—OLD WORLD SPARROWS

* *Passer domesticus*—house sparrow

Old World Warblers and Gnatcatchers

POLIOPTILIDAE—GNATCATCHERS

Polioptila caerulea—blue-gray gnatcatcher

Owls

STRIGIDAE—TYPICAL OWLS

Athene cunicularia—burrowing owl

Pelicans

PELECANIDAE—PELICANS

Pelecanus erythrorhynchos—American white pelican

Pelecanus occidentalis—brown pelican

Pigeons and Doves

COLUMBIDAE—PIGEONS AND DOVES

Zenaida macroura—mourning dove

* *Streptopelia decaocto*—Eurasian collared-dove

* *Columba livia*—rock pigeon

Rails, Gallinules and Coots

RALLIDAE—RAILS, GALLINULES, AND COOTS

Fulica americana—American coot

Porzana carolina—sora

Rallus limicola—Virginia rail

Roadrunners and Cuckoos

CUCULIDAE—CUCKOOS, ROADRUNNERS, AND ANIS

Geococcyx californianus—greater roadrunner

Shorebirds

RECURVIROSTRIDAE—STILTS AND AVOCETS

Himantopus mexicanus—black-necked stilt

Recurvirostra americana—American avocet

CHARADRIIDAE—LAPWINGS AND PLOVERS

Charadrius semipalmatus—semipalmated plover

Charadrius vociferus—killdeer

Pluvialis squatarola—black-bellied plover

Charadrius nivosus nivosus—western snowy plover

SCOLOPACIDAE—SANDPIPERS, PHALAROPES, AND ALLIES

Actitis macularius—spotted sandpiper

Calidris alpina—dunlin

Calidris canutus—red knot

Calidris mauri—western sandpiper

Calidris minutilla—least sandpiper

Limnodromus griseus—short-billed dowitcher

Limosa fedoa—marbled godwit

Numenius americanus—long-billed curlew

Numenius phaeopus—whimbrel

Phalaropus lobatus—red-necked phalarope

Tringa flavipes—lesser yellowlegs

Tringa melanoleuca—greater yellowlegs

Tringa semipalmata—willet

Tringa solitaria—solitary sandpiper

Starlings and Allies

STURNIDAE—STARLINGS

* *Sturnus vulgaris*—European starling

Swallows

HIRUNDINIDAE—SWALLOWS

Hirundo rustica—barn swallow
Petrochelidon pyrrhonota—cliff swallow
Stelgidopteryx serripennis—northern rough-winged swallow
Tachycineta bicolor—tree swallow

Terns and Gulls

LARIDAE—GULLS, TERNS, AND SKIMMERS

Chroicocephalus philadelphia—Bonaparte's gull
Hydroprogne caspia—Caspian tern
Larus argentatus—herring gull
Larus brachyrhynchus—short-billed gull
Larus californicus—California gull
Larus delawarensis—ring-billed gull
Larus occidentalis—western gull
Rynchops niger—black skimmer
Sterna forsteri—Forster's tern
Sternula antillarum browni—California least tern
Thalasseus elegans—elegant tern
Thalasseus maximus—royal tern

Thrushes

TURDIDAE—THRUSHES

Sialia mexicana—western bluebird

Wagtails and Pipits

MOTACILLIDAE—WAGTAILS AND PIPITS

Anthus rubescens—American pipit

Waterfowl

ANATIDAE—DUCKS, GEESE, AND SWANS

Anas acuta—northern pintail
Anas platyrhynchos—mallard
Aythya americana—redhead
Aythya collaris—ring-necked duck

Branta bernicla—brant
Bucephala albeola—bufflehead
Mergus serrator—red-breasted merganser
Oxyura jamaicensis—ruddy duck
Anas crecca—green-winged teal
Spatula discors—blue-winged teal
Spatula cyanoptera—cinnamon teal
Mareca strepera—gadwall
Spatula clypeata—northern shoveler
Mareca americana—American wigeon

Waxbills

ESTRILDIDAE—WAXBILLS

* *Lonchura punctulata*—scaly-breasted munia

Wood Warblers and Allies

PARULIDAE—WOOD-WARBLERS

Cardellina pusilla—Wilson's warbler
Geothlypis trichas—common yellowthroat
Leiothlypis celata—orange-crowned warbler
Geothlypis trichas—yellow warbler

Woodpeckers

PICIDAE—WOODPECKERS AND ALLIES

Dryobates nuttallii—Nuttal's woodpecker

Wrens

TROGLODYTIDAE—WRENS

Thryomanes bewickii—Bewick's wren
Troglodytes aedon—northern house wren

Parrots

PSITTACIDAE—AFRICAN AND NEW WORLD PARROTS

* *Amazona viridigenalis*—red-crowned parrot
* *Psittacara erythrogenys*—red-masked parakeet

New World Sparrows

PASSERELLIDAE—NEW WORLD SPARROWS

Junco hyemalis—Dark-Eyed Junco
Melospiza melodia—Song Sparrow
Melozone crissalis—California towhee
Passerculus sandwichensis beldingi—Belding's savannah sparrow
Passerculus sandwichensis—Savannah sparrow
Zonotrichia leucophrys—white-crowned sparrow

Typical Warblers, Parrotbills, Wrentit

SYLVIIDAE—SYLVIID WARBLERS

Chamaea fasciata—wrentit

Invertebrates

Butterflies

NYMPHALIDAE—BRUSH-FOOTED BUTTERFLIES

Nymphalis antiopa—mourning cloak
Vanessa cardui—painted lady

Fish

Bass

SERRANIDAE—GROUPERS AND BASSES

Paralabrax clathratus—kelp bass
Paralabrax nebulifer—barred sand bass

Chimaera

CHIMERIDAE—CHIMERA

Hydrolagus colliei—spotted ratfish

Damselfish

POMACENTRIDAE—DAMSELFISH

Hypsypops rubicundus—garibaldi

Flatfish

PLEURONECTIDAE—FLATFISH

Hypsopsetta guttulata—diamond turbot

Paralichthys californicus—California halibut

Pleuronichthys coenosus—C-O sole

Greenling

ZANIOLEPIDIDAE—GREENLING AND COMBFISHES

Oxylebius pictus—painted greenling

Sea Chub

GIRELLIDAE—RAY-FINNED FISH

Girella nigricans—opaleye

Short-Snout Grunts

HAEMULIDAE—GRUNTS, PORKFISHES AND SALEMAS

Anisotremus davidsonii—sargo

Brachygenys californiensis—California salema

Perch

EMBIOTOCIDAE—SURFPERCHS

Cymatogaster aggregata—shiner perch

Ray

MYLIOBATIDAE—EAGLE RAYS

Urobatis halleri—bat ray

UROTRYGONIDAE—THORNBACK RAYS

Platyrhinoidis triseriata—thornback guitarfish

UROTRYGONIDAE—ROUND RAYS

Urobatis halleri—round ray

Urolophus halleri—California spotted stingray

RHINOBATIDAE—GUITARFISH

Rhinobatos productus—shovelnose guitarfish

Scorpionfish

SCORPAENIDAE—SCORPIONFISH

Scorpaena guttata—California scorpionfish (sculpin)

Shark

HETERODONTIDAE—BULLHEAD SHARKS

Heterodontus francisci—horn shark

Silversides

ATHERINOPSIDAE—SILVERSIDES

Atherinops affinis—top smelt

Atherinopsis californiensis—Jack smelt

Skate

RAJIIDAE—SKATES

Beringraja inornata—California skate

Surfperch

EMBIOTOCIDAE—SURFPERCH

Embiotoca jacksoni—black surfperch

Hypsurus caryi—rainbow surfperch

Wrasse

LABRIDAE—WRASSES

Oxyjulis californica—senorita

Marine Invertebrates

Anemone

ACTINIIDAE—SAND ANEMONE

Exaiptasia diaphana—pale anemone

Urticina columbiana—sand anemone

CERIANTHIDAE—TUBE-DWELLING ANEMONE

Pachycerianthus fimbriatus—tube-dwelling anemone

DIADUMENIDAE—SEA ANEMONE

Diadumene leucolena—ghost anemone

Bryozoa

LOPHOPHORATA—BRYOZOANS

Membranipora sp.—bryozoan

Clams

PHARIDAE—RAZOR CLAMS

Siliqua patula—Pacific razor clam

VENERIDAE—CLAMS

Chione californiensis—California venus

Crabs

PAGUROIDEA—HERMIT CRABS

Pagurus samuelis—blueband hermit crab

VARUNDIDAE—THORACOTREMATAN CRABS

Hemigrapsus nudus—purple shore crab

Flatworms

PSEUDOCEROTIDAE—FLATWORMS

Pseudoceros mexicanus—Mexican skirt dancer

Gorgonians

PLEXAURIDAE—GORGONIANS

Muricea californica—California golden gorgonian

Hydroids

AGLAOPHENIIDAE—HYDROIDS

Aglaophenia struthionides—ostrich plume hydroid

Lobster

PALINURIDAE—LOBSTER

Panulirus interruptus—spiny lobster

Mussel

MYTILIDAE—MUSSEL

Mytilus californianus—California mussel

Octopus

OCTOPODIDAE—OCTOPUS

Octopus bimaculoides—California two-spot octopus

Porifera

TETHYIDAE—SEA SPONGE

Tethya aurantium—orange puffball sponge

Hymeniacidon perlevis—crumb-of-bread sponge

HALICHONDRIIDAE—SEA SPONGE

Hymeniacidon perlevis—crumb-of-bread sponge

Salp

SALPIDAE—SALPS

Salpa fusiformis—common salp

Sand Dollar

DENDRASTERIDAE—SAND DOLLAR

Dendraster excentricus—eccentric sand dollar

Scallop

PECTINIDAE—SCALLOP

Crassedoma giganteum—rock scallop

Sea Cucumber

STICHOPODIDAE—SEA CUCUMBER

Apostichopus parvimensis—warty sea cucumber

Sea Urchin

STRONGYLOCENTROTIDAE—SEA URCHIN

Strongylocentrotus purpuratus—purple sea urchin

Sea Pen

VIRGULARIIDAE—SEA PENS

Virgularia mirabilis—slender sea pen

Sea Slug

AGLAJIDAE—HEAD SHIELD SLUGS AND SNAILS

Navanax inermis—California aglaja

APLYSIIDAE—SEA HARE

Aplysia californica—California sea hare

Sea Snail

BUCCINIDAE—SEA SNAILS

Crepidula spp.—slipper snail

Haminoea virescens—green bubble snail

HAMINOEIDAE—BUBBLE SNAILS

Haminoea virescens—green bubble snail

POTAMIDIDAE—HORN SNAILS

Cerithideopsis californica—California horn snail

TURBINIDAE—TURBAN SNAILS

Megastraea undosa—wavy turban snail

Sea Star

OPHIONEREIDIDAE—BRITTLE STAR

Ophionereis annulata—banded brittle star

Shrimp

ARTEMIIDAE—BRINE SHRIMP

Artemia spp.—brine shrimp

Algae

Brown Seaweeds

DICTYOTACEAE—BROWN ALGAE

Dictyota spp.—brown algae

* Sargassum horneri—devil weed

LESSONIACEAE—KELP

Egregia menziesii—feather boa kelp

Green algae

ULVACEAE—GREEN ALGAE

Ulva intestinalis—gutweed

Ulva lactuca—sea lettuce

Red algae

DUMONTIACEAE—RED ALGAE

Dilsea californica—red algae

ERYTHROTRICHIACEAE—RED ALGAE

Smithora naiadum—seagrass laver

GRACILARIACEAE—SEA SPAGHETTIS

Gracilariopsis sp.—sea spaghetti

Mammals

Canids

CANIDAE—WOLVES AND FOXES

Canis latrans—coyote

Hares and Rabbits

LEPORIDAE—HARES AND RABBITS

Sylvilagus audubonii—desert cottontail

Pocket Gophers

GEOMYIDAE—POCKET GOPHERS

Thomomys bottae—Botta's pocket gopher

Racoons and Relatives

PROCYONIDAE—RACOONS AND RELATIVES

Procyon lotor—northern racoon

Squirrels

SCIURIDAE—SQUIRRELS

Otospermophilus beecheyi—California ground squirrel

Reptiles

Lizards

PHRYNOSOMATIDAE—IGUANID LIZARDS

Sceloporus occidentalis—western fence lizard

Uta stansburiana—common side-blotched lizard

Snakes

COLUBRIDAE—COLUBRID SNAKES

Lampropeltis californiae—California kingsnake

Pituophis catenifer—gophersnake

* Signifies introduced (non-native) species

Appendix C

Aquatic Resources Delineation Report

DRAFT

Aquatic Resources Delineation Report

Mission Bay Park Improvements Program

Prepared for
Dudek
and City of San Diego

Schaefer Ecological Solutions
Christina Schaefer, Principal Biologist

schaefer ecological solutions

August 29, 2025

Table of Contents

Acronyms and Abbreviations iv
1.0 Site Description and Landscape Setting 1
1.1 Program Location 1
1.2 Contact Information 1
2.0 Site Alterations, Current and Past Land Use 2
2.1 Land Use 2
2.2 Topography and Soils 2
2.3 Climate and Growing Season 3
2.4 Hydrology 3
2.5 Vegetation Communities and Land Cover Types 4
3.0 Investigation Methods 5
3.1 Literature Review 5
3.2 Planning-Level Delineation 5
3.2.1 Hydrophytic Vegetation 6
3.2.2 Hydric Soils 7
3.2.3 Hydrology 7
3.2.4 Ordinary High Water Mark 7
3.2.5 Atypical Situation and Problem Areas 7
3.3 Delineation Verification 8
4.0 Results 9
4.1 Wetland Sampling Stations 9
4.2 U.S. Army Corps of Engineers 9
4.3 Regional Water Quality Control Board 12
4.4 California Department of Fish and Wildlife Jurisdiction 13
4.5 California Coastal Commission Jurisdiction 14
4.6 City of San Diego Jurisdiction 15
5.0 Deviation from National Wetland Inventory 17
6.0 Disclaimer Statement 18
7.0 References Cited 19

List of Tables

Table 1. Wetland Soils **3**
Table 2. Wetland Vegetation Communities and Land Cover Types and Acreage **4**
Table 3. Jurisdictional Wetlands Delineation Survey Dates and Conditions **6**
Table 4. Jurisdictional Wetlands Delineation Survey Dates and Conditions **8**
Table 5. Wetland Sampling Station Data Summary **9**
Table 6. USACE Aquatic Resource Summary for the Review Area **10**
Table 7. RWQCB Aquatic Resource Summary for the Review Area **12**
Table 8. CDFW Aquatic Resource Summary for the Review Area **13**
Table 9. CCC Aquatic Resource Summary for the Review Area **14**
Table 10. City Aquatic Resource Summary for the Review Area **16**

Appendices

A Aquatic Resources Delineation Report Figures
B Wetland Determination Data Forms – Arid West Region
C Review Area Photos

Acronyms and Abbreviations

bgs	below ground surface
CCC	California Coastal Commission
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
City	City of San Diego
EPA	Environmental Protection Agency
HTL	high tide line
HU	Hydrologic Unit
I	Interstate
MHPA	Multi-Habitat Preserve Area
NWI	National Wetland Inventory
OHWM	ordinary high water mark
RWQCB	Regional Water Quality Control Board
SES	Schaefer Ecological Solutions
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture

1.0 SITE DESCRIPTION AND LANDSCAPE SETTING

This Aquatic Resources Delineation Report (report) describes the existing jurisdictional and aquatic resources within the Review Area of the Mission Bay Park Improvements Program (Program) in the City of San Diego (City), California.

1.1 Program Location

The Review Area consists of the 4,387-acre Mission Bay Park and Mission Bay located in the westernmost portion of the central City (Figures 1 and 2; see Appendix A for all report figures). The Review Area occurs entirely within the Mission Bay Park planning area covered by the Mission Bay Park Master Plan. The Review Area includes Mission Bay itself and its shoreline and is surrounded by highly urbanized areas to the north, south, east, and west. It is generally bounded by the Crystal Pier, Pacific Beach Drive, Riviera Drive, Crown Point Drive, Grand Avenue and the community of Pacific Beach to the north; Interstate (I) 5 to the East; I-8, West Point Loma Boulevard and the community of Ocean Beach to the south; and the community of Mission Beach and the Pacific Ocean to the west. Regional access to the Review Area is provided by I-5 from the north and south, and I-8 from the east. The Review Area is located within the California Coastal Commission (CCC) Coastal Zone. Portions of the Review Area are within the City of San Diego Multiple Species Conservation Program Subarea Plan (City 1998) boundary and the Multi-Habitat Planning Area. The center point of the Review Area is 32.77468901, −117.2302614 (decimal degrees).

1.2 Contact Information

The contact information for the applicant is:

Property Owner/Applicant:	City of San Diego – Engineering and Capital Projects Department
Primary Contact:	Kristy Forburger Program Manager
Email:	KForburger@sandiego.gov
Agent Company:	Dudek
Agent Contact:	Vipul Joshi 619.985.2149
E-mail:	vjoshi@dudek.com

2.0 SITE ALTERATIONS, CURRENT AND PAST LAND USE

The coastal inlet of Mission Bay was created over the last 18,000 years, after the last glacial period, as sea level rose to present level and riverine drainage incised the inlet. As sea level rose, the San Diego River deposited large volumes of alluvial sediment to create the delta that became the landmass for Mission Bay, named False Bay at the time. During the 1820s, the San Diego River was redirected from False Bay into the San Diego Bay. This left False Bay as a low-flow marshland. False Bay was made up of fluvial and estuarine fine sand, silts, and clays from the surface to approximately 60 feet below ground surface (bgs), which were underlain by Quaternary-age dense clayey sands, hard clays, and gravel/cobble from approximately 50 feet to 70 feet bgs south of North Mission Bay Drive, and approximately 10 feet to 30 feet bgs north of North Mission Bay Drive.

False Bay was historically unnavigable as the channels were narrow and shallow. The City began dredging in 1946 to create Mission Bay Park. Dredging operations, and subsequent land creation with dredged and upland material, occurred between 1946 and 1956, 1959 and 1961, and 1963 and 1964 to create the current configuration of Mission Bay. Landforms, such as Fiesta Island, were formed with what is geologically described as Artificial Fill. This Artificial Fill consists primarily of loose to medium dense silty sands with intermittent layers of soft clay.

2.1 Land Use

The Review Area includes a variety of land uses. Open water makes up the majority; however, beaches (including Dog Beach), developed land, including residential developments, hotels and resorts, shops and restaurants, marinas, parks and recreational areas, a conference center, and amusement parks, occur along the edges of Mission Bay and throughout the terrestrial portion of the Review Area. Native habitat occurs in the vicinity of the San Diego River and Flood Control Channel, Tecolote Creek, areas of Fiesta Island, the Northern Wildlife Preserve, Kendall-Frost Mission Bay Marsh Reserve, Rose Creek, and along the shoreline of the Pacific Ocean and Mission Bay.

The Review Area is located within or is surrounded by community park space and residential and commercial uses in the following community planning areas/groups: Pacific Beach, Mission Beach, Clairemont Mesa, Linda Vista, Ocean Beach, Peninsula, Midway/Pacific Highway Corridor, Old Town, and Mission Valley.

2.2 Topography and Soils

Elevations within the Review Area range from 0 to 46 feet above mean sea level. Topography within the Review Area is generally flat, characterized by the coastal shoreline of the Pacific Ocean and Mission Bay and marshland associated with the mouth of the San Diego River, Tecolote Creek, Rose Creek, the Northern Wildlife Preserve, and Kendall-Frost Mission Bay Marsh Reserve. Elevation gradually increases from west to east.

According to the U.S. Department of Agriculture (USDA) Web Soil Survey and soil maps (USDA 2024; USDA 1973), eight soil mapping units were mapped within the Review Area (USDA 2019). Soil mapping units and their respective phases occurring within the Review Area were mapped as shown on Figure 3, Soils. Soils found within the Review Area that are listed on the National List of Hydric Soils (USDA 2024) are identified in Table 1.

Hydric soils are defined as "a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part" (USDA 2024).

Table 1. Wetland Soils

Soil Mapping Unit	Soil Phase	Review Area Acreage
Coastal beaches	NA	180.15
Corralitos, loamy sandy	0%–5% slopes	9.28
Tidal flats	NA	107.87
Water (incl. lagoons)	NA	2,170.46
Total		**2,429.01**

Note: NA = not applicable.

2.3 Climate and Growing Season

Climate data, including precipitation totals, for the nearest recording station to the Review Area was gathered from the USDA National Water and Climate Center databases (USDA 2025). The Review Area is within the coastal region of southern California, in an area generally characterized as mild throughout most of the year, with hotter and drier summers and cooler and wetter winters. The majority of precipitation typically falls between December and March as somewhat frequent low- to moderate-intensity rainfall; however, there is a shift of more unpredictable weather patterns with rains occurring as early as October or as late as March, and precipitation also happening during the summer months (i.e., August), influenced by monsoon events in the eastern desert regions. The growing season typically lasts into early summer after winter and spring rainfall and ends in mid-to-late summer when little to no precipitation occurs and as temperatures increase.

2.4 Hydrology

The Review Area lies primarily within the southwestern portion of the Peñasquitos Hydrologic Unit ([HU] 906.00; Figure 4, Hydrology; SDRWQCB 2002). The Peñasquitos HU is a collection of coastal watersheds that drain approximately 162 square miles of southern San Diego County into Mission Bay, Los Peñasquitos Lagoon, and the Pacific Ocean. Primary drainages of the HU include Los Peñasquitos Creek and its tributaries, Tecolote Creek, Rose Creek (both tributaries of Mission Bay), Carroll Canyon Creek, Carmel Creek (both tributaries of Los Peñasquitos Lagoon), and several unnamed tributaries that drain into the Pacific Ocean. The San Diego HU (907.00) drains approximately 440 square miles of the San Diego River watershed, and overlaps the Review Area where the San Diego River enters the Pacific Ocean south of Mission Bay through the San Diego River estuary.

The existing terrain of the Review Area consists of two component land types: low-lying fill at beach elevations, and upland fill areas. With the exception of salt panne in some areas, tidally connected coastal salt marsh habitat does not exist on North Fiesta Island. This is because the interior elevations of the island are too high, and there are no connections to seawater in Mission Bay. The U.S. Geological Survey National Hydrography Dataset and U.S. Fish and Wildlife Service National Wetland Inventory (NWI) mapper map the aquatic resources in the Review Area as blue line streams (National Hydrography Dataset), Estuarine and Marine Deep Water, Estuarine and Marine Wetland, and Fresh Water/Forested Shrub Wetland and Freshwater Emergent Wetland (NWI) (Figure 4)

2.5 Vegetation Communities and Land Cover Types

The Review Area is occupied by a mix of native and non-native vegetation communities and land cover types dominated by wetland communities (Figures 5A–5L, Vegetation Communities and Land Cover Types). The wetland vegetation communities are listed in Table 2.

Table 2. Wetland Vegetation Communities and Land Cover Types and Acreage

Wetland Vegetation Communities and Land Cover Types	Review Area Acreage
Beach	120.19
Coastal and Valley Freshwater Marsh (incl. Disturbed)	1.18
Coastal Brackish Marsh	12.54
Southern Coastal Salt Marsh (incl. Disturbed)	111.32
Disturbed Southern Willow Scrub	4.17
Disturbed Wetland – Arundo-Dominated	0.03
Disturbed Wetland – Concrete-Lined Channel	0.76
Intertidal Estuary	14.10
Open Water	2,104.24
Saltpan/Mudflats	45.91
Shallow Bay	12.01
Subtidal Ocean	32.81
Tidal Channel	2.35
Unvegetated Habitat	0.68
Total	**2,464.45**

3.0 INVESTIGATION METHODS

3.1 Literature Review

Initially, a desktop analysis was performed using publicly available data and existing data from other projects. The following data sources were reviewed to assist in the delineation effort:

- U.S. Fish and Wildlife Service's National Wetlands Inventory (NWI; USFWS 2024)
- USDA National Hydric Soils List (USDA 2024)
- USDA Soil Survey of San Diego County, CA (USDA 1973)
- USDA Web Soil Survey (USDA 2019)
- Google Earth historical aerial photography of the site
- City of San Diego's 2018 SanGIS Topographical Map (City 2018a)
- Mission Bay Hydrology Study (Moffat & Nichols 2019)
- Mission Bay Park Master Plan Fiesta Island Amendment (City 2021)
- Final Program Environmental Impact Report (EIR) for the De Anza Natural Amendment to the Mission Bay Park Master Plan (City 2023)
- Biological Resources Technical Report for the De Anza Natural Amendment to the Mission Bay Park Master Plan (Harris & Associates 2023)
- Biological Resources Technical Report for the Mission Bay Park Improvements Program (Dudek 2025)

3.2 Planning-Level Delineation

Schaefer Ecological Solutions (SES) conducted a planning-level aquatic resources delineation within the Review Area in 2018 and 2019. The approach was designed to provide baseline mapping at an appropriate level of detail to inform component design, estimate potential impacts, and identify types of permits that would be needed from the regulatory agencies should aquatic resources not be avoidable.

A planning-level delineation was performed by Christina Schaefer on November 23, 2018, and January 10 and 11, 2019. Field work conducted on November 23, 2018, included a reconnaissance of the entire Review Area to identify representative wetland sampling stations. Representative wetland sampling locations were selected in areas that best illustrated the characteristics of each potential wetlands vegetation community type, and were chosen to coincide, as feasible and appropriate, with the Program component areas. A total of 16 wetland sampling stations were analyzed to determine the presence or absence of wetland field indicators. Field sampling on November 23 was performed on the east bank of Rose Creek between Mission Boulevard and the confluence with Mission Bay. Fiesta Island was visually examined on November 23, 2018, and January 10, 2019, for the purpose of identifying potential jurisdictional areas and comparing current conditions with previous wetlands delineation data (Merkel & Associates 2018). Field sampling on January 10, 2019, was performed on the west bank of Rose Creek between Mission Boulevard and Campland-by-the-Bay, and field sampling on January 11, 2019, included the north and south side of the Tecolote Creek outfall area in Mission Bay and the northeastern portion of the San Diego River flood channel west of I-5. The field sampling conditions are listed in Table 3. The

locations of wetland sampling stations are identified on Figures 6–10, and wetlands delineation datasheets are included in Appendix B.

Table 3. Jurisdictional Wetlands Delineation Survey Dates and Conditions

Date	Personnel*	Time	Weather Conditions (start–end)
11/23/2018	CS	10 a.m.–4 p.m.	20% high clouds; 68°F–74°F
1/10/2019	CS	11 a.m.–3:30 p.m.	5% clouds; 63°F–68°F
1/11/2019	CS	12 p.m.–3:30 p.m.	90% clouds; 62°F–64°F

*CS = Christina Schaefer

The delineation was performed in accordance with the U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual (USACE 1987) and the Regional Supplement to the USACE Wetland Delineation Manual: Arid West Region (USACE 2008a). USACE and Regional Water Quality Control Board (RWQCB) jurisdiction, pursuant to the federal Clean Water Act, includes all areas supporting three-parameter wetlands criteria described in the USACE manual: hydric soils, hydrology, and hydrophytic vegetation. RWQCB may also take jurisdiction over additional waters of the state pursuant to the Porter–Cologne Water Quality Control Act based on the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (SWRCB 2021). Streambeds under the jurisdiction of the California Department of Fish and Wildlife (CDFW) and wetlands under the jurisdiction of CCC (within the Coastal Zone) 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). A predominance of hydrophytic vegetation, where associated with a lake or streambed, was used to determine CDFW regulated riparian areas. City jurisdictional areas were based on the definition of City wetlands described in the City Biological Guidelines (City 2018b). The location of sampling points and the limits of wetlands were collected in the field using a 100 scale (1 inch = 100 feet) aerial photograph, topographic base, and Global Positioning System (GPS) equipment with sub-meter accuracy. ArcGIS software was used to compile the information into a geospatial database.

3.2.1 Hydrophytic Vegetation

SES reviewed the updated National Wetland Plant List for the Arid West (USACE 2025) to determine the indicator status of each plant species within each sampling location. Species classified as (1) obligate wetland plants (OBL)—plants that occur almost always in wetlands under natural conditions, but which may also occur rarely in non-wetlands; (2) facultative wetland plants (FACW)—plants that occur usually in wetlands, but also occur in non-wetlands; (3) facultative plants (FAC)—plants with a similar likelihood of occurring in both wetlands and non-wetlands; (4) facultative upland plants (FACU)—plants that occur sometimes in wetlands, but occur more often in non-wetlands; and (5) obligate upland plants (UPL)—plants that occur rarely in wetlands, but occur almost always in non-wetlands under natural conditions (USACE 1987). During the delineation, a data station point was considered positive for hydrophytic vegetation if it passed the basic dominance test (Indicator 1), meaning that more than 50% of the dominant species sampled were characterized as either obligate, facultative wetland, and/or facultative per the National Wetland Plant List for the Arid West.

In those cases where the dominance test failed but there were positive indicators of hydric soils and/or hydrology, the vegetation parameter was re-evaluated using the prevalence index (Indicator 2), which takes into account all plant species in the community, not just dominants. All plant species observed

during the surveys were identified and recorded. As part of the jurisdictional delineation, SES also classified and mapped the vegetation communities in the field sampling areas and consulted the existing vegetation mapping (Dudek 2025).

3.2.2 Hydric Soils

SES determined the presence of hydric soils through consultations with the 1987 USACE Manual as well as the Field Indicators of Hydric Soils in the Arid West Region Version 2.0 (USACE 2017). SES used Munsell Soil Color Charts to determine soil chroma and value, and excavated soil pits ranging in depths from 12 to 18 inches. Dry soils were moistened to obtain the most accurate color.

Soils from sampling pits were generally determined to be hydric if they met one or more hydric soil indicators (i.e., redox concentrations, redox depletions, reduced matrix, or depleted matrix).

3.2.3 Hydrology

Per the guidelines prescribed in the Arid West Supplement (USACE 2008a), wetland hydrology indicators are separated into four major groups: Groups A, B, C, and D. Group A indicators are based on direct observations of surface flow, ponding, and soil saturation/groundwater. Group B indicators consist of evidence that the site has been or is currently subjected to ponding including, but not limited to, water marks, drift deposits, and sediment deposits. Group C indicators include signs of previous and/or current saturation including oxidized rhizospheres surrounding living roots and the presence of reduced iron or sulfur, both of which are indicative of extended periods of soil saturation. Group D indicators consist of "vegetation and soil features that are indicative of current rather than historic wet conditions and include a shallow aquitard and results of the FAC-Neutral test." Each group is subdivided into primary and secondary categories based on their frequency and reliability to occur in the Arid West region. Signs of hydrology were investigated on site by intensive field review, including surface water, saturation, and salt crusts, as well as secondary indicators such as sediment deposits, water marks, and drainage patterns.

3.2.4 Ordinary High Water Mark

Non-tidal non-wetland waters were delineated by the presence of an ordinary high water mark (OHWM). The OHWM was mapped in accordance with 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 (USACE 2008b). The OHWM is defined as: "That line on the shore established by the fluctuations of water and indicated by physical characteristics such as [a] clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (33 CFR Part 238.3). Those areas that lacked wetland vegetation or hydric soil characteristics were delineated as non-wetland waters. For example, topographic position (e.g., alluvial floodplain) or soil types (including sandy soils and alluvial soils) may preclude ponding and subsequent development of hydric soils. Absence of wetland vegetation can result from frequent scouring due to rapid water flow, long inundation periods, or fluctuating tidal inundation (e.g., mudflats).

3.2.5 Atypical Situation and Problem Areas

The definition of a wetland includes the phrase "under normal circumstances," because there are situations in which the vegetation of a wetland has been removed or altered as a result of recent natural events or human activities and disturbances such that wetlands parameters cannot be formed or are absent.

Atypical situations and problem areas may lack one or more of the three criteria and still be considered wetlands, provided background information on the previous condition of the area and field observations indicate that the missing wetland criteria were present before the disturbance and would occur at the site under normal circumstances. Additional delineation procedures would be employed, if normal circumstances did not occur on a site of if jurisdictional resources could not conclusively be determined based on abnormal circumstances.

Atypical areas in the Review Area included all flood controlled areas where water would not flow within the natural confines of the floodplain, including Rose Creek north of Garnet and the San Diego River floodway, as indicated in the datasheets (Appendix B). Such circumstances were found on Fiesta Island, which contains isolated depressions that are not connected to Mission Bay. Fiesta Island is considered an atypical situation because the island was modified from its historic conditions and artificially created from dredge spoils placed there during the construction of Mission Bay (see Section 2.0). The entire Mission Bay has been completely modified from its historical estuarine conditions and would, therefore, also be classified as atypical.

3.3 Delineation Verification

SES conducted an aquatic resources delineation verification in 2025. This verification was conducted to verify existing aquatic resources mapping, refine mapping of tidally influenced features, and update mapping based on current guidance provided by the USACE and the U.S. Environmental Protection Agency (EPA) on the definition of waters of the United States. Additional fieldwork was conducted within Fiesta Island by Christina Schaefer and Melissa Tu on April 14, 2025. The field sampling conditions are listed in Table 4.

Table 4. Jurisdictional Wetlands Delineation Survey Dates and Conditions

Date	Personnel*	Time	Weather Conditions (Start–End)
4/15/2025	CS, MT	11 a.m.–2 p.m.	75% high clouds; 66°F – 70°F

*CS = Christina Schaefer; MT = Melissa Tu.

Four additional wetland sampling stations were collected within Fiesta Island in order to provide a baseline for habitat restoration components of the Program. Aquatic resources under the potential jurisdiction of the USACE were evaluated using EPA's current definition of waters of the United States, which includes traditional navigable waters, territorial seas, interstate waters, impoundments, and certain tributaries, wetlands, and other features that meet a "relatively permanent" standard.

For tidal waters associated with Mission Bay, tidal elevation data provided by the nearest National Oceanic and Atmospheric Administration tidal station (San Diego, Station ID 9410170, located on Broadway Pier/San Diego Bay) was utilized along with topographic mapping (NOAA 2024). The extent of waters of the United States, as defined by Section 10 of the Rivers and Harbors Act, was determined to extend up to the mean high water (+4.56 feet above mean sea level, North American Vertical Datum 88). The extent of waters of the United States/state, as defined by Section 404 of the federal Clean Water Act, the Porter–Cologne Water Quality Act, and the California Coastal Act, was determined to include all Section 10 waters and additional land up to the highest astronomical tide (+7.19 feet above mean sea level, North American Vertical Datum 88). In some locations there are walls or other vertical features that result in the estimated mean high watermark and high tide line (HTL) being co-located.

4.0 RESULTS

4.1 Wetland Sampling Stations

A summary of the wetland sampling stations is provided in Table 5 and depicted on Figures 6–10. Photos of each data point are provided in Appendix C, Review Area Photos.

Table 5. Wetland Sampling Station Data Summary

Data Point	Location	Vegetation	Soils	Hydrology
RC 1E	Rose Creek East	Yes	Yes	Yes
RC 2E	Rose Creek East	No	Yes	No
RC 3E	Rose Creek East	Yes	Yes	Yes
RC 4E	Rose Creek East	Yes	Yes	Yes
RC 1W	Rose Creek West	Yes	Yes	Yes
RC 2W	Rose Creek West	Yes	No	No
RC 3W	Rose Creek West	Yes	Yes	Yes
RC 4W	Rose Creek West	No	No	No
RC 5W	Rose Creek West	Yes	Yes	Yes
RC 6W	Rose Creek West	Yes	Yes	Yes
SDR 1N	San Diego River	Yes	Yes	Yes
SDR 2N	San Diego River	Yes	No	No
Tec 1S	Tecolote	Yes	Yes	Yes
Tec 2N	Tecolote	Yes	Yes	Yes
Tec 3N	Tecolote	Yes	No	No
Tec 4N	Tecolote	Yes	Yes	Yes
FIS 1	Fiesta Island	Yes	Yes	Yes
FIN 1	Fiesta Island	Yes	Yes	Yes
FIN 2	Fiesta Island	Yes	No	Yes
FIN 3	Fiesta Island	No	Yes	Yes

4.2 U.S. Army Corps of Engineers

The Review Area contains aquatic resources that are anticipated to be regulated by USACE, including non-wetland waters and wetlands.

Potentially jurisdictional aquatic resources mapped within the Review Area are shown on Figures 6A–6L, USACE Jurisdictional Resources, and Table 6 provides a summary of these resources under the jurisdiction of USACE.

Table 6. USACE Aquatic Resource Summary for the Review Area

Feature Name	Dominant Vegetation Community	Cowardin[a]	Location (Latitude/ Longitude; Decimal Degrees)	Acres/Linear Feet[b]/Active Channel Width (feet)[b]
Non-Wetland Waters				
NWW-DIT-01	Disturbed Coastal and Valley Freshwater Marsh	R5	32.80127588, −117.2149187	0.45/1,061/35
NWW-MB-01	Open Water	M	32.77104224, −117.233729	2,069.76/NA/NA
NWW-PO-01	Beach	M2	32.79358132, −117.256675	2.63/NA/NA
NWW-RC-01	Open Water	R2	32.79783789, −117.2209146	12.89/4,154/80
NWW-SDR-01	Subtidal	E1	32.75490587, −117.256429	51.29/3,103/480
NWW-SDR-02	Open Water	R2	32.75811947, −117.2311577	136.74/6,339/120
NWW-TC-01	Open Water	R2	32.75811947, −117.2311577	0.89/766/30
			Non-Wetland Waters Subtotal	*2,274.66/15,423/NA*
Wetlands				
WET-NWP-01	Saltpan/Mudflats; Southern Coastal Salt Marsh	M1	32.79219045, −117.2279137	69.48/NA/NA
WET-RC-01	Saltpan/Mudflats/Southern Coastal Salt Marsh	E1	32.96942768, −117.2213986	6.67/NA/NA
WET-SDR-01	Southern Coastal Salt Marsh	E1	32.7603535, −117.2140588	109.09/NA/NA
WET-TC-01	Southern Coastal Salt Marsh	M1	32.77080948, −117.2085825	1.62/NA/NA
			Wetlands Subtotal	*186.85/NA/NA*
			Total	**2,461.51/15,423/NA**

Notes: USACE = U.S. Army Corps of Engineers; NA = not applicable; NWW = non-wetland water; WET = wetland; DiT = ditch; MB = Mission Bay; PO = Pacific Ocean; RC = Rose Creek; SDR = San Diego River; TC = Tecolote Creek; NWP = National Wildlife Preserve.
Totals may not sum due to rounding.

[a] Pursuant to Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979).

[b] Provided for linear features only

In the fall of 2023, the EPA and USACE issued a final rule on the "Revised Definition of 'Waters of the United States,'" which defines waters of the United States as having a relatively permanent and continuous surface connection to traditional navigable waters.

Mission Bay is a tidally influenced body of water with a direct connection to the Pacific Ocean. Therefore, all of Mission Bay and a portion of the Pacific Ocean within the Review Area would be

subject to the regulatory authority of USACE up to the mean high watermark under Section 10 of the Rivers and Harbors Act, and up to the HTL under Section 404 of the federal Clean Water Act.

Wetlands around Mission Bay occur in the form of salt marshes in the Northern Wildlife Preserve and Kendall-Frost Mission Bay Marsh Reserve, along Rose Creek south of Garnet Avenue, Fiesta Island, Tecolote Creek outfall, and within the San Diego River floodway. Coastal salt marsh and brackish marsh habitats are dominated by marsh jaumea (*Jaumea carnosa*), salt grass (*Distichlis spicata*), and pickleweed (*Salicornia pacifica*). Cordgrass (*Spartina foliosa*) occurs sparsely at the saltmarsh south of the Tecolote Creek outfall. The upper marsh zone of the habitats in the above-mentioned locations contains alkali heath (*Frankenia salina*) and Parish's glasswort (*Arthrocnemum subterminale*). The Northern Wildlife Preserve and Kendall-Frost Mission Bay Marsh Reserve are dominated by southern coastal salt marsh traversed by tidal channels and flanked by a band of mudflats before the area merges with the open water of Mission Bay. A thin bank of southern foredunes borders the southern portion of the Kendall-Frost Mission Bay Marsh Reserve, and beach shoreline continues south on the western shores of the East Bay. Three-parameter wetlands within and adjacent to Mission Bay are all anticipated to be regulated by USACE due to their direct surface connection to traditional navigable waters.

Cudahy Creek, Rose Creek, San Diego River, and Tecolote Creek are all considered relatively permanent tributaries to Mission Bay due to the presence of hydrophytic/riparian vegetation. Therefore, these non-wetland waters are anticipated to be regulated by USACE up to the OHWM. Three-parameter wetlands within and adjacent to these features are also anticipated to be regulated by the USACE as adjacent wetlands.

Rose Creek is a flood-controlled channel that is deeply incised. The creek is surrounded by residential development and a pedestrian and bicycle trail on either side north of Grant Avenue. The Rose Creek area is characterized by freshwater wetlands such as riparian woodland, freshwater and brackish marsh vegetation, and disturbed wetlands (including ornamental trees (such as various palm trees (*Phoenix* sp., *Washingtonia* sp.) and Brazilian pepper tree (*Schinus terebinthifolius*). Below Garnet Avenue, Rose Creek is tidally influenced and flanked by residential development, Mission Bay High School on the eastern bank, and recreational uses such as Campland-by-the-Bay on the southwestern bank. The area is dominated by disturbed upper and lower coastal salt marsh habitat.

The mouth of Tecolote Creek where it drains into Mission Bay is characterized by the presence of tidally influenced marshlands that are dominated by pickleweed. Cordgrass occurs sparsely in the saltmarsh lining the south shore of the Tecolote outfall below the trail and parking lot. Southern coastal salt marsh is present along the southern shore and contains sparse patches of cordgrass. Saltpan/mudflat is also present along the shoreline.

Cudahy Creek drains into Mission Bay via an outfall structure and primarily consists of urban/developed lands. In addition, the stormwater collection system north of Cudahy Creek collects runoff that drains to the south and discharges into a ditch between Mission Bay Drive and the Mission Bay Tennis Center, Athletic Fields, and Golf Course, before entering another underground culvert through the park and ultimately draining into Mission Bay. A portion of the ditch in the review area supports wetland features with freshwater marsh and non-native invasive arundo (*Arundo donax*).

The San Diego River is a managed flood control channel that flows into the Pacific Ocean in the study area. It is flanked by beach and dune habitats at its confluence with the ocean, contains listed species habitats for such species as the federally endangered salt marsh bird's beak (*Chloropyron maritimus*) and

light-footed Ridgway's rail (*Rallus obsoletus brevipes*), and a California least tern (*Sternula antillarum browni*) nesting island. Salt marsh habitat occurs in the midsection of the study area, which transitions into brackish and cismontane alkali marsh, freshwater marsh, and disturbed wetland habitat toward the eastern portion of the study area, dominated by Leopold's bulrush (*Juncus acutus leopoldii*) and California bulrush (*Schoenoplectus californicus*) and non-native species. Regulatory oversight over the San Diego River floodway is complex as multiple agencies claim jurisdiction over the flood channel. The majority of the floodway is regulated by USACE, and saltmarsh and freshwater islands in the eastern portion of the floodway within the Review Area are also USACE-regulated wetlands.

Three isolated wetland features on Fiesta Island and one isolated pond feature on Vacation Isle lack a surface connection to Mission Bay or other waters of the United States and are therefore not anticipated to be regulated by the USACE.

4.3 Regional Water Quality Control Board

All of the previously described USACE-jurisdictional waters of the United States have also been identified as waters of the state. In addition, the RWQCB asserts jurisdiction over isolated surface waters under the Porter–Cologne Water Quality Control Act and any artificial wetland that "resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape" (SWRCB 2021). Therefore, isolated features not regulated by USACE are anticipated to be regulated by the RWQCB. Potentially jurisdictional aquatic resources mapped within the Review Area are shown on Figures 7A–7L, RWQCB Jurisdictional Resources, and Table 7 provides a summary of these resources under the jurisdiction of the RWQCB.

Table 7. RWQCB Aquatic Resource Summary for the Review Area

Feature Name	Dominant Vegetation Community	Acres/Linear Feet[a]
Non-Wetland Waters (Stream Channels and Oceans, Bays, and Estuaries)		
NWW-DIT-01	Disturbed Coastal and Valley Freshwater Marsh	0.45/1,061
NWW-MB-01	Open Water	2,069.76/NA
NWW-PO-01	Beach	2.63/NA
NWW-RC-01	Open Water	12.89/4,154
NWW-SDR-01	Subtidal	51.29/3,103
NWW-SDR-02	Open Water	136.74/6,339
NWW-TC-01	Open Water	0.89/766
	Non-Wetland Waters Subtotal	*2,274.66/15,423*
Wetlands		
WET-NWP-01	Saltpan/Mudflats; Southern Coastal Salt Marsh	69.48/NA
WET-RC-01	Saltpan/Mudflats/Southern Coastal Salt Marsh	6.67/NA
WET-SDR-01	Southern Coastal Salt Marsh	109.22/NA
WET-TC-01	Southern Coastal Salt Marsh	1.88/NA
WOTS-FI-01	Disturbed Southern Coastal Salt Marsh	0.37/NA
	Wetlands Subtotal	*187.22/NA*
	Total	**2,461.88/15,423**

Notes: RWQCB = Regional Water Quality Control Board; NA = not applicable; NWW = non-wetland water; WET = wetland; DIT = ditch; MB = Mission Bay; PO = Pacific Ocean; RC = Rose Creek; SDR = San Diego River; TC = Tecolote Creek; NWP = National Wildlife Preserve; WOTS = waters of the state; FI = Fiesta Island.
Totals may not sum due to rounding.
[a] Provided for linear features only

In addition to the USACE-jurisdictional resources described in Section 4.2, three isolated features are anticipated to be regulated by the RWQCB. Fiesta Island is an artificial island created from dredged material from Mission Bay as a disposal site for Mission Bay construction and dredging in the 1950s and receives ongoing disposal of dredged material from beach maintenance (Merkel & Associates 2018). The island was historically occupied by tidelands, none of which remain to date. The island vegetation is significantly disturbed and includes non-native salt-tolerant species such as iceplant (*Mesembryanthemum nodiflorum* and *M. crystallinum*), Russian thistle (*Salsola tragus*), and non-native grasses. Native salt-tolerant species include sea heliotrope (*Heliotropium curassavicum*) and other salt marsh species. The northern tip of the island immediately south of the California least tern nesting area and the center of the island contain depressions, some of which display one to three wetlands parameters. However, all of these depressions are isolated and none of them have any surface water connection to Mission Bay (a traditional navigable water). Therefore, these depressions would not be federally regulated, but would be regulated by the RWQCB.

4.4 California Department of Fish and Wildlife Jurisdiction

There are CDFW jurisdictional areas within the Review Area, including streambed and non-tidal wetlands and riparian habitat within or adjacent to a streambed. Tidally influenced features and wetlands not associated with a lake or streambed (e.g., isolated wetlands) are excluded from CDFW jurisdiction. Potentially jurisdictional aquatic resources mapped within the Review Area are shown on Figures 8A–8L, CDFW Jurisdictional Resources, and Table 8 provides a summary of these resources under the jurisdiction of CDFW.

Table 8. CDFW Aquatic Resource Summary for the Review Area

Feature Name	Dominant Vegetation Community	Acres/Linear Feet[a]
Streambed		
NWW-DIT-01	Disturbed Coastal and Valley Freshwater Marsh	0.45/1,061
NWW-RC-01	Disturbed Southern Willow Scrub	3.43/1,212
NWW-SDR-02	Open Water	85.91/4,779
NWW-TC-01	Open Water	0.69/587
WOTS-RC-01	Non-Native Riparian; Disturbed Southern Willow Scrub	0.78/NA
WOTS-SDR-01	Southern Coastal Salt Marsh	0.26/NA
WOTS-TC-01	Open Water	0.06/NA
	Streambed Subtotal	*91.88/7,639*
Wetlands		
WET-RC-01	Southern Coastal Salt Marsh	1.64/NA
WET-SDR-01	Southern Coastal Salt Marsh	79.68/NA
	Wetlands Subtotal	*81.02/NA*

Table 8. CDFW Aquatic Resource Summary for the Review Area

Feature Name	Dominant Vegetation Community	Acres/Linear Feet[a]
Riparian		
WET-SDR-01	Non-Native Riparian	0.81/NA
WOTS-RC-01	Non-Native Riparian; Disturbed Southern Willow Scrub	1.14/NA
	Riparian Subtotal	*1.95/NA*
	Total	**174.85/7,639**

Notes: CDFW = California Department of Fish and Wildife; NA = not applicable; NWW = non-wetland water; WET = wetland; DIT = ditch; RC = Rose Creek; SDR = San Diego River; TC = Tecolote Creek; WOTS = waters of the state.
Totals may not sum due to rounding.
[a] Provided for linear features below OHWM only in order to avoid double counting.

Rose and Tecolote Creeks and most of the San Diego River floodway are streambeds regulated by CDFW. However, because these creeks' confluence with Mission Bay/Pacific Ocean contains brackish waters, CDFW jurisdiction for the Mission Bay Program will need to be established following consultation with CDFW during the permitting phase of each individual project to provide site-specific evidence of the geometry of the water feature, the predominant salinity of the waters, and the composition of vegetation. Specifically in Mission Bay and the San Diego River floodway, the boundary of where CDFW starts must be determined by site-specific indicators of fluvial processes rather than tidal influence (Kelly Fisher, pers. comm. 2019). For the purposes of this report, CDFW jurisdiction within these features was mapped above Sunset Cliffs Drive for the San Diego River, I-5 for Tecolote Creek, and Garnet Avenue for Rose Creek.

CDFW jurisdictional areas within the Review Area include the Rose Creek streambed and associated riparian and wetlands area upstream of Garnet Avenue, the Tecolote Creek streambed upstream and including I-5, the San Diego River streambed and associated riparian and wetland areas upstream and including Sunset Cliffs Drive, and a ditch along the eastern boundary of the Mission Bay Tennis Center, Athletic Fields, and Golf Course.

4.5 California Coastal Commission Jurisdiction

Aquatic features anticipated to be regulated by the CCC are present within the Review Area. In addition to the RWQCB jurisdictional resources described in Section 4.3, CDFW jurisdictional streambed and riparian areas within the Coastal Overlay Zone described in Section 4.4 are anticipated to be regulated by CCC. CCC jurisdictional resources are identified on Figures 9A–9L, CCC Jurisdictional Resources, and listed in Table 9.

Table 9. CCC Aquatic Resource Summary for the Review Area

Feature Name	Dominant Vegetation Community	Acres/Linear Feet[a]
NWW-DIT-01	Disturbed Coastal and Valley Freshwater Marsh	0.45/1,061
NWW-MB-01	Open Water	2,069.76/NA
NWW-PO-01	Beach	2.63/NA
NWW-RC-01	Disturbed Southern Willow Scrub	9.64/3,020
NWW-SDR-01	Subtidal	51.29/3,103
NWW-SDR-02	Open Water	136.74/6,339

Table 9. CCC Aquatic Resource Summary for the Review Area

Feature Name	Dominant Vegetation Community	Acres/Linear Feet[a]
NWW-TC-01	Open Water	0.89/766
WET-NWP-01	Saltpan/Mudflats; Southern Coastal Salt Marsh	69.48/NA
WET-RC-01	Saltpan/Mudflats/Southern Coastal Salt Marsh	6.35/NA
WET-SDR-01	Southern Coastal Salt Marsh	109.22/NA
WET-TC-01	Southern Coastal Salt Marsh	1.62/NA
WOTS-FI-01	Disturbed Southern Coastal Salt Marsh	0.37/NA
WOTS-RC-01	Disturbed Southern Willow Scrub	0.03/NA
WOTS-SDR-01	Open Water	0.78/NA
WOTS-TC-01	Open Water	0.06/NA
	Total	**2,459.31/14,289**

Notes: CCC = California Coastal Commission; NA = not applicable; NWW = non-wetland water; WET = wetland; DIT = ditch; MB = Mission Bay; PO = Pacific Ocean; RC = Rose Creek; SDR = San Diego River; TC = Tecolote Creek; NWP = National Wildlife Preserve; WOTS = waters of the state; FI = Fiesta Island.
Totals may not sum due to rounding.

[a] Provided for linear features below OHWM only in order to avoid double counting.

Nearly the entire Review Area is located within lands in the Coastal Overlay Zone; the exception being Rose Creek, upstream of Garnet Avenue. Wetlands under the jurisdiction of CCC within the Coastal Overlay Zone 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). CCC wetlands extend up to the HTL. The CCC may additionally regulate a larger extent of "coastal beach" as Environmentally Sensitive Lands due to its land use, but not as a biological resource and/or wetland, because these upper elevational areas support very limited biological function.

4.6 City of San Diego Jurisdiction

The City of San Diego identifies wetlands by the presence of one out of three parameters. The City considers wetlands biological resources and generally does not regulate unvegetated waters, specifically those created by human activities (except for habitat restoration projects). However, the City makes an exception to those waters that have wetlands indicators but lack wetlands vegetation because of natural events, such as mudflats, which would be regulated by the City. Although Mission Bay (including Fiesta Island) is artificially created, the City specifically regulates tidal areas in Mission Bay under the City's Environmentally Sensitive Lands Guidelines (City 2018a). A total of 2,464.77 acres of City-regulated wetlands occur within the Review Area. In addition to the USACE-jurisdictional resources described in Section 4.2, CDFW riparian areas described in Section 4.4 are anticipated to be regulated by the City. The City does not take jurisdiction over artificial features created in uplands that are not considered wetlands by the regulatory agencies and were not constructed for the purpose of establishing habitat; therefore, the Model Boat Pond (a recreational pond feature surrounded by developed park lands) is not anticipated to be regulated by the City. The City's jurisdiction is identified on Figures 10A–10L, City Jurisdictional Resources, and in Table 10.

Table 10. City Aquatic Resource Summary for the Review Area

Feature Name	Dominant Vegetation Community	Acres/Linear Feet[a]
NWW-DIT-01	Disturbed Coastal and Valley Freshwater Marsh	0.45/1,061
NWW-MB-01	Open Water	2,069.76/NA
NWW-PO-01	Beach	2.63/NA
NWW-RC-01	Disturbed Southern Willow Scrub	12.89/3,020
NWW-SDR-01	Subtidal	51.29/3,103
NWW-SDR-02	Open Water	136.74/6,339
NWW-TC-01	Open Water	0.89/766
WET-NWP-01	Saltpan/Mudflats; Southern Coastal Salt Marsh	69.48/NA
WET-RC-01	Saltpan/Mudflats/Southern Coastal Salt Marsh	6.67/NA
WET-SDR-01	Southern Coastal Salt Marsh	109.22/NA
WET-TC-01	Southern Coastal Salt Marsh	1.62/NA
WOTS-FI-01	Disturbed Southern Coastal Salt Marsh	0.37/NA
WOTS-RC-01	Non-Native Riparian	1.92/NA
WOTS-SDR-01	Open Water	0.78/NA
WOTS-TC-01	Open Water	0.06/NA
	Total	**2,464.77/14,289**

Notes: CCC= California Coastal Commission; NA = not applicable; NWW = non-wetland water; WET = wetland; DIT = ditch; MB = Mission Bay; PO = Pacific Ocean; RC = Rose Creek; SDR = San Diego River; TC = Tecolote Creek; NWP = National Wildlife Preserve; WOTS = waters of the state; FI = Fiesta Island.
Totals may not sum due to rounding.

[a] Provided for linear features below OHWM only in order to avoid double counting.

5.0 DEVIATION FROM NATIONAL WETLAND INVENTORY

No deviation from the NWI occurs. The NWI data for the Review Area includes estuarine and marine deepwater and estuarine and marine wetland (i.e., in the San Diego River, Northern Wildlife Preserve, Kendall-Frost Mission Bay Marsh Reserve, and Rose Creek; the upper Rose Creek contains freshwater forested/shrub wetland habitat and freshwater emergent wetland) (Figure 4). Based on the aquatic resources delineation, the aquatic resources in the Review Area match the data identified in the NWI.

6.0 DISCLAIMER STATEMENT

This report describes the results of aquatic resource delineations conducted within the Review Area. It was prepared in accordance with the Minimum Standards for Acceptance of Aquatic Resources Delineation Reports (USACE 2017). The jurisdictional waters delineation is used to identify and map the potential extent of the federal jurisdictional waters of the United States. The purpose of this study was to identify and map the limits of any aquatic water features on the property to provide necessary background information for analysis by USACE in making a jurisdictional determination. USACE will review the content of this report and ultimately make a determination of federal jurisdiction for any waters of the United States that may be present in the Review Area. References used in the preparation of this report are included in Section 7.0.

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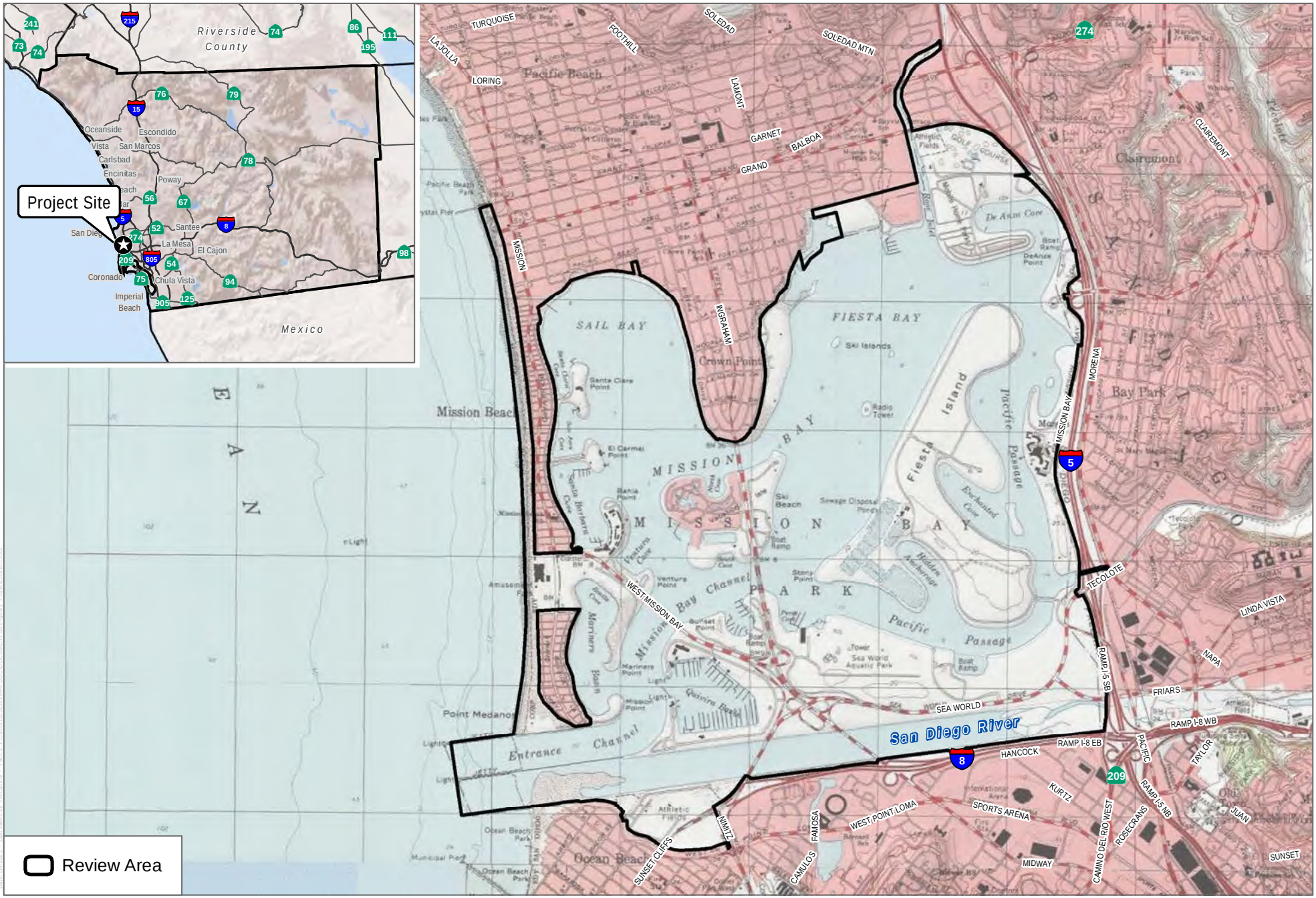
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APPENDIX A – AQUATIC RESOURCES DELINEATION REPORT FIGURES



SOURCE: USGS 7.5-minute La Jolla Quadrangle

FIGURE 1

Review Area Location

Mission Bay Improvements Program - Aquatic Resources Delineation Report



SOURCE: ESRI 2024; City of San Diego 2018

DUDEK

0 900 1,800 Feet

FIGURE 2

Review Area

Mission Bay Improvements Program - Aquatic Resources Delineation Report



SOURCE: SANGIS 2023; City of San Diego 2018; USDA 2018

DUDEK

0 900 1,800 Feet

FIGURE 3

Soils

Mission Bay Improvements Program - Aquatic Resources Delineation Report



SOURCE: SANGIS 2023; City of San Diego 2018; USFWS 2025; USGS 2025

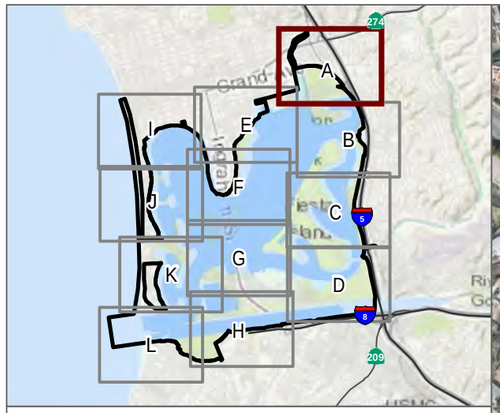
DUDEK

0 900 1,800 Feet

FIGURE 4

Hydrology

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area
Eelgrass
Vegetation Communities/Land Covers

Bog and Marsh

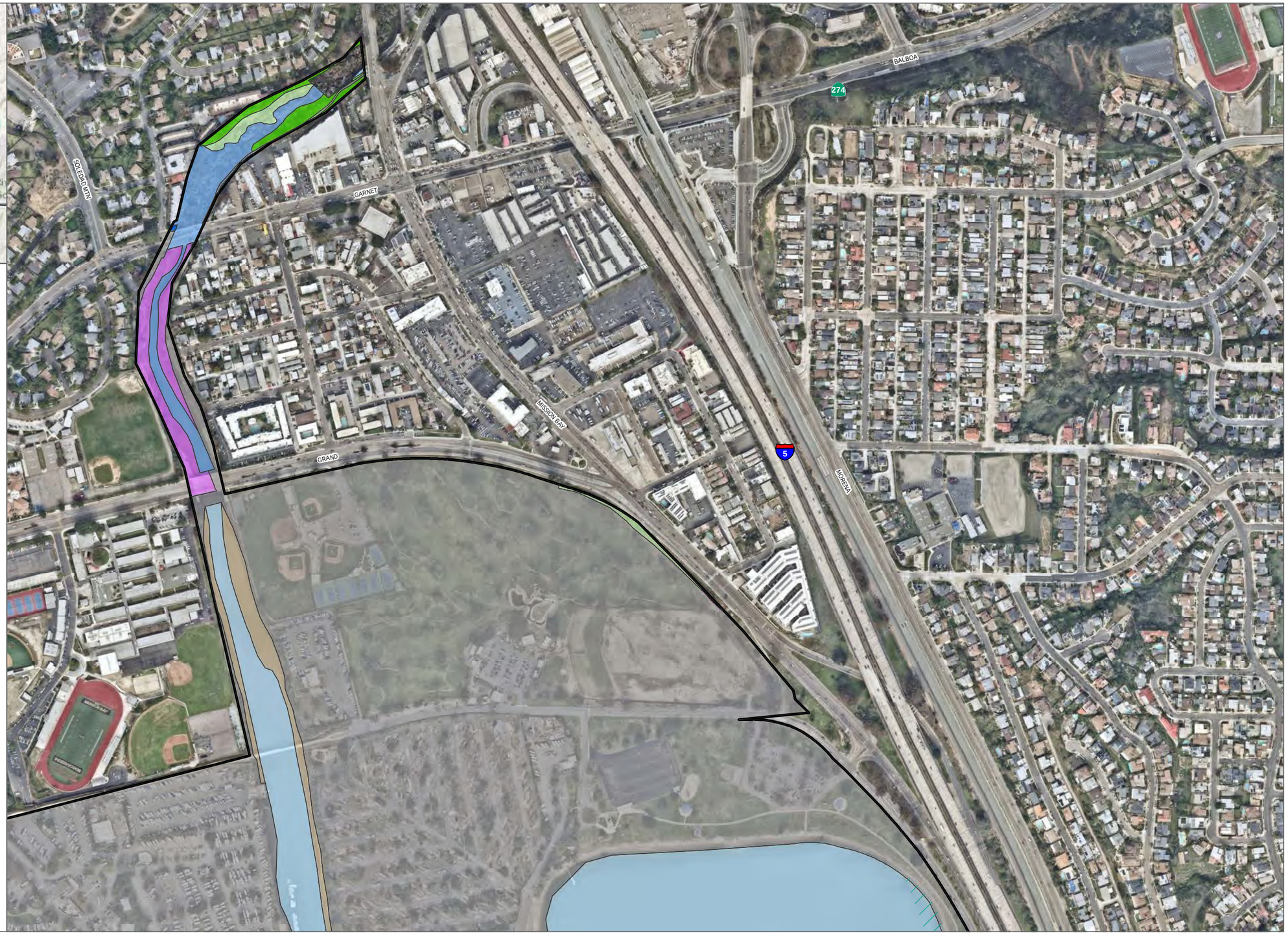
Coastal and Valley Freshwater Marsh
Disturbed Coastal and Valley Freshwater Marsh
Southern Coastal Salt Marsh

Disturbed or Developed

Urban/Developed
Disturbed Wetland (Arundo)

Riparian and Bottomland Habitat

Disturbed Southern Willow Scrub
Non-Native Riparian
Open Water
Saltpan/Mudflats



SOURCE: SANGIS 2023; City of San Diego 2018

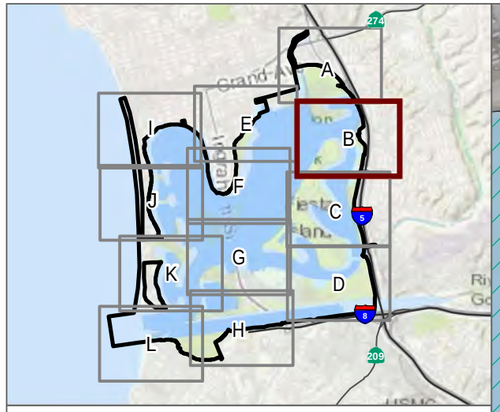
DUDEK

0 250 500 Feet

FIGURE 5A

Vegetation Communities and Land Cover Types

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

Eelgrass

Vegetation Communities/Land Covers

Bog and Marsh

Disturbed Southern Coastal Salt Marsh

Disturbed or Developed

Urban/Developed

Disturbed Habitat

Dunes

Southern Foredunes

Riparian and Bottomland Habitat

Beach

Open Water

Saltpan/Mudflats

Shallow Bay

Unvegetated Habitat

SOURCE: SANGIS 2023; City of San Diego 2018

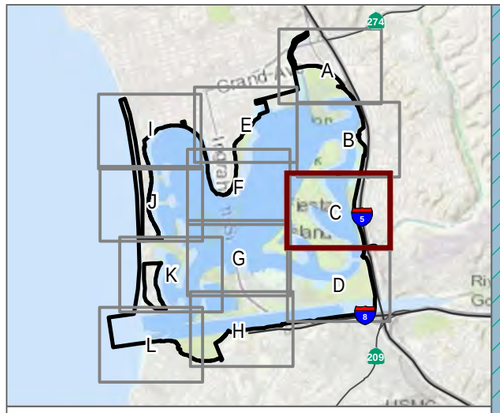
DUDEK

0 250 500 Feet

FIGURE 5B

Vegetation Communities and Land Cover Types

Mission Bay Improvements Program - Aquatic Resources Delineation Report



- Review Area
- Eelgrass
- Vegetation Communities/Land Covers

Bog and Marsh

- Disturbed Southern Coastal Salt Marsh
- Southern Coastal Salt Marsh

Disturbed or Developed

- Urban/Developed
- Disturbed Habitat

Dunes

- Southern Foredunes

Riparian and Bottomland Habitat

- Beach
- Open Water
- Unvegetated Habitat

Scrub and Chaparral

- Diegan Coastal Sage Scrub

SOURCE: SANGIS 2023; City of San Diego 2018

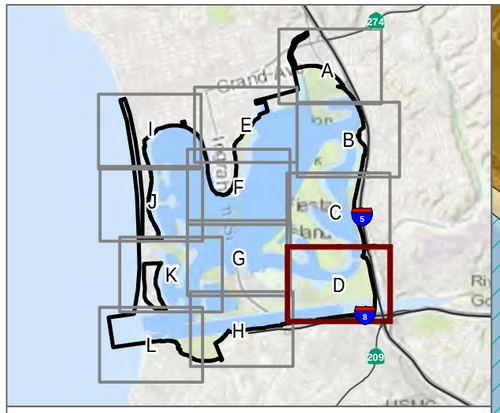
DUDEK

0 250 500 Feet

FIGURE 5C

Vegetation Communities and Land Cover Types

Mission Bay Improvements Program - Aquatic Resources Delineation Report



- Review Area
- Eelgrass
- Vegetation Communities/Land Covers

Bog and Marsh

- Coastal Brackish Marsh
- Southern Coastal Salt Marsh

Disturbed or Developed

- Urban/Developed
- Disturbed Habitat

Riparian and Bottomland Habitat

- Beach
- Intertidal Estuary
- Non-Native Riparian
- Open Water
- Shallow Bay

Scrub and Chaparral

- Diegan Coastal Sage Scrub
- Disturbed Diegan Coastal Sage Scrub

SOURCE: SANGIS 2023; City of San Diego 2018

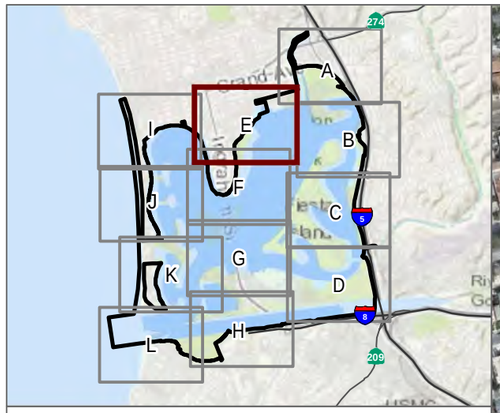
DUDEK

0 250 500 Feet

FIGURE 5D

Vegetation Communities and Land Cover Types

Mission Bay Improvements Program - Aquatic Resources Delineation Report



- Review Area
- Eelgrass
- Vegetation Communities/Land Covers

Bog and Marsh
- Southern Coastal Salt Marsh

Disturbed or Developed
- Urban/Developed
- Disturbed Habitat

Dunes
- Southern Foredunes

Riparian and Bottomland Habitat
- Beach
- Open Water
- Saltpan/Mudflats
- Tidal Channel

Scrub and Chaparral
- Diegan Coastal Sage Scrub

SOURCE: SANGIS 2023; City of San Diego 2018

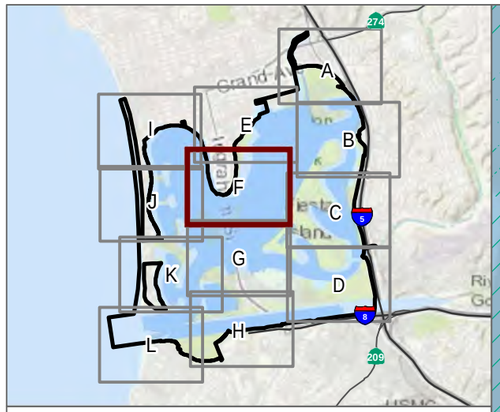
DUDEK

0 250 500 Feet

FIGURE 5E

Vegetation Communities and Land Cover Types

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area
Eelgrass
Vegetation Communities/Land Covers

Disturbed or Developed

Urban/Developed
Disturbed Habitat

Riparian and Bottomland Habitat

Beach
Open Water
Saltpan/Mudflats

SOURCE: SANGIS 2023; City of San Diego 2018

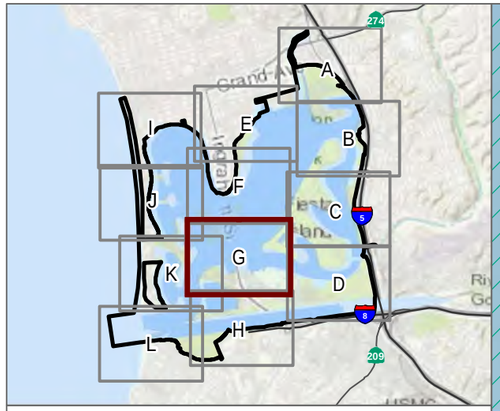
DUDEK

0 250 500 Feet

FIGURE 5F

Vegetation Communities and Land Cover Types

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

Eelgrass

Vegetation Communities/Land Covers

Disturbed or Developed

Urban/Developed

Disturbed Habitat

Riparian and Bottomland Habitat

Beach

Open Water

Shallow Bay



SOURCE: SANGIS 2023; City of San Diego 2018

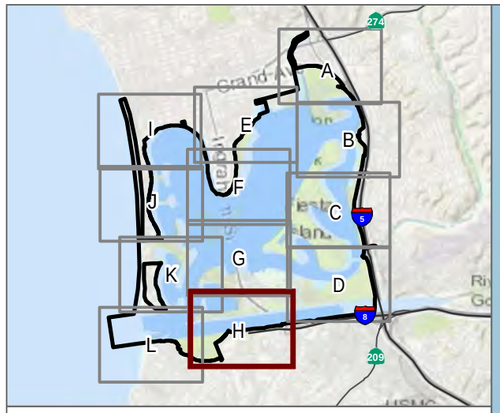
DUDEK

0 250 500 Feet

FIGURE 5G

Vegetation Communities and Land Cover Types

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area
Eelgrass
Vegetation Communities/Land Covers

Bog and Marsh
Southern Coastal Salt Marsh

Disturbed or Developed
Urban/Developed
Disturbed Habitat

Riparian and Bottomland Habitat
Beach
Intertidal Estuary
Open Water
Saltpan/Mudflats

Scrub and Chaparral
Diegan Coastal Sage Scrub



SOURCE: SANGIS 2023; City of San Diego 2018

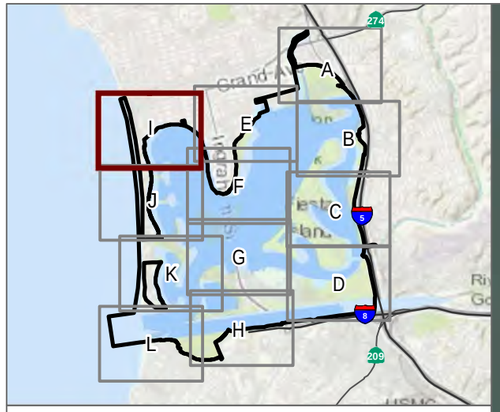
DUDEK

0 250 500 Feet

FIGURE 5H

Vegetation Communities and Land Cover Types

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

Eelgrass

Vegetation Communities/Land Covers

Disturbed or Developed

Urban/Developed

Riparian and Bottomland Habitat

Beach

Open Water

SOURCE: SANGIS 2023; City of San Diego 2018

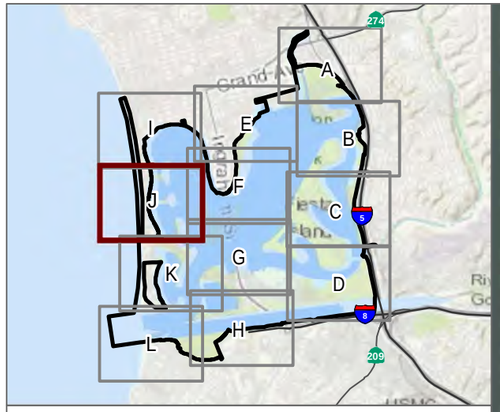
DUDEK

0 250 500 Feet

FIGURE 5I

Vegetation Communities and Land Cover Types

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

Eelgrass

Vegetation Communities/Land Covers

Disturbed or Developed

Urban/Developed

Riparian and Bottomland Habitat

Beach

Open Water



SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

0 250 500 Feet

FIGURE 5J

Vegetation Communities and Land Cover Types

Mission Bay Improvements Program - Aquatic Resources Delineation Report



SOURCE: SANGIS 2023; City of San Diego 2018

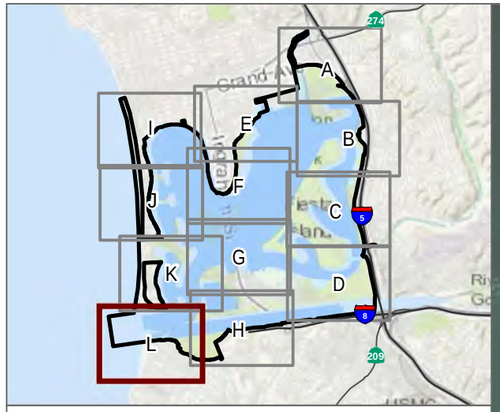
DUDEK

0 250 500 Feet

FIGURE 5K

Vegetation Communities and Land Cover Types

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

Vegetation Communities/Land Covers

Bog and Marsh

Southern Coastal Salt Marsh

Disturbed or Developed

Urban/Developed

Dunes

Southern Foredunes

Riparian and Bottomland Habitat

Beach

Intertidal Estuary

Open Water

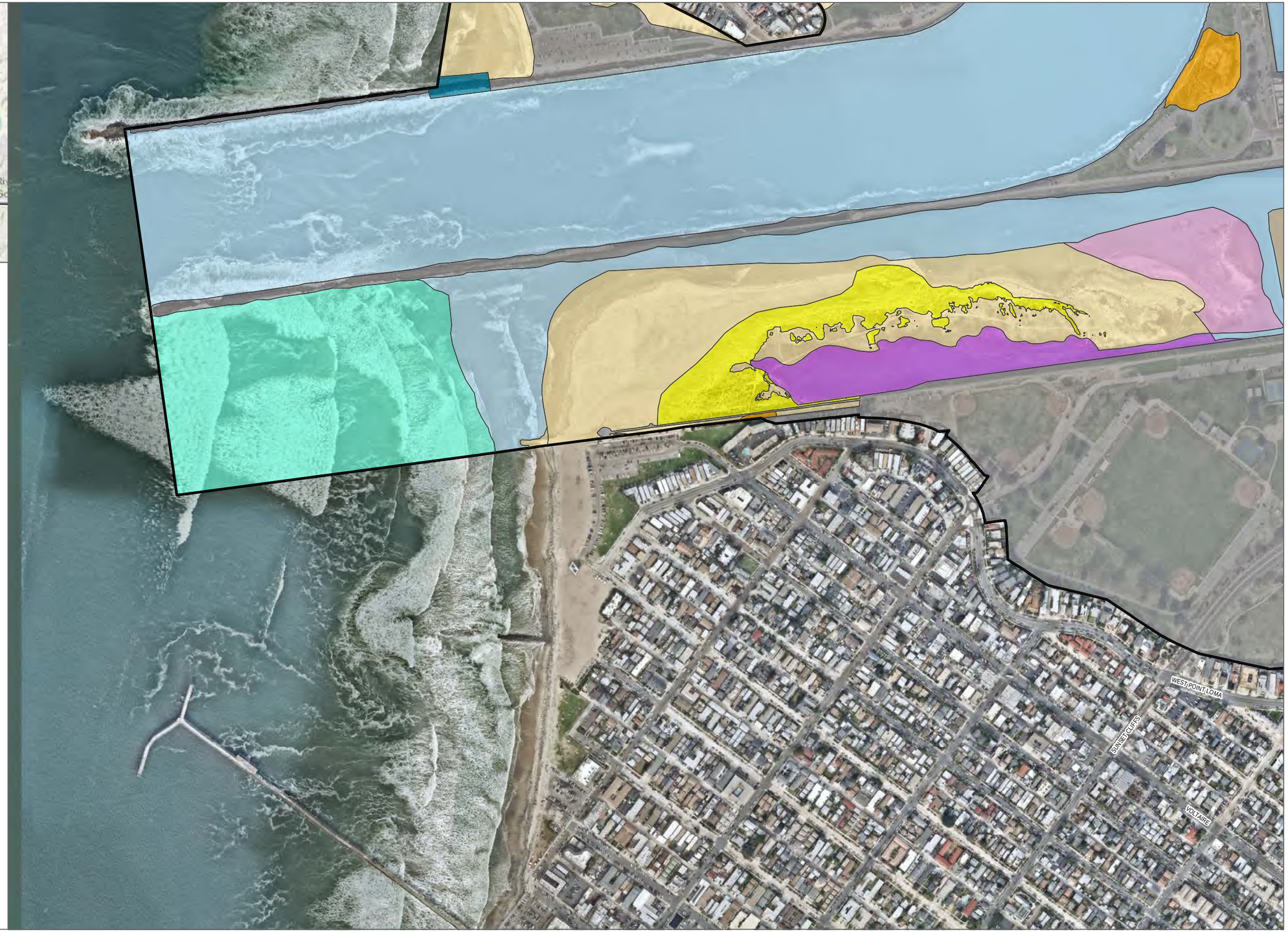
Saltpan/Mudflats

Shallow Bay

Subtidal

Scrub and Chaparral

Diegan Coastal Sage Scrub



SOURCE: SANGIS 2023; City of San Diego 2018

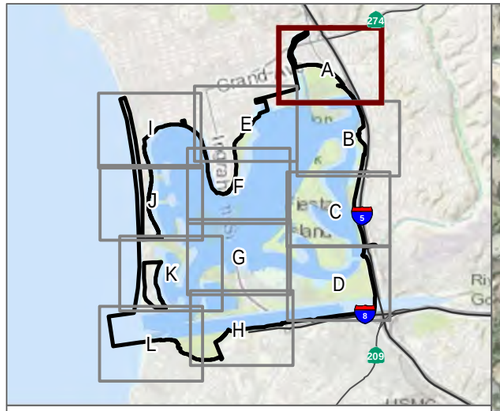
DUDEK

0 250 500 Feet

FIGURE 5L

Vegetation Communities and Land Cover Types

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

Wetland Sampling Station

USACE Jurisdictional Resources

Wetland

Non-Wetland Waters

SOURCE: SANGIS 2023

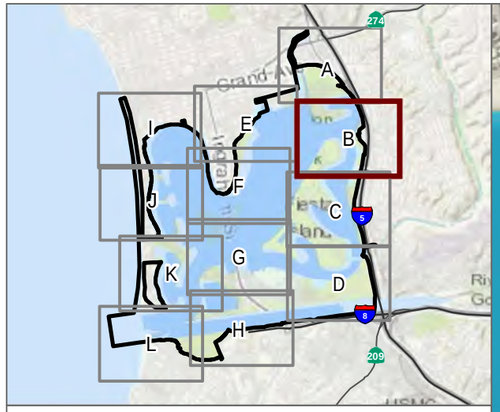
DUDEK

0 250 500 Feet

FIGURE 6A

USACE Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

Wetland Sampling Station

USACE Jurisdictional Resources

Wetland

Non-Wetland Waters

WET-RC-01

NWW-RC-01

NWW-MB-01

FIN 3

FIN 1

FIN 2

FIS 1

CLAIREMONT

MORENA

MISSION BAY

5

SOURCE: SANGIS 2023

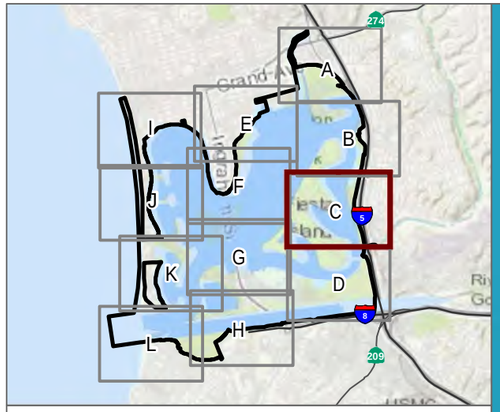
DUDEK

0 250 500 Feet

FIGURE 6B

USACE Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

Wetland Sampling Station

USACE Jurisdictional Resources

Wetland

Non-Wetland Waters



SOURCE: SANGIS 2023

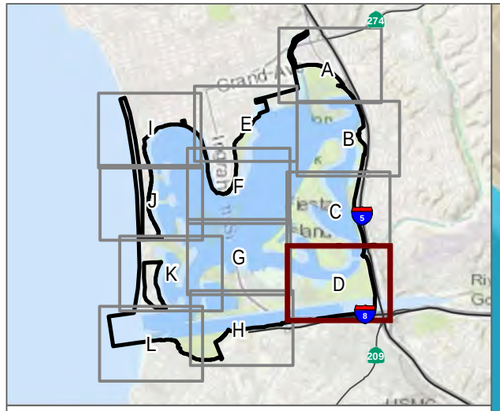
DUDEK

0 250 500 Feet

FIGURE 6C

USACE Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

Wetland Sampling Station

USACE Jurisdictional Resources

Wetland

Non-Wetland Waters

SOURCE: SANGIS 2023

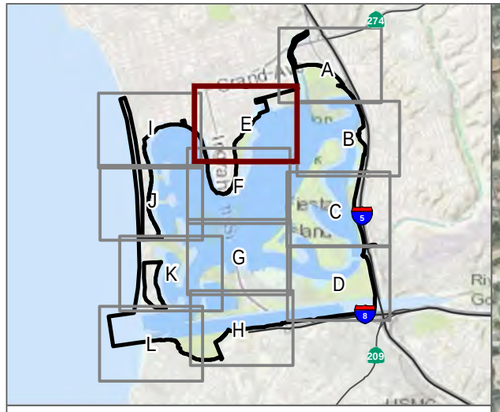
DUDEK

0 250 500 Feet

FIGURE 6D

USACE Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

USACE Jurisdictional Resources

Wetland

Non-Wetland Waters

SOURCE: SANGIS 2023

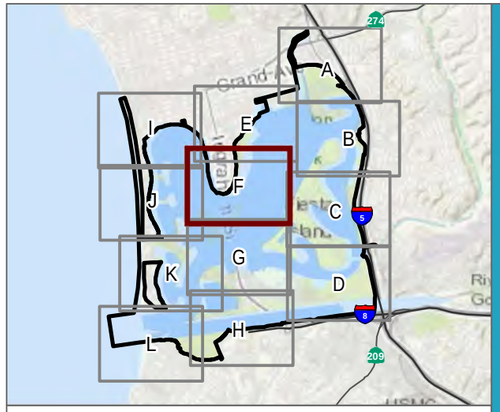
DUDEK

0 250 500 Feet

FIGURE 6E

USACE Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

USACE Jurisdictional Resources

Wetland

Non-Wetland Waters

WET-NWP-01

NWW-MB-01

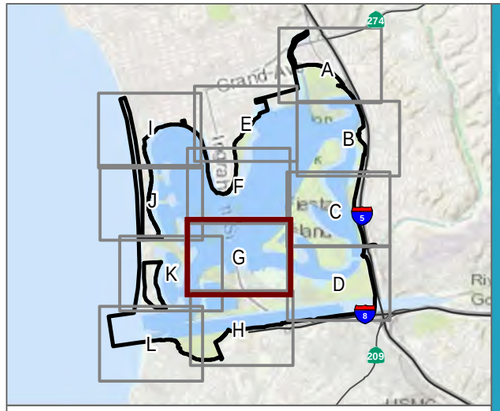
SOURCE: SANGIS 2023

0 250 500 Feet

FIGURE 6F

USACE Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

USACE Jurisdictional Resources

Non-Wetland Waters



SOURCE: SANGIS 2023

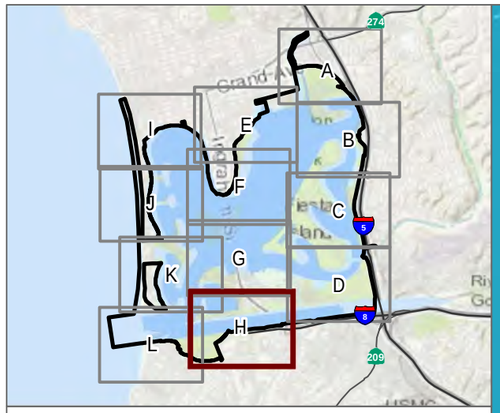
DUDEK

0 250 500 Feet

FIGURE 6G

USACE Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

USACE Jurisdictional Resources

Wetland

Non-Wetland Waters

NWW-MB-01

NWW-SDR-02

WET-SDR-01

NWW-SDR-01

SEA WORLD

WEST MISSION BAY

San Diego River

SPORTS ARENA

NIMITZ

SUNSET CLIFFS

WEST POINT LOMA

FAMOSA

CAMULOS

SOURCE: SANGIS 2023

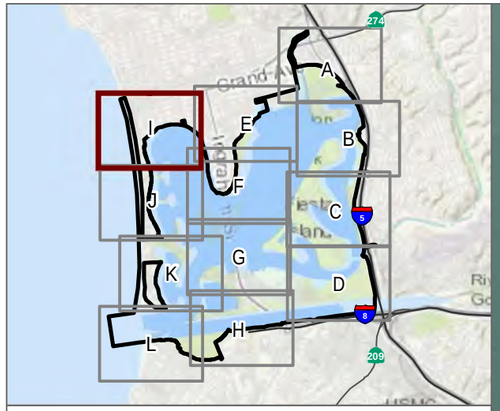
DUDEK

0 250 500 Feet

FIGURE 6H

USACE Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

USACE Jurisdictional Resources

Non-Wetland Waters



SOURCE: SANGIS 2023

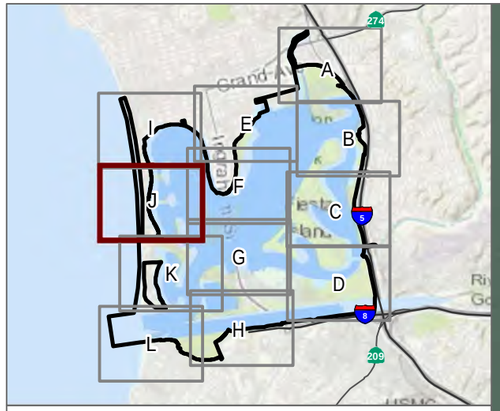
DUDEK

0 250 500 Feet

FIGURE 6I

USACE Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

USACE Jurisdictional Resources

Non-Wetland Waters

NWW-MB-01

MISSION

WEST MISSION BAY

SOURCE: SANGIS 2023

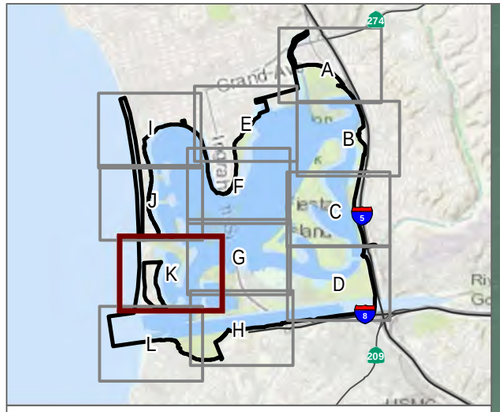
DUDEK

0 250 500 Feet

FIGURE 6J

USACE Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

USACE Jurisdictional Resources

Non-Wetland Waters

NWW-MB-01

WEST MISSION BAY

SOURCE: SANGIS 2023

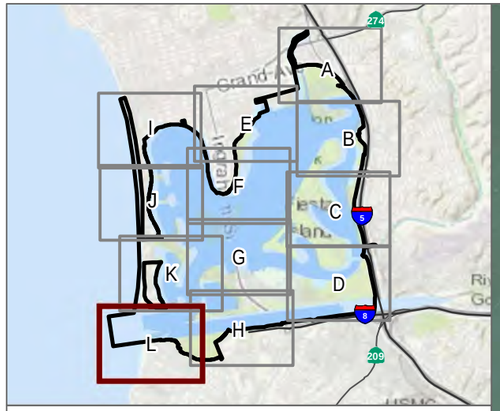
0 250 500 Feet

FIGURE 6K

USACE Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report

DUDEK



Review Area

USACE Jurisdictional Resources

Wetland

Non-Wetland Waters

NWW-MB-01

NWW-SDR-02

WET-SDR-01

NWW-SDR-01

WEST POINT LOMA

SUNSET CLIFFS

VOLTAIRE

SOURCE: SANGIS 2023

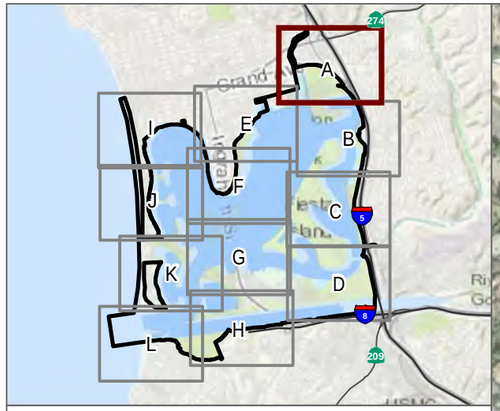
DUDEK

0 250 500 Feet

FIGURE 6L

USACE Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

Wetland Sampling Station

RWQCB Jurisdictional Resources

Ocean/Bay/Estuary

Stream Channel

Wetland

SOURCE: SANGIS 2023

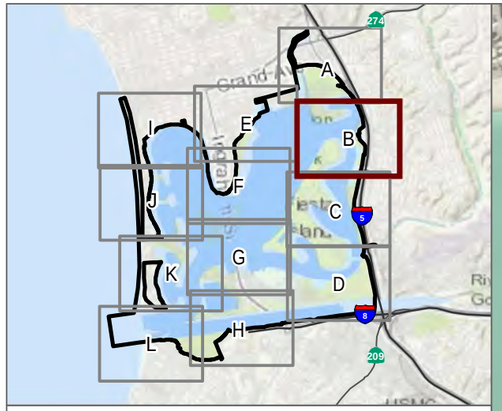
DUDEK

0 250 500 Feet

FIGURE 7A

RWQCB Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

Wetland Sampling Station

RWQCB Jurisdictional Resources

Ocean/Bay/Estuary

Stream Channel

Wetland

WET-RC-01

NWW-RC-01

NWW-MB-01

FIN 3

WOTS-FI-01

FIN 1

FIN 2

FIS 1

CLAIREMONT

MORENA

MISSION BAY

5

SOURCE: SANGIS 2023

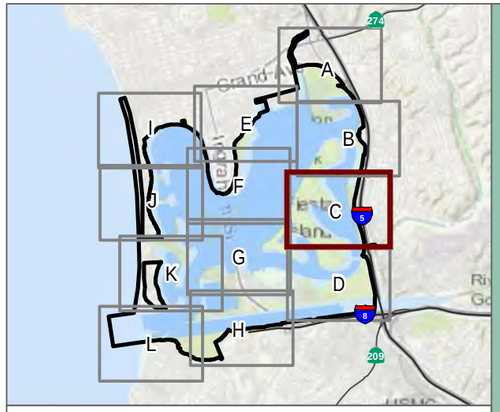
DUDEK

0 250 500 Feet

FIGURE 7B

RWQCB Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

Wetland Sampling Station

RWQCB Jurisdictional Resources

Ocean/Bay/Estuary

Stream Channel

Wetland



SOURCE: SANGIS 2023

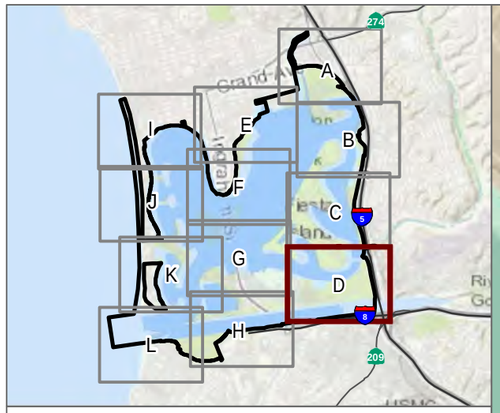
DUDEK

0 250 500 Feet

FIGURE 7C

RWQCB Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

Wetland Sampling Station

RWQCB Jurisdictional Resources

Ocean/Bay/Estuary

Stream Channel

Wetland

NWW-MB-01

WET-TC-01

1S

2N

3N

4N

MISSION BAY

TECOLOTE

MORENA

PACIFIC

SEA WORLD

FRIARS

1N

2N

WET-SDR-01

San Diego River

San Diego River

NWW-SDR-02

HANCOCK

5

8

209

SOURCE: SANGIS 2023

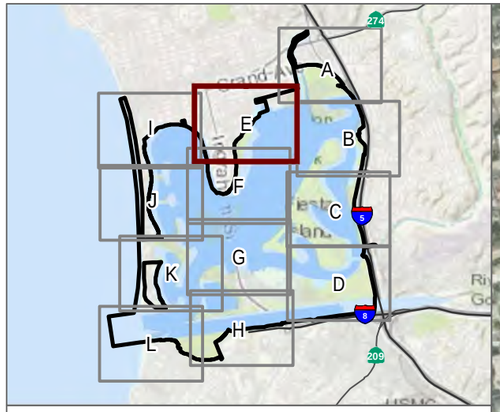
DUDEK

0 250 500 Feet

FIGURE 7D

RWQCB Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

RWQCB Jurisdictional Resources

Ocean/Bay/Estuary

Wetland

SOURCE: SANGIS 2023

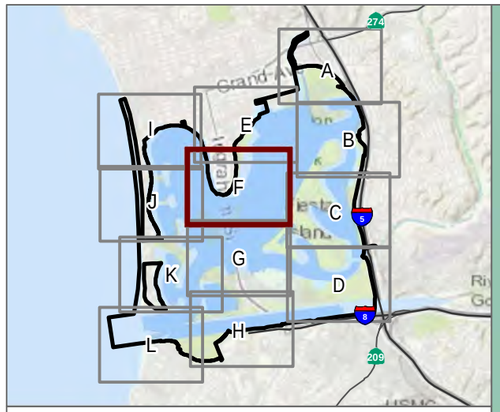
DUDEK

0 250 500 Feet

FIGURE 7E

RWQCB Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

RWQCB Jurisdictional Resources

Ocean/Bay/Estuary

Wetland



SOURCE: SANGIS 2023

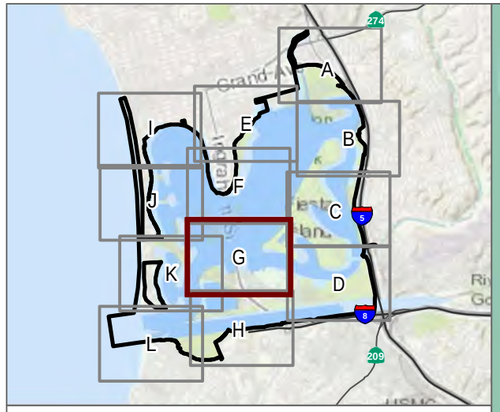
DUDEK

0 250 500 Feet

FIGURE 7F

RWQCB Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

RWQCB Jurisdictional Resources

Ocean/Bay/Estuary



SOURCE: SANGIS 2023

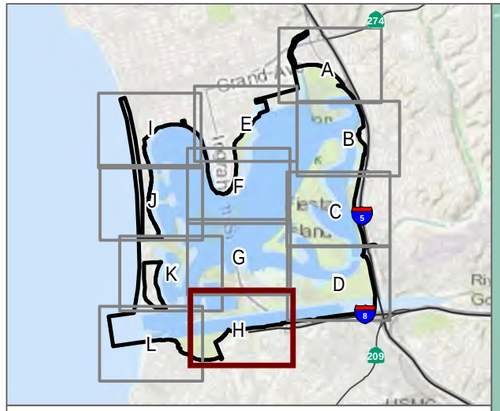
DUDEK

0 250 500 Feet

FIGURE 7G

RWQCB Jurisdictional Resources

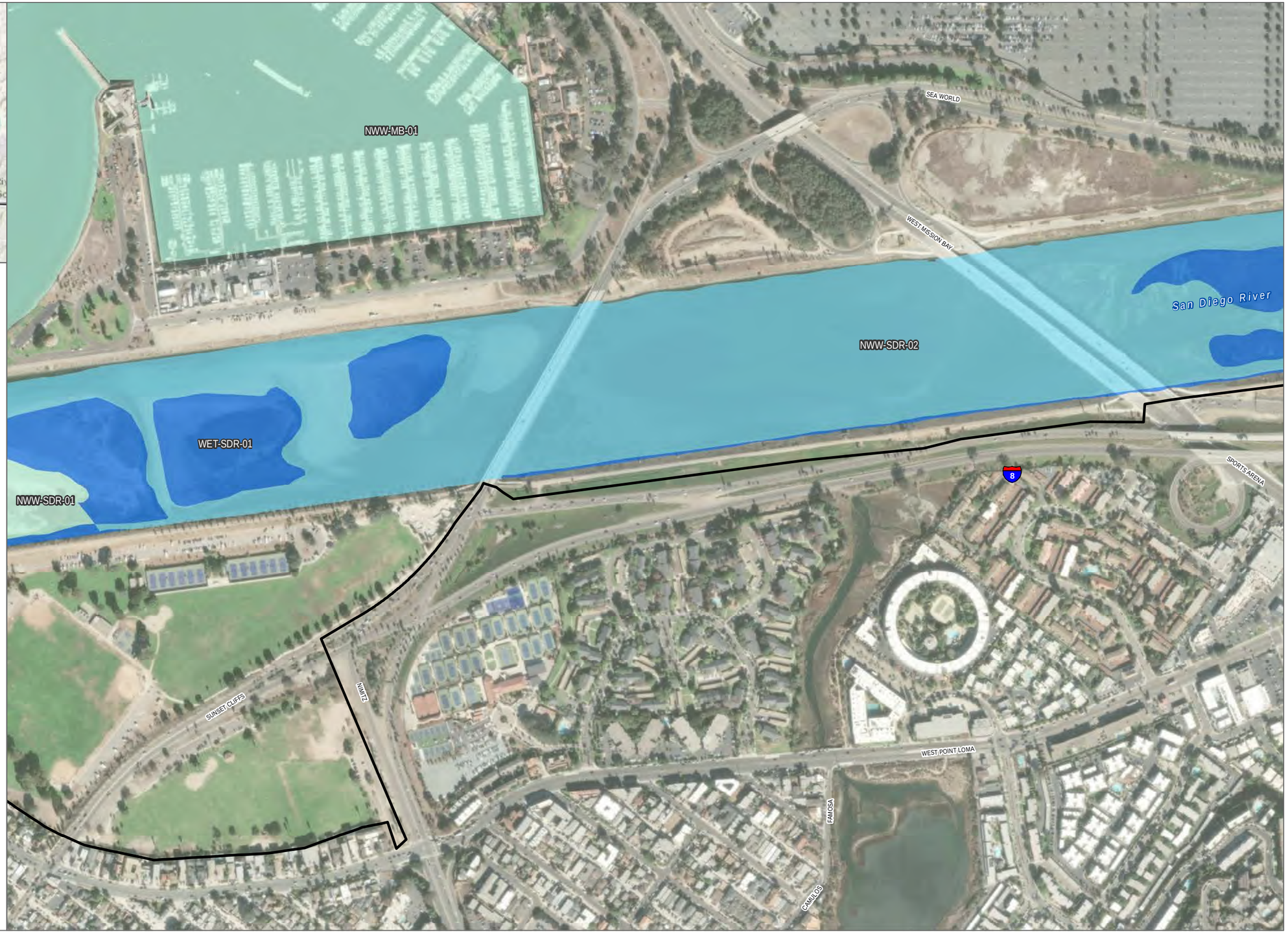
Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

RWQCB Jurisdictional Resources

- Ocean/Bay/Estuary
- Stream Channel
- Wetland



SOURCE: SANGIS 2023

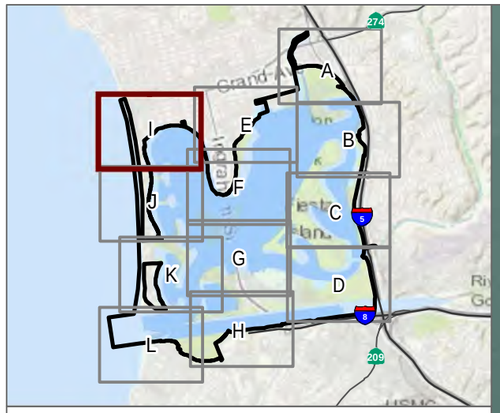
DUDEK

0 250 500 Feet

FIGURE 7H

RWQCB Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

RWQCB Jurisdictional Resources

Ocean/Bay/Estuary



SOURCE: SANGIS 2023

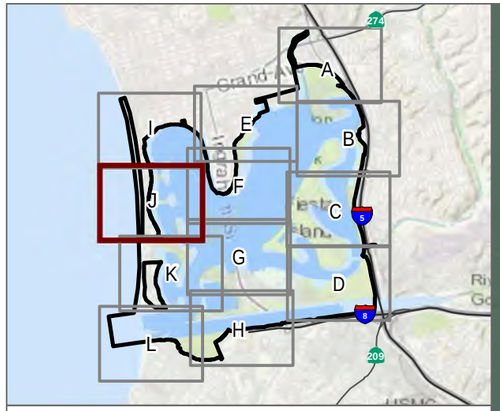
DUDEK

0 250 500 Feet

FIGURE 7I

RWQCB Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

RWQCB Jurisdictional Resources

Ocean/Bay/Estuary

NWW-MB-01

MISSION

WEST MISSION BAY

SOURCE: SANGIS 2023

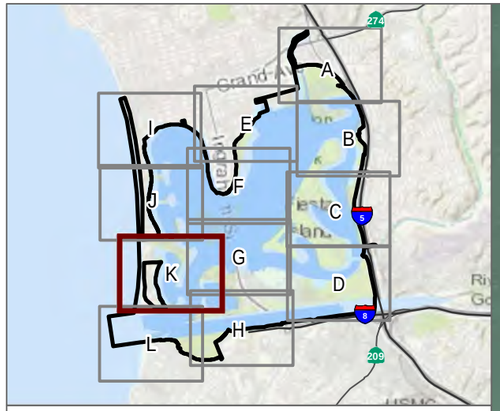
DUDEK

0 250 500 Feet

FIGURE 7J

RWQCB Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

RWQCB Jurisdictional Resources

Ocean/Bay/Estuary



SOURCE: SANGIS 2023

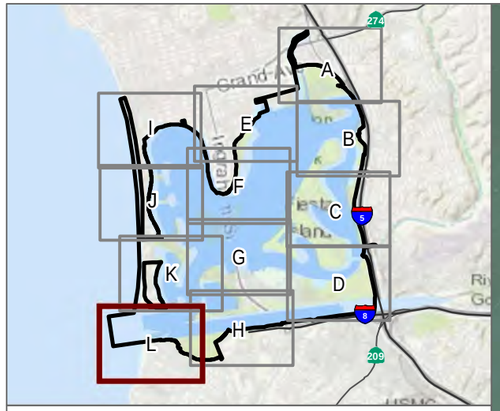
DUDEK

0 250 500 Feet

FIGURE 7K

RWQCB Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

RWQCB Jurisdictional Resources

- Ocean/Bay/Estuary
- Stream Channel
- Wetland



SOURCE: SANGIS 2023

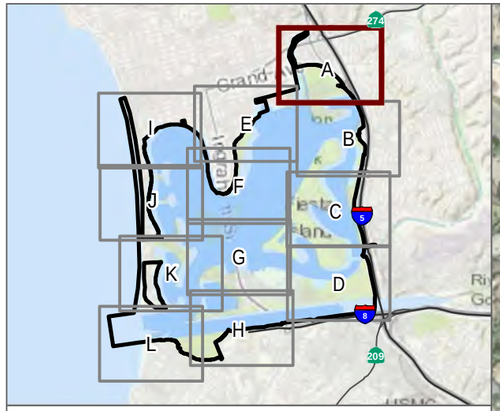
DUDEK

0 250 500 Feet

FIGURE 7L

RWQCB Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

Wetland Sampling Station

CDFW Jurisdictional Resources

Riparian

Streambed

Wetland

SOURCE: SANGIS 2023

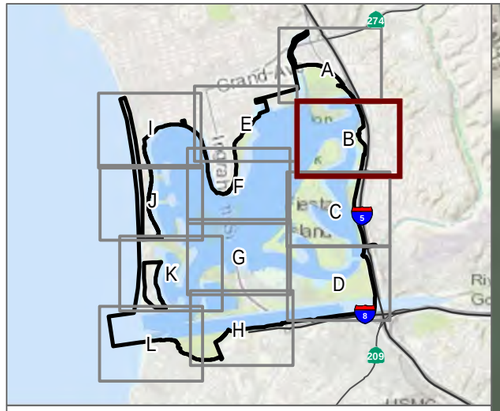
DUDEK

0 250 500 Feet

FIGURE 8A

CDFW Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

Wetland Sampling Station

CDFW Jurisdictional Resources

Wetland

WET-RC-01

WET-RC-01

FIN 3

FIN 1

FIN 2

FIS 1

CLAIREMONT

MORENA

MISSION BAY

5

SOURCE: SANGIS 2023

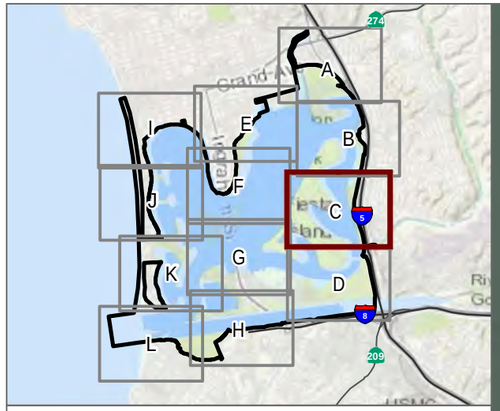
DUDEK

0 250 500 Feet

FIGURE 8B

CDFW Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

Wetland Sampling Station

CDFW Jurisdictional Resources

Streambed



SOURCE: SANGIS 2023

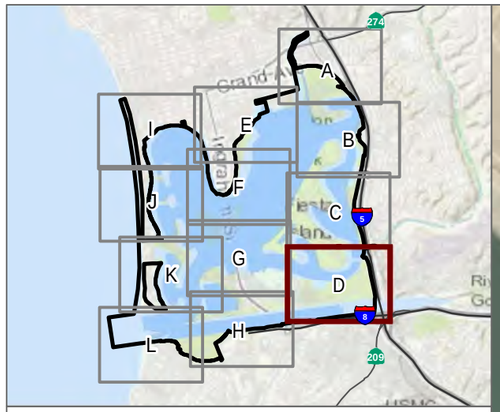
DUDEK

0 250 500 Feet

FIGURE 8C

CDFW Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

Wetland Sampling Station

CDFW Jurisdictional Resources

Riparian

Streambed

Wetland

SOURCE: SANGIS 2023

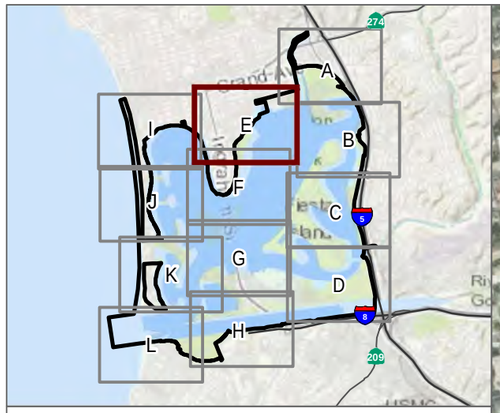
DUDEK

0 250 500 Feet

FIGURE 8D

CDFW Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

CDFW Jurisdictional Resources

Wetland



SOURCE: SANGIS 2023

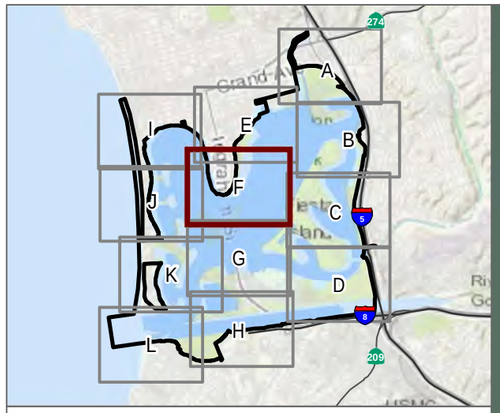
DUDEK

0 250 500 Feet

FIGURE 8E

CDFW Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

SOURCE: SANGIS 2023

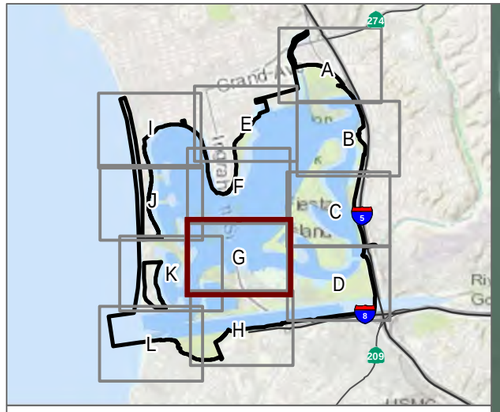
DUDEK

0 250 500 Feet

FIGURE 8F

CDFW Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area



SOURCE: SANGIS 2023

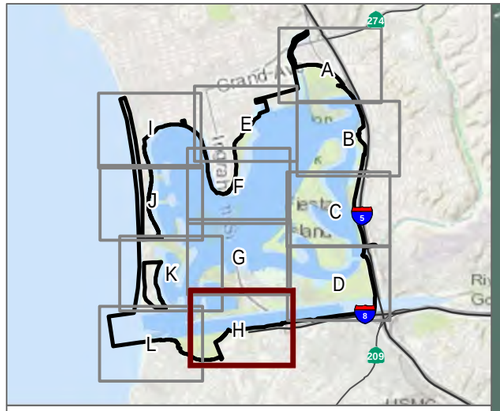
DUDEK

0 250 500 Feet

FIGURE 8G

CDFW Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

CDFW Jurisdictional Resources

Streambed

Wetland

WOTS-SDR-01
WET-SDR-01
NWW-SDR-02
SEA WORLD
WEST MISSION BAY
San Diego River
SPORTS ARENA
SUNSET CLIFFS
NIMITZ
WEST POINT LOMA
FAMOSA
CAMULOS
8

SOURCE: SANGIS 2023

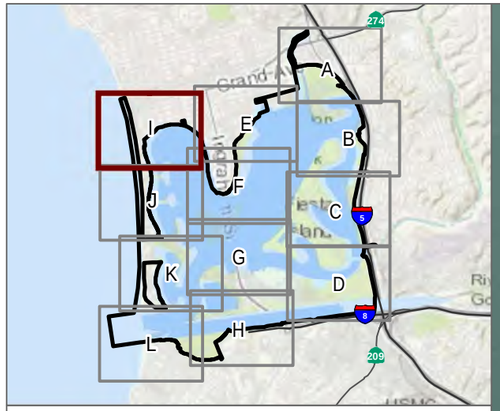
DUDEK

0 250 500 Feet

FIGURE 8H

CDFW Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area



SOURCE: SANGIS 2023

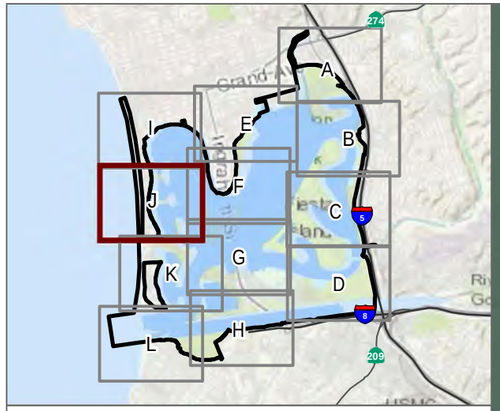
DUDEK

0 250 500 Feet

FIGURE 8I

CDFW Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area



SOURCE: SANGIS 2023

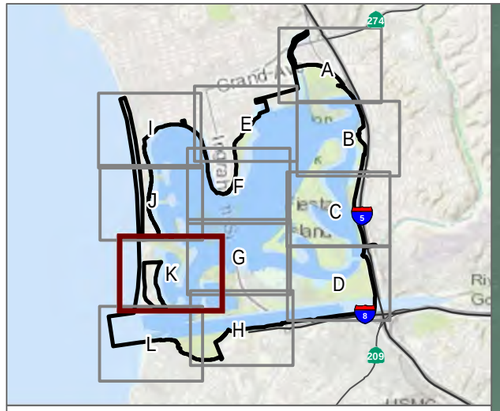
DUDEK

0 250 500 Feet

FIGURE 8J

CDFW Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area



SOURCE: SANGIS 2023

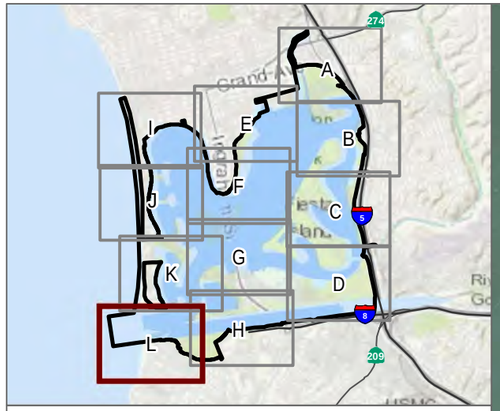
DUDEK

0 250 500 Feet

FIGURE 8K

CDFW Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

CDFW Jurisdictional Resources

Wetland



SOURCE: SANGIS 2023

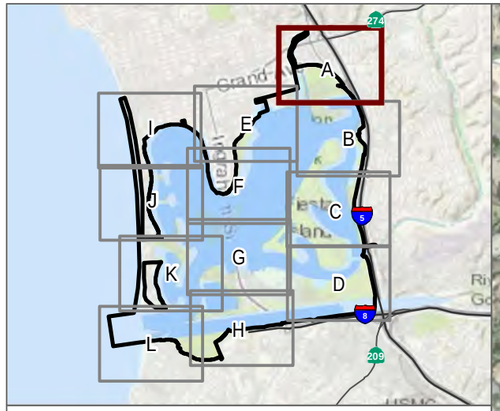
DUDEK

0 250 500 Feet

FIGURE 8L

CDFW Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

Wetland Sampling Station

CCC Jurisdictional Resources

SOURCE: SANGIS 2023

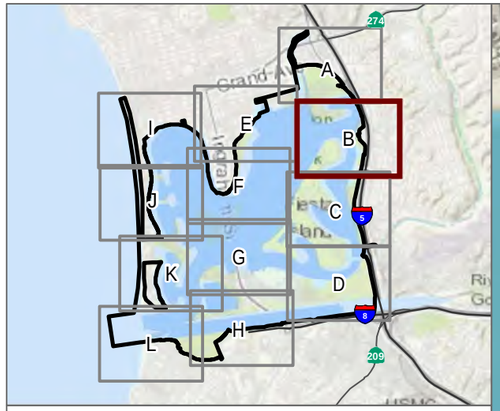
DUDEK

0 250 500 Feet

FIGURE 9A

CCC Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

Wetland Sampling Station

CCC Jurisdictional Resources

WET-RC-01

NWW-RC-01

NWW-MB-01

FIN 3

WOTS-FI-01

FIN 1

FIN 2

FIS 1

CLAIREMONT

MORENA

MISSION BAY

SOURCE: SANGIS 2023

DUDEK

0 250 500 Feet

FIGURE 9B

CCC Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



SOURCE: SANGIS 2023

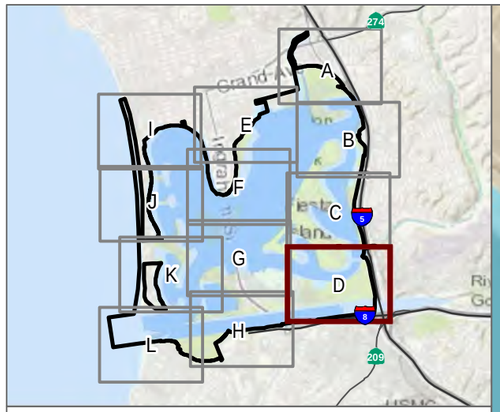
DUDEK

0 250 500 Feet

FIGURE 9C

CCC Jurisdictional Resources

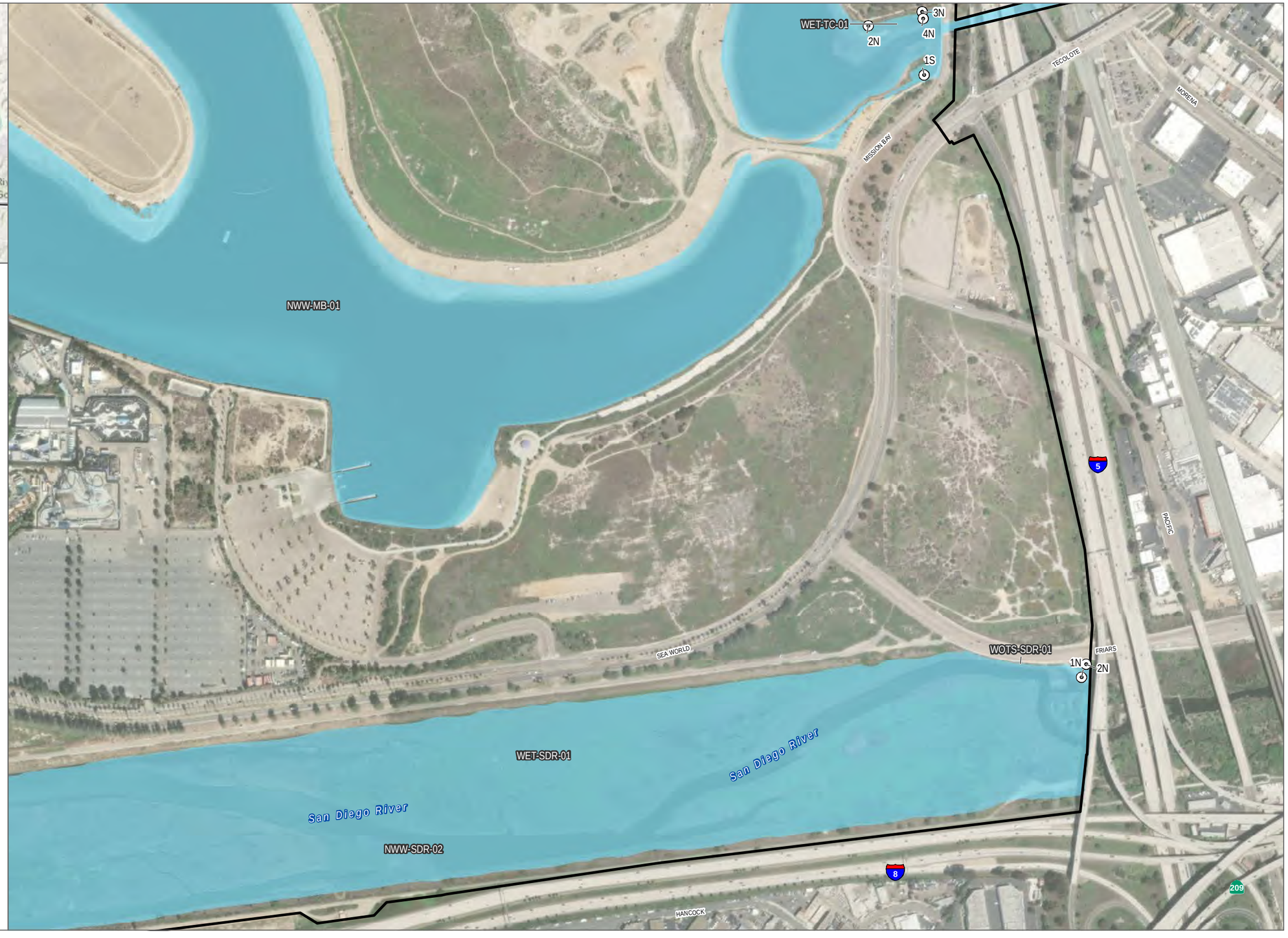
Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

Wetland Sampling Station

CCC Jurisdictional Resources



SOURCE: SANGIS 2023

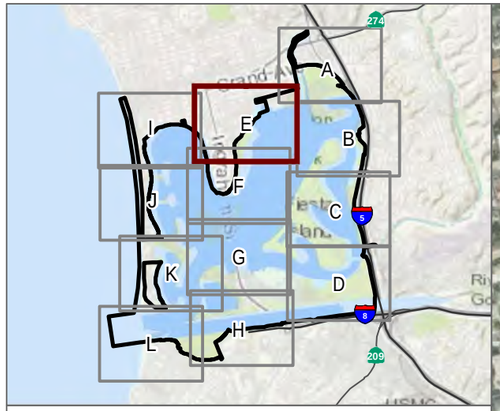
DUDEK

0 250 500 Feet

FIGURE 9D

CCC Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

CCC Jurisdictional Resources

SOURCE: SANGIS 2023

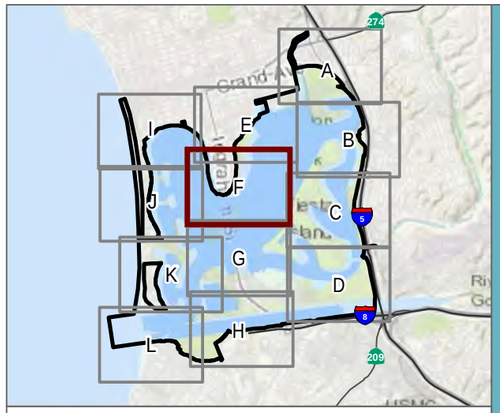
DUDEK

0 250 500 Feet

FIGURE 9E

CCC Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

CCC Jurisdictional Resources



SOURCE: SANGIS 2023

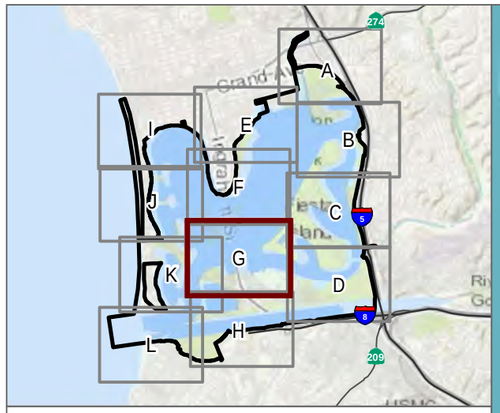
DUDEK

0 250 500 Feet

FIGURE 9F

CCC Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

CCC Jurisdictional Resources



SOURCE: SANGIS 2023

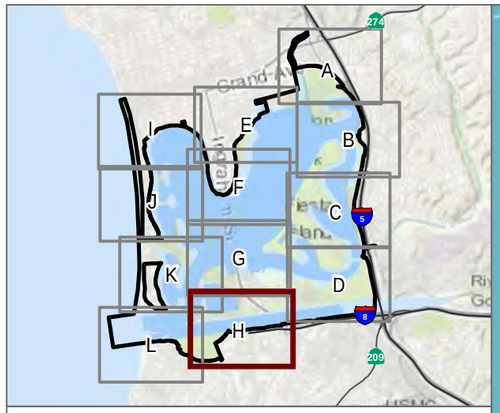
DUDEK

0 250 500 Feet

FIGURE 9G

CCC Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

CCC Jurisdictional Resources

NWW-MB-01

NWW-SDR-02

WET-SDR-01

WOTS-SDR-01

NWW-SDR-01

SEA WORLD

WEST MISSION BAY

San Diego River

SPORTS ARENA

NIMITZ

SUNSET CLIFFS

WEST POINT LOMA

PAMOSA

CAMULOS

SOURCE: SANGIS 2023

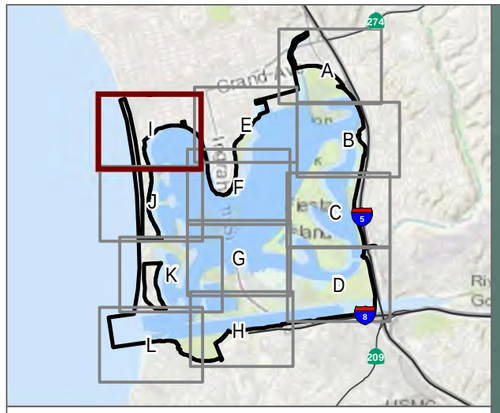
DUDEK

0 250 500 Feet

FIGURE 9H

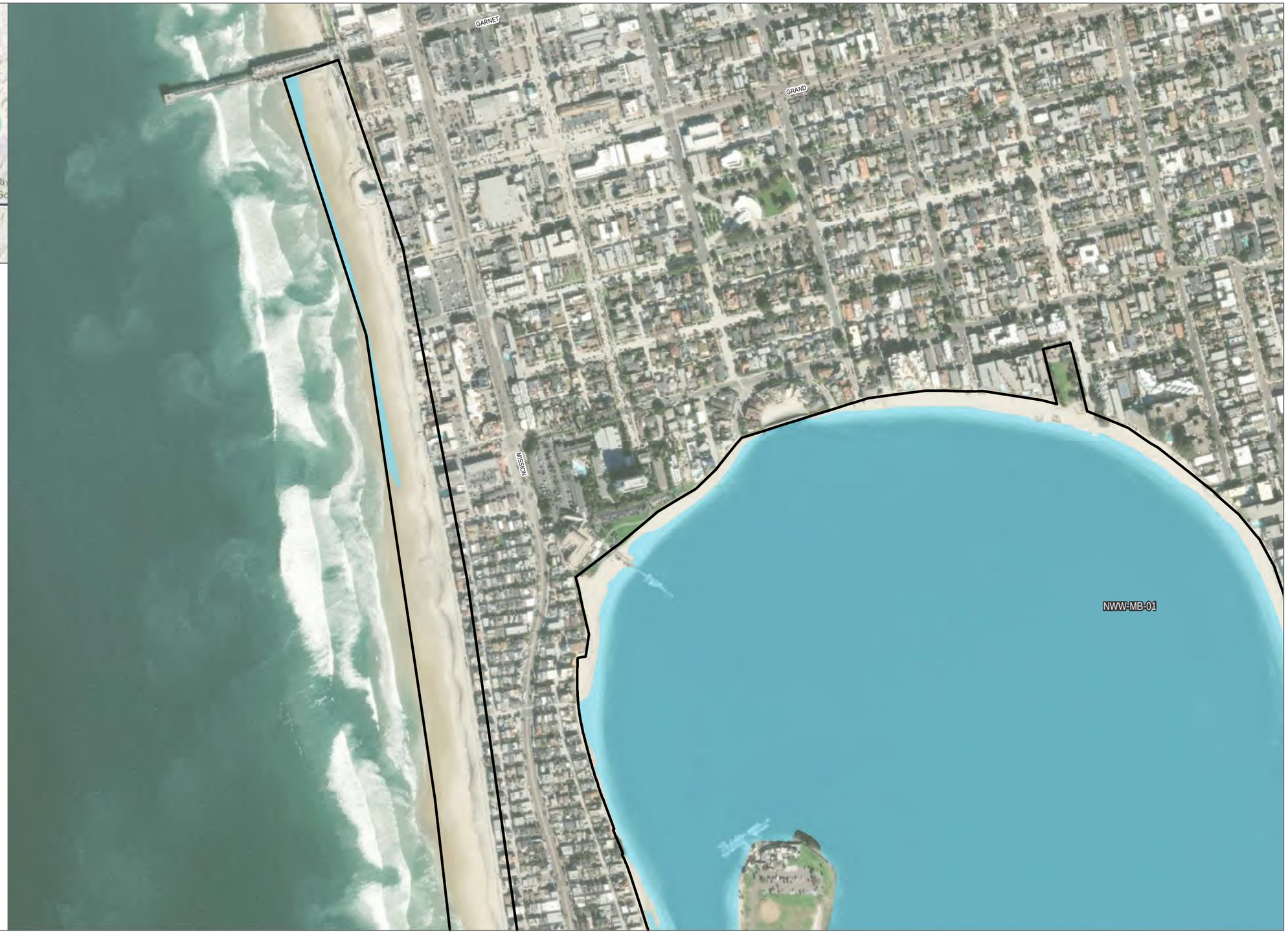
CCC Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

CCC Jurisdictional Resources



SOURCE: SANGIS 2023

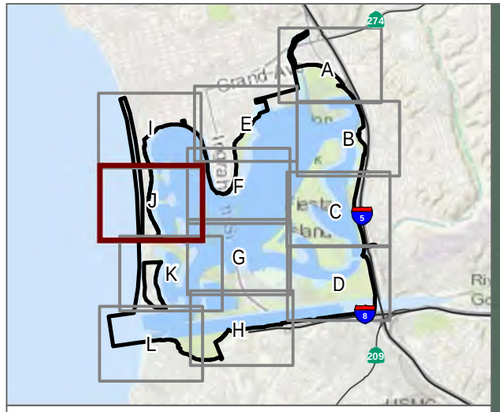
DUDEK

0 250 500 Feet

FIGURE 9I

CCC Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

CCC Jurisdictional Resources



SOURCE: SANGIS 2023

DUDEK

0 250 500 Feet

FIGURE 9J

CCC Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



SOURCE: SANGIS 2023

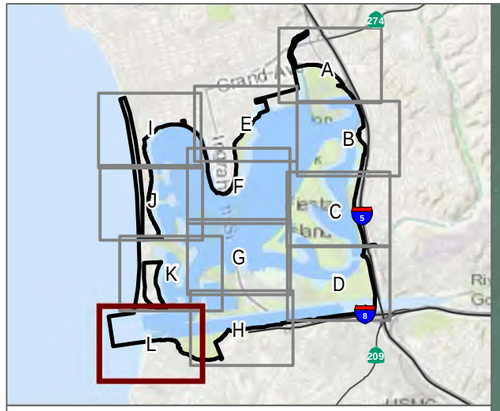
DUDEK

0 250 500 Feet

FIGURE 9K

CCC Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

CCC Jurisdictional Resources



SOURCE: SANGIS 2023

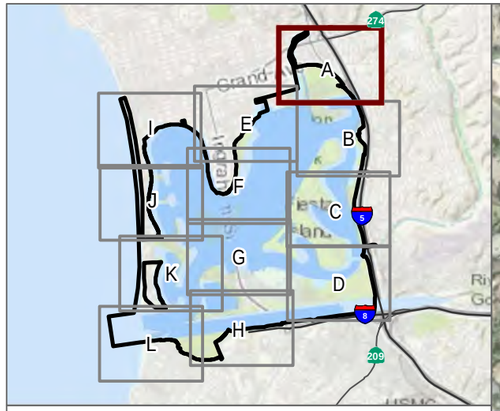
DUDEK

0 250 500 Feet

FIGURE 9L

CCC Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area
Wetland Sampling Station
City Jurisdictional Resources

SOURCE: SANGIS 2023

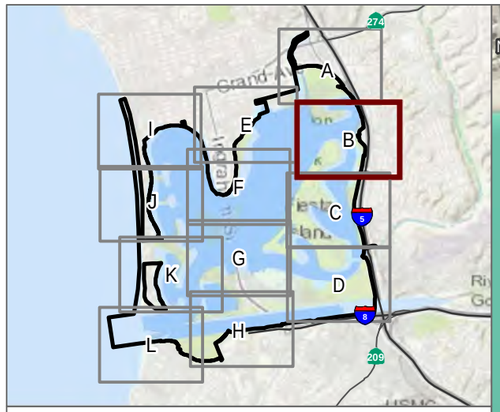
DUDEK

0 250 500 Feet

FIGURE 10A

City Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area
Wetland Sampling Station
City Jurisdictional Resources

WET-RC-01
NWW-RC-01
NWW-MB-01
FIN 3
WOTS-FI-01
FIN 2
FIN 1
FIS 1
CLAIREMONT
MORENA
MISSION BAY
5

SOURCE: SANGIS 2023

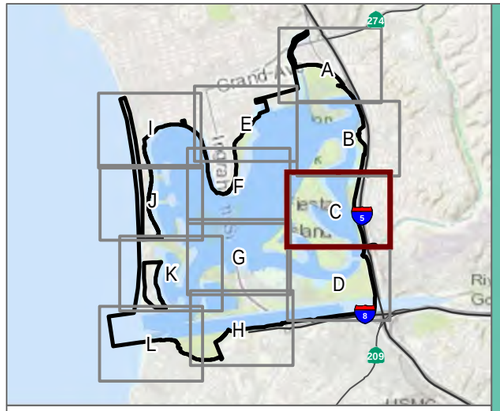
DUDEK

0 250 500 Feet

FIGURE 10B

City Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

Wetland Sampling Station

City Jurisdictional Resources

WOTS-FI-01

WOTS-FI-01

FIS 1

NWW-MB-01

NWW-MB-01

NWW-MB-01

NWW-MB-01

NWW-MB-01

NWW-MB-01

NWW-MB-01

NWW-MB-01

NWW-MB-01

WOTS-TC-01

WET-TC-01

WET-TC-01

4N

3N

NWW-TC-01

5

MORENA

MISSION BAY

TECOLOTE

SOURCE: SANGIS 2023

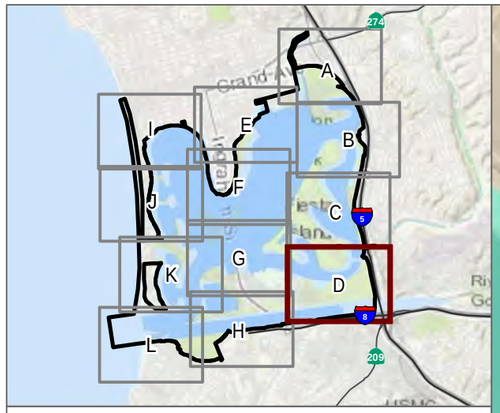
DUDEK

0 250 500 Feet

FIGURE 10C

City Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

Wetland Sampling Station

City Jurisdictional Resources

NWW-MB-01
NWW-MB-01
NWW-MB-01
NWW-MB-01
NWW-MB-01
WET-TC-01
3N
4N
2N
WET-TC-01
NWW-TC-01
WOTS-TC-01
1S
TECOLOTE
MORENA
MISSION BAY
PACIFIC
FRIARS
WOTS-SDR-01
1N
2N
WOTS-SDR-01
WET-SDR-01
NWW-SDR-02
WET-SDR-01
WET-SDR-01
WOTS-SDR-01
NWW-SDR-02
San Diego River
WET-SDR-01
NWW-SDR-02
NWW-SDR-02
WET-SDR-01
SEA WORLD
HANCOCK
5
8
209

SOURCE: SANGIS 2023

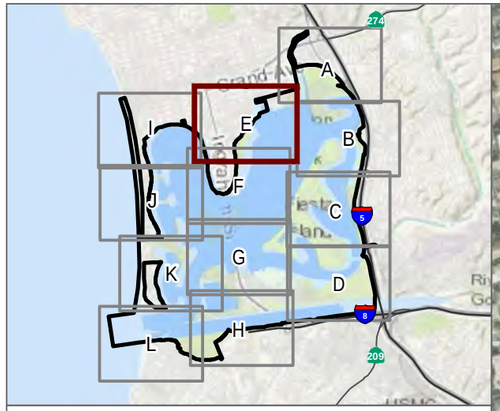
DUDEK

0 250 500 Feet

FIGURE 10D

City Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

City Jurisdictional Resources

SOURCE: SANGIS 2023

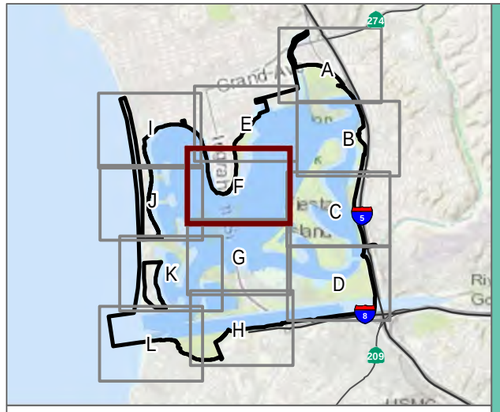
DUDEK

0 250 500 Feet

FIGURE 10E

City Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

City Jurisdictional Resources

NWW-MB-01

WET-NWP-01

SOURCE: SANGIS 2023

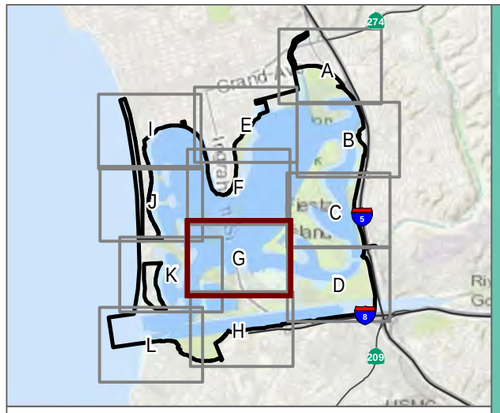
DUDEK

0 250 500 Feet

FIGURE 10F

City Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

City Jurisdictional Resources

NWW-MB-01

INGRAHAM

WEST MISSION BAY

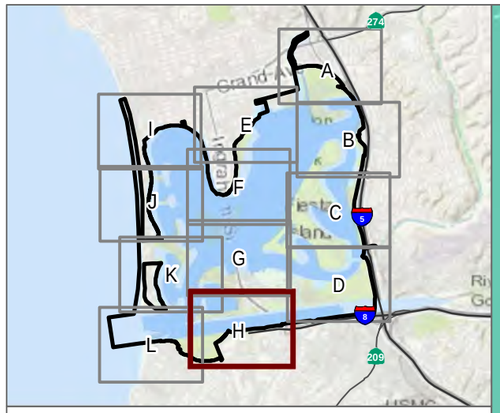
SOURCE: SANGIS 2023

0 250 500 Feet

FIGURE 10G

City Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

City Jurisdictional Resources

NWW-MB-01
NWW-MB-01
NWW-MB-01
SEA WORLD
WEST MISSION BAY
WOTS-SDR-01
WOTS-SDR-01
NWW-SDR-02
NWW-SDR-02
NWW-SDR-02
WET-SDR-01
WET-SDR-01
NWW-SDR-02
San Diego River
WOTS-SDR-01
WET-SDR-01
WET-SDR-01
NWW-SDR-02
WET-SDR-01
WOTS-SDR-01
WOTS-SDR-01
NWW-SDR-01
NWW-SDR-01
SPORTS ARENA
8
SUNSET CLIFFS
NIMITZ
WEST POINT LOMA
FAMOSA
CAMULOS

SOURCE: SANGIS 2023

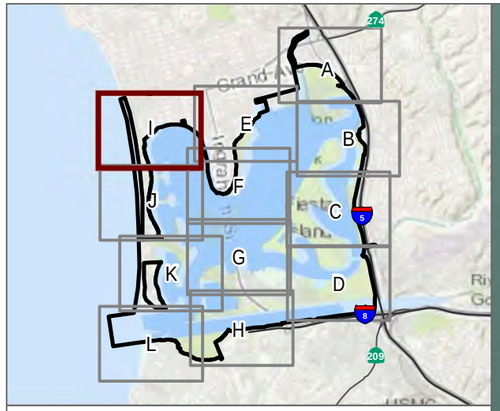
DUDEK

0 250 500 Feet

FIGURE 10H

City Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

City Jurisdictional Resources



SOURCE: SANGIS 2023

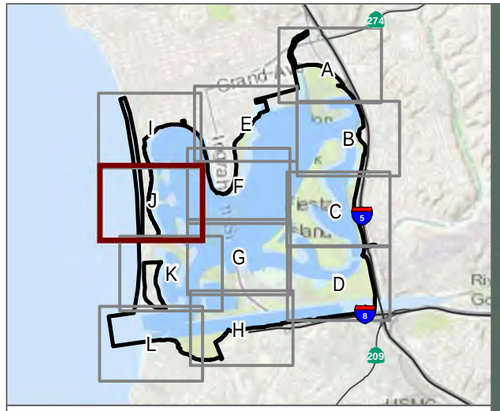
DUDEK

0 250 500 Feet

FIGURE 10I

City Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

City Jurisdictional Resources

NWW-MB-01

NWW-MB-01

NWW-MB-01

NWW-MB-01

NWW-MB-01

NWW-MB-01

NWW-MB-01

MISSION

WEST MISSION BAY

SOURCE: SANGIS 2023

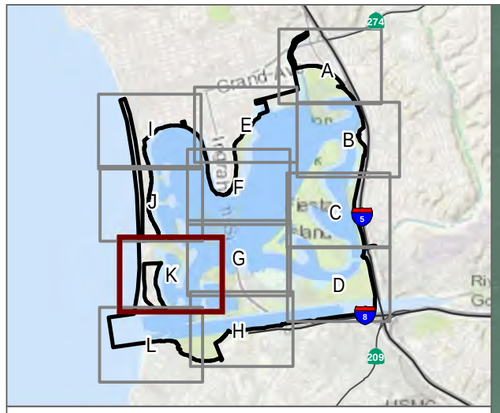
DUDEK

0 250 500 Feet

FIGURE 10J

City Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

City Jurisdictional Resources



SOURCE: SANGIS 2023

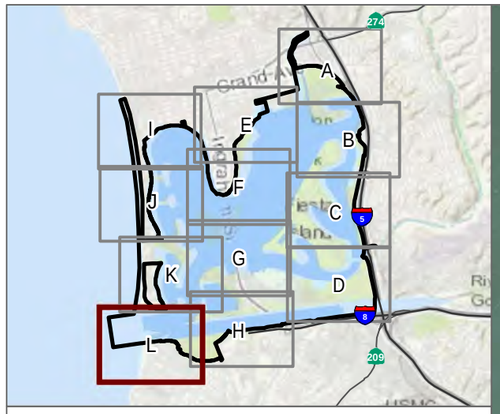
DUDEK

0 250 500 Feet

FIGURE 10K

City Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report



Review Area

City Jurisdictional Resources



SOURCE: SANGIS 2023

DUDEK

0 250 500 Feet

FIGURE 10L

City Jurisdictional Resources

Mission Bay Improvements Program - Aquatic Resources Delineation Report

APPENDIX B – WETLAND DETERMINATION DATA FORMS – ARID WEST REGION

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: MIssion Bay Programmatic JD - Rose Creek City/County: San Diego Sampling Date: 11/23/2018

Applicant/Owner: City of San Diego State: CA Sampling Point: RC 1E

Investigator(s): Christina Schaefer Section, Township, Range:

Landform (hillslope, terrace, etc.): river terrace Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): C - California Mediterranean Lat: Long: Datum:

Soil Map Unit Name: Corralitos loamy sand, 0 to 5 percent slopes NWI classification: PSSRx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔ No ____	
Wetland Hydrology Present?	Yes ✔ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix goodingii	35	Y	FACW
2. Platanus racemosa	15	Y	FAC
3.			
4.			
	100 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10 m)			
1. Grasses (non-native)	40	N	N/A
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✔ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No ____

Remarks:

Bank immediately next to Rose Creek channel; point is within surface drainage under willows and sycamore; high amount of bare ground and non-native grasses form groundcover. Homeless camps contribute to disturbed vegetation.

SOIL

Sampling Point: RC 1E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 2/3	100					loam	alluvial bank
12-18	7.5YR 3/4	100					sandy loar	alluvial bank

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ✔ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✔ **No** ___

Remarks:

Soil classification: excessively drained; soils disturbed from grading/creation of flood control channel; rip rap and gravel/fill present

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ✔ Water Marks (B1) (**Nonriverine**)
- ✔ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ✔ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No ___ Depth (inches): 18

Water Table Present? Yes ✔ No ___ Depth (inches): 18

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 16

Wetland Hydrology Present? Yes ✔ **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Banks seem to get frequently flooded by high tides and/or flood events; flood control channel.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: MIssion Bay Programmatic JD - Rose Creek City/County: San Diego Sampling Date: 11/23/2018

Applicant/Owner: City of San Diego State: CA Sampling Point: RC 1E

Investigator(s): Christina Schaefer Section, Township, Range:

Landform (hillslope, terrace, etc.): river terrace Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): C - California Mediterranean Lat: Long: Datum:

Soil Map Unit Name: Corralitos loamy sand, 0 to 5 percent slopes NWI classification: PSSRx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No ____	**Is the Sampled Area within a Wetland?** **Yes ✔ No ____**
Hydric Soil Present?	Yes ✔ No ____	
Wetland Hydrology Present?	Yes ✔ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix goodingii	35	Y	FACW
2. Platanus racemosa	15	Y	FAC
3.			
4.			
	100 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10 m)			
1. Grasses (non-native)	40	N	N/A
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species 35	x 2 = 70
FAC species 15	x 3 = 45
FACU species ____	x 4 = ____
UPL species 40	x 5 = 200
Column Totals: 80 (A)	315 (B)

Prevalence Index = B/A = 3.94

Hydrophytic Vegetation Indicators:

✔ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ✔ No ____**

Remarks:

Bank immediately next to Rose Creek channel; point is within surface drainage under willows and sycamore; high amount of bare ground and non-native grasses form groundcover. Homeless camps contribute to disturbed vegetation.

SOIL

Sampling Point: RC 1E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 2/3	100					loam	alluvial bank
12-18	7.5YR 3/4	100					sandy loar	alluvial bank

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ✔ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** _____

Remarks:

Soil classification: excessively drained; soils disturbed from grading/creation of flood control channel; rip rap and gravel/fill present

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ✔ Water Marks (B1) (**Nonriverine**)
- ✔ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ✔ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 18

Water Table Present? Yes ✔ No _____ Depth (inches): 18

Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 16

Wetland Hydrology Present? Yes ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Banks seem to get frequently flooded by high tides and/or flood events; flood control channel.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: MIssion Bay Programmatic JD - Rose Creek City/County: San Diego Sampling Date: 11/23/2018

Applicant/Owner: City of San Diego State: CA Sampling Point: RC 1E

Investigator(s): Christina Schaefer Section, Township, Range:

Landform (hillslope, terrace, etc.): river terrace Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): C - California Mediterranean Lat: Long: Datum:

Soil Map Unit Name: Corralitos loamy sand, 0 to 5 percent slopes NWI classification: PSSRx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No ____	**Is the Sampled Area within a Wetland?** **Yes ✔ No ____**
Hydric Soil Present?	Yes ✔ No ____	
Wetland Hydrology Present?	Yes ✔ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix goodingii	35	Y	FACW
2. Platanus racemosa	15	Y	FAC
3.			
4.			
	100 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10 m)			
1. Grasses (non-native)	40	N	N/A
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species 35	x 2 = 70
FAC species 15	x 3 = 45
FACU species ____	x 4 = ____
UPL species 40	x 5 = 200
Column Totals: 80 (A)	315 (B)

Prevalence Index = B/A = 3.94

Hydrophytic Vegetation Indicators:

✔ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ✔ No ____**

Remarks:

Bank immediately next to Rose Creek channel; point is within surface drainage under willows and sycamore; high amount of bare ground and non-native grasses form groundcover. Homeless camps contribute to disturbed vegetation.

SOIL

Sampling Point: RC 1E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 2/3	100					loam	alluvial bank
12-18	7.5YR 3/4	100					sandy loar	alluvial bank

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ✔ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** _____

Remarks:

Soil classification: excessively drained; soils disturbed from grading/creation of flood control channel; rip rap and gravel/fill present

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ✔ Water Marks (B1) (**Nonriverine**)
- ✔ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ✔ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 18

Water Table Present? Yes ✔ No _____ Depth (inches): 18

Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 16

Wetland Hydrology Present? Yes ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Banks seem to get frequently flooded by high tides and/or flood events; flood control channel.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: MIssion Bay Programmatic JD - Rose Creek City/County: San Diego Sampling Date: 11/23/2018

Applicant/Owner: City of San Diego State: CA Sampling Point: RC 1E

Investigator(s): Christina Schaefer Section, Township, Range:

Landform (hillslope, terrace, etc.): river terrace Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): C - California Mediterranean Lat: Long: Datum:

Soil Map Unit Name: Corralitos loamy sand, 0 to 5 percent slopes NWI classification: PSSRx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No ____	**Is the Sampled Area within a Wetland?** **Yes ✔ No ____**
Hydric Soil Present?	Yes ✔ No ____	
Wetland Hydrology Present?	Yes ✔ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix goodingii	35	Y	FACW
2. Platanus racemosa	15	Y	FAC
3.			
4.			
	100 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10 m)			
1. Grasses (non-native)	40	N	N/A
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species 35	x 2 = 70
FAC species 15	x 3 = 45
FACU species ____	x 4 = ____
UPL species 40	x 5 = 200
Column Totals: 80 (A)	315 (B)

Prevalence Index = B/A = 3.94

Hydrophytic Vegetation Indicators:

✔ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ✔ No ____**

Remarks:

Bank immediately next to Rose Creek channel; point is within surface drainage under willows and sycamore; high amount of bare ground and non-native grasses form groundcover. Homeless camps contribute to disturbed vegetation.

SOIL

Sampling Point: RC 1E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 2/3	100					loam	alluvial bank
12-18	7.5YR 3/4	100					sandy loar	alluvial bank

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ✔ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** _____

Remarks:

Soil classification: excessively drained; soils disturbed from grading/creation of flood control channel; rip rap and gravel/fill present

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ✔ Water Marks (B1) (**Nonriverine**)
- ✔ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ✔ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 18

Water Table Present? Yes ✔ No _____ Depth (inches): 18

Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 16

Wetland Hydrology Present? Yes ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Banks seem to get frequently flooded by high tides and/or flood events; flood control channel.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: MIssion Bay Programmatic JD - Rose Creek City/County: San Diego Sampling Date: 11/23/2018

Applicant/Owner: City of San Diego State: CA Sampling Point: RC 1E

Investigator(s): Christina Schaefer Section, Township, Range:

Landform (hillslope, terrace, etc.): river terrace Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): C - California Mediterranean Lat: Long: Datum:

Soil Map Unit Name: Corralitos loamy sand, 0 to 5 percent slopes NWI classification: PSSRx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No ____	**Is the Sampled Area within a Wetland?** **Yes ✔ No ____**
Hydric Soil Present?	Yes ✔ No ____	
Wetland Hydrology Present?	Yes ✔ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix goodingii	35	Y	FACW
2. Platanus racemosa	15	Y	FAC
3.			
4.			
	100 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10 m)			
1. Grasses (non-native)	40	N	N/A
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
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FAC species 15	x 3 = 45
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UPL species 40	x 5 = 200
Column Totals: 80 (A)	315 (B)

Prevalence Index = B/A = 3.94

Hydrophytic Vegetation Indicators:

✔ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ✔ No ____**

Remarks:

Bank immediately next to Rose Creek channel; point is within surface drainage under willows and sycamore; high amount of bare ground and non-native grasses form groundcover. Homeless camps contribute to disturbed vegetation.

SOIL

Sampling Point: RC 1E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 2/3	100					loam	alluvial bank
12-18	7.5YR 3/4	100					sandy loar	alluvial bank

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ✔ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** _____

Remarks:

Soil classification: excessively drained; soils disturbed from grading/creation of flood control channel; rip rap and gravel/fill present

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ✔ Water Marks (B1) (**Nonriverine**)
- ✔ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ✔ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 18

Water Table Present? Yes ✔ No _____ Depth (inches): 18

Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 16

Wetland Hydrology Present? Yes ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Banks seem to get frequently flooded by high tides and/or flood events; flood control channel.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: MIssion Bay Programmatic JD - Rose Creek City/County: San Diego Sampling Date: 11/23/2018

Applicant/Owner: City of San Diego State: CA Sampling Point: RC 1E

Investigator(s): Christina Schaefer Section, Township, Range:

Landform (hillslope, terrace, etc.): river terrace Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): C - California Mediterranean Lat: Long: Datum:

Soil Map Unit Name: Corralitos loamy sand, 0 to 5 percent slopes NWI classification: PSSRx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No ____	**Is the Sampled Area within a Wetland?** **Yes ✔ No ____**
Hydric Soil Present?	Yes ✔ No ____	
Wetland Hydrology Present?	Yes ✔ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix goodingii	35	Y	FACW
2. Platanus racemosa	15	Y	FAC
3.			
4.			
	100 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10 m)			
1. Grasses (non-native)	40	N	N/A
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species 35	x 2 = 70
FAC species 15	x 3 = 45
FACU species ____	x 4 = ____
UPL species 40	x 5 = 200
Column Totals: 80 (A)	315 (B)

Prevalence Index = B/A = 3.94

Hydrophytic Vegetation Indicators:

✔ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ✔ No ____**

Remarks:

Bank immediately next to Rose Creek channel; point is within surface drainage under willows and sycamore; high amount of bare ground and non-native grasses form groundcover. Homeless camps contribute to disturbed vegetation.

SOIL

Sampling Point: RC 1E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 2/3	100					loam	alluvial bank
12-18	7.5YR 3/4	100					sandy loar	alluvial bank

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ✔ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** _____

Remarks:

Soil classification: excessively drained; soils disturbed from grading/creation of flood control channel; rip rap and gravel/fill present

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ✔ Water Marks (B1) (**Nonriverine**)
- ✔ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ✔ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 18

Water Table Present? Yes ✔ No _____ Depth (inches): 18

Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 16

Wetland Hydrology Present? Yes ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Banks seem to get frequently flooded by high tides and/or flood events; flood control channel.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: MIssion Bay Programmatic JD - Rose Creek City/County: San Diego Sampling Date: 11/23/2018

Applicant/Owner: City of San Diego State: CA Sampling Point: RC 1E

Investigator(s): Christina Schaefer Section, Township, Range:

Landform (hillslope, terrace, etc.): river terrace Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): C - California Mediterranean Lat: Long: Datum:

Soil Map Unit Name: Corralitos loamy sand, 0 to 5 percent slopes NWI classification: PSSRx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No ____	**Is the Sampled Area within a Wetland?** **Yes ✔ No ____**
Hydric Soil Present?	Yes ✔ No ____	
Wetland Hydrology Present?	Yes ✔ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix goodingii	35	Y	FACW
2. Platanus racemosa	15	Y	FAC
3.			
4.			
	100 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10 m)			
1. Grasses (non-native)	40	N	N/A
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species 35	x 2 = 70
FAC species 15	x 3 = 45
FACU species ____	x 4 = ____
UPL species 40	x 5 = 200
Column Totals: 80 (A)	315 (B)

Prevalence Index = B/A = 3.94

Hydrophytic Vegetation Indicators:

✔ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ✔ No ____**

Remarks:

Bank immediately next to Rose Creek channel; point is within surface drainage under willows and sycamore; high amount of bare ground and non-native grasses form groundcover. Homeless camps contribute to disturbed vegetation.

SOIL

Sampling Point: RC 1E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 2/3	100					loam	alluvial bank
12-18	7.5YR 3/4	100					sandy loar	alluvial bank

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ✔ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** _____

Remarks:

Soil classification: excessively drained; soils disturbed from grading/creation of flood control channel; rip rap and gravel/fill present

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ✔ Water Marks (B1) (**Nonriverine**)
- ✔ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ✔ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 18

Water Table Present? Yes ✔ No _____ Depth (inches): 18

Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 16

Wetland Hydrology Present? Yes ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Banks seem to get frequently flooded by high tides and/or flood events; flood control channel.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: MIssion Bay Programmatic JD - Rose Creek City/County: San Diego Sampling Date: 11/23/2018

Applicant/Owner: City of San Diego State: CA Sampling Point: RC 1E

Investigator(s): Christina Schaefer Section, Township, Range:

Landform (hillslope, terrace, etc.): river terrace Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): C - California Mediterranean Lat: Long: Datum:

Soil Map Unit Name: Corralitos loamy sand, 0 to 5 percent slopes NWI classification: PSSRx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No ____	**Is the Sampled Area within a Wetland?** **Yes ✔ No ____**
Hydric Soil Present?	Yes ✔ No ____	
Wetland Hydrology Present?	Yes ✔ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix goodingii	35	Y	FACW
2. Platanus racemosa	15	Y	FAC
3.			
4.			
	100 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10 m)			
1. Grasses (non-native)	40	N	N/A
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species 35	x 2 = 70
FAC species 15	x 3 = 45
FACU species ____	x 4 = ____
UPL species 40	x 5 = 200
Column Totals: 80 (A)	315 (B)

Prevalence Index = B/A = 3.94

Hydrophytic Vegetation Indicators:

✔ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ✔ No ____**

Remarks:

Bank immediately next to Rose Creek channel; point is within surface drainage under willows and sycamore; high amount of bare ground and non-native grasses form groundcover. Homeless camps contribute to disturbed vegetation.

SOIL

Sampling Point: RC 1E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 2/3	100					loam	alluvial bank
12-18	7.5YR 3/4	100					sandy loar	alluvial bank

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ✔ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** _____

Remarks:

Soil classification: excessively drained; soils disturbed from grading/creation of flood control channel; rip rap and gravel/fill present

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ✔ Water Marks (B1) (**Nonriverine**)
- ✔ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ✔ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 18

Water Table Present? Yes ✔ No _____ Depth (inches): 18

Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 16

Wetland Hydrology Present? Yes ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Banks seem to get frequently flooded by high tides and/or flood events; flood control channel.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: MIssion Bay Programmatic JD - Rose Creek City/County: San Diego Sampling Date: 11/23/2018

Applicant/Owner: City of San Diego State: CA Sampling Point: RC 1E

Investigator(s): Christina Schaefer Section, Township, Range:

Landform (hillslope, terrace, etc.): river terrace Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): C - California Mediterranean Lat: Long: Datum:

Soil Map Unit Name: Corralitos loamy sand, 0 to 5 percent slopes NWI classification: PSSRx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No ____	**Is the Sampled Area within a Wetland?** **Yes ✔ No ____**
Hydric Soil Present?	Yes ✔ No ____	
Wetland Hydrology Present?	Yes ✔ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix goodingii	35	Y	FACW
2. Platanus racemosa	15	Y	FAC
3.			
4.			
	100 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10 m)			
1. Grasses (non-native)	40	N	N/A
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species 35	x 2 = 70
FAC species 15	x 3 = 45
FACU species ____	x 4 = ____
UPL species 40	x 5 = 200
Column Totals: 80 (A)	315 (B)

Prevalence Index = B/A = 3.94

Hydrophytic Vegetation Indicators:

✔ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ✔ No ____**

Remarks:

Bank immediately next to Rose Creek channel; point is within surface drainage under willows and sycamore; high amount of bare ground and non-native grasses form groundcover. Homeless camps contribute to disturbed vegetation.

SOIL

Sampling Point: RC 1E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 2/3	100					loam	alluvial bank
12-18	7.5YR 3/4	100					sandy loar	alluvial bank

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ✔ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** _____

Remarks:

Soil classification: excessively drained; soils disturbed from grading/creation of flood control channel; rip rap and gravel/fill present

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ✔ Water Marks (B1) (**Nonriverine**)
- ✔ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ✔ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 18

Water Table Present? Yes ✔ No _____ Depth (inches): 18

Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 16

Wetland Hydrology Present? Yes ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Banks seem to get frequently flooded by high tides and/or flood events; flood control channel.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: MIssion Bay Programmatic JD - Rose Creek City/County: San Diego Sampling Date: 11/23/2018

Applicant/Owner: City of San Diego State: CA Sampling Point: RC 1E

Investigator(s): Christina Schaefer Section, Township, Range:

Landform (hillslope, terrace, etc.): river terrace Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): C - California Mediterranean Lat: Long: Datum:

Soil Map Unit Name: Corralitos loamy sand, 0 to 5 percent slopes NWI classification: PSSRx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No ____	**Is the Sampled Area within a Wetland?** **Yes ✔ No ____**
Hydric Soil Present?	Yes ✔ No ____	
Wetland Hydrology Present?	Yes ✔ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix goodingii	35	Y	FACW
2. Platanus racemosa	15	Y	FAC
3.			
4.			
	100 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10 m)			
1. Grasses (non-native)	40	N	N/A
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species 35	x 2 = 70
FAC species 15	x 3 = 45
FACU species ____	x 4 = ____
UPL species 40	x 5 = 200
Column Totals: 80 (A)	315 (B)

Prevalence Index = B/A = 3.94

Hydrophytic Vegetation Indicators:

✔ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ✔ No ____**

Remarks:

Bank immediately next to Rose Creek channel; point is within surface drainage under willows and sycamore; high amount of bare ground and non-native grasses form groundcover. Homeless camps contribute to disturbed vegetation.

SOIL

Sampling Point: RC 1E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 2/3	100					loam	alluvial bank
12-18	7.5YR 3/4	100					sandy loar	alluvial bank

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ✔ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** _____

Remarks:

Soil classification: excessively drained; soils disturbed from grading/creation of flood control channel; rip rap and gravel/fill present

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ✔ Water Marks (B1) (**Nonriverine**)
- ✔ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ✔ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 18

Water Table Present? Yes ✔ No _____ Depth (inches): 18

Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 16

Wetland Hydrology Present? Yes ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Banks seem to get frequently flooded by high tides and/or flood events; flood control channel.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: MIssion Bay Programmatic JD - Rose Creek City/County: San Diego Sampling Date: 11/23/2018

Applicant/Owner: City of San Diego State: CA Sampling Point: RC 1E

Investigator(s): Christina Schaefer Section, Township, Range:

Landform (hillslope, terrace, etc.): river terrace Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): C - California Mediterranean Lat: Long: Datum:

Soil Map Unit Name: Corralitos loamy sand, 0 to 5 percent slopes NWI classification: PSSRx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No ____	**Is the Sampled Area within a Wetland?** **Yes ✔ No ____**
Hydric Soil Present?	Yes ✔ No ____	
Wetland Hydrology Present?	Yes ✔ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix goodingii	35	Y	FACW
2. Platanus racemosa	15	Y	FAC
3.			
4.			
	100 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10 m)			
1. Grasses (non-native)	40	N	N/A
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species 35	x 2 = 70
FAC species 15	x 3 = 45
FACU species ____	x 4 = ____
UPL species 40	x 5 = 200
Column Totals: 80 (A)	315 (B)

Prevalence Index = B/A = 3.94

Hydrophytic Vegetation Indicators:

✔ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ✔ No ____**

Remarks:

Bank immediately next to Rose Creek channel; point is within surface drainage under willows and sycamore; high amount of bare ground and non-native grasses form groundcover. Homeless camps contribute to disturbed vegetation.

SOIL

Sampling Point: RC 1E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 2/3	100					loam	alluvial bank
12-18	7.5YR 3/4	100					sandy loar	alluvial bank

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ✔ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** _____

Remarks:

Soil classification: excessively drained; soils disturbed from grading/creation of flood control channel; rip rap and gravel/fill present

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ✔ Water Marks (B1) (**Nonriverine**)
- ✔ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ✔ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 18

Water Table Present? Yes ✔ No _____ Depth (inches): 18

Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 16

Wetland Hydrology Present? Yes ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Banks seem to get frequently flooded by high tides and/or flood events; flood control channel.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: MIssion Bay Programmatic JD - Rose Creek City/County: San Diego Sampling Date: 11/23/2018

Applicant/Owner: City of San Diego State: CA Sampling Point: RC 1E

Investigator(s): Christina Schaefer Section, Township, Range:

Landform (hillslope, terrace, etc.): river terrace Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): C - California Mediterranean Lat: Long: Datum:

Soil Map Unit Name: Corralitos loamy sand, 0 to 5 percent slopes NWI classification: PSSRx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No ____	**Is the Sampled Area within a Wetland?** **Yes ✔ No ____**
Hydric Soil Present?	Yes ✔ No ____	
Wetland Hydrology Present?	Yes ✔ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix goodingii	35	Y	FACW
2. Platanus racemosa	15	Y	FAC
3.			
4.			
	100 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10 m)			
1. Grasses (non-native)	40	N	N/A
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species 35	x 2 = 70
FAC species 15	x 3 = 45
FACU species ____	x 4 = ____
UPL species 40	x 5 = 200
Column Totals: 80 (A)	315 (B)

Prevalence Index = B/A = 3.94

Hydrophytic Vegetation Indicators:

✔ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ✔ No ____**

Remarks:

Bank immediately next to Rose Creek channel; point is within surface drainage under willows and sycamore; high amount of bare ground and non-native grasses form groundcover. Homeless camps contribute to disturbed vegetation.

SOIL

Sampling Point: RC 1E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 2/3	100					loam	alluvial bank
12-18	7.5YR 3/4	100					sandy loar	alluvial bank

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ✔ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** _____

Remarks:

Soil classification: excessively drained; soils disturbed from grading/creation of flood control channel; rip rap and gravel/fill present

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ✔ Water Marks (B1) (**Nonriverine**)
- ✔ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ✔ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 18

Water Table Present? Yes ✔ No _____ Depth (inches): 18

Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 16

Wetland Hydrology Present? Yes ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Banks seem to get frequently flooded by high tides and/or flood events; flood control channel.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: MIssion Bay Programmatic JD - Rose Creek City/County: San Diego Sampling Date: 11/23/2018

Applicant/Owner: City of San Diego State: CA Sampling Point: RC 1E

Investigator(s): Christina Schaefer Section, Township, Range:

Landform (hillslope, terrace, etc.): river terrace Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): C - California Mediterranean Lat: Long: Datum:

Soil Map Unit Name: Corralitos loamy sand, 0 to 5 percent slopes NWI classification: PSSRx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No ____	**Is the Sampled Area within a Wetland?** **Yes ✔ No ____**
Hydric Soil Present?	Yes ✔ No ____	
Wetland Hydrology Present?	Yes ✔ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix goodingii	35	Y	FACW
2. Platanus racemosa	15	Y	FAC
3.			
4.			
	100 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10 m)			
1. Grasses (non-native)	40	N	N/A
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species 35	x 2 = 70
FAC species 15	x 3 = 45
FACU species ____	x 4 = ____
UPL species 40	x 5 = 200
Column Totals: 80 (A)	315 (B)

Prevalence Index = B/A = 3.94

Hydrophytic Vegetation Indicators:

✔ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ✔ No ____**

Remarks:

Bank immediately next to Rose Creek channel; point is within surface drainage under willows and sycamore; high amount of bare ground and non-native grasses form groundcover. Homeless camps contribute to disturbed vegetation.

SOIL

Sampling Point: RC 1E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 2/3	100					loam	alluvial bank
12-18	7.5YR 3/4	100					sandy loar	alluvial bank

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ✔ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** _____

Remarks:

Soil classification: excessively drained; soils disturbed from grading/creation of flood control channel; rip rap and gravel/fill present

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ✔ Water Marks (B1) (**Nonriverine**)
- ✔ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ✔ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 18

Water Table Present? Yes ✔ No _____ Depth (inches): 18

Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 16

Wetland Hydrology Present? Yes ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Banks seem to get frequently flooded by high tides and/or flood events; flood control channel.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: MIssion Bay Programmatic JD - Rose Creek City/County: San Diego Sampling Date: 11/23/2018

Applicant/Owner: City of San Diego State: CA Sampling Point: RC 1E

Investigator(s): Christina Schaefer Section, Township, Range:

Landform (hillslope, terrace, etc.): river terrace Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): C - California Mediterranean Lat: Long: Datum:

Soil Map Unit Name: Corralitos loamy sand, 0 to 5 percent slopes NWI classification: PSSRx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No ____	**Is the Sampled Area within a Wetland?** **Yes ✔ No ____**
Hydric Soil Present?	Yes ✔ No ____	
Wetland Hydrology Present?	Yes ✔ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix goodingii	35	Y	FACW
2. Platanus racemosa	15	Y	FAC
3.			
4.			
	100 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10 m)			
1. Grasses (non-native)	40	N	N/A
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species 35	x 2 = 70
FAC species 15	x 3 = 45
FACU species ____	x 4 = ____
UPL species 40	x 5 = 200
Column Totals: 80 (A)	315 (B)

Prevalence Index = B/A = 3.94

Hydrophytic Vegetation Indicators:

✔ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ✔ No ____**

Remarks:

Bank immediately next to Rose Creek channel; point is within surface drainage under willows and sycamore; high amount of bare ground and non-native grasses form groundcover. Homeless camps contribute to disturbed vegetation.

SOIL

Sampling Point: RC 1E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 2/3	100					loam	alluvial bank
12-18	7.5YR 3/4	100					sandy loar	alluvial bank

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ✔ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** _____

Remarks:

Soil classification: excessively drained; soils disturbed from grading/creation of flood control channel; rip rap and gravel/fill present

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ✔ Water Marks (B1) (**Nonriverine**)
- ✔ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ✔ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 18

Water Table Present? Yes ✔ No _____ Depth (inches): 18

Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 16

Wetland Hydrology Present? Yes ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Banks seem to get frequently flooded by high tides and/or flood events; flood control channel.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: MIssion Bay Programmatic JD - Rose Creek City/County: San Diego Sampling Date: 11/23/2018

Applicant/Owner: City of San Diego State: CA Sampling Point: RC 1E

Investigator(s): Christina Schaefer Section, Township, Range:

Landform (hillslope, terrace, etc.): river terrace Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): C - California Mediterranean Lat: Long: Datum:

Soil Map Unit Name: Corralitos loamy sand, 0 to 5 percent slopes NWI classification: PSSRx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No ____	**Is the Sampled Area within a Wetland?** **Yes ✔ No ____**
Hydric Soil Present?	Yes ✔ No ____	
Wetland Hydrology Present?	Yes ✔ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix goodingii	35	Y	FACW
2. Platanus racemosa	15	Y	FAC
3.			
4.			
	100 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10 m)			
1. Grasses (non-native)	40	N	N/A
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species 35	x 2 = 70
FAC species 15	x 3 = 45
FACU species ____	x 4 = ____
UPL species 40	x 5 = 200
Column Totals: 80 (A)	315 (B)

Prevalence Index = B/A = 3.94

Hydrophytic Vegetation Indicators:

✔ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ✔ No ____**

Remarks:

Bank immediately next to Rose Creek channel; point is within surface drainage under willows and sycamore; high amount of bare ground and non-native grasses form groundcover. Homeless camps contribute to disturbed vegetation.

SOIL

Sampling Point: RC 1E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 2/3	100					loam	alluvial bank
12-18	7.5YR 3/4	100					sandy loar	alluvial bank

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ✔ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** _____

Remarks:

Soil classification: excessively drained; soils disturbed from grading/creation of flood control channel; rip rap and gravel/fill present

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ✔ Water Marks (B1) (**Nonriverine**)
- ✔ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ✔ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 18

Water Table Present? Yes ✔ No _____ Depth (inches): 18

Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 16

Wetland Hydrology Present? Yes ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Banks seem to get frequently flooded by high tides and/or flood events; flood control channel.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: MIssion Bay Programmatic JD - Rose Creek City/County: San Diego Sampling Date: 11/23/2018

Applicant/Owner: City of San Diego State: CA Sampling Point: RC 1E

Investigator(s): Christina Schaefer Section, Township, Range:

Landform (hillslope, terrace, etc.): river terrace Local relief (concave, convex, none): concave Slope (%): 0-2

Subregion (LRR): C - California Mediterranean Lat: Long: Datum:

Soil Map Unit Name: Corralitos loamy sand, 0 to 5 percent slopes NWI classification: PSSRx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ____ (If no, explain in Remarks.)

Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ____

Are Vegetation ____, Soil ____, or Hydrology ✔ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No ____	**Is the Sampled Area within a Wetland?** **Yes ✔ No ____**
Hydric Soil Present?	Yes ✔ No ____	
Wetland Hydrology Present?	Yes ✔ No ____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix goodingii	35	Y	FACW
2. Platanus racemosa	15	Y	FAC
3.			
4.			
	100 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10 m)			
1. Grasses (non-native)	40	N	N/A
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
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FAC species 15	x 3 = 45
FACU species ____	x 4 = ____
UPL species 40	x 5 = 200
Column Totals: 80 (A)	315 (B)

Prevalence Index = B/A = 3.94

Hydrophytic Vegetation Indicators:

✔ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ✔ No ____**

Remarks:

Bank immediately next to Rose Creek channel; point is within surface drainage under willows and sycamore; high amount of bare ground and non-native grasses form groundcover. Homeless camps contribute to disturbed vegetation.

SOIL

Sampling Point: RC 1E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 2/3	100					loam	alluvial bank
12-18	7.5YR 3/4	100					sandy loar	alluvial bank

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ✔ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ✔ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ **No** _____

Remarks:

Soil classification: excessively drained; soils disturbed from grading/creation of flood control channel; rip rap and gravel/fill present

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ✔ Water Marks (B1) (**Nonriverine**)
- ✔ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ✔ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): 18

Water Table Present? Yes ✔ No _____ Depth (inches): 18

Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): 16

Wetland Hydrology Present? Yes ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Banks seem to get frequently flooded by high tides and/or flood events; flood control channel.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mission Bay Improvements Project-Fiesta Island City/County: San Diego, San Diego County Sampling Date: 4/14/2025

Applicant/Owner: City of San Diego State: CA Sampling Point: FIS-1

Investigator(s): C. Schaefer, M. Tu Section, Township, Range: unsectioned T1bS R3W

Landform (hillslope, terrace, etc.): basin/flat slat pan Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C Lat: 32.7 Long: -117.10 Datum:

Soil Map Unit Name: made land NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation x, Soil , or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes No x

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?** **Yes X=x No**
Hydric Soil Present?	Yes X No	
Wetland Hydrology Present?	Yes X No	

Remarks: Fiesta Island was created in the 1950s with dredged material from Mission Bay. The area is significantly disturbed by humans and dogs, and dirt bikes and other off-road vehicles. The northern portion of the island is a fenced endangered California least tern nesting area.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. *Atriplex lentiformis*.	5	Y	FACU
2.			
3.			
4.			
5.			
Total Cover: 5			
Herb Stratum			
1. *Salicornia* sp.	10	Y	OBL
2. *Bromus maditendris*	10	Y	UPL
3. *Suaeda* sp,	3	N	FACW
4. Max	2	N	FACU
5.			
6.			
7.			
8.			
Total Cover: 25			
Woody Vine Stratum			
1.			
2.			
Total Cover: 30			

% Bare Ground in Herb Stratum 70 % Cover of Biotic Crust

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.33 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 10	x 1 = 10
FACW species 3	x 2 = 6
FAC species	x 3 =
FACU species 7	x 4 = 28
UPL species 10	x 5 = 50
Column Totals: *30* (A)	90 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

_ Dominance Test is >50%

x Prevalence Index is ≤3.0[1]

_ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes x No**

Remarks: Disturbed coastal salt marsh, much of the area is bare salt pan.

SOIL

Sampling Point: FIS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR3/1	55	10YR4/4	10			Sandy loam	
			10YR5/6	35				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- _ Histosol (A1)
- _ Histic Epipedon (A2)
- _ Black Histic (A3)
- _ Hydrogen Sulfide (A4)
- _ Stratified Layers (A5) (**LRR C**)
- _ 1 cm Muck (A9) (**LRR D**)
- _ Depleted Below Dark Surface (A11)
- _ Thick Dark Surface (A12)
- _ Sandy Mucky Mineral (S1)
- _ Sandy Gleyed Matrix (S4)
- _ Sandy Redox (S5)
- _ Stripped Matrix (S6)
- _ Loamy Mucky Mineral (F1)
- _ Loamy Gleyed Matrix (F2)
- _ Depleted Matrix (F3)
- _ Redox Dark Surface (F6)
- x Depleted Dark Surface (F7)
- _ Redox Depressions (F8)
- _ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- _ 1 cm Muck (A9) (**LRR C**)
- _ 2 cm Muck (A10) (**LRR B**)
- _ Reduced Vertic (F18)
- _ Red Parent Material (TF2)
- _ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? Yes x_____ No _____

Remarks

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- _ Surface Water (A1)
- _ High Water Table (A2)
- _ Saturation (A3)
- _ Water Marks (B1) (**Nonriverine**)
- _ Sediment Deposits (B2) (**Nonriverine**)
- _ Drift Deposits (B3) (**Nonriverine**)
- X Surface Soil Cracks (B6)
- _ Inundation Visible on Aerial Imagery (B7)
- _ Water-Stained Leaves (B9)
- _ Salt Crust (B11)
- _ Biotic Crust (B12)
- _ Aquatic Invertebrates (B13)
- _ Hydrogen Sulfide Odor (C1)
- _ Oxidized Rhizospheres along Living Roots (C3)
- _ Presence of Reduced Iron (C4)
- _ Recent Iron Reduction in Plowed Soils (C6)
- _ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- _ Water Marks (B1) (**Riverine**)
- _ Sediment Deposits (B2) (**Riverine**)
- _ Drift Deposits (B3) (**Riverine**)
- _ Drainage Patterns (B10)
- _ Dry-Season Water Table (C2)
- _ Thin Muck Surface (C7)
- _ Crayfish Burrows (C8)
- _ Saturation Visible on Aerial Imagery (C9)
- _ Shallow Aquitard (D3)
- _ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _X_ Depth (inches): _____

Water Table Present? Yes _____ No _X_ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _X_ Depth (inches): _____

Wetland Hydrology Present? Yes X_____ No_____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Flat mostly unvegetated area with soil cracks and some vegetation along the edges. No Ordinary High Water Mark (OHWM) to delineate a waters of the US or state.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mission Bay Improvements Project-Fiesta Island City/County: San Diego, San Diego County Sampling Date: 4/14/2025

Applicant/Owner: City of San Diego State: CA Sampling Point: FIN-1

Investigator(s): C. Schaefer, M. Tu Section, Township, Range: unsectioned T1bS R3W

Landform (hillslope, terrace, etc.): basin/flat slat pan Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C Lat: 32.7 Long: -117.10 Datum:

Soil Map Unit Name: made land NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation x, Soil , or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes No x

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?** **Yes X No**
Hydric Soil Present?	Yes X No	
Wetland Hydrology Present?	Yes X No	

Remarks: Fiesta Island was created in the 1950s with dredged material from Mission Bay. The area is significantly disturbed by humans and dogs, and dirt bikes and other off-road vehicles. The northern portion of the island is a fenced endangered California least tern nesting area.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. *Tamarix* sp.	9	Y	FAC
2. *Isocoma menziesii*	1	N	FACU
3.			
4.			
5.			
Total Cover: 10			
Herb Stratum			
1. *Salicornia* sp.	10	Y	OBL
2. *Heliotropium curassavicum*	5	Y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover: 15			
Woody Vine Stratum			
1.			
2.			
Total Cover: 25			

% Bare Ground in Herb Stratum 75 % Cover of Biotic Crust

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.67 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- Dominance Test is >50%
- Prevalence Index is ≤3.0[1]
- Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes x No**

Remarks: Disturbed coastal salt marsh, much of the area is bare salt pan

SOIL

Sampling Point: FIN-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR3/1	55	10YR4/4	10			Sandy loam	
			10YR5/6	35				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- _ Histosol (A1)
- _ Histic Epipedon (A2)
- _ Black Histic (A3)
- _ Hydrogen Sulfide (A4)
- _ Stratified Layers (A5) (**LRR C**)
- _ 1 cm Muck (A9) (**LRR D**)
- _ Depleted Below Dark Surface (A11)
- _ Thick Dark Surface (A12)
- _ Sandy Mucky Mineral (S1)
- _ Sandy Gleyed Matrix (S4)
- _ Sandy Redox (S5)
- _ Stripped Matrix (S6)
- _ Loamy Mucky Mineral (F1)
- _ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- _ Redox Dark Surface (F6)
- x Depleted Dark Surface (F7)
- _ Redox Depressions (F8)
- _ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- _ 1 cm Muck (A9) (**LRR C**)
- _ 2 cm Muck (A10) (**LRR B**)
- _ Reduced Vertic (F18)
- _ Red Parent Material (TF2)
- _ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? Yes x_____ No _____

Remarks

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- _ Surface Water (A1)
- _ High Water Table (A2)
- _ Saturation (A3)
- _ Water Marks (B1) (**Nonriverine**)
- _ Sediment Deposits (B2) (**Nonriverine**)
- _ Drift Deposits (B3) (**Nonriverine**)
- X Surface Soil Cracks (B6)
- _ Inundation Visible on Aerial Imagery (B7)
- _ Water-Stained Leaves (B9)
- _ Salt Crust (B11)
- _ Biotic Crust (B12)
- _ Aquatic Invertebrates (B13)
- _ Hydrogen Sulfide Odor (C1)
- _ Oxidized Rhizospheres along Living Roots (C3)
- _ Presence of Reduced Iron (C4)
- _ Recent Iron Reduction in Plowed Soils (C6)
- _ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- _ Water Marks (B1) (**Riverine**)
- _ Sediment Deposits (B2) (**Riverine**)
- _ Drift Deposits (B3) (**Riverine**)
- _ Drainage Patterns (B10)
- _ Dry-Season Water Table (C2)
- _ Thin Muck Surface (C7)
- _ Crayfish Burrows (C8)
- _ Saturation Visible on Aerial Imagery (C9)
- _ Shallow Aquitard (D3)
- _ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _X_ Depth (inches): _____

Water Table Present? Yes _____ No _X_ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _X_ Depth (inches): _____

Wetland Hydrology Present? Yes X_____ No_____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Flat mostly unvegetated area with soil cracks and wetland vegetation along the edges.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mission Bay Improvements Project – Fiesta Island City/County: San Diego, San Diego County Sampling Date: 4/14/2025

Applicant/Owner: City of San Diego State: CA Sampling Point: FIN-2

Investigator(s): C. Schaefer, M. Tu Section, Township, Range: unsectioned T1bS R3W

Landform (hillslope, terrace, etc.): flat salt pan/basin Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C Lat: 32.7 Long: -117.10 Datum:

Soil Map Unit Name: made land NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation __, Soil x, or Hydrology x significantly disturbed? Are "Normal Circumstances" present? Yes ____ No x

Are Vegetation __, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?** **Yes ____ No X**
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	

Remarks: Fiesta Island was created in the 1950s with dredged material from Mission Bay. The area is significantly disturbed by humans and dogs, and dirt bikes and other off-road vehicles. Many depressions are caused by creating jumps for dirt bikes. The northern portion of the island is a fenced endangered California least tern nesting area

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. *Tamarix* sp.	80	Y	FAC
2.			
3.			
4.			
5.			
Total Cover: 80			
Herb Stratum			
1. *Sueda* sp.	9	Y	FACW
2. *Salicornia* sp.	1	N	OBL
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover: 10			
Woody Vine Stratum			
1.			
2.			
Total Cover: 25			

% Bare Ground in Herb Stratum 95 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

x Dominance Test is >50%

_ Prevalence Index is ≤3.0[1]

_ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes x No ____**

Remarks:

SOIL

Sampling Point: FIN-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR7/2	100					Sand	
3-12	10YR5/3	90	7.5YR4/4	5			Sandy loam	faint
			7.5YR3/3	5				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- _ Histosol (A1)
- _ Histic Epipedon (A2)
- _ Black Histic (A3)
- _ Hydrogen Sulfide (A4)
- _ Stratified Layers (A5) (**LRR C**)
- _ 1 cm Muck (A9) (**LRR D**)
- _ Depleted Below Dark Surface (A11)
- _ Thick Dark Surface (A12)
- _ Sandy Mucky Mineral (S1)
- _ Sandy Gleyed Matrix (S4)
- _ Sandy Redox (S5)
- _ Stripped Matrix (S6)
- _ Loamy Mucky Mineral (F1)
- _ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- _ Redox Dark Surface (F6)
- _ Depleted Dark Surface (F7)
- _ Redox Depressions (F8)
- _ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- _ 1 cm Muck (A9) (**LRR C**)
- _ 2 cm Muck (A10) (**LRR B**)
- _ Reduced Vertic (F18)
- _ Red Parent Material (TF2)
- _ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? Yes X____ No _____

Remarks

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- _ Surface Water (A1)
- _ High Water Table (A2)
- _ Saturation (A3)
- _ Water Marks (B1) (**Nonriverine**)
- _ Sediment Deposits (B2) (**Nonriverine**)
- _ Drift Deposits (B3) (**Nonriverine**)
- Surface Soil Cracks (B6)
- _ Inundation Visible on Aerial Imagery (B7)
- _ Water-Stained Leaves (B9)
- _ Salt Crust (B11)
- _ Biotic Crust (B12)
- _ Aquatic Invertebrates (B13)
- _ Hydrogen Sulfide Odor (C1)
- _ Oxidized Rhizospheres along Living Roots (C3)
- _ Presence of Reduced Iron (C4)
- _ Recent Iron Reduction in Plowed Soils (C6)
- _ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- _ Water Marks (B1) (**Riverine**)
- _ Sediment Deposits (B2) (**Riverine**)
- _ Drift Deposits (B3) (**Riverine**)
- _ Drainage Patterns (B10)
- _ Dry-Season Water Table (C2)
- _ Thin Muck Surface (C7)
- _ Crayfish Burrows (C8)
- _ Saturation Visible on Aerial Imagery (C9)
- _ Shallow Aquitard (D3)
- _ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _X_ Depth (inches): _____

Water Table Present? Yes _____ No _X_ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _X_ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No wetland hydrology or any hydrological indicators present; area is human-made.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Mission Bay Improvements Project City/County: San Diego, San Diego County Sampling Date: 4/14/2025

Applicant/Owner: City of San Diego State: CA Sampling Point: FIN-3

Investigator(s): C. Schaefer, M. Tu Section, Township, Range: unsectioned T1bS R SW

Landform (hillslope, terrace, etc.): basin Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C Lat: 32.7 Long: -117.10 Datum:

Soil Map Unit Name: made land NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation __, Soil ____, or Hydrology x ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No x

Are Vegetation __, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No X	**Is the Sampled Area within a Wetland?** **Yes ____ No X**
Hydric Soil Present?	Yes X ____ No ____	
Wetland Hydrology Present?	Yes X ____ No ____	

Remarks: Fiesta Island was created in the 1950s with dredged material from Mission Bay. The area is significantly disturbed by humans and dogs, and dirt bikes and other off-road vehicles. The northern portion of the island is a fenced endangered California least tern nesting area

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. *Isocoma menziesii*	20	Y	FACU
2.			
3.			
4.			
5.			
Total Cover: 80			
Herb Stratum			
1. *Salicornia* sp.	5	Y	OBL
2. *Melilotus indicus*	2	Y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover: 10			
Woody Vine Stratum			
1.			
2.			
Total Cover: 25			

% Bare Ground in Herb Stratum 95 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.33 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 5	x 1 = 5
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species 20	x 4 = 80
UPL species 2	x 5 = 10
Column Totals: 27 (A)	115 (B)

Prevalence Index = B/A = 4.26

Hydrophytic Vegetation Indicators:

__ Dominance Test is >50%

_ Prevalence Index is ≤3.0[1]

_ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

_ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes ____ No x**

Remarks: Disturbed area. The area has soil cracks and open bare salt pan but the vegetation surrounding the salt pan is dominated by FACU *Isocoma menziesii;* the área does not display an OHWM to classify it as non-vegetated waters.

SOIL

Sampling Point: FIN-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR5/2	100					Sand	
1-3.5	7.5YR3/2	50	7.5YR3/4	50			Sandy loam	
3.5-	10YR5/3	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- _ Histosol (A1)
- _ Histic Epipedon (A2)
- _ Black Histic (A3)
- _ Hydrogen Sulfide (A4)
- _ Stratified Layers (A5) (**LRR C**)
- _ 1 cm Muck (A9) (**LRR D**)
- _ Depleted Below Dark Surface (A11)
- _ Thick Dark Surface (A12)
- _ Sandy Mucky Mineral (S1)
- _ Sandy Gleyed Matrix (S4)
- _ Sandy Redox (S5)
- _ Stripped Matrix (S6)
- _ Loamy Mucky Mineral (F1)
- _ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- _ Redox Dark Surface (F6)
- _ Depleted Dark Surface (F7)
- _ Redox Depressions (F8)
- _ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- _ 1 cm Muck (A9) (**LRR C**)
- _ 2 cm Muck (A10) (**LRR B**)
- _ Reduced Vertic (F18)
- _ Red Parent Material (TF2)
- _ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? Yes X No

Remarks

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- _ Surface Water (A1)
- _ High Water Table (A2)
- _ Saturation (A3)
- _ Water Marks (B1) (**Nonriverine**)
- _ Sediment Deposits (B2) (**Nonriverine**)
- _ Drift Deposits (B3) (**Nonriverine**)
- X Surface Soil Cracks (B6)
- _ Inundation Visible on Aerial Imagery (B7)
- _ Water-Stained Leaves (B9)
- _ Salt Crust (B11)
- _ Biotic Crust (B12)
- _ Aquatic Invertebrates (B13)
- _ Hydrogen Sulfide Odor (C1)
- _ Oxidized Rhizospheres along Living Roots (C3)
- _ Presence of Reduced Iron (C4)
- _ Recent Iron Reduction in Plowed Soils (C6)
- _ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- _ Water Marks (B1) (**Riverine**)
- _ Sediment Deposits (B2) (**Riverine**)
- _ Drift Deposits (B3) (**Riverine**)
- _ Drainage Patterns (B10)
- _ Dry-Season Water Table (C2)
- _ Thin Muck Surface (C7)
- _ Crayfish Burrows (C8)
- _ Saturation Visible on Aerial Imagery (C9)
- _ Shallow Aquitard (D3)
- _ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _X_ Depth (inches): _____

Water Table Present? Yes _____ No _X_ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _X_ Depth (inches): _____

Wetland Hydrology Present? Yes X_____ No_____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Surface soil cracks

APPENDIX C – REVIEW AREA PHOTOS



Photo 1. Looking southwest at data point RC 1E within Rose Creek.



Photo 2. Looking west at paired upland point, RC 2E.



Photo 3: Looking north at data point RC 3E within Rose Creek.



Photo 4. Looking west at data point RC 4E within Rose Creek.



Photo 5. Looking southeast at data point RC 1W within Rose Creek.



Photo 6. Looking west at paired upland point, RC 2W.



Photo 7: Looking west at data point RC 3W within Rose Creek.



Photo 8. Looking west at paired upland point, RC 4W.



Photo 9. Looking east at RC 5W within Rose Creek.



Photo 10. Looking west at data point RC 6W within Rose Creek.



Photo 11: Looking down at data point SDR 1N within the San Diego River.



Photo 12. Looking southwest at data point SDR 2N within the San Diego River.



Photo 13. Looking north at data point Tec 1S within Tecolote Creek.



Photo 14. Looking south at data point Tec 2N within Tecolote Creek.



Photo 15: Looking northeast at paired upland point, Tec 3N.



Photo 16. Looking south at data point Tec 4N within Tecolote Creek.



Photo 17. Looking north at data point FIS 1 within a disturbed coastal salt marsh wetland on Fiesta Island.



Photo 18. Looking south at data point FIN 1 within a disturbed coastal salt marsh wetland on Fiesta Island.



Photo 19: Looking north at paired upland point, FIN 2.



Photo 20. Looking north at paired upland point, FIN 3.

Appendix D

45-Day Presence/Absence Survey Report
for California Gnatcatcher Surveys

September 17, 2019

Stacey Love
Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
U.S. Fish and Wildlife Service
2177 Salk Avenue, Ste. 250
Carlsbad, CA 92008

Subject: **45-day Presence/Absence Survey Report for California Gnatcatcher Surveys for the Mission Bay Park Improvement Zone Program Environmental Impact Report, San Diego, California**

Dear Ms. Love:

Balk Biological, Inc. conducted California gnatcatcher (*Polioptila californica*, CAGN) presence/absence surveys in support of the Mission Bay Park Improvement Zone Program Environmental Impact Report (PEIR) in San Diego, California. These surveys were conducted on behalf of the City of San Diego to assess potential impacts on CAGN resulting from park improvements. The survey area includes several disjunct habitat patches found within the Mission Bay Park Improvement Zone (Figures 1 and 2). No CAGN were detected during the surveys in July 2019.

Methods

Permitted biologist Brian Lohstroh (TE-063608-6) conducted the surveys following the protocol established by the U.S. Fish and Wildlife Service for permitted biologists (July 1997). Three CAGN surveys visits were completed because the project location falls within an NCCP (City of San Diego MSCP). The surveys were conducted in July 2019 per Table 1. Recorded CAGN vocalizations were broadcast for approximately 10 seconds approximately every 2-3 minutes, or approximately every 100 feet of linear distance along the survey route. Recorded CAGN vocalizations were broadcast only to initially locate CAGN, and the surveys were conducted on foot with the aid of binoculars.

Table 1
Survey Dates, Rates and Conditions

Survey #	Date	Time on site		Temp (ºF)	Sky Cover (%)	Wind Speed (MPH)	Acres/Day	Approx. Acres/Hr	Personnel
1	9-Jul-2019	Start	615	64	95	0-1	58.5	13.8	B. Lohstroh
		End	1030	72	0	1-4			
2	16-Jul-2019	Start	835	65	100	1-3	58.5	17.1	B. Lohstroh
		End	1200	69	0	2-5			
3	23-Jul-2019	Start	645	70	90	0-1	58.5	12.3	B. Lohstroh
		End	1130	77	20	0-3			

Results

No CAGN were detected during the surveys in July 2019. The combined survey area totals approximately 58.5 acres of coastal sage scrub and disturbed coastal sage scrub habitat distributed within various disjunct patches throughout the study area (Figure 2).

The coastal sage scrub habitat within the survey area varies in quality and by dominant species. Broom baccharis (*Baccharis sarothroides*), California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), laurel sumac (*Malosma laurina*), deerweed (*Acmispon glaber*), California encelia (*Encelia californica*) and goldenbush (*Isocoma menziesii*) were the typical native species that were present to various levels of dominance. Additional native species present included lemonadeberry (*Rhus integrifolia*), black sage (*Salvia mellifera*), and coastal cholla (*Cylindropuntia prolifera*). Disturbance-adapted species such as crown daisy (*Glebionis coronaria*), tree tobacco (*Nicotiana glauca*), olive trees (*Olea europaea*), sea-lavender (*Limonium* sp.), and big saltbush (*Atriplex lentiformis*) co-dominated areas of disturbed coastal sage scrub. Avian species detected during the survey visits are provided in Appendix A.

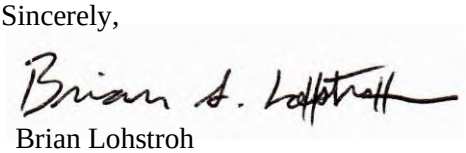
Discussion

Mission Bay Park is an area of high recreational use with few intact areas of native habitat. Some of the survey locations supported a very small area where native coastal sage scrub species occur, and they were often sparsely distributed in areas with a high relative cover of non-native or disturbance-adapted species. The larger patches of contiguous habitat, such as those near the southeast corner of the project area and on the southern portion of Fiesta Island had ample evidence of active and abandoned transient campsites with trash visible throughout. Feral cats were also observed during the surveys.

If you have any questions about these surveys, please contact me at 858.750.9300.

I certify that the information in this survey report and attached exhibits fully and accurately represents my work.

Sincerely,

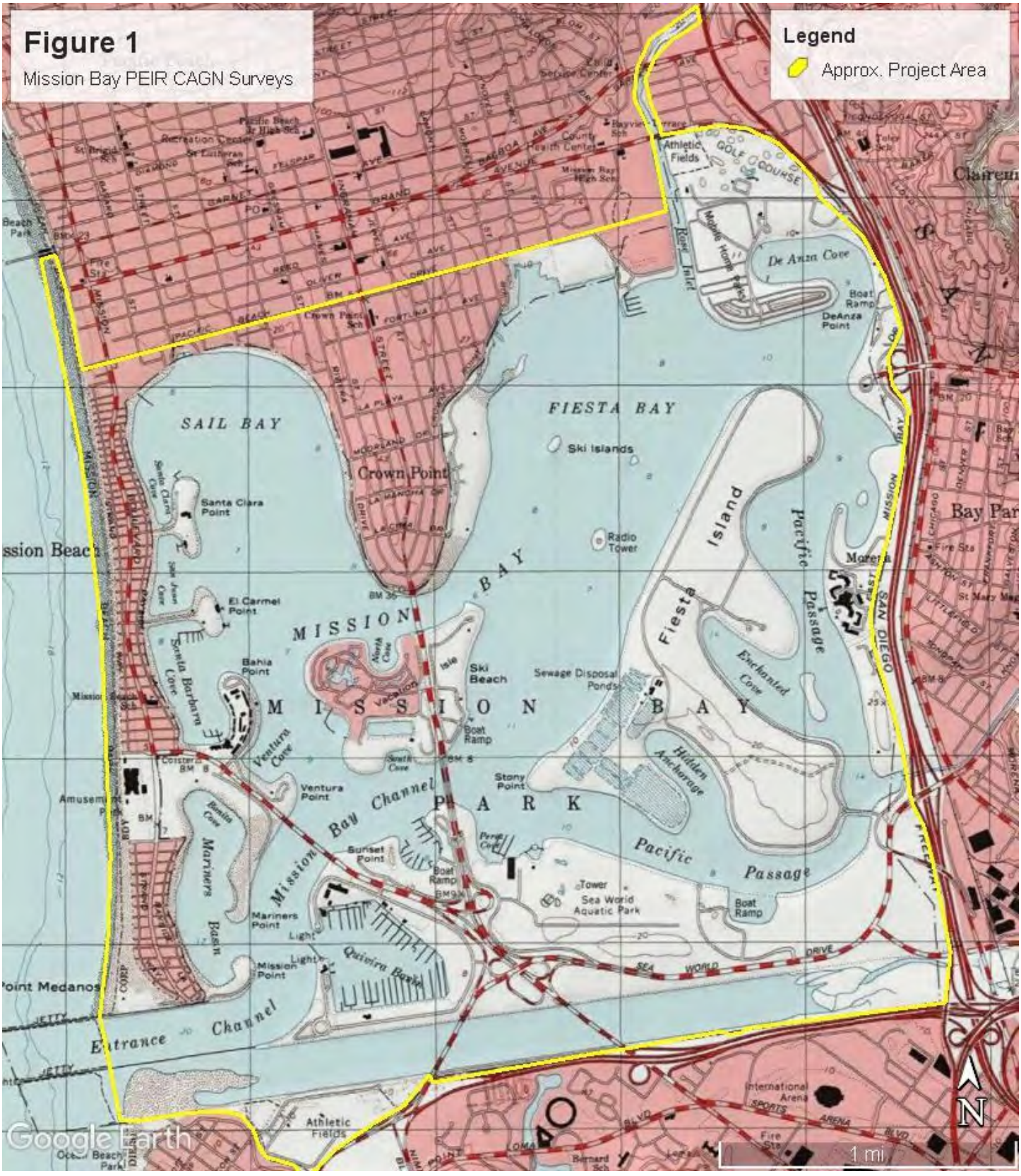


Brian Lohstroh
TE-063608-6
Senior Biologist
Balk Biological, Inc.
blohstroh@balkbiological.com

Attachments:
Figure 1 Project Area and Location Map
Figure 2 CAGN Survey Area with Survey Routes
Appendix A Avian Species Detected
Site Photographs

Citations

USFWS. 1997. Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Guidelines. Rev. July 28.



Balk Biological, Inc.



SOURCE: SANGIS 2017; City of San Diego 2018

DUDEK

0 900 1,800 Feet

Figure 2. CAGN Survey Area

Mission Bay PEIR

Appendix A
Avian Species Detected
Mission Bay Improvement Zone PEIR CAGN Surveys

Common Name	*Scientific Name*	Status
Gadwall	*Anas strepera*	
Mallard	*Anas platyrhynchos*	
Rock Pigeon	*Columba livia*	
Mourning Dove	*Zenaida macroura*	
Greater Roadrunner	*Geococcyx californianus*	
White-throated Swift	*Aeronautes saxatalis*	
Anna's Hummingbird	*Calypte anna*	
Killdeer	*Charadrius vociferus*	
Willet	*Tringa semipalmata*	
Western Gull	*Larus occidentalis*	
Double-crested Cormorant	*Phalacrocorax auritus*	WL
Great Blue Heron	*Ardea herodias*	
Snowy Egret	*Egretta thula*	
Black-crowned Night-Heron	*Nycticorax nycticorax*	
White-tailed Kite	*Elanus leucurus*	FP
American Kestrel	*Falco sparverius*	
Red-crowned Parrot	*Amazona viridigenalis*	Introduced
Red-masked Parakeet	*Psittacara erythrogenys*	Introduced
Black Phoebe	*Sayornis nigricans*	
Say's Phoebe	*Sayornis saya*	
Cassin's Kingbird	*Tyrannus vociferans*	
American Crow	*Corvus brachyrhynchos*	
California Horned Lark	*Eremophila alpestris actia*	WL
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	
Cliff Swallow	*Petrochelidon pyrrhonota*	
Bushtit	*Psaltriparus minimus*	
Bewick's Wren	*Thryomanes bewickii*	
Wrentit	*Chamaea fasciata*	
Western Bluebird	*Sialia mexicana*	
Northern Mockingbird	*Mimus polyglottos*	
European Starling	*Sturnus vulgaris*	Introduced
House Sparrow	*Passer domesticus*	Introduced
House Finch	*Haemorhous mexicanus*	
Common Yellowthroat	*Geothlypis trichas*	
California Towhee	*Melozone crissalis*	
Belding's Savannah Sparrow	*Passerculus sandwichensis beldingi*	CA-E
Song Sparrow	*Melospiza melodia*	
Hooded Oriole	*Icterus cucullatus*	
WL: California Watch List Species		
FP: California Fully Protected Species		
CA-E: California Endangered Species		

Site Photographs: July 2019



Photo 1: View of habitat within the southern portion of Fiesta Island. California buckwheat is visible in the foreground, with California sage brush and broom baccharis visible in the background.



Photo 2: View of habitat within the largest contiguous habitat patch in the southeastern corner of the project area. Trash is visible in the foreground, with broom baccharis dominating the area.



Photo 3: Small, marginal habitat coastal sage scrub patch at Hospitality Point in the southwestern portion of the project area.



Photo 4: View of suitable habitat at Kendall Frost Marsh in the northern portion of the project area.

Appendix E

Results of a Focused Survey for the Light-Footed Ridgway's Rail, Belding's Savannah Sparrow, Western Snowy Plover, and California Least Tern

August 13, 2019

City of San Diego Engineering and Capital Projects Department
525 B St. Suite 750, MS908A
San Diego, CA 92101

Subject: **Results of a Focused Survey for the Light-footed Ridgway's Rail, Belding's Savannah Sparrow, Western Snowy Plover, and California Least Tern for the Mission Bay PEIR Project, Mission Bay Vicinity, City of San Diego, Diego County, California, 2019.**

Dear City of San Diego Engineering and Capital Projects Department:

This letter report presents the results of a focused surveys for the light-footed Ridgway's rail (*Rallus obsoletus levipes*) (LFRR), Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) (BSS), western snowy plover (*Charadrius alexandrines nivosus*) (WSP), and California least tern (*Sternula antillarum browni*) (CLT) for the Mission Bay Program Environmental Impact Report (PEIR) Project, City of San Diego, San Diego County, California. The LFRR is listed as an endangered species by the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW). This coastal southern California subspecies is one of three subspecies of federally endangered *R. obsoletus*, which was formerly *R. longirostris* but recently has been taxonomically reclassified by the American Ornithologist Union (Chesser *et al.* 2014). The CLT is listed as an endangered species by the USFWS and the CDFW. The WSP is listed as a threatened species by the USFWS. The Belding subspecies of the savannah sparrow is listed as an endangered species by CDFW.

Surveys for the LFRR, WSP, CLT, and BSS were conducted by wildlife biologist Mr. John Konecny. The LFRR survey activity is authorized by Konecny Biological Services' (KBS) USFWS section 10(a) permit number TE837308-7.

INTRODUCTION

Light-footed Ridgway's Rail

The LFRR is a slender, tawny-breasted bird with grayish edges on brown centered back feathers, olive wing coverts, vertical white bars on the flanks, a white stripe over the eye, and a partially orange bill. LFRR occurred historically along the coast of southern California from Carpinteria Marsh in Santa Barbara County south to San Quintín, Baja California, Mexico (Grinnell and Miller 1944, USFWS 1994).

The LFRR is a permanent resident of coastal salt marsh traversed by tidal sloughs, usually characterized by cordgrass (*Spartina foliosa*) and pickleweed (*Salicornia* spp.) (Grinnell and Miller 1944, USFWS 1994). LFRRs have also nested in freshwater marsh characterized by cattails (*Typha* sp.) and bulrush (*Scirpus* sp.) at Buena Vista, Agua Hedionda, Batiquitos, San Elijo, and San Dieguito Lagoons in San Diego County (Zembal *et al.* 2013); and in southwestern spiny rush (*Juncus acutus*) at Naval Air Station (NAS) Point Mugu.

LFRRs forage primarily on crustaceans when present. They will also feed on mollusks, small fish, aquatic insects, grasshoppers, small vertebrates, and in some cases, seeds (Eddleman and Conway

1998). LFRRs forage within emergent vegetation or along the ecotone between mudflats and marsh (Zembal and Fancher 1988), and in the central drains of tidal creeks at low tide. Surface gleaning and shallow probing compose approximately 90% of foraging time. They very irregularly probe deep into the substrate (Zembal and Fancher 1988).

Populations of LFRRs have undergone decline in the United States due to the rail's limited distribution and destruction and degradation of coastal salt marsh habitat. The statewide LFRR population in 2018 was reported to be 356 pairs in 18 marshes (Zembal *et al.* 2018). This is a decline from the all-time high of 656 pairs in 2016 and 514 pairs in 2017. The 2018 total is the lowest total reported since 2009. Thirty-nine percent of these pairs were found in two coastal salt marsh complexes at Upper Newport Bay and the Tijuana Marsh National Wildlife Refuge (NWR). Only five other marshes had more than ten breeding pairs in 2018: Batiquitos Lagoon, San Elijo Lagoon, Seal Beach NWR, San Dieguito Lagoon, and the San Diego River had between 15 and 54 pairs each, representing an additional 45% of the state total. The remaining 11 marshes had between one and nine pairs, representing 16% of the state population. Zembal (2018) attributes the continued decline of the LFRR to ocean inlet closure, unchecked predation, rising sea level, and climatological effects on territorial manifestation including reduced vocalization.

Zembal and Massey (1986) have shown that paired LFRR can be detected "clappering" throughout the year but have a bimodal peak in vocalizing during mid-February to mid-April and again in September through October. The initial peak in "clappering" vocalizing corresponds to the onset of breeding season and the second peak is thought to function in pair formation in the fall (Zembal and Massey 1986). In contrast to "clappering", single male and female "kekking" is highly seasonal, almost exclusively occurring between February and June.

California Least Tern

The CLT is the smallest North American tern. It has a grey mantle and a black cap and nape with a white forehead during the breeding season, with a yellow bill with a dark tip. The CLT is a once abundant, migratory seabird that returns to coastal California and Baja Mexico to breed from over wintering regions in Central and South America. In 2010 there were an estimated 6,699 breeding pairs in southern California (Marschalek 2011). Historic nesting locales were primarily sandy, ocean beach strand areas near estuaries and river mouths. Such beaches and coastal nesting opportunities for the least tern have become intensively disturbed or eliminated by human activities, such as seaside recreation, roads, marinas, ports, and houses. During the breeding season, April through September, the CLT feeds itself and its young entirely on fish captured from near shore waters, estuaries, lagoons, bays, and river mouths. Filling, channelizing, or water quality degradations contributed to the decline of the least tern population by eliminating or degrading foraging areas. The California least tern was added to the State and Federal list of endangered species in 1970 due to the tern's diminished population level caused primarily by disruption of or unavailability of breeding sites and adjacent foraging waters. Efforts were begun to identify and protect breeding sites and adjacent winter areas. Annual population censuses were begun by California Department of Fish and Game in 1973 and fledgling production estimates were begun in 1978. Critical habitat designations were considered, but never proposed, while the CLT Recovery Plan was completed in 1980.

As a colonial nesting seabird, CLT nesting colonies can be low to high density, with group mobbing of some predators by breeding adults, cryptically colored eggs and chicks, being principle defense methods. Least tern nesting areas are typically flat, open areas near the coast with light colored, sandy substrate, and little vegetation. In the Unites States, very few "natural" nesting areas remain. Many have been created or are highly modified man-made areas. Some least tern nesting sites are

next to aircraft taxiways and highways, within industrial port areas, flood-prone areas, and several are on southern California beaches. Many CLT nesting colonies remain concentrated in relatively small areas that are very vulnerable to predation or disturbance.

When an active CLT nesting colony is disturbed in some manner, nesting pairs may respond in several ways, depending on several factors such as type of disturbance, loss of eggs, loss of chicks, loss of adults, and number of other pairs similarly disturbed. The responses may include nesting again within the same colony, renesting at a nearby colony, or abandoning attempts to breed in that season. Renesting attempts after the first month of the breeding season occur during the influx of two-year-old pairs breeding for the first time. The CLT also shows strong year after year fidelity to successfully used breeding sites, or proximal clusters of sites, and may return to a previously disturbed site after several years of absence.

Western Snowy Plover

The WSP is small, pale sandy brown shorebird with a thin dark bill, grayish legs, dark ear patches, and dark patches on either side of the upper breast. Black patches are present above the forehead in breeding individuals, but this is typically absent in winter plumage. Juveniles resemble nonbreeding adults. The coastal population of WSP was listed as a threatened species by USFWS in 1993 (USFWS 1993). The WSP occurs along the Pacific coast from southern Washington to southern Baja California. There is an inland population that is not listed, but some individuals may migrate to the west coast in winter. Northern breeders depart from the coastal areas beginning in mid-March.

WSP preferred habitat is sandy coastal sand spits above the high tide line, dune-backed beaches, bayshore sand flats, salt evaporation ponds, salt flats, alkaline flats, and the shores of alkaline sink lakes. WSP forage for invertebrates in sand, low foredune vegetation, and washed up kelp. Seasonal movements bring WSP's from the north and northeast and possibly the California interior to coastal beaches beginning in October. WSP's nesting season is between March 1 and September 30. Currently there are 10 active nesting sites in southern California. The primary reason for the decline of the WSP in San Diego County is loss of habitat, especially for human development and recreation (Unitt 2004).

Belding's Savannah Sparrow

The Belding's subspecies of the savannah sparrow is a small, dark brown sparrow with a heavily streaked breast, a short, squared tail, and a yellow lore. The BSS sparrow inhabits coastal salt marsh characterized by several species of pickleweed. Historically, the sparrow from Goleta in Santa Barbara County, south to El Rosario, Baja California, Mexico (Grinnell and Miller 1944, and Van Rossen 1947). More than 75% of the coastal wetland habitats within this range have been lost or highly degraded (Wiley and Zembal 1989) and the remainder suffer from the effects of increasing human populations. The greatly reduced amount of habitat, increasing human impacts in the remnants, and small population sizes led CDFW to list the Belding's subspecies of Savannah sparrow as endangered species in 1974. There were an estimated 3,740 breeding territories of the BSS in southern California during the last range-wide survey in 2015 (Zembal *et al.* 2015).

PROJECT LOCATION

The Mission Bay Park PEIR area is located at the west end of the San Diego River Valley in west central San Diego County, California (Figure 1). The survey area is bounded on the east side by

Interstate-5, on the north by Grand Avenue, on the south by the San Diego River Flood Control Channel (SDRFCC), and on the west by the Community of Mission Beach and the Pacific Ocean. The survey area is approximately 4,600 acres (1,862 hectare) of land and water and is the largest aquatic park of its kind in the United States. Specifically, the Mission Bay PEIR Project site is located within Township 14 South, Range 3 West of the U.S. Geological Survey La Jolla, CA 7.5-minute quadrangle.

PROJECT SITE DESCRIPTION

The Mission Bay Park PEIR survey area is a mosaic of sandy beach, sand and mudflat, open water, maintained park land, and patches of coastal saltmarsh. Fresh water flows into Mission Bay Park via Rose Creek on the north side, Tecolote Creek on the east side, and the San Diego River on the south. The beaches and upland parkland areas are maintained and groomed by the City of San Diego. The Park is bordered on the west and north sides by the residential community of Mission Beach, and on the east and south sides by the industrialization of the City of San Diego. Mission Bay Park has 27 miles (43 kilometers) of sandy shoreline (Figure 2), utilized by migratory shorebirds. The Park is divided into West Mission Bay and East Mission bay, separated by Ingraham Street. East Mission Bay is dominated by the large Fiesta Island. West Mission bay is primarily open water with several harbors and boat launching ramps, and upland parkland.

The Northern Wildlife Preserve, Kendall-Frost Marsh, owned and administered by the University of California San Diego, is located in East Mission Bay, and the Southern Wildlife Preserve in the San Diego River Flood Control Channel (SDRFCC) are lush areas of southern coastal salt marsh and home to the state and federal endangered LFRR and BSS. Other small, isolated patches of southern salt marsh are located at North Fiesta Island, the mouth of Tecolote Creek, the west end of the SDRFCC, and Rose Creek (Figure 3). The state and federal endangered CLT nests in four areas of Mission Bay Park; North Fiesta Island, Mariners Point, Stoney Point, and Federal Aviation Administration (FAA) Island. South Mission Beach on the west side of the Park is one of the largest wintering areas for the federally threatened WSP in San Diego County. Elevation of Mission Bay Park is approximately zero to 10 feet (4 meters) above mean sea level.

METHOD

Three focused survey events were conducted at least seven days apart at the Mission Bay Park PEIR site for each of LFRR, BSS, CLT, and WSP between March 24th and May 19th, 2019. The first survey event in late March for the LFRR, BSS, and WSP lasted three days. All salt marsh and san/salt pan habitat was looked at thoroughly. The CLT was not included because it is generally not present at that time of year. Each of the subsequent five survey events was one day in duration. The second and third surveys, conducted on April 5th and 12th were focused for the LFRR and BSS. Focused surveys for the WSP and CLT were conducted on April 18th and may 1st. The final survey on May 19th was for the CLT. All surveys were conducted during daylight hours.

All sandy beach or salt pan habitat in Figure 2 was surveyed for CLT and WSP with the exception of north Fiesta Island, West Ski Island, Stoney Point, and south Mariner's Point which have seasonal restrictions for their access. These areas are surveyed annually during the CLT breeding season by approved monitors. All saltmarsh habitat in Figure 3 was surveyed for LFRR and BSS, with the exception of the Kendall-Frost Marsh and the SDRFCC east of the West Mission Bay Drive Bridge. These two areas have ongoing yearly or five-year surveys conducted for the range-wide surveys for the LFRR and BSS. A summary of the environmental conditions and species surveyed for on the eight survey dates are provided in Table 1 below.

Table 1. Summary of Weather Conditions During Eight Survey Events for the Light-footed Ridgway's Rail, Belding's Savannah Sparrow, Western Snowy Plover, and California Least Tern for the Mission Bay PEIR Project, City of San Diego, California, 2019.

Survey #	Date	Surveyor (Species)*	Time	Weather Conditions
1A	03/24/2019	JK (LFRR)(BSS)(WSP)	0630-0945	100% overcast, 57-63ºF, wind 7-10 mph
1B	03/25/2019	JK (LFRR)(BSS)(WSP)	0615-0930	60% overcast, 60-63ºF, wind 5-7 mph
1C	03/30/2019	JK (LFRR)(BSS)(WSP)	1625-1945	40% overcast, 68-62ºF, wind 8-15 mph
2	04/05/2019	JK (LFRR)(BSS)	1630-1940	100% overcast, 66-65ºF, wind 8-12 mph
3	04/12/2019	JK (LFRR)(BSS)	1630-1935	40% overcast, 72-66ºF, wind 5-10 mph
4	04/18/2019	JK (WSP)(CLT)	0645-1530	100% overcast, 60-66ºF, wind 5-7 mph
5	05/01/2019	JK (WSP)(CLT)	0700-1550	100% overcast, 65-68ºF, wind 7-10 mph
6	05/19/2019	JK (CLT)	0730-1545	0% overcast, 74-78ºF, wind 5-7 mph

* JK-John Konecny; LFRR-Light-footed Ridgway's Rail; BSS-Belding's Savannah Sparrow; WSP-Western Snowy Plover; CLT-California Least Tern

The surveys were conducted by walking the project site boundary and stopping at areas where there was appropriate habitat and listening for vocalizing light-footed Ridgway's rails. If rails were not detected passively, a digital call-prompt of the light-footed Ridgway's rail "dueting" was played with an iPod and amplified speakers at 30-second intervals. A response was listened for approximately ten minutes before proceeding to the next survey station. Binoculars and a spotting scope were used to scan the survey area for BSS, WSP, and CLT. No call prompting was done for BSS, WSP, and CLT.

RESULTS and DISCUSSION

No LFRR was detected during the three focused surveys in 2019. In 2018 there were 15 pairs of LFRR in the SDRFCC east of West Mission Bay Drive in 2018, and nine pairs at Kendall-Frost Marsh in 2018 (Zembal *et al*. 2018). LFRR surveys will be conducted at the SDRFCC and Kendall-Frost Marsh again in 2019 and 2020 by Zembal. No other LFRR were found in the survey area in 2019.

Three BSS territories were detected in the SDRFCC west of Nimitz Boulevard during the 2019 survey (Figure 4). In 2015 there were nine BSS territories in the SDRFCC east of West Mission Bay Drive in and sixteen territories were present at Kendall-Frost Marsh in 2015 (Zembal *et al* 2015). BSS surveys will be conducted at the SDRFCC and Kendall-Frost Marsh again in 2020 by Zembal. No other BSS were found in the survey area in 2019.

No nesting WSP were found in the areas surveyed in 2019. Individual WSP were observed roosting at South Mission Beach, the sand spit near Kendall-Frost Marsh and the SDRFCC west of Nimitz Boulevard in March (Figure 5). No other wintering WSP were detected during the survey in 2019. There have been occasional WSP nesting attempts in Mission Bay Park, most of which have been

unsuccessful. In 1995, there was one WSP nesting attempt at Mariners Point during the summer X-Games (Unitt 2004). Large numbers of wintering WSP have been documented at South Mission Beach. Fifty-two individuals were documented in 2018 (USFWS 2018), and 52-62 individuals were found during the winter of 2018-2019 (Dudek 2019) at high tide. During low winter tides, these WSP are apparently off the South Mission roost site and move to the mouth of the San Diego River to forage (S. Vissman, pers.com.).

No nesting CLT were detected in the areas surveyed in 2019. Individual CLT were observed foraging in the Mission Bay Channel immediately east of Mariners Point, West SDRFCC, and Rose Creek inlet (Figure5) during the survey in 2019. CLT are known to nest in Mission Bay Park. In 2017, 146 pairs nested at south Mariner's Point, 37 pairs at FAA Island, and two pairs at Stoney Point. No nesting CLT were found at North Fiesta Island (CDFW 2017). CLT's are also known to forage in Mission Bay, Fishermen's Channel, Mission Bay Channel, the Ventura Cove area, around West Ski Island, and the San Diego River (SRA 1994).

Eighty-four species of birds were observed in the biological survey area during the 2019 survey (Table 2).

CERTIFICATION

I certify that the information in this survey report and attached exhibits fully and accurately represent my work. The results of focused surveys for listed species are typically considered valid for one year by the USFWS and CDFW. If you have any questions or require additional information, please call me at (760) 489-5276.

Sincerely,

John K. Konecny
Wildlife Biologist
TE837308-7

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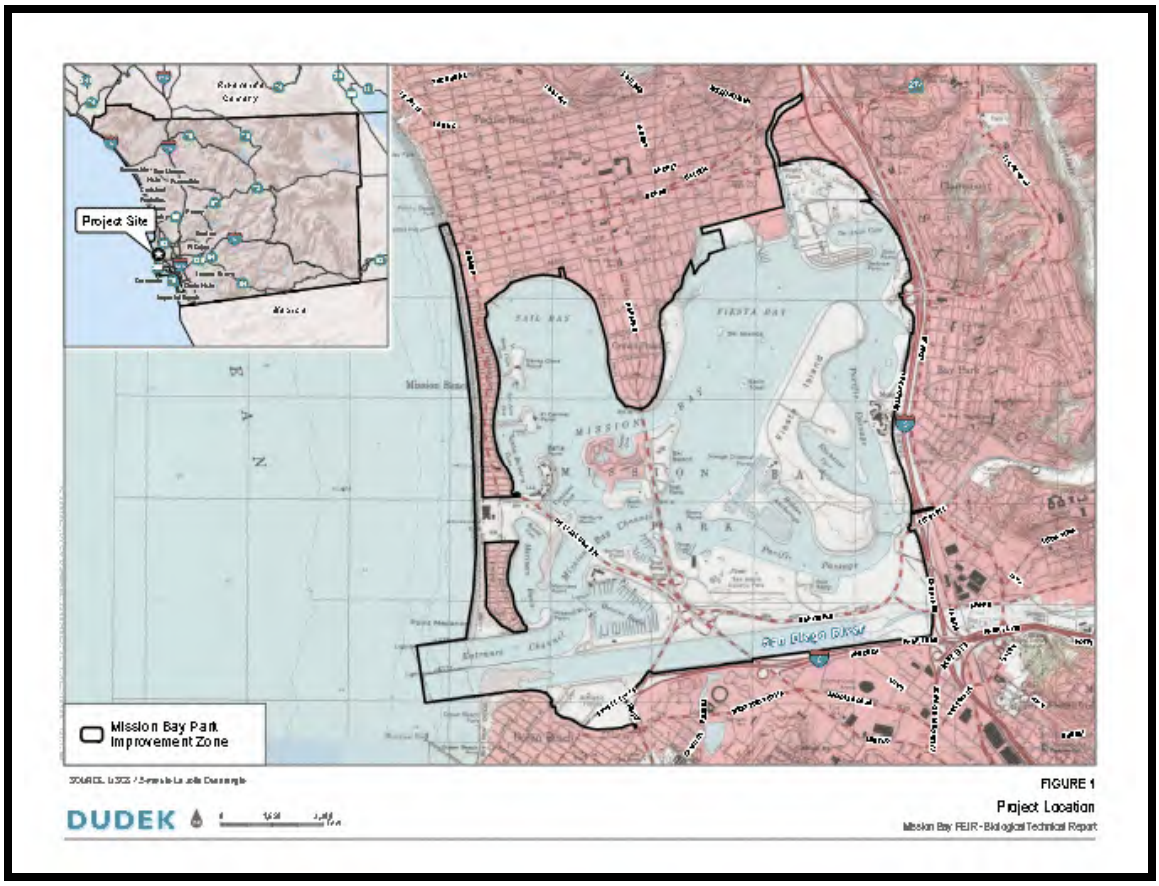


Figure 1. Location of the Mission Bay Park PEIR Survey Area, Mission Bay Park and Vicinity, San Diego County, California, 2019.



Figure 2. **Location of the California Least Tern and Western Snowy Plover Habitat (blue shaded area), Mission Bay Park and Vicinity, San Diego County, California, 2019. (All habitat was surveyed except for North Fiesta Island, Stoney Point, South Mariner's Point, and West Ski Island).**

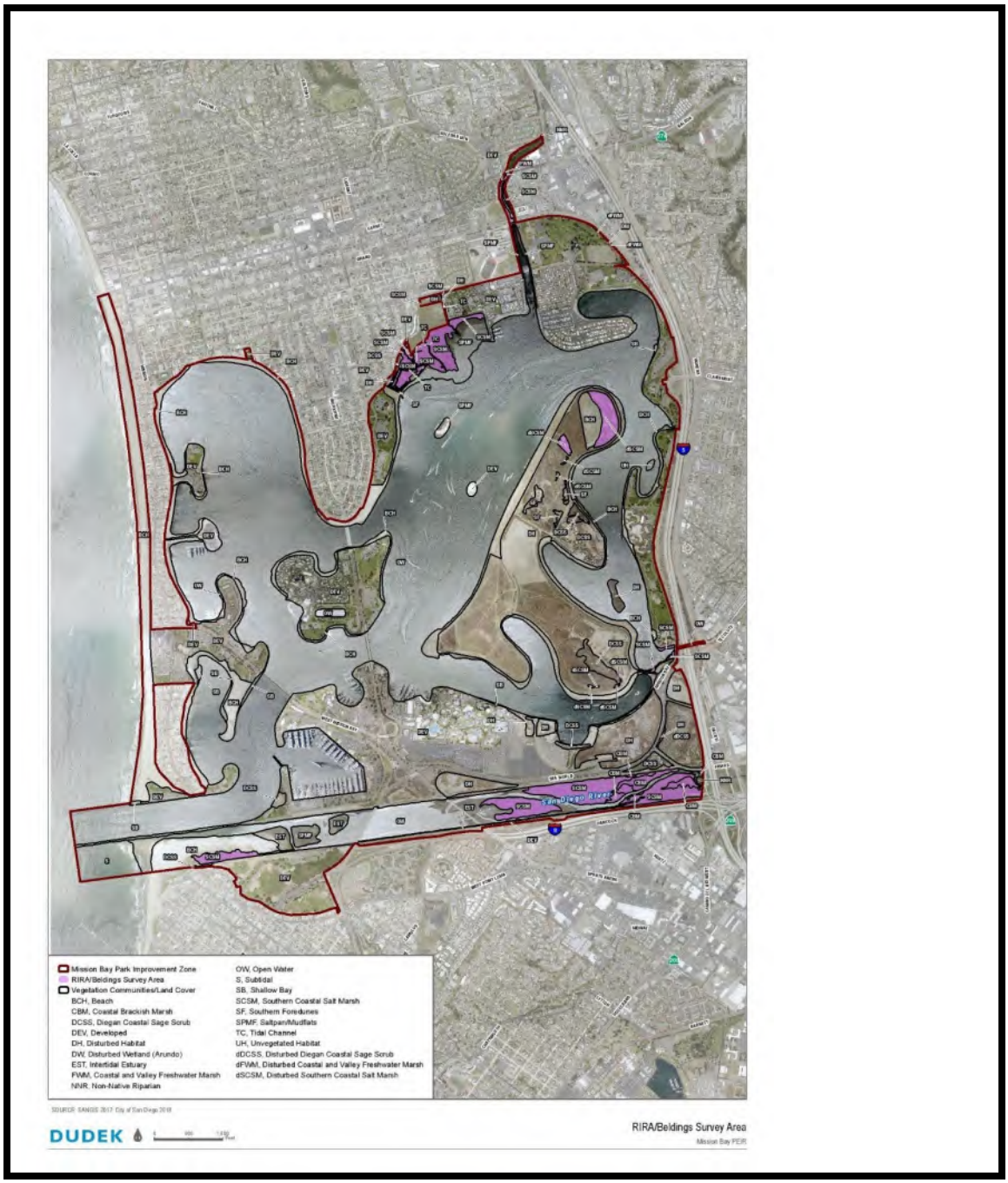


Figure 3. **Location of Light-footed Ridgway's Rail and Belding's Savannah Sparrow Habitat (purple shaded area), Mission Bay Park and Vicinity, San Diego County, California, 2019. (All habitat was surveyed except for the San Diego River Flood Control Channel (east of West Mission Bay Drive) and Kendal-Frost Marsh).**



Figure 4. **Location of Three Belding's Savannah Sparrow Territories at the West Mitigation Site for the West Mission Bay Bridge Replacement Project, Mission Bay Park and Vicinity, San Diego County, California, 2019.**

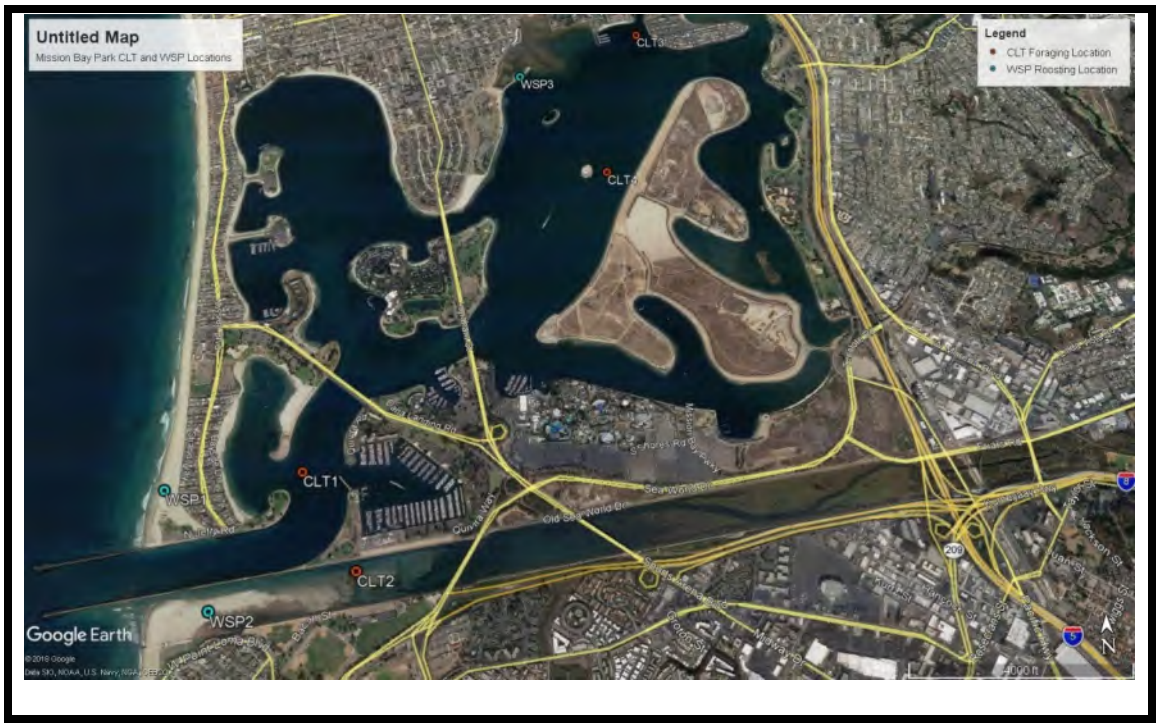


Figure 5. **Location of the WSP Roost Locations (blue circles) at South Mission Beach, West SDRFCC, and Kendall-Frost Sand Spit; and CLT Foraging Locations (red circles) at West SDRFCC, Mission bay Channel, and Rose Creek Inlet, Mission Bay Park and Vicinity, San Diego County, California, 2019.**

Table 2. Avian Species Observed in the Biological Survey Area, 2019

Anatidae	**Waterfowl**
Anas platyrhynchos	Mallard
Anas cyanoptera	Cinnamon teal
Ana discors	Blue-winged teal
Anas crecca	Green-winged teal
Anas strepera	Gadwall
Anas americana	American wigeon
Anas clypeata	Northern shoveler
Oxyura jamaicensis	Ruddy duck
Bucephala albeola	Bufflehead
Aythya americana	Redhead
Branta bernicola	Brant
Aythya sp.	Scaup sp.
Podicipedidae	**Grebes**
Podiceps nigricollis	Eared grebe
Podilymbus podiceps	Pied-billed grebe
Aechmophorus occidentalis	Western grebe
Peliecanidae	
Pelecanus erythrorhynchos	American white pelican
Pelecanus occidentalis	Brown pelican
Phalacrocoraxidae	**Cormorants**
Phalacrocorax auritus	Double-crested cormorant
Ardeidae	**Herons**
Ardea herodias	Great Blue heron
Ardea albus	Great egret
Egretta thula	Snowy egret
Butorides virescens	Green heron
Nycticorax nycticorax	Black-crowned night-heron
Nyctanassa violacea	Yellow-crowned night heron
Egretta rufescens	Reddish egret
Egretta caerulea	Little blue heron
Threskiornithidae	**Ibis**
Plegadis chihi	White-faced ibis
Cathartidae	**New World Vultures**
Cathartes aura	Turkey vulture
Accipitridae	**Hawks**
Buteo jamaicensis	Red-tailed hawk
Pandion haliaetus	Osprey
Buteo lineatus	Red-shouldered hawk
Elanus leucurus	White-tailed kite
Circus cyaneus	Northern harrier

Accipiter cooperii	Cooper's hawk
Falconidae	**Falcons**
Falco sparverius	American kestrel
Falco perigrinus	Peregrine falcon
Rallidae	**Rails, Gallinules**
Fulica americana	American coot
Porzana carolina	Sora
Rallus limicola	Virginia rail
Recurvirostridae	**Stilts, Avocets**
Himantopus mexicanus	Black-necked Stilt
Recurvirostra americana	American Avocet
Charadriidae	**Plovers**
Pluvialis squatarola	Black-bellied plover
Charadrius alexandrines nivosus	Snowy plover (western)
Charadrius semipalmatus	Semipalmated plover
Charadrius vociferus	Killdeer
Scolopacidae	**Sandpipers**
Tringa melanoleuca	Greater yellowlegs
Tringa flavipes	Lesser yellowlegs
Numenius phaeopus	Whimbrel
Tringa semipalmata	Willet
Actitis macularius	Spotted sandpiper
Numenius americanus	Long-billed curlew
Limosa fedoa	Marbled godwit
Calidris alba	Sanderling
Calidris mauri	Western sandpiper
Calidris minutilla	Least sandpiper
Calidris alpine	Dunlin
Calidris canutus	Red knot
Limnodromus sp.	Dowitcher sp.
Phalaropus lobatus	Red-necked phalarope
Laridae	**Gulls, Terns**
Larus heermanni	Heerman's gull
Larus philadelphia	Bonaparte's gull
Larus argentatus	Herring gull
Larus occidentalis	Western gull
Larus delawarensis	Ring-billed gull
Larus canus	Mew gull
Larus californicus	California gull
Sterna antillarum	Least tern (California)
Sterna elegans	Elegant tern
Sterna maxima	Royal tern
Sterna caspia	Caspian tern
Sterna forsteri	Forster's tern

Rynchops niger	Black skimmer
Columbidae	**Pigeons, Doves**
Zenaida macroura	Mourning dove
Streptopelia decaocto	Eurasian collared-dove
Columba livia	Rock dove
Apodidae	**Swifts**
Aeronautes saxatalis	White-throated swift
Alcedinidae	**Kingfishers**
Ceryle alcyon	Belted kingfisher
Tyrannidae	**Tyrant Flycatchers**
Sayornis nigricans	Black phoebe
Sayornis saya	Say's phoebe
Hirundinidae	**Swallows**
Stelgidopteryx serripennis	Northern Rough-winged swallow
Petrochelidon pyrrhonota	Cliff swallow
Petrochelidon rustica	Barn swallow
Emberizidae	**Sparrows and Allies**
Passerculus sandwichensis beldingi	Savannah sparrow (Belding's)
Melospiza melodia	Song sparrow
Zonotrichia leucophrys	White-crowned sparrow

Appendix F

2019 Western Burrowing Owl Survey Report

August 13, 2019

City of San Diego Engineering and Capital Projects Department
525 B St. Suite 750, MS908A
San Diego, CA 92101

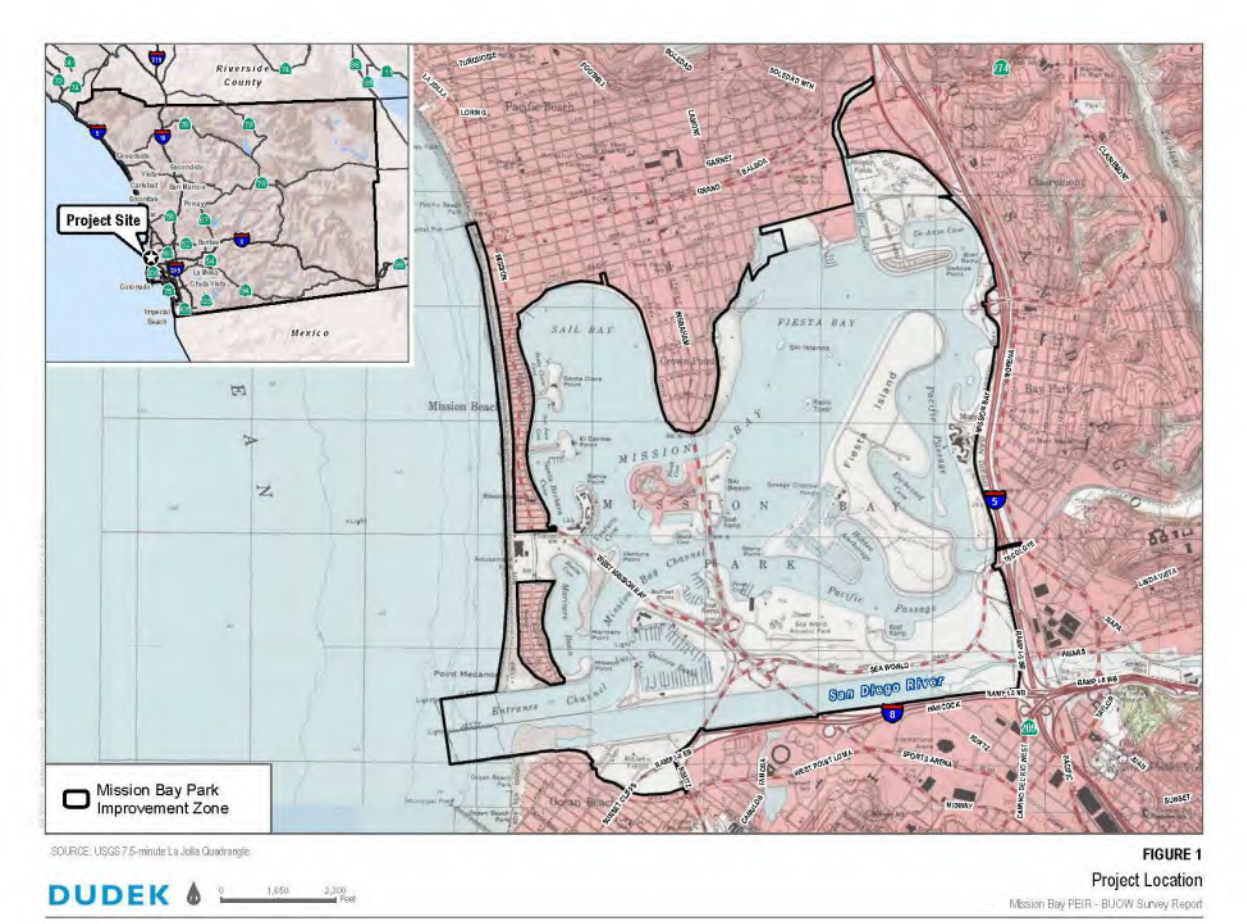
Re: 2019 Western Burrowing Owl Summary Report for Mission Bay Park Improvement Zone Program Environmental Impact Report, San Diego, California

Dear City of San Diego Engineering and Capital Projects Department,

Balk Biological submits this letter report to summarize the results of focused surveys conducted in 2019 for the California Department of Fish and Wildlife's (CDFW) "species of special concern" western burrowing owl (*Athene cunicularia hypugaea*; WBO). Focused surveys were conducted for the preparation of a Program Environmental Impact Report (PEIR) in accordance with the California Environmental Quality Act (CEQA) for seven prioritized improvement projects within the Mission Bay Park Improvement Zone (Improvement Zone). Balk Biological complies with all guiding principles in the current CDFW protocol for 2012, Staff Report on Burrowing Owl Mitigation (CDFG 2012). Balk Biological biologists meet all qualifications to perform burrowing owl habitat assessments and surveys.

Project Location

The Improvement Zone is located within or is surrounded by, the following community planning areas/groups: Pacific Beach, Mission Beach, Clairemont Mesa, Linda Vista, Ocean Beach, Peninsula, Midway/Pacific Highway Corridor, Old Town and Mission Valley (Figure 1, Project Location). The Improvement Zone occurs entirely within the Mission Bay Park planning area covered by the Mission Bay Park Master Plan and it is in a SANDAG planned Smart Growth area. The Biological Survey Area (BSA) of the Improvement Zone includes Mission Bay itself and its shoreline and is surrounded by highly urbanized areas to the north, south, east, and west. It is generally bounded by the Crystal Pier, Pacific Beach Drive, Riviera Drive, Crown Point Drive, Grand Avenue and the community of Pacific Beach to the north; Interstate 5 to the East; Interstate 8, West Point Loma Boulevard and the community of Ocean Beach to the south; and, the community of Mission Beach and the Pacific Ocean to the west.



Project Description

The PEIR for the Improvement Zone projects will analyze seven general projects with objectives of wetland expansion and creation, water quality enhancement, restoration of shoreline, expansion of endangered or threatened species preserves, completion of bicycle and pedestrian paths and bridges, restoration of the seawall bulkhead on Oceanfront Walk, and deferred maintenance. The projects are intended to improve the conditions of the Improvement Zone, in accordance with the Mission Bay Master Park Plan, while providing a benefit to those who recreate within Mission Bay Park. The scope of work for these projects have not yet been fully defined; however, the entire BSA of the Improvement Zone was assessed in support of the PEIR, and baseline biological data for all seven prioritized projects has been collected. This data may be used to analyze impacts to these, and future, projects, thus supporting the goal of the PEIR in streamlining all future environmental and permitting approvals for the projects.

Site Description

The Improvement Zone Project site contains approximately 4,387 acres of terrestrial and aquatic resources and is comprised of commercial, residential, recreational and park, and natural areas (Figure 1). The BSA includes the entire footprint of the Improvement Zone; a

buffer was not surveyed as the Improvement Zone is surrounded on all sides by either water or intensive development. Twenty-two vegetation communities and land cover types occur within the BSA (Table 1, Figure 2).

Table 1
Vegetation Communities and Land Cover Types occurring within the BSA

Vegetation Communities and Land Cover Types	Tier Level	Total BSA (acres)
Riparian and Wetlands		
Beach	Wetland	350.05
Coastal Brackish Marsh	Wetland	12.54
Coastal and Valley Freshwater Marsh	Wetland	0.02
Disturbed Coastal and Valley Freshwater Marsh	Wetland	1.36
Disturbed Southern Willow Scrub	Wetland	4.78
Southern Coastal Salt Marsh	Wetland	110.96
Disturbed Southern Coastal Salt Marsh	Wetland	2.86
Disturbed Wetland	Wetland	0.03
Intertidal Estuary	Wetland	14.1
Non-Native Riparian	Wetland	2.34
Open Water (includes eelgrass beds)	Wetland	2119.17
Open Water – Tidal Channel	Wetland	2.35
Subtidal	Wetland	32.81
Shallow Bay	Wetland	6.77
Saltpan/Mudflats	Wetland	45.91
Unvegetated Habitat	Wetland	0.95
Uplands		
Diegan Coastal Sage Scrub	II	25.07
Disturbed Diegan Coastal Sage Scrub	II	33.41
Southern Foredunes	I	6.61
Other Cover Types		
Disturbed Habitat	IV	464.42
Developed	N/A	1150.41
Total		**4386.92**



FIGURE 2

Vegetation Communities

Mission Bay PEIR - BUOW Survey Report

The project site is relatively flat with elevation on site ranging from zero feet above mean sea level (AMSL) to 46 feet AMSL. The total acreage of suitable burrowing owl habitat within the BSA is 516 acres. Suitable burrowing owl habitat ranges from low to high quality within coastal sage scrub, disturbed coastal sage scrub, disturbed land, and developed land, as well as the riprap shoreline along some of the beach habitat (Figure 3). Suitable burrowing owl habitat characteristics within the BSA includes scrub habitat and disturbed and/or developed land with openings within the native or nonnative vegetation, the presence of fossorial mammal burrows, and adequate perch sites (fence posts, fencing, dirt mounds, berms and debris piles).



FIGURE 3
Suitable Western Burrowing Owl Habitat
Mission Bay PEIR - BUOW Survey Report

Western Burrowing Owl Background Information

Regulatory Status

The WBO is protected under the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-712) and it is unlawful to take this species, its eggs, or its nest under Federal law. Sections 3505, 3503.5, and 3800 of the CDFW Code prohibit the take or destruction of the bird, its nests, or eggs. The WBO is also a Species of Special Concern to California (CDFW 2018) and, as such, CEQA requires mandatory findings of significance (i.e., significant or not significant) if impacts are likely to occur to this species.

Habitat Status

WBO habitat consists of annual and perennial grasslands, deserts, agricultural areas, disturbed habitat, and scrublands characterized by low-growing vegetation; suitable WBO habitat may also include trees and shrubs if the canopy covers less than 30% of the ground surface (CBOC 1993; Zarn 1974). Burrows are an essential component of burrowing owl habitat, and both natural and artificial burrows provide protection, shelter, and nests. WBO often uses burrows made by mammals such as California ground squirrels (*Spermophilus beecheyi*) in southern California but may also use human-made structures such as cement culverts; riprap; cement, asphalt, or wood debris piles; or openings beneath cement or asphalt pavement. WBO may use a particular site for migratory stopovers, or for breeding and foraging year-round. Suitable habitat is considered occupied if there is an observation of at least one burrowing owl occupying a burrow within the last 3 years, or burrowing owl sign around a burrow such as molted feathers, cast pellets, prey remains, eggshell fragments, or feces (CDFG 2012). Burrowing owls tend to exhibit high site fidelity, reusing the same site year after year (Feeney 1992; Rich 1984).

Population Status

WBO is found sparsely distributed in southern California; including San Diego County (DeSante et al. 1997, Klute et al. 2003, Lincer and Bloom 2007). The vast majority of the California breeding population of WBOs occurs in the Central and Imperial Valleys, primarily in agricultural areas, often associated with canals and drainages (and their berms). Small, scattered populations occur in the Mojave Desert. Population density seems to be correlated with prey availability, particularly small mammals (Klute et al. 2003). Breeding season in California takes place usually from February 1 to August 31 but varies by climatic conditions and latitude. The peak of breeding season occurs April 15 through July 15, when nests are most active and occupied by eggs or young (CDFG 2012). WBO may change burrows many times during the breeding season after nestlings reach three weeks old. This can be dependent on predation or disturbance.

Burrowing owls have disappeared or declined in several southern California counties and in coastal areas, including San Diego County (DeSante et al. 1997, Klute et al. 2003, Kidd et al. 2007, Lincer and Bloom 2007). This trend is not, however, limited to California; in 1992, 16 (67 %) of 24 states and provinces polled reported burrowing owl population declines and none reported an increase (James and Espie 1997).

Burrowing owls in southern coastal California are year-round residents; while breeding has not been confirmed within the BSA, wintering birds have been documented along the San Diego River mouth and the southeast corner of Mission Bay, according to the San Diego Natural History Museum Bird Atlas (Unitt 2004). Within the last ten years, wintering burrowing owls have been documented through eBird in over 30 locations within Mission Bay, Fiesta Island, and the San Diego River mouth (Sullivan et al. 2012). Burrowing owls have also been recorded historically in the Mission Bay area in the California Natural Diversity Database (CNDDB 2018).

Survey Methodology

Survey methods were conducted for the proposed project in accordance with the CDFW's Staff Report on Burrowing Owl Mitigation (CDFG 2012). WBO surveys were conducted to determine the presence or absence, abundance, and breeding status of the species within suitable habitat within the larger project survey area.

CDFW (2012) protocol requires that the project footprint and a 500-foot (150-meter) buffer surrounding the project footprint be surveyed for the presence/absence of WBO; however, a buffer was not surveyed as the Improvement Zone is surrounded on all sides by either water or intensive development and no suitable habitat occurs outside of the project footprint (Interstate 5, residential areas, and business). The BSA encompasses approximately 4,387 acres and the entire BSA was surveyed to assess suitable burrowing owl habitat in support of the PEIR.

An initial habitat assessment of the BSA was conducted on December 3, 4, and 11, 2018. Follow-up visits to verify site conditions and suitable habitat were conducted on March 25, 26, 27, 28, and 29, 2019 during and after the first round of WBO breeding season surveys. During the follow up site visits, certain areas within the larger survey area were eliminated to the increase of vegetation cover (primarily nonnative species) and lack of openings in the habitat, following the winter rains. However, these eliminated areas were reassessed during each survey visit and surveyed if conditions changed and habitat was considered suitable (decrease in vegetation cover and openings created). Suitable WBO habitat within the BSA included native and nonnative/disturbed habitats. The total acreage of suitable burrowing owl habitat within the BSA is 516 acres (Figure 3).

Vegetation communities within the BSA that are suitable for burrowing owls include Diegan (and disturbed) coastal sage scrub, disturbed land, and developed land with openings in the habitat, available perch sites (fence posts, fencing, dirt mounds, berms and debris piles), and evidence of fossorial mammals and/or burrows, as well as some areas of beach habitat with a riprap shoreline and the presence of fossorial mammals and/or burrows (Figure 3).

Visits and Timing

Burrowing owls are more detectable during the breeding season with detection probabilities being highest during the nestling stage (Conway et al. 2008). In California, the WBO breeding season extends generally from February 1 to August 31 (Haug et al. 1993, Thomsen 1971) with some variances by geographic location and climatic conditions. As indicated by CDFW (2012), several researchers suggest three or more survey visits during daylight hours (Haug

and Diduik 1993, CBOC 1997, Conway and Simon 2003) and recommend each visit occur at least three weeks apart during the peak of the breeding season, commonly accepted in California as between April 15 and July 15 (CBOC 1997).

Per CDFW 2012 requirements, where suitable WBO habitat exists, WBO breeding season surveys should consist of four survey visits based on the following timing:

- One survey visit between February 1 and April 15
- Two survey visits, at least three weeks apart, between April 15 and July 15
- One survey visit after June 15 but prior to the end of the breeding season (August 31), at least three weeks after previous survey

The first survey was conducted on March 25, 26, 27, 28, and 29, 2019. The second survey was conducted on April 22, 23, 24, and 25, 2019. The third survey was conducted on May 20, 21, 22, and 23, 2019. The fourth WBO survey was conducted on June 23, 24, 25, and 26, 2019. All survey dates were conducted according to current CDFW (2012) guidelines and all surveys were at least three weeks apart. To ensure the greatest detection probability, surveys were conducted at times of high burrowing owl activity: dawn to early morning, and evening to dusk. Surveys were scheduled to coincide with the burrowing owl laying and incubation period, nesting period, and the late nestling period when owls are most present above ground. Surveys were not conducted when wind speeds exceeded 20 kilometers per hour (km/hr) or when it was raining or during the presence of dense fog. Surveys were conducted only between morning civil twilight and 10:00 AM and two hours before sunset until evening civil twilight. Breeding season survey dates, observer, weather data, times, and observations are presented in Table 2.

Table 2
Survey Dates, Personnel, and Weather Conditions

Survey Number	Date	Survey Personnel	Time	Weather Conditions
1a	3/25/2019	Shelley Lawrence, Brynne Mulrooney	0622-1000	Start: 53°F, wind 3 mph, 0% cover End: 63°F, wind 4 mph, 0% cover
1b	3/26/2019	Shelley Lawrence, Brynne Mulrooney	0630-1000	Start: 54°F, wind 1 mph, 0% cover End: 60°F, wind 9 mph, 0% cover

Survey Number	Date	Survey Personnel	Time	Weather Conditions
1c	3/26/2019	Shelley Lawrence, Brynne Mulrooney	1704–1915	Start: 63°F, wind 10 mph, 100% cover/hazy End: 59°F, wind 10 mph, 25% cover
1d	3/27/2019	Holly Hoffman, Shelley Lawrence, Brynne Mulrooney	0627–1000	Start: 58°F, wind 5 mph, 20% cover End: 54°F, wind 7 mph, 25% cover
1e	3/28/2019	Holly Hoffman, Shelley Lawrence, Brynne Mulrooney, Will Roberts	0629-1000	Start: 57°F, wind 2 mph, 90% cover End: 61°F, wind 4mph, 75% cover
1f	3/28/2019	Holly Hoffman, Shelley Lawrence, Brynne Mulrooney, Will Roberts	1705-1853	Start: 63°F, wind 12 mph, 20% cover End: 61°F, wind 12 mph, 20% cover
1g	3/29/2019	Holly Hoffman, Shelley Lawrence, Brynne Mulrooney, Will Roberts	0622-0959	Start: 53°F, wind 3 mph, 90% cover End: 61°F, wind 5 mph, 50% cover
2a	4/22/2019	Thomas Dayton, Shelley Lawrence, Will Molland-Simms, Brynne Mulrooney, Jon Walker	0550-1000	Start: 54°F, wind 1-2 mph, 0% cover End: 67°F, wind 3-5 mph, 0% cover
2b	4/23/2019	Thomas Dayton, Shelley Lawrence, Will Molland-Simms, Brynne Mulrooney, Marshall Paymard, Jon Walker	0600–1000	Start: 60°F, wind 0 mph, 100% cover End: 65°F, wind 2-5 mph, 50% cover
2c	4/24/2019	Thomas Dayton, Shelley Lawrence, Will Molland-Simms, Brynne Mulrooney, Marshall Paymard, Jon Walker	0546–1000	Start: 60°F, wind 0-2mph, 100% cover End: 65°F, wind 2-4 mph, 50% cover
2d	4/25/2019	Shelley Lawrence, Will Molland-Simms, Brynne Mulrooney	0548–0933	Start: 59°F, wind 0 mph, 100% cover End: 67°F, wind 2-5 mph, 10% cover
3a	5/20/2019	Shelley Lawrence, Will Molland-Simms, Brynne Mulrooney, Jon Walker	0543–1000	Start: 59°F, wind 10-12 mph, 90% cover, light rain End: 62°F, wind 10-12 mph, 75% cover
3b	5/21/2019	Shelley Lawrence, Will Molland-Simms, Brynne Mulrooney, Jon Walker	0545–1000	Start: 59°F, wind 10-12 mph, 100% cover End: 59°F, wind 10-12 mph, 100% cover
3c	5/22/2019	Shelley Lawrence, Will Molland-Simms, Marshall Paymard, Jon Walker	0538–0950	Start: 54°F, wind 4-8 mph, 100% cover End: 60°F, wind 2-5 mph, 50% cover
3d	5/23/2019	Will Molland-Simms, Brynne Mulrooney	0530-0915	Start: 54°F, wind 4-8 mph, 90% cover, light drizzle End: 60°F, wind 2-5 mph, 100% cover

Survey Number	Date	Survey Personnel	Time	Weather Conditions
4a	6/23/2019	Brynne Mulrooney	0550-0800	Start: 65°F, wind 0-2 mph, 100% cover End: 65°F, wind 0-2 mph, 100% cover
4b	6/24/2019	Shelley Lawrence, Will Molland-Simms, Brynne Mulrooney, Will Roberts, Jon Walker	0530-1000	Start: 64°F, wind 0-2 mph, 100% cover End: 66°F, wind 2-4 mph, 100% cover
4c	6/25/2019	Shelley Lawrence, Will Molland-Simms, Brynne Mulrooney, Marshall Paymard, Will Roberts, Jon Walker	0545-1000	Start: 63°F, wind 2-4 mph, 100% cover End: 66°F, wind 2-4 mph, 100% cover
4d	6/26/2019	Shelley Lawrence, Will Molland-Simms, Brynne Mulrooney, Marshall Paymard	0535-0913	Start: 62°F, wind 0-2 mph, 100% cover End: 64°F, wind 3-5 mph, 100% cover

Survey Method

Surveys were conducted by walking through all suitable habitats within the BSA using 100% visual coverage, focusing on visual signs of burrowing owl (burrows, pellets, white wash, etc.). Distance between transects was no greater than 20 meters (65 feet) during each survey. While walking transects, the biologists would continuously scan the BSA to detect owls. As owls were detected, biologists would observe the owls from a distance of at least 50 meters (165 feet) so that burrowing owls were not disturbed. The number and age of individuals were recorded for observed WBO. At each suitable burrow, presence of WBO sign (e.g., pellets, prey remains, whitewash, decorations, tracks) and number of WBO present at that burrow were recorded for each survey visit. After a burrow was marked, it was revisited on all follow-up surveys; biologists also continued to survey for new burrows during follow-up surveys. All data were recorded using the ESRI (Environmental System Research Institute) Collector Application. The total number of burrows and burrow status following each survey round is summarized in Table 3.

During each visit, the "survey status" of a burrow for the given survey period was classified as follows:

- Occupied – a WBO individual was observed to be present at the burrow;
- Active – a WBO burrow with fresh WBO sign but no WBO individual was present;
- Inactive – suitable for WBO but no WBO individuals or sign was observed; or
- No longer suitable – previously suitable burrow that was no longer suitable due to erosion, a natural burrow collapse, or inadvertent damage from anthropogenic activities.

Results

A total of 631 potentially suitable burrows, or burrow clusters, were documented within the BSA (Table 3, Attachment A, and Figure 4). Each burrow was visited up to four times on

different days during burrowing owl protocol surveys. Table 3 summarizes the progression of burrow status by survey number. Burrows were considered occupied if at least one adult burrowing owl was detected at the burrow during the survey round.

Table 3
Progression of Burrow Status by Survey Number

	Count of Burrows and Burrow Status by Survey Number			
	Survey 1	Survey 2	Survey 3	Survey 4
Burrows				
Occupied	**1**	**0**	**0**	**0**
Active (included in Occupied total)	**1**	**0**	**0**	**0**
Inactive (including destroyed and no longer suitable)	**314**	**465**	**567**	**631**
Total	**315**	**465**	**567**	**631**



DUDEK

FIGURE 4

Western Burrowing Owl and Burrow Locations

Mission Bay PEIR - BUOW Survey Report

Out of the 631 mapped burrows, one was considered inhabited by WBO during only one of the survey rounds (Survey 1). The occupied burrow (Attachment A; Burrow 69) was located within the BSA on Fiesta Island, on a berm just north of the section of Fiesta Island Road where it cuts west and bisects the island, north of the Over the Line ball field (Figure 4). The burrow was occupied by an adult WBO during the first survey round; no juvenile burrowing owls were observed at this burrow. No owls were observed at this burrow after the first survey, and no sign of burrowing owl (feathers, white wash, pellets, etc.) was observed on any subsequent survey round.

Although WBO was only detected at one burrow during one survey round, six additional burrows showed historic signs of WBO use of the Project site (Attachment A). Five burrows showed signs of weathered whitewash (Burrows 9, 74, 362, 368, and 369), and an old pellet was located outside of an additional burrow (Burrow 4). These burrows may have potentially been previously occupied by wintering burrowing owls, as fresh WBO sign was not observed at any of these burrows.

Additional sensitive wildlife species detected during burrowing owl surveys are included in Attachment B and Figure 5.



FIGURE 5

Other Sensitive Species Observations

Mission Bay PEIR - BUOW Survey Report

Discussion

One out of 631 potential burrows was considered occupied at the time of surveys, with one adult burrowing owl individual observed in the BSA on March 26, 2019. Wintering burrowing owls have been documented within the vicinity of Mission Bay into late March, and it is assumed that this bird is a wintering bird as breeding status has never been confirmed within the Mission Bay area (Sullivan et al. 2012; Unitt 2004). Six additional burrows showed historic WBO use (weathered whitewash and an old pellet)The majority of burrows within the BSA were concentrated on Fiesta Island and in developed areas adjacent to the San Diego River (Figure 4). Smaller pockets of burrows were observed in the open space east of Sea World as well as the edge of some developed park land.

If you have any questions or comments regarding this letter report, please contact me at 305-849-2765.

Sincerely,

Brynne Mulrooney

Brynne Mulrooney

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Attachments:

Figure 1 – Project Location
Figure 2 – Vegetation Communities
Figure 3 – Suitable WBO Habitat
Figure 4 – Burrow Locations
Figure 5 -- Other Sensitive Species Observations

Attachment A - Burrow Data Summary for Phase III Burrowing Owl Surveys
Attachment B - Wildlife Species Detected within the Mission Bay PEIR Biological Study Area
Attachment C – Representative Site Photos for Phase III Burrowing Owl Surveys

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ATTACHMENT A

SUMMARY BURROW DATA FOR PHASE III BURROWING OWL SURVEYS

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
1	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
2	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Cluster of 3 burrows
3	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
4	1	Inactive; old pellet outside entrance	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
5	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
6	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
7	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
8	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	2 burrows under a slab of concrete
9	1	Inactive; no owl sign	2	No longer suitable; collapsed or not located	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
10	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
11	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
12	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Cluster of 7 burrow; rabbits everywhere
13	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Cluster of 10-15 burrows
14	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
15	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
16	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	Cluster of 4 burrows

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
17	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Cluster of burrows
18	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
19	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
20	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
21	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
22	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
23	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
24	1	Inactive; no owl sign	2	No longer suitable; collapsed or not located	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
25	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
26	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
27	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
28	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	No longer suitable; collapsed or not located	
29	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
30	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
31	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
32	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
33	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
34	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Collapsed; burrow not located	4	No longer suitable; collapsed or not located	
35	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
36	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
37	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
38	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
40	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; culvert filled in	4	No longer suitable; culvert filled in	Drainage culvert
41	1	Inactive; no owl sign	2	No longer suitable; collapsed or not located	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
42	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
43	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
44	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
45	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
46	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	No longer suitable; collapsed or not located	
47	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
48	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	No longer suitable; collapsed or not located	
49	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
50	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
51	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
52	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	2 concrete culverts and a mound
53	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
54	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Culvert
55	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Cluster of 5-6 burrows
56	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Culvert
57	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
58	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
59	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Cluster of 5 burrows
60	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
61	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	2 drainage culverts
62	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	3 drainage pipes
63	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Culvert
64	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
65	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Culvert

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
66	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Culvert
67	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Culvert
68	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Cement culvert
69	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
70	1	Occupied by BUOW	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
71	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
72	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
73	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	No longer suitable; collapsed or not located	
74	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
75	1	Inactive; no owl sign, old white wash near burrow	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
76	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	2 burrows
77	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	2 burrows
79	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
80	1	Inactive; no owl sign	2	Collapsed; burrow not located	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
81	1	Inactive; no owl sign	2	Collapsed; burrow not located	3	No longer suitable;	4	Inactive, no owl sign	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
						collapsed or not located			
82	1	Inactive; no owl sign	2	Collapsed; burrow not located	3	Inactive; no owl sign	4	Inactive, no owl sign	
83	1	Inactive; no owl sign	2	Collapsed; burrow not located	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
84	1	Inactive; no owl sign	2	Collapsed; burrow not located	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
85	1	Inactive; no owl sign	2	Inaccessible due to LETE nesting; fenced off	3	N/A	N/A	N/A	
86	1	Inactive; no owl sign	2	Collapsed; burrow not located	3	Collapsed; burrow not located	4	Collapsed; burrow not located	
87	1	Inactive; no owl sign	2	Collapsed; burrow not located	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
88	1	Inactive; no owl sign	2	Collapsed; burrow not located	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
89	1	Inactive; no owl sign	2	Collapsed; burrow not located	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
90	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
91	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
92	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	2 burrows

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
93	1	Inactive; no owl sign	2	Collapsed; burrow not located	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
94	1	Inactive; no owl sign	2	No longer suitable; collapsed or not located	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
95	1	Inactive; no owl sign	2	No longer suitable; collapsed or not located	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
96	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	No longer suitable; collapsed or not located	
97	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
98	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
99	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
100	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
101	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	Rabbit tunnels
102	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
103	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
104	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
105	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
106	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
107	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
108	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
109	1	Inactive; no owl sign	2	No longer suitable; collapsed or not located	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
110	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Concrete culvert
111	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Concrete culvert
112	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Concrete culvert
113	1	Inactive; no owl sign	2	No longer suitable; collapsed or not located	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
114	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive	4	Inactive, no owl sign	
115	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive	4	Inactive, no owl sign	
116	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive	4	Inactive, no owl sign	Metal culvert
117	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive	4	Inactive, no owl sign	Metal culvert
118	1	Inactive; no owl sign	2	No longer suitable; collapsed or not located	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
119	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
120	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
121	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Culvert
122	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
123	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
124	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
125	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
126	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
127	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
128	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
129	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
130	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
131	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
132	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
133	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
134	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
135	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
136	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
137	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
138	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
139	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
140	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
141	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
142	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
143	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Several burrows in area
144	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Several burrows in area
145	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Several burrows in area
146	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Several burrows in area
147	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Several burrows in area
148	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	In riprap complex
149	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	2 burrows
150	1	Inactive; no owl sign	2	No longer suitable; collapsed or not located	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
151	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
152	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Under riprap
153	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Under riprap
154	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
155	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
156	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
157	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
158	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
159	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
160	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
161	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
162	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
163	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
164	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	No longer suitable; collapsed or not located	
165	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
166	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
167	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
168	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	No longer suitable; collapsed or not located	
169	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
170	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
171	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
172	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
173	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
174	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
175	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
176	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
177	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
178	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
179	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
180	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	No longer suitable; collapsed or not located	
181	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
182	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
183	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
184	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
185	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Concrete slabs
186	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
187	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
188	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
189	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
190	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
191	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	Under sidewalk
192	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Under sidewalk; 2 burrows
193	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
194	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Under sidewalk; 2 burrows
195	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Under sidewalk
196	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
197	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
198	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
199	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
200	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Riprap burrow complex
201	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Concrete culvert
202	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
203	1	Inactive; no owl sign	2	No longer suitable; collapsed or not located	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
204	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
205	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
206	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
207	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	No longer suitable; collapsed or not located	
208	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	No longer suitable; collapsed or not located	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
209	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Several small burrows
210	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
211	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
212	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	2 burrows
213	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
214	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	Small burrows
215	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
216	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
217	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Burrow complex
218	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
219	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Cluster of several burrows; probably 2 are suitable as of first survey
220	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
221	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
222	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
223	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
224	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
225	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
226	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
227	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
228	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
229	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	No longer suitable; collapsed or not located	
230	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Metal pipe
231	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
232	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
233	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
234	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Game trail through bushes
235	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
236	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
237	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
238	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
239	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
240	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
241	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
242	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
243	1	Inactive; no owl sign	2	No longer suitable; collapsed or not located	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
244	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; water pouring out of culvert	4	Inactive, no owl sign	Concrete culvert
245	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
246	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
247	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Culvert
248	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	2 burrows
249	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
250	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
251	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
252	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Drainage pipe under cement bench
253	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Drainage pipe
254	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
255	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
256	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Drainage pipe

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
257	1	Inactive; no owl sign	2	No longer suitable; collapsed or not located	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
258	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
259	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
260	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Burrow complex
261	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
262	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	2 burrows
263	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
264	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
265	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Several burrows in area
266	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
267	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Cement culvert
268	1	Inactive; no owl sign	2	No longer suitable; collapsed or not located	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
269	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	Several burrows in area
270	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Several burrows in area
271	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Several burrows in area
272	1	Inactive; no owl sign	2	No longer suitable; collapsed or not located	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
273	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
274	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
275	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	No longer suitable; collapsed or not located	
276	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	No longer suitable; collapsed or not located	
277	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	No longer suitable; collapsed or not located	Under sidewalk
278	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	No longer suitable; collapsed or not located	Under sidewalk
279	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
280	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
281	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
282	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Burrows under storage container; homeless at this location from Survey 2- Survey 4
283	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
284	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	Inactive, no owl sign	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
285	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
286	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Burrows under storage container
287	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
288	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
289	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
290	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
291	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
292	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Several burrows in area
293	1	Inactive; no owl sign	2	No longer suitable; collapsed or not located	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
294	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
295	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
296	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
297	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
298	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
299	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
300	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
301	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
302	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
303	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
304	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
305	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
306	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
307	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
308	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
309	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
310	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
311	1	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
312	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
313	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
314	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
315	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
316	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
317	1	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
318	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Cement culvert
319	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Cement culvert
320	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Cement culvert

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
321	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Cement culvert
322	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
323	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
324	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
325	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
326	N/A	N/A	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
327	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
328	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
329	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
330	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
331	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
332	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
333	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
334	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
335	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
336	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
337	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	No longer suitable; collapsed or not located	
338	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
339	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
340	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
341	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
342	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
343	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
344	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
345	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
346	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
347	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
348	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
349	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
350	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
351	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
352	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
353	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
354	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
355	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
356	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
357	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
358	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
359	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
360	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
361	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
362	N/A	N/A	2	Inactive; weathered whitewash outside burrow, no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
363	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
364	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Drain pipe
365	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
366	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
367	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Small complex
368	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
369	N/A	N/A	2	Inactive; weathered whitewash outside burrow, no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
370	N/A	N/A	2	Inactive; weathered whitewash outside burrow, no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
371	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
372	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
373	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	2 burrows
374	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
375	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
376	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
377	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	2 burrows
378	N/A	N/A	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
379	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
380	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
381	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
382	Yes	Inactive; no owl sign	2	Inactive; no owl sign	3	Inactive; no owl sign	4	No longer suitable; collapsed or not located	
383	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
384	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
385	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
386	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
387	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
388	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
389	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
390	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
391	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	2 burrows
392	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
393	N/A	N/A	2	Inactive; weathered whitewash outside burrow, no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	2 burrows
394	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	2 burrows
395	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
396	Yes	Inactive; no owl sign	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
397	N/A	N/A	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
398	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	2 burrows
399	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	2 burrows
400	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
401	N/A	N/A	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
402	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
403	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
404	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Occupied by rabbit family
405	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
406	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	No longer suitable; collapsed or not located	
407	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
408	N/A	N/A	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
409	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
410	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
411	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
412	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
413	N/A	N/A	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
414	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
415	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Drainage pipe
416	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Drainage pipe
417	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Drainage pipe
418	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Culvert
419	N/A	N/A	2	Inactive; no owl sign	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
420	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
421	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
422	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
423	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
424	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
425	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
426	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
427	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Pipe
428	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Under concrete slab
429	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Pipe
430	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Pipe
431	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Under concrete slab
432	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Under concrete slab
433	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
434	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
435	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Burrow complex
436	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
437	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
438	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
439	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Burrow complex
440	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
441	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
442	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
443	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
444	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Under collapsed cement

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
445	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
446	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
447	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
448	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
449	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
450	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	Under sidewalk
451	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
452	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
453	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	No longer suitable; collapsed or not located	
454	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
455	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
456	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
457	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
458	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
459	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	No longer suitable; collapsed or not located	
460	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
461	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	No longer suitable; collapsed or not located	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
462	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
463	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
464	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
465	N/A	N/A	2	Inactive; no owl sign	3	Inactive; no owl sign	4	Inactive, no owl sign	
466	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
467	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
468	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
469	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
470	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
471	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
472	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
473	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
474	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
475	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
476	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
477	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	No longer suitable; collapsed or not located	
478	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
479	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
480	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
481	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
482	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
483	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
484	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
485	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
486	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
487	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
488	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
489	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	No longer suitable; collapsed or not located	
490	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
491	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
492	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
493	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
494	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
495	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
496	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
497	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
498	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
499	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
500	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
501	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
502	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
503	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
504	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
505	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
506	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
507	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
508	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
509	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
510	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
511	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
512	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
513	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
514	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
515	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	No longer suitable; collapsed or not located	
516	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
517	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
518	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
519	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
520	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
521	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
522	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
523	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
524	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	No longer suitable; collapsed or not located	
525	N/A	N/A	N/A	N/A	3	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
526	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
527	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
528	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
529	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
530	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	No longer suitable; collapsed or not located	
531	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
532	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
533	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
534	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
535	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
536	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
537	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
538	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
539	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
540	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
541	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
542	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
543	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
544	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
545	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
546	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
547	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
548	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	No longer suitable; collapsed or not located	
549	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
550	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
551	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
552	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
553	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
554	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
555	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
556	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	3 burrows
557	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
558	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
559	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
560	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
561	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
562	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
563	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
564	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
565	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
566	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
567	N/A	N/A	N/A	N/A	3	Inactive; no owl sign	4	Inactive, no owl sign	
568	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
569	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
570	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
571	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
572	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
573	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	5 burrows
574	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
575	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
576	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
577	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
578	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
579	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
580	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
581	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
582	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
583	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
584	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
585	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
586	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
587	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
588	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
589	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
590	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
591	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
592	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
593	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
594	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
595	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
596	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
597	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
598	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
599	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
600	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
601	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
602	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
603	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
604	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
605	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
606	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
607	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
608	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	2 burrows
609	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
610	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
611	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
612	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
613	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
614	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	

Burrow ID	Survey Number	Status	Survey Number	Status	Survey Number	Status	Survey Number	Status	Notes
615	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
616	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
617	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
618	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
619	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
620	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
621	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
622	N/A	N/A	N/A	N/A	Yes	No longer suitable; collapsed or not located	4	No longer suitable; collapsed or not located	
623	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
624	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
625	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	2 burrows
626	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
627	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
628	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
629	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
630	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	
631	N/A	N/A	N/A	N/A	N/A	N/A	4	Inactive, no owl sign	

ATTACHMENT B

WILDLIFE SPECIES OBSERVED OR DETECTED WITHIN THE MISSION BAY PEIR BIOLOGICAL STUDY AREA

Common Name	Scientific Name	Order	Family	Federal Status (Endangered/Threatened)	California Status (Endangered/Threatened)
Invertebrates					
Western Black Widow	*Latrodectus hesperus*	Araneae	Theridiidae	None	None
Behr's Metalmark	*Apodemia mormo virgulti*	Lepidoptera	Riodinidae	None	None
Funereal Duskywing	*Erynnis funeralis*	Lepidoptera	Hesperiidae	None	None
White Checkered Skipper	*Pyrgus albescens*	Lepidoptera	Hesperiidae	None	None
Anise Swallowtail	*Papilio zelicaon*	Lepidoptera	Papilionidae	None	None
Reptiles & Amphibians					
Western Fence Lizard	*Sceloporus occidentalis*	Squamata	Phrynosomatidae	None	None
Side-Blotched Lizard	*Uta stansburiana*	Squamata	Phrynosomatidae	None	None
Red-diamond Rattlesnake[1,2]	*Crotalus ruber*	Serpentes	Viperidae	None	None
Avian					
Cooper's Hawk[1,3]	*Accipiter cooperii*	Accipitriformes	Accipitridae	None	None
Red-tailed Hawk	*Buteo jamaicensis*	Accipitriformes	Accipitridae	None	None
Northern Harrier[1,2]	*Circus cyaneus*	Accipitriformes	Accipitridae	None	None
White-tailed Kite	*Elanus leucurus*	Accipitriformes	Accipitridae	None	None
Mallard	*Anas platyrhynchos*	Anseriformes	Anatidae	None	None
Vaux's Swift	*Chaetura vauxi*	Apodiformes	Apodidae	None	None
Costa's Hummingbird	*Calypte costae*	Apodiformes	Trochilidae	None	None
Rufous Hummingbird	*Selasphorus rufus*	Apodiformes	Trochilidae	None	None
Killdeer	*Charadrius vociferus*	Charadriiformes	Charadriidae	None	None
Western Gull	*Larus occidentalis*	Charadriiformes	Laridae	None	None
Mourning Dove	*Zenaida macroura*	Columbiformes	Columbidae	None	None
Greater Roadrunner	*Geococcyx californianus*	Cuculiformes	Cuculidae	None	None
American Kestrel	*Falco sparverius*	Falconiformes	Falconidae	None	None
California Quail	*Callipepla californica*	Galliformes	Odontophoridae	None	None

[1] SDG&E Natural Community Conservation Plan Species
[2] CDFW Species of Special Concern
[3] CDFW Watch List

Virginia Rail	*Rallus limicola*	Gruiformes	Rallidae	None	None
Bushtit	*Psaltriparus minimus*	Passeriformes	Aegithalidae	None	None
Horned Lark	*Eremophila alpestris*	Passeriformes	Alaudidae	None	None
California Horned Lark[3]	*Eremophila alpestris actia*	Passeriformes	Alaudidae	None	None
Cedar Waxwing	*Bombycilla cedrorum*	Passeriformes	Bombycillidae	None	None
Blue Grosbeak	*Passerina caerulea*	Passeriformes	Cardinalidae	None	None
American Crow	*Corvus brachyrhynchos*	Passeriformes	Corvidae	None	None
Common Raven	*Corvus corax*	Passeriformes	Corvidae	None	None
Southern California Rufous-crowned Sparrow[13]	*Aimophila ruficeps canescens*	Passeriformes	Emberizidae	None	None
Grasshopper Sparrow[12]	*Ammodramus savannarum*	Passeriformes	Emberizidae	None	None
Lincoln's Sparrow	*Melospiza lincolnii*	Passeriformes	Emberizidae	None	None
Song Sparrow	*Melospiza melodia*	Passeriformes	Emberizidae	None	None
California Towhee	*Melozone crissalis*	Passeriformes	Emberizidae	None	None
House Finch	*Haemorhous mexicanus*	Passeriformes	Fringillidae	None	None
Lawrence's Goldfinch	*Spinus lawrencei*	Passeriformes	Fringillidae	None	None
Lesser Goldfinch	*Spinus psaltria*	Passeriformes	Fringillidae	None	None
American Goldfinch	*Spinus tristis*	Passeriformes	Fringillidae	None	None
Cliff Swallow	*Petrochelidon pyrrhonota*	Passeriformes	Hirundinidae	None	None
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	Passeriformes	Hirundinidae	None	None
Red-winged Blackbird	*Agelaius phoeniceus*	Passeriformes	Icteridae	None	None
Brewer's Blackbird	*Euphagus cyanocephalus*	Passeriformes	Icteridae	None	None
Hooded Oriole	*Icterus cucullatus*	Passeriformes	Icteridae	None	None
Western Meadowlark	*Sturnella neglecta*	Passeriformes	Icteridae	None	None
Northern Mockingbird	*Mimus polyglottos*	Passeriformes	Mimidae	None	None
Common Yellowthroat	*Geothlypis trichas*	Passeriformes	Parulidae	None	None
Yellow-breasted Chat[2]	*Icteria virens*	Passeriformes	Parulidae	None	None
Yellow Warbler[2]	*Setophaga petechia brewsteri*	Passeriformes	Parulidae	None	None
Coastal California Gnatcatcher[12]	*Polioptila californica californica*	Passeriformes	Polioptilidae	Threatened	None

[1] SDG&E Natural Community Conservation Plan Species

[2] CDFW Species of Special Concern

[3] CDFW Watch List

House Wren	*Troglodytes aedon*	Passeriformes	Troglodytidae	None	None
Pacific-slope Flycatcher	*Empidonax difficilis*	Passeriformes	Tyrannidae	None	None
Ash-throated Flycatcher	*Myiarchus cinerascens*	Passeriformes	Tyrannidae	None	None
Black Phoebe	*Sayornis nigricans*	Passeriformes	Tyrannidae	None	None
Say's Phoebe	*Sayornis saya*	Passeriformes	Tyrannidae	None	None
Western Kingbird	*Tyrannus verticalis*	Passeriformes	Tyrannidae	None	None
Cassin's Kingbird	*Tyrannus vociferans*	Passeriformes	Tyrannidae	None	None
Least Bell's Vireo[1]	*Vireo bellii pusillus*	Passeriformes	Vireonidae	Endangered	Endangered
Warbling Vireo	*Vireo gilvus*	Passeriformes	Vireonidae	None	None
Great Blue Heron	*Ardea herodias*	Pelecaniformes	Ardeidae	None	None
Great Horned Owl	*Bubo virginianus*	Strigiformes	Strigidae	None	None
Double-crested Cormorant	*Phalacrocorax auritus*	Suliformes	Phalacrocoracidae	None	None
Mammals					
Mule Deer[1]	*Odocoileus hemionus*	Artiodactyla	Cervidae	None	None
San Diego Black-tailed Jackrabbit[12]	*Lepus californicus bennettii*	Lagomorpha	Leporidae	None	None
Desert Cottontail	*Sylvilagus audubonii*	Lagomorpha	Leporidae	None	None
California Ground Squirrel	*Spermophilus beecheyi*	Rodentia	Sciuridae	None	None

[1] SDG&E Natural Community Conservation Plan Species

[2] CDFW Species of Special Concern

[3] CDFW Watch List

ATTACHMENT C

REPRESENTATIVE SITE PHOTOS FOR PHASE III BURROWING OWL SURVEYS

REPRESENTATIVE SITE PHOTOS



Figure 1: Surveyed WBO habitat near Crown Point and Kendall-Frost Mission Bay Marsh Reserve



Figure 2: Surveyed WBO habitat within Mission Bay RV Resort/De Anza Cove

REPRESENTATIVE SITE PHOTOS



Figure 3: Surveyed WBO habitat along East Mission Bay Drive



Figure 4: Surveyed WBO habitat north of Tecolote Creek

REPRESENTATIVE SITE PHOTOS



Figure 5: Surveyed WBO habitat on Fiesta Island (City of San Diego dump site)



Figure 6: Surveyed WBO habitat on Fiesta Island (berm along perimeter of island)

REPRESENTATIVE SITE PHOTOS



Figure 7: Surveyed WBO habitat on Fiesta Island (interior of island)



Figure 8: Surveyed WBO habitat on Fiesta Island (interior of island)

REPRESENTATIVE SITE PHOTOS



Figure 9: Surveyed WBO habitat on Fiesta Island (interior of island)



Figure 10: Surveyed WBO habitat at South Shores Park (northwest side)

REPRESENTATIVE SITE PHOTOS



Figure 11: Surveyed WBO habitat at South Shores Park (north edge along water)



Figure 12: Surveyed WBO habitat at South Shores Park (radio-controlled aircraft field)

REPRESENTATIVE SITE PHOTOS



Figure 13: Surveyed WBO habitat along Old Sea World Drive (east end by Friar's Road)



Figure 14: Surveyed WBO habitat along Old Sea World Drive (west end by West Mission Bay Drive Bridge)

REPRESENTATIVE SITE PHOTOS



Figure 15: Surveyed WBO habitat east of Sea World Drive, north of Friar's Road, and west of Interstate 5.



Figure 16: Surveyed WBO habitat in the riprap south of the San Diego River

REPRESENTATIVE SITE PHOTOS



Figure 17: Surveyed WBO habitat in the ornamental plantings along Sunset Cliffs Boulevard/Robb Field



Figure 18: Surveyed WBO habitat in the riprap along Mission Point

REPRESENTATIVE SITE PHOTOS



Figure 19: Surveyed WBO habitat in the riprap along Mariner's Point



Figure 20: Surveyed WBO habitat in the ornamental plantings on Hospitality Point

Appendix G

2024 Focused Least Bell's Vireo and Southwestern Willow Flycatcher Survey Report

September, 6 2024

U.S. Fish and Wildlife Service
Attn: Recovery Permit Coordinator
2177 Salk Avenue, Suite 250
Carlsbad, California 92008

Subject: ***Focused Least Bell's Vireo and Southwestern Willow Flycatcher Survey Report for the Mission Bay PEIR Project, City of San Diego, San Diego County, California***

Dear Recovery Permit Coordinator:

This report documents the results of eight protocol-level presence/absence surveys for the state- and federally listed endangered least Bell's vireo (*Vireo bellii pusillus*; vireo), and five protocol-level presence/absence surveys for the state- and federally listed endangered southwestern willow flycatcher (*Empidonax traillii extimus*; flycatcher). The study area for this survey is a small subset of the overall Mission Bay PEIR Project. The surveys were conducted in all areas of suitable least Bell's vireo and southwestern willow flycatcher habitat within the approximately 4.71-acre study area.

The southwestern willow flycatcher and least Bell's vireo are closely associated with riparian habitats, especially densely vegetated willow scrub and riparian forest vegetation. These species are threatened primarily by loss, degradation, and fragmentation of riparian habitats. They also are impacted by brown-headed cowbird (*Molothrus ater*) nest parasitism.

LOCATION AND EXISTING CONDITIONS

The survey area is located along a small segment of Rose Creek, within the community of Pacific Beach, City of San Diego, San Diego County, California (Figures 1 and 2). The site is

located approximately 850 feet west of I-5, and abuts Garnet Avenue to the southwest, at the downstream end of the study area. Surrounding land consists of dense urban development.

The survey area is located on the U.S. Geological Survey (USGS), 7.5 minute map, La Jolla quadrangle: unsectioned lands; Township 16 South; Range 3 West; latitude 32°48′24"N; and longitude 117°13′17"W (Figures 1 and 2).

VEGETATION COMMUNITIES

One vegetation community was identified within the study area as potentially suitable habitat for the southwestern willow flycatcher and least Bell's vireo: disturbed southern willow scrub. Additional habitats within the study area include coastal and valley freshwater marsh (including disturbed forms) and non-native riparian. The suitable habitat vegetation community is described below; acreages for the study area are presented in Table 1; and spatial distribution is presented on Figure 2.

Table 1
Existing Suitable Flycatcher and Vireo Habitat within the Project Site

Vegetation Community/Land Cover	Acres
Disturbed Southern Willow Scrub	2.67
Coastal And Valley Freshwater Marsh	0.02
Disturbed Coastal and Valley Freshwater Marsh	0.79
Non-Native Riparian	1.23
Total	**4.71**

Disturbed Southern Willow Scrub

Southern willow scrub is comprised of dense, broad-leafed, winter-deciduous riparian thickets dominated by several willow (*Salix*) species, with scattered emergent Fremont cottonwood (*Populus fremontii*) and western sycamore (*Platanus racemosa*) (Oberbauer 2008). Within the survey area, disturbed southern willow scrub is dominated by arroyo willow (*Salix lasiolepis*), Goodding's black willow (*Salix gooddingii*), Fremont's cottonwood, western sycamore, mulefat (*Baccharis salicifolia*), as well as Mexican fan palm (*Washingtonia robusta*), eucalyptus trees (*Eucalyptus* spp.), and Brazilian pepper (*Schinus terebinthifolius*).

METHODS

Suitable habitat areas within the study area were surveyed eight times for vireo and five times for flycatcher by Balk Biological wildlife biologists Jeff Priest (Recovery Permit number ES840619 version 7) and Brian Lohstroh (Recovery Permit number ES063608 version 7) (Table 2). Audio-playback techniques were used to elicit flycatcher responses during flycatcher surveys. Focused surveys for these species were initiated on May 2, 2024 and continued through July 29, 2024.

Table 2
Vireo and Flycatcher Survey Schedule and Conditions

Survey Pass #/ Focus	Date	Hours	Personnel	Conditions (temperature, cloud cover, wind speed)
1-LBVI	5-2-2024	0730-0900	BL	60-63°F; 100% cc; 0-3 mph wind
2-LBVI	5-13-2024	0630-0800	BL	63-63°F; 100% cc; 0-3 mph wind
1-SWFL 3-LBVI	5-23-2024	0630-0715 0715-0815	BL	61-61°F; 100% cc; 0-3 mph wind 61-61°F; 100% cc; 0-3 mph wind
2-SWIFL 4-LBVI	6-4-2024	0645-0750 0750-0830	BL	61-62°F; 100% cc; 0-8 mph wind 62-63°F; 100% cc; 3-8 mph wind
3-SWFL 5-LBVI	6-14-2024	0630-0730 0730-0830	BL	64-64°F; 100-90% cc; 2-7 mph wind 64-66°F; 90-50% cc; 3-7 mph wind
6-LBVI	6-24-2024	0715-0830	BL	73-75°F; 50-40% cc; 0-3 mph wind
4-SWFL 7-LBVI	7-8-2024	0530-0630 0630-0730	JP	64-65°F; 100% cc; 0-1 mph wind 65-67°F; 100% cc; 0-1 mph wind
5-SWFL	7-16-2024	0500-0700	JP	65-67°F; 100% cc; 0-1 mph wind
8-LBVI	7-29-2024	0500-0700	JP	60-64°F; 100-80% cc; 0-1 mph wind

Notes: LBVI = least Bell's vireo; SWFL = Southwestern willow flycatcher; JP = Jeff Priest; BL = Brian Lohstroh; cc = cloud cover; mph = miles per hour; °F = degrees Fahrenheit.

Surveys for vireo and flycatcher were not conducted concurrently. Due to differences in detectability, surveys were conducted sequentially, with surveys for the flycatcher conducted first and surveys for the vireo conducted afterwards through linear survey routes within the riparian corridor. The survey route was arranged to cover all suitable habitat within the study area. A digital vegetation map (1:2,400 scale; 1 inch=200 feet) of the study area was available to record any detected vireo or flycatcher. Binoculars (10×42) were used to aid in detecting and identifying wildlife species.

The five surveys conducted for flycatcher followed the currently accepted protocol (*A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher* [Sogge et al.

2010]), which states that a minimum of five survey visits is needed to evaluate project effects on flycatchers. It is recommended that one survey is made between May 15 and 31, two surveys between June 1 and June 24, and two surveys between June 25 and July 17. Surveys during the final period (June 25 and July 17) were separated by at least five days. A tape of recorded flycatcher vocalizations was used, approximately every 50 to 100 feet within suitable habitat, to induce flycatcher responses. When a flycatcher was detected, playing of the tape ceased to avoid harassment.

A Section 10(a)(1)(A) permit is not required to conduct presence/absence surveys for vireo. The eight surveys for vireo followed the currently accepted *Least Bell's Vireo Survey Guidelines* (USFWS, 2001), which states that a minimum of eight survey visits should be made to all riparian areas and any other potential vireo habitats between April 10 and July 31. The site visits are required to be conducted at least 10 days apart to maximize the detection of early and late arrivals, females, non-vocal birds, and nesting pairs. Taped playback of vireo vocalizations was not used during the surveys. Surveys were conducted between dawn and 1100 for vireo and were not conducted during periods of excessive or abnormal cold, heat, wind, rain, or other inclement weather.

Weather conditions, time of day, and season were appropriate for the detection of flycatcher and vireo (Table 2).

RESULTS

One willow flycatcher was detected during a single visit (June 4) in disturbed southern willow scrub during the 2024 focused surveys (Figure 2). The flycatcher was not detected during any other surveys and was determined to be a migrant and not a southwestern subspecies breeding onsite during this survey effort.

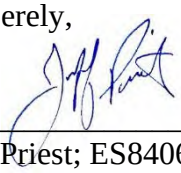
No least Bell's vireo were observed in the study area during the 2024 focused surveys.

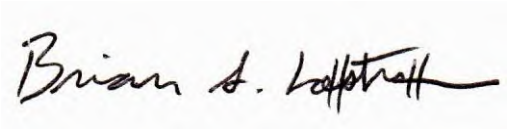
A total of 48 wildlife species were detected in the study area during focused surveys (Appendix A). In addition, a completed Willow Flycatcher Survey and Detection Form is included as Appendix B. Habitat photos are included in Appendix C.

Please feel free to contact me at 619-761-9981 or jeffdpriest619@gmail.com or Brian Lohstroh at 858-750-9300 or blohstroh@balkbiological.com with questions or if you require additional information.

We certify that the information in this survey report and attached exhibits fully and accurately represent our work.

Sincerely,





Jeff Priest; ES840619 ver.7
Senior Wildlife Biologist

Brian Lohstroh; ES063608 ver.7
Senior Wildlife Biologist

Att: Figure 1, Project Regional Location / USGS Quads Map
Figure 2, Biological Resources Map
Appendix A, Wildlife Species Observed on the Project Site
Appendix B, Willow Flycatcher Survey and Detection Form
Appendix C, Habitat Photos

cc: Michelle Balk, Balk Biological
Brian Lohstroh, Balk Biological
Matt Valerio, Dudek

REFERENCES

Oberbauer, T., M. Kelly, and J. Buegge. March 2008. Draft Vegetation Communities of San Diego County. Based on "Preliminary Descriptions of the Terrestrial Natural Communities of California," Robert F. Holland, Ph.D., October 1986.

Sogge, M.K., Ahlers, Darrell, and S.J. Sferra. 2010. *A natural history summary and survey protocol for the southwestern willow flycatcher.* U.S. Geological Survey Techniques and Methods 2A-10. 38 p.

USFWS (U.S. Fish and Wildlife Service). 2001. Least Bell's Vireo Survey Guidelines. January 19.

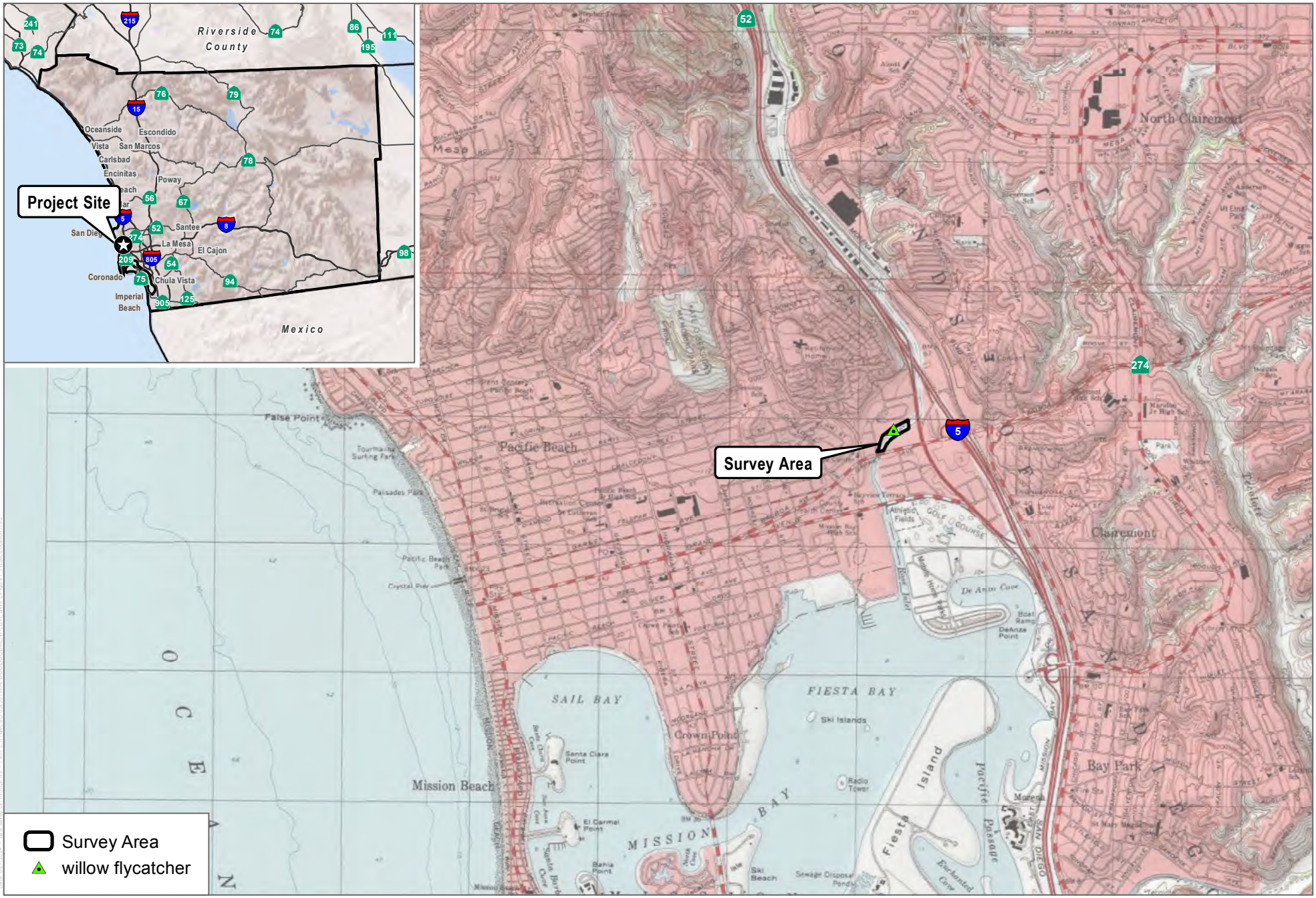


FIGURE 1

Project Location

Mission Bay PEIR - LBVI/SWIFL Report



- Survey Area
- willow flycatcher
- brown headed cowbird
- Vegetation Communities/Land Covers
  - DEV=Developed
  - FWM=Coastal and Valley Freshwater Marsh
  - NNR=Non-Native Riparian
  - SCSM=Southern Coastal Salt Marsh
  - dFWM=Disturbed Coastal and Valley Freshwater Marsh
  - dSWS=Disturbed Southern Willow Scrub



SOURCE: SANGIS 2023; City of San Diego 2018

DUDEK

0 50 100 Feet

FIGURE 2

Biological Resources 2024 LBVI-SWFL Survey Area

Mission Bay PEIR - LBVI/SWIFL Report

APPENDIX A

Wildlife Species Observed on the Project Site

APPENDIX A
Wildlife Species Observed on the Project Site

BIRDS

BLACKBIRDS, ORIOLES & ALLIES
ICTERIDAE—BLACKBIRDS
Icterus cucullatus—hooded oriole
Molothrus ater—brown-headed cowbird*

BUSHTITS
AEGITHALIDAE—LONG-TAILED TITS & BUSHTITS
Psaltriparus minimus—bushtit

CARDINALS, GROSBEAKS & ALLIES
CARDINALIDAE—CARDINALS & ALLIES
Pheucticus melanocephalus—black-headed grosbeak
Piranga ludoviciana—western tanager

CHICKADEES & TITMICE
PARIDAE—CHICKADEES & TITMICE
Baeolophus inornatus—oak titmouse

CORMORANTS
PHALACROCORACIDAE—CORMORANTS
Nannopterum auritus—double-crested cormorant

FALCONS
FALCONIDAE—CARACARAS & FALCONS
Falco peregrinus anatum—American peregrine falcon

FINCHES
FRINGILLIDAE—FRINGILLINE & CARDUELINE FINCHES & ALLIES
Spinus psaltria—lesser goldfinch

GULLS, TERNS & SKIMMERS
LARIDAE—GULLS, TERNS, & SKIMMERS
Larus occidentalis—western gull

HAWKS
ACCIPITRIDAE—HAWKS, KITES, EAGLES, & ALLIES
Buteo jamaicensis—red-tailed hawk
Buteo lineatus—red-shouldered hawk

HERONS, BITTERNS & ALLIES
ARDEIDAE—HERONS, BITTERNS, & ALLIES
Ardea herodias—great blue heron
Nycticorax nycticorax—black-crowned night-heron

HUMMINGBIRDS
TROCHILIDAE—HUMMINGBIRDS
Calypte anna—Anna's hummingbird
Selasphorus sasin—Allen's hummingbird

JAYS, MAGPIES & CROWS
CORVIDAE—CROWS & JAYS
Corvus brachyrhynchos—American crow
Corvus corax—common raven

MOCKINGBIRDS & THRASHERS
MIMIDAE—MOCKINGBIRDS & THRASHERS
Mimus polyglottos—northern mockingbird

PIGEONS & DOVES
COLUMBIDAE—PIGEONS & DOVES
Zenaida macroura—mourning dove
Columba livia—rock pigeon (rock dove)*

RAILS, GALLINULES & COOTS
RALLIDAE—RAILS, GALLINULES, & COOTS
Fulica americana—American coot

STARLINGS & ALLIES
STURNIDAE—STARLINGS
Sturnus vulgaris—European starling*

SWALLOWS
HIRUNDINIDAE—SWALLOWS
Petrochelidon pyrrhonota—cliff swallow
Stelgidopteryx serripennis—northern rough-winged swallow

TYRANT FLYCATCHERS
TYRANNIDAE—TYRANT FLYCATCHERS
Empidonax difficilis—western flycatcher (formerly Pacific-slope flycatcher)
Empidonax traillii—willow flycatcher
Sayornis nigricans—black phoebe
Tyrannus vociferans—Cassin’s kingbird

WATERFOWL
ANATIDAE—DUCKS, GEESE, & SWANS
Anas platyrhynchos—mallard
Aythya collaris—ring-necked duck
Mareca strepera—gadwall

WAXBILLS
ESTRILDIDAE—WAXBILLS
Lonchura punctulata—scaly-breasted munia*

WOOD WARBLERS & ALLIES
PARULIDAE—WOOD-WARBLERS
Cardellina pusilla—Wilson's warbler
Geothlypis trichas—common yellowthroat
Leiothlypis celata—orange-crowned warbler
Setophaga petechia—yellow warbler

WOODPECKERS
PICIDAE—WOODPECKERS & ALLIES
Dryobates nuttallii—Nuttall's woodpecker

WRENS
TROGLODYTIDAE—WRENS
Troglodytes aedon—house wren

NEW WORLD SPARROWS
PASSERELLIDAE—NEW WORLD SPARROWS
Junco hyemalis—dark-eyed junco
Melospiza melodia—song sparrow
Melozone crissalis—California towhee

OLD WORLD SPARROWS
PASSERELLIDAE—OLD WORLD SPARROWS
Passer domesticus—house sparrow*

MAMMALS

CANIDS
CANIDAE—WOLVES & FOXES
Canis latrans—coyote

HARES & RABBITS

LEPORIDAE—HARES & RABBITS

Sylvilagus audubonii—desert cottontail

POCKET GOPHERS

GEOMYIDAE—POCKET GOPHERS

Thomomys bottae—Botta's pocket gopher

RACCOONS & RELATIVES

PROCYONIDAE—RACCOONS & RELATIVES

Procyon lotor—northern raccoon

SQUIRRELS

SCIURIDAE—SQUIRRELS

Otospermophilus beecheyi—California ground squirrel

* signifies introduced (non-native) species

APPENDIX B

Willow Flycatcher Survey and Detection Form

Willow Flycatcher (WIFL) Survey and Detection Form (revised April, 2010)

Site Name: Mission Bay PEIR State: CA County: San Diego
USGS Quad Name: La Jolla Elevation: 3 (meters)
Creek, River, or Lake Name: Rose Creek

Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? *Yes* X *No* ____

Survey Coordinates: Start: E 479904 N 3629968 UTM Datum: NAD 83 (See instructions)
Stop: E 479195 N 3629722 UTM Zone: 11

If survey coordinates changed between visits, enter coordinates for each survey in comments section on back of this page.

*****Fill in additional site information on back of this page*****

Survey # Observer(s) (Full Name)	Date (m/d/y) Survey Time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N If Yes, number of nests	Comments (e.g., bird behavior; evidence of pairs or breeding;-potential threats [livestock, cowbirds, *Diorhabda* spp.]). If *Diorhabda* found, contact USFWS and State WIFL coordinator.	GPS Coordinates for WIFL Detections (this is an optional column for documenting individuals, pairs, or groups of birds found on each survey). Include additional sheets if necessary.			
							# Birds	Sex	UTM E	UTM N
Survey # 1 Observer(s): Brian Lohstroh	Date: 5.23.24 Start: 0630 Stop: 0715 Total hrs: 0.75	0	0	0	N					
Survey # 2 Observer(s): Brian Lohstroh	Date: 6.4.24 Start: 0645 Stop: 0750 Total hrs: 1.1	1	0	0	N					
Survey # 3 Observer(s): Brian Lohstroh	Date: 6.14.24 Start: 0630 Stop: 0730 Total hrs: 1	0	0	0	N					
Survey # 4 Observer(s): Jeff Priest	Date: 7.8.24 Start: 0530 Stop: 0630 Total hrs: 1	0	0	0	N					
Survey # 5 Observer(s): Jeff Priest	Date: 7.16.24 Start: 0500 Stop: 0700 Total hrs: 2	0	0	0	N					
Overall Site Summary. Totals do not equal the sum of each column. Include only resident adults. Do not include migrants, nestlings, and fledglings. Be careful not to double count individuals. Total survey hrs: 5.85		Total Adult Residents: 0	Total Pairs: 0	Total Territories: 0	Total Nests: 0	Were any WIFLs color-banded? Yes (No) If yes, report color combination(s) in the comments section on back of form and report to USFWS.				

Reporting Individual: Jeff Priest
US Fish & Wildlife Service Permit #: ES84061g v.7
Date Report Completed: September 6 2024
State Wildlife Agency Permit #: ____

Submit form to USFWS and State Wildlife Agency by September 1st. Retain a copy for your records.

Fill in the following information completely. Submit form by September 1st. Retain a copy for your records.

Reporting Individual Jeff Priest Phone # 619-761-9981

Affiliation Bull's Biological E-mail jeffdpriest619@gmail.com

Site Name Mission Bay PEIR Date report Completed September 6 2024

Was this site surveyed in a previous year? Yes___ No___ Unknown X

Did you verify that this site name is consistent with that used in previous yrs? Yes X No _____ Not Applicable _____

If name is different, what name(s) was used in the past? _____

If site was surveyed last year, did you survey the same general area this year? Yes ____ No _____ If no, summarize below.

Did you survey the same general area during each visit to this site this year? Yes X No _____ If no, summarize below.

Management Authority for Survey Area: Federal _____ Municipal/County X State _____ Tribal ____ Private _____

Name of Management Entity or Owner (e.g., Tonto National Forest) City of San Diego

Length of area surveyed: 0.34 (km)

Vegetation Characteristics: Check (only one) category that best describes the predominant tree/shrub foliar layer at this site:

_____ Native broadleaf plants (entirely or almost entirely, > 90% native)

_____ Mixed native and exotic plants (mostly native, 50 - 90% native)

X Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)

_____ Exotic/introduced plants (entirely or almost entirely, > 90% exotic)

Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific name.

Salix lasiolepis, *Salix Gooddingii, Populus spp.,* ~~Aaaminata~~ + Baccharis salicifolia

Average height of canopy (Do not include a range): 7.5 (meters)

Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections;
2) sketch or aerial photo showing site location, patch shape, survey route, location of any detected WIFLs or their nests; → see report figures
3) photos of the interior of the patch, exterior of the patch, and overall site. Describe any unique habitat features in Comments. + photo appendix

Comments (such as start and end coordinates of survey area if changed among surveys, supplemental visits to sites, unique habitat features. Attach additional sheets if necessary.

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)
N/A						

Attach additional sheets if necessary

APPENDIX C

Habitat Photos









Appendix H

Special-Status Plant Species Potential to Occur

Scientific Name	Common Name	Status (Federal/State/CRPR)	City of San Diego MSCP	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet above mean sea level)	Potential to Occur
Abronia maritima	red sand-verbena	None/None/4.2	None	Coastal dunes/perennial herb/Feb–Nov/0–330	Known to occur. This species was detected in the Biological Study Area (BSA) during 2019 focused surveys.
Acanthomintha ilicifolia	San Diego thorn-mint	FT/SE/1B.1	Narrow Endemic	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools; Clay, Openings/annual herb/Apr–June/35–3,150	Not expected to occur. The BSA does not contain suitable vernal pools or clay soils to support this species.
Lotus nuttallianus	Nuttall's lotus	None/None/1B.1	Covered	Coastal dunes, Coastal scrub (sandy)/annual herb/Mar–June(July)/0–35	Known to occur. This species was detected within the BSA during 2019 focused surveys.
Adolphia californica	California adolphia	None/None/2B.1	None	Chaparral, Coastal scrub, Valley and foothill grassland; Clay/ perennial deciduous shrub/Dec–May/35–2,430	Low potential to occur. The BSA contains suitable habitat for this species, although this species was not detected during 2019 focused surveys. Documented occurrences of this species are absent from the vicinity (CDFW 2025).
Agave shawii var. *shawii*	Shaw's agave	None/None/2B.1	Narrow Endemic	Coastal bluff scrub, Coastal scrub/perennial leaf/Sep–May/10–395	Low potential to occur. The BSA contains suitable habitat for this species. Eight planted individuals were detected in a native plant garden near Dog Beach adjacent to the BSA during the 2019 focused survey. There are no other documented occurrences within the vicinity, and this species is believed to be almost extirpated locally (CDFW 2015).
Ambrosia chenopodiifolia	San Diego bur-sage	None/None/2B.1	None	Coastal scrub/perennial shrub/Apr–June/180–510	Not expected to occur. The BSA is outside of the elevational range of this species.
Ambrosia monogyra	singlewhorl burrobrush	None/None/2B.2	None	Chaparral, Sonoran desert scrub; Sandy/perennial shrub/Aug–Nov/35–1,640	Not expected to occur. Suitable habitat for this species is absent from the BSA.
Ambrosia pumila	San Diego ambrosia	FE/None/1B.1	Narrow Endemic	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools; Alkaline (sometimes), Clay (sometimes), Disturbed areas (often), Loam (sometimes), Sandy (sometimes)/perennial rhizomatous herb/Apr–Oct/65–1,360	Not expected to occur. The BSA is outside of the elevational range of this species.
Aphanisma blitoides	aphanisma	None/None/1B.2	Narrow Endemic	Coastal bluff scrub, Coastal dunes, Coastal scrub; Gravelly (sometimes), Sandy (sometimes)/annual herb/Feb–June/5–1,000	Moderate potential to occur. The BSA contains suitable habitat for this species, although this species was not detected during 2019 focused surveys. There are documented occurrences in the vicinity (CDFW 2025, SDNHM 2025).
Aphyllon parishii ssp. *brachylobum*	short-lobed broomrape	None/None/4.2	None	Coastal bluff scrub, Coastal dunes, Coastal scrub; Sandy/ annual/perennial herb (parasitic)/Apr–Oct/10–1,000	Low potential to occur. The BSA contains suitable habitat for this species, although it was not detected during 2019 focused surveys. Documented occurrences are absent from the vicinity (CDFW 2025).
Arctostaphylos glandulosa ssp. *crassifolia*	Del Mar manzanita	FE/None/1B.1	Covered	Chaparral (maritime, sandy)/perennial evergreen shrub/June–Apr/0–1,200	Not expected to occur. The BSA is outside of the current known range of this species and suitable habitat is absent.
Arctostaphylos otayensis	Otay manzanita	None/None/1B.2	Covered	Chaparral, Cismontane woodland/perennial evergreen shrub/Jan–Apr/900–5,580	Not expected to occur. The BSA is outside of the elevational range of this species.
Artemisia palmeri	San Diego sagewort	None/None/4.2	None	Chaparral, Coastal scrub, Riparian forest, Riparian scrub, Riparian woodland; Mesic, Sandy/perennial deciduous shrub/(Feb)May–Sep/15–3,000	Known to occur. This species was detected within the BSA in riparian habitat associated with the Rose Creek inlet.
Asplenium vespertinum	western spleenwort	None/None/4.2	None	Chaparral, Cismontane woodland, Coastal scrub; Rocky/perennial rhizomatous herb/Feb–June/590–3,280	Not expected to occur. The BSA is outside of the elevational range of this species.
Astragalus deanei	Dean's milk-vetch	None/None/1B.1	None	Chaparral, Cismontane woodland, Coastal scrub, Riparian forest/ perennial herb/Feb–May/245–2,280	Not expected to occur. The BSA is outside of the elevational range of this species.
Astragalus tener var. *titi*	coastal dunes milk-vetch	FE/SE/1B.1	Narrow Endemic	Coastal bluff scrub (sandy), Coastal dunes, Coastal prairie (mesic); Mesic (often), Vernally Mesic (often)/annual herb/Mar–May/5–165	Low potential to occur. The BSA contains suitable habitat for this species, although this species was not detected during 2019 focused surveys. Documented occurrences are absent within the vicinity (CDFW 2025).

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Atriplex coulteri	Coulter's saltbush	None/None/1B.2	None	Coastal bluff scrub, Coastal dunes, Coastal scrub, Valley and foothill grassland; Alkaline (sometimes), Clay (sometimes)/ perennial herb/Mar–Oct/10–1,510	Moderate potential to occur. The BSA contains suitable habitat for this species, although this species was not detected during 2019 focused surveys. There are documented occurrences in the vicinity (CDFW 2025; SDNHM 2025).
Atriplex pacifica	south coast saltscale	None/None/1B.2	None	Coastal bluff scrub, Coastal dunes, Coastal scrub, Playas/annual herb/Mar–Oct/0–460	Moderate potential to occur. The BSA contains suitable habitat for this species, but the species was not detected during the 2019 focused surveys. There are documented occurrences within the vicinity (CDFW 2025; SDNHM 2025).
Baccharis vanessae	Encinitas baccharis	FT/SE/1B.1	Covered	Chaparral (maritime), Cismontane woodland; Sandstone/perennial deciduous shrub/Aug–Nov/195–2,360	Not expected to occur. The BSA is outside of the elevational range for this species.
Bahiopsis laciniata	San Diego County viguiera	None/None/4.3	None	Chaparral, Coastal scrub/perennial shrub/Feb–June(Aug)/195–2,460	Known to occur. Forty San Diego viguiera shrubs were detected on a south-facing slope, west of Interstate 5 and south of Pacific Highway.
Berberis nevinii	Nevin's barberry	FE/SE/1B.1	Covered	Chaparral, Cismontane woodland, Coastal scrub, Riparian scrub; Gravelly (sometimes), Sandy (sometimes)/perennial evergreen shrub/(Feb)Mar–June/230–2,705	Not expected to occur. The BSA is outside of the elevational range for this species.
Bergerocactus emoryi	golden-spined cereus	None/None/2B.2	None	Chaparral, Closed-cone coniferous forest, Coastal scrub; Sandy/perennial stem/May–June/10–1,295	Moderate potential to occur. The BSA contains suitable habitat for this species, although this species was not detected during 2019 focused surveys. There are documented occurrences in the vicinity (CDFW 2025).
Bloomeria clevelandii	San Diego goldenstar	None/None/1B.1	Covered	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools; Clay/perennial bulbiferous herb/Apr–May/165–1,525	Not detected. The BSA is outside of the elevation range for this species.
Brodiaea filifolia	thread-leaved brodiaea	FT/SE/1B.1	Covered	Chaparral (openings), Cismontane woodland, Coastal scrub, Playas, Valley and foothill grassland, Vernal pools; Clay (often)/ perennial bulbiferous herb/Mar–June/80–3,675	Not expected to occur. The BSA is outside of the current known range of this species.
Brodiaea orcuttii	Orcutt's brodiaea	None/None/1B.1	Covered	Chaparral, Cismontane woodland, Closed-cone coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools; Clay, Mesic/perennial bulbiferous herb/May–July/100–5,550	Not expected to occur. Suitable habitat for this species is absent.
Calamagrostis koelerioides	San Diego reed grass	None/None/None	Covered	Chaparral, meadows and seeps; slopes, dry hills, ridges/perennial rhizomatous herb/June–Aug/0–7,546	Not expected to occur. Suitable habitat for this species is absent.
Calochortus dunnii	Dunn's mariposa-lily	None/SR/1B.2	Covered	Chaparral, Closed-cone coniferous forest, Valley and foothill grassland; Gabbroic (sometimes), Rocky/perennial bulbiferous herb/(Feb)Apr–June/605–6,005	Not expected to occur. The BSA is outside of the elevational range for this species.
Camissoniopsis lewisii	Lewis' evening-primrose	None/None/3	None	Cismontane woodland, Coastal bluff scrub, Coastal dunes, Coastal scrub, Valley and foothill grassland; Clay (sometimes), Sandy (sometimes)/annual herb/Mar–May(June)/0–985	Known to occur. This species was detected within the BSA at Fiesta Island, west of Interstate 5 and north of Friar's Road, from the South Shores boat launching area to East Mission Bay Drive, Ventura Cove, Mariner's Point, and on the northern and southern shores of the SDRFCC.
Caulanthus stenocarpus	slender-pod jewelflower	None/None/None	Covered	Coastal scrub, chaparral; dry, open, generally after fire, disturbance/annual herb/Mar–May/0–4,593	Moderate potential to occur. The BSA contains suitable habitat for this species, although this species was not detected during 2019 focused surveys. There are documented occurrences in the vicinity (SDNHM 2025).
Ceanothus cyaneus	Lakeside ceanothus	None/None/1B.2	Covered	Chaparral, Closed-cone coniferous forest/perennial evergreen shrub/Apr–June/770–2,475	Not expected to occur. The BSA is outside of the elevational range of this species.
Ceanothus otayensis	Otay Mountain ceanothus	None/None/1B.2	None	Chaparral (gabbroic, metavolcanic)/perennial evergreen shrub/Jan–Apr/1,970–3,610	Not expected to occur. The BSA is outside of the elevational range of this species.
Ceanothus verrucosus	wart-stemmed ceanothus	None/None/2B.2	Covered	Chaparral/perennial evergreen shrub/Dec–May/5–1,245	Not expected to occur. Suitable habitat is absent from the BSA.

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Centromadia parryi ssp. *australis*	southern tarplant	None/None/1B.1	None	Marshes and swamps (margins), Valley and foothill grassland (vernally mesic), Vernal pools/annual herb/May–Nov/0–1,575	Not expected to occur. The BSA is outside of the current known range of this species.
Chaenactis glabriuscula var. *orcuttiana*	Orcutt's pincushion	None/None/1B.1	None	Coastal bluff scrub (sandy), Coastal dunes/annual herb/Jan–Aug/0–330	Moderate potential to occur. The BSA contains suitable habitat for this species, although this species was not detected during the 2019 focused surveys. Two historical occurrences of this species are documented within the BSA, although both occurrences are possibly extirpated (CDFW 2025).
Chamaebatia australis	southern mountain misery	None/None/4.2	None	Chaparral (gabbroic, metavolcanic)/perennial evergreen shrub/Nov–May/985–3,345	Not expected to occur. The BSA is outside of the elevational range of this species.
Chloropyron maritimum ssp. *maritimum*	salt marsh bird's-beak	FE/SE/1B.2	Covered	Coastal dunes, Marshes and swamps (coastal salt)/annual herb (hemiparasitic)/May–Oct(Nov)/0–100	Known to occur. This species was detected within a known and managed location at Dog Beach during 2019 focused surveys.
Chorizanthe orcuttiana	Orcutt's spineflower	FE/SE/1B.1	None	Chaparral (maritime), Closed-cone coniferous forest, Coastal scrub; Openings, Sandy/annual herb/Mar–May/10–410	Low potential to occur. The BSA contains suitable habitat for this species, although this species was not detected during 2019 focused surveys. There are two historical occurrences documented to the south of the BSA (CDFW 2025; SDNHM 2025).
Chorizanthe polygonoides var. *longispina*	long-spined spineflower	None/None/1B.2	None	Chaparral, Coastal scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools; Clay (often)/annual herb/Apr–July/100–5,020	Low potential to occur. The BSA contains suitable habitat for this species, although this species was not detected during 219 focused surveys. There is a historical occurrence documented in the vicinity (CDFW 2025).
Cistanthe maritima	seaside cistanthe	None/None/4.2	None	Coastal bluff scrub, Coastal scrub, Valley and foothill grassland; Sandy/annual herb/(Feb)Mar–June(Aug)/15–985	Moderate potential to occur. The BSA contains suitable habitat for this species, although the species was not detected during 2019 focused surveys. There are documented occurrences in the vicinity (SDNHM 2025)
Clarkia delicata	delicate clarkia	None/None/1B.2	None	Chaparral, Cismontane woodland; Gabbroic (often)/annual herb/Apr–June/770–3,280	Not expected to occur. The BSA is outside of the elevational range of this species
Clinopodium chandleri	San Miguel savory	None/None/1B.2	Covered	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland, Valley and foothill grassland; Gabbroic (sometimes), Rocky (sometimes)/perennial shrub/Mar–July/395–3,525	Not expected to occur. The BSA is outside of the elevational range of this species
Comarostaphylis diversifolia ssp. *diversifolia*	summer holly	None/None/1B.2	None	Chaparral, Cismontane woodland/perennial evergreen shrub/Apr–June/100–2,590	Not expected to occur. The BSA is outside of the elevational range of this species, and suitable habitat is absent.
Convolvulus simulans	small-flowered morning-glory	None/None/4.2	None	Chaparral (openings), Coastal scrub, Valley and foothill grassland; Clay, Seeps, Serpentinite/annual herb/Mar–July/100–2,430	Not expected to occur. Suitable soils are absent from the BSA.
Corethrogyne filaginifolia var. *incana*	San Diego sand aster	None/None/1B.1	None	Chaparral, Coastal bluff scrub, Coastal scrub/perennial herb/ June–Sep/10–375	Low potential to occur. The BSA contains suitable habitat for this species, although this species was not detected during the 2019 focused surveys. There are historical occurrences documented in the vicinity (SDNHM 2025).
Corethrogyne filaginifolia var. *linifolia*	Del Mar Mesa sand aster	None/None/1B.1	Covered	Chaparral (maritime, openings), Coastal bluff scrub, Coastal scrub; Sandy/perennial herb/May–Sep/15–490	Low potential to occur. The BSA contains suitable habitat for this species, although this species was not detected during 2019 focused surveys. Most occurrences of this species are at or north of Torrey Pines State Reserve (SDNHM 2025).
Cylindropuntia californica var. *californica*	snake cholla	None/None/1B.1	Narrow Endemic	Chaparral, Coastal scrub/perennial stem/Apr–May/100–490	Not expected to occur. The BSA is outside of the elevational range for this species.
Deinandra conjugens	Otay tarplant	FT/SE/1B.1	Narrow Endemic	Coastal scrub, Valley and foothill grassland; Clay/annual herb/ (Apr)May–June/80–985	Not expected to occur. The BSA is outside of the current known range of this species.

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Deinandra paniculata	paniculate tarplant	None/None/4.2	None	Coastal scrub, Valley and foothill grassland, Vernal pools; Sandy (sometimes), Vernally Mesic (usually)/annual herb/(Mar)Apr–Nov/ 80–3,085	Low potential to occur. The BSA contains suitable habitat for this species, although this species was not detected during 2019 focused surveys. Documented occurrences are absent from the vicinity (SDNHM 2025).
Dichondra occidentalis	western dichondra	None/None/4.2	None	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland/perennial rhizomatous herb/(Jan)Mar–July/ 165–1,640	Not expected to occur. The BSA is outside of the elevational range for this species.
Dicranostegia orcuttiana	Orcutt's bird's-beak	None/None/2B.1	Covered	Coastal scrub/annual herb (hemiparasitic)/(Mar)Apr–July(Sep)/ 35–1,150	Not expected to occur. The BSA is outside of the current known range of this species.
Diplacus aridus	low bush monkeyflower	None/None/4.3	None	Chaparral (rocky), Sonoran desert scrub/perennial evergreen shrub/Apr–July/2,460–3,935	Not expected to occur. The BSA is outside of the elevational range for this species and suitable habitat is absent.
Dudleya blochmaniae ssp. *blochmaniae*	Blochman's dudleya	None/None/1B.1	None	Chaparral, Coastal bluff scrub, Coastal scrub, Valley and foothill grassland; Clay (often), Rocky, Serpentinite/perennial herb/Apr–June/15–1,475	Low potential to occur. The BSA contains suitable habitat for this species, although this species was not detected during 2019 focused surveys. There are historical occurrences documented in the vicinity (CDFW 2025; SDNHM 2025).
Dudleya brevifolia	short-leaved dudleya	None/SE/1B.1	Narrow Endemic	Chaparral (maritime, openings), Coastal scrub; Sandstone/perennial herb/Apr–May/100–820	Not expected to occur. The BSA is outside of the elevational range for this species.
Dudleya variegata	variegated dudleya	None/None/1B.2	Narrow Endemic	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland, Vernal pools; Clay/perennial herb/Apr–June/10–1,905	Not expected to occur. Suitable soils are absent from the BSA.
Dudleya viscida	sticky dudleya	None/None/1B.2	Covered	Chaparral, Cismontane woodland, Coastal bluff scrub, Coastal scrub; Rocky/perennial herb/May–June/35–1,805	Not expected to occur. The BSA is outside of the current known range of this species.
Ericameria palmeri var. *palmeri*	Palmer's goldenbush	None/None/1B.1	Covered	Chaparral, Coastal scrub; Mesic/perennial evergreen shrub/(July)Sep–Nov/ 100–1,970	Not expected to occur. The BSA is outside of the elevational range for this species.
Eriodictyon sessilifolium	sessile-leaved yerba santa	None/None/2B.1	None	Coastal scrub; Volcanic/perennial shrub/July/560–560	Not expected to occur. The BSA is outside of the elevational range for this species.
Eryngium aristulatum var. *parishii*	San Diego button-celery	FE/SE/1B.1	Covered	Coastal scrub, Valley and foothill grassland, Vernal pools; Mesic/annual/perennial herb/Apr–June/65–2,035	Not expected to occur. Suitable vernal pool habitat is absent from the BSA.
Erysimum ammophilum	sand-loving wallflower	None/None/1B.2	Covered	Chaparral (maritime), Coastal dunes, Coastal scrub; Openings, Sandy/perennial herb/Feb–June(July–Aug)/0–195	Low potential to occur. The BSA contains suitable habitat for this species, although this species was not detected during 2019 focused surveys. There are historical occurrences documented in the vicinity (CDFW 2025).
Erythranthe diffusa	Palomar monkeyflower	None/None/4.3	None	Chaparral, Lower montane coniferous forest; Gravelly (sometimes), Sandy (sometimes)/annual herb/Apr–June/4,005–6,005	Not expected to occur. The BSA is outside of the elevational range for this species and suitable habitat is absent.
Euphorbia misera	cliff spurge	None/None/2B.2	None	Coastal bluff scrub, Coastal scrub, Mojavean desert scrub; Rocky/perennial shrub/(Oct)Dec–Aug/35–1,640	High potential to occur. The BSA contains suitable habitat for this species, and one planted individual was detected during 2019 focused surveys within a restoration site of the Kendall-Frost Mission Bay Marsh Reserve (Kendall-Frost Reserve)/Northern Wildlife Preserve , outside of the BSA. There are documented occurrences within the vicinity (CDFW 2025).
Ferocactus viridescens	San Diego barrel cactus	None/None/2B.1	Covered	Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools/perennial stem/May–June/10–1,475	Known to occur. This species was detected within the Kendall-Frost Reserve/Northern Wildlife Preserve during 2019 focused surveys.
Frankenia palmeri	Palmer's frankenia	None/None/2B.1	None	Coastal dunes, Marshes and swamps (coastal salt), Playas/perennial herb/May–July/0–35	Known to occur. Planted individuals were detected within a restoration site of the KFMBMP/NWP during 2019 focused surveys.

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Geothallus tuberosus	Campbell's liverwort	None/None/1B.1	None	Coastal scrub (mesic), Vernal pools/ephemeral liverwort/NA/35–1,970	Low potential to occur. The BSA contains suitable habitat for this species, although this species was not detected during 2019 focused surveys. There are historical occurrences documented in the vicinity (CDFW 2025).
Githopsis diffusa ssp. *filicaulis*	Mission Canyon bluecup	None/None/3.1	None	Chaparral (disturbed areas, mesic)/annual herb/Apr–June/ 1,475–2,295	Not expected to occur. The BSA is outside of the elevational range for this species and suitable habitat is absent.
Grindelia hallii	San Diego gumplant	None/None/1B.2	None	Chaparral, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland/perennial herb/May–Oct/605–5,725	Not expected to occur. The BSA is outside of the elevational range for this species and suitable habitat is absent.
Harpagonella palmeri	Palmer's grapplinghook	None/None/4.2	None	Chaparral, Coastal scrub, Valley and foothill grassland; Clay, Openings/annual herb/Mar–May/65–3,135	Low potential to occur. The BSA contains suitable habitat for this species, although this species was not detected during 2019 focused surveys. There are occurrences documented in the vicinity (CDFW 2025; SDNHM 2025).
Hesperevax caulescens	hogwallow starfish	None/None/4.2	None	Valley and foothill grassland (mesic clay), Vernal pools (shallow); Alkaline (sometimes)/annual herb/Mar–June/0–1,655	Not expected to occur. Suitable habitat is absent from the BSA.
Hesperocyparis forbesii	Tecate cypress	None/None/1B.1	Covered	Chaparral, Closed-cone coniferous forest; Clay, Gabbroic (sometimes)/perennial evergreen tree/N.A./260–4,920	Not expected to occur. The BSA is outside of the elevational range for this species and suitable habitat is absent.
Heterotheca sessiliflora ssp. *sessiliflora*	beach goldenaster	None/None/1B.1	None	Chaparral (coastal), Coastal dunes, Coastal scrub/perennial herb/Mar–Dec/0–4,020	Known to occur. This species was detected in a restoration site at Dog Beach during 2019 focused surveys, and there are historical occurrences documented on Vacation Isle and north of Cudahy Creek (SDNHM 2025).
Holocarpha virgata ssp. *elongata*	graceful tarplant	None/None/4.2	None	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland/annual herb/May–Nov/195–3,610	Not expected to occur. The BSA is outside of the elevational range of this species.
Hordeum intercedens	vernal barley	None/None/3.2	None	Coastal dunes, Coastal scrub, Valley and foothill grassland (depressions, saline flats), Vernal pools/annual herb/Mar–June/15–3,280	Moderate potential to occur. Although saltpan habitat is present, preferred vernal pool habitat is absent from the BSA. This species was not detected during 2019 focused surveys. There is a historical occurrence documented within the BSA at Mission Beach (SDNHM 2025).
Isocoma menziesii var. *decumbens*	decumbent goldenbush	None/None/1B.2	None	Chaparral, Coastal scrub (often disturbed areas, sandy)/perennial shrub/Apr–Nov/35–820	Known to occur. This species was detected in a restoration site at Dog Beach during the 2019 focused surveys, which is likely hybridized with *Isocoma menziesii* ssp. m*enziesii*¸ There is a historical occurrence documented within the BSA at Crown Point (CDFW 2025).
Iva hayesiana	San Diego marsh-elder	None/None/2B.2	None	Marshes and swamps, Playas/perennial herb/Apr–Oct/0–1,640	Known to occur This species was detected within the BSA in Rose Creek inlet during 2019 focused surveys. This species is known from Famosa Slough adjacent to the BSA (CDFW 2025).
Juglans californica	Southern California black walnut	None/None/4.2	None	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland/perennial deciduous tree/Mar–Aug/165–2,955	Not expected to occur. The BSA is outside of the elevational range for this species.
Juncus acutus ssp. *leopoldii*	southwestern spiny rush	None/None/4.2	None	Coastal dunes (mesic), Coastal scrub, Marshes and swamps (coastal salt), Meadows and seeps (alkaline seeps)/perennial rhizomatous herb/(Mar)May–June/10–2,955	Known to occur. This species was detected within the BSA in the SDRFCC and Rose Creek inlet during 2019 focused surveys. This species has also been documented within the BSA at Fiesta Island (SDNHM 2025).
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	None/None/1B.1	None	Marshes and swamps (coastal salt), Playas, Vernal pools/annual herb/Feb–June/5–4,005	Known to occur. This species was detected within the BSA in Rose Creek inlet during 2019 focused surveys. This species has also been documented within the BSA at Fiesta Island (SDNHM 2025).
Lathyrus splendens	pride-of-California	None/None/4.3	None	Chaparral/perennial herb/Mar–June/655–5,005	Not expected to occur. The BSA is outside the elevational range for this species and suitable habitat is absent.
Lepechinia cardiophylla	heart-leaved pitcher sage	None/None/1B.2	Covered	Chaparral, Cismontane woodland, Closed-cone coniferous forest/perennial shrub/Apr–July/1,705–4,495	Not expected to occur. The BSA is outside the elevational range for this species and suitable habitat is absent.

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Lepechinia ganderi	Gander's pitcher sage	None/None/1B.3	Covered	Chaparral, Closed-cone coniferous forest, Coastal scrub, Valley and foothill grassland; Gabbroic (sometimes)/perennial shrub/ June–July/1,000–3,295	Not expected to occur. The BSA is outside the elevational range for this species.
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	None/None/4.3	None	Chaparral, Coastal scrub/annual herb/Jan–July/5–2,905	Known to occur. This species was detected on the interior of Fiesta Island during the 2019 focused surveys.
Leptosyne maritima	sea dahlia	None/None/2B.2	None	Coastal bluff scrub, Coastal scrub/perennial herb/Mar–May/15–490	Low potential to occur. The BSA contains suitable habitat for this species, although it was not detected during 2019 focused surveys. There are historical occurrences documented in the vicinity (CDFW 2025).
Lycium californicum	California box-thorn	None/None/4.2	None	Coastal bluff scrub, Coastal scrub/perennial shrub/Mar–Aug(Dec)/15–490	Known to occur. This species was detected within the BSA north of Mission Bay RV Resort near Rose Creek Inlet, KFMBMP/NWP, Crown Point, and Dog Beach.
Microseris douglasii ssp. *platycarpha*	small-flowered microseris	None/None/4.2	None	Cismontane woodland, Coastal scrub, Valley and foothill grassland, Vernal pools; Clay/annual herb/Mar–May/50–3,510	Low potential to occur. The BSA contains suitable habitat for this species, although it was not detected during 2019 focused surveys. There are historical occurrences documented in the vicinity (CDFW 2025).
Mobergia calculiformis	light gray lichen	None/None/3	None	Coastal scrub (?)/crustose lichen (saxicolous)/NA/35–35	Low potential to occur. The BSA contains suitable habitat for this species, although it was not detected during 2019 focused surveys. This species has been documented in the vicinity, but specific locational details are unknown (CNPS 2025).
Monardella hypoleuca ssp. *lanata*	felt-leaved monardella	None/None/1B.2	Covered	Chaparral, Cismontane woodland/perennial rhizomatous herb/June–Aug/985–5,170	Not expected to occur. The BSA is outside of the elevational range for this species and suitable habitat is absent.
Monardella viminea	willowy monardella	FE/SE/1B.1	Covered	Chaparral, Coastal scrub, Riparian forest, Riparian scrub, Riparian woodland; Alluvial Terraces, Washes/perennial herb/June–Aug/ 165–740	Not expected to occur. The BSA is outside of the elevational range for this species.
Mucronea californica	California spineflower	None/None/4.2	None	Chaparral, Cismontane woodland, Coastal dunes, Coastal scrub, Valley and foothill grassland; Sandy/annual herb/Mar–July(Aug)/0–4,595	Low potential to occur. The BSA contains suitable habitat for this species, although it was not detected during 2019 focused surveys. There are historical occurrences documented in the vicinity (CDFW 2025; SDNHM 2025).
Myosurus minimus ssp. *apus*	little mousetail	None/None/3.1	None	Valley and foothill grassland, Vernal pools (alkaline)/annual herb/Mar–June/65–2,100	Not expected to occur. Suitable habitat is absent from the BSA.
Nama stenocarpa	mud nama	None/None/2B.2	None	Marshes and swamps (lake margins, riverbanks)/annual/ perennial herb/Jan–July/15–1,640	Not expected to occur. The BSA is outside of the current known range of this species.
Navarretia fossalis	spreading navarretia	FT/None/1B.1	Narrow Endemic	Chenopod scrub, Marshes and swamps (shallow freshwater), Playas, Vernal pools/annual herb/Apr–June/100–2,150	Not expected to occur. The BSA is outside of the current known range of this species and suitable vernal pool habitat is absent.
Navarretia prostrata	prostrate vernal pool navarretia	None/None/1B.2	None	Coastal scrub, Meadows and seeps, Valley and foothill grassland (alkaline), Vernal pools; Mesic/annual herb/Apr–July/10–3,970	Not expected to occur. The BSA is outside of the current known range of this species.
Nemacaulis denudata var. *denudata*	coast woolly-heads	None/None/1B.2	None	Coastal dunes/annual herb/Apr–Sep/0–330	Known to occur. This species was detected at Fiesta Island, Enchanted Isle, Leisure Island, west of Interstate 5 and north of Friar's Road, FAA Island, Mariner's Point, and Dog Beach during the 2019 focused surveys.
Nemacaulis denudata var. *gracilis*	slender cottonheads	None/None/2B.2	None	Coastal dunes, Desert dunes, Sonoran desert scrub/annual herb/(Mar)Apr–May/–165–1,310	Not expected to occur. The BSA is outside of the elevational range for this species.
Nolina interrata	Dehesa nolina	None/SE/1B.1	Covered	Chaparral (gabbroic, metavolcanic, serpentinite)/perennial herb/June–July/605–2,805	Not expected to occur. The BSA is outside of the elevational range for this species.
Ophioglossum californicum	California adder's-tongue	None/None/4.2	None	Chaparral, Valley and foothill grassland, Vernal pools (margins); Mesic/perennial rhizomatous herb/Jan–June(Dec)/195–1,725	Not expected to occur. The BSA is outside of the elevational range for this species.
Orcuttia californica	California Orcutt grass	FE/SE/1B.1	Narrow Endemic	Vernal pools/annual herb/Apr–Aug/50–2,165	Not expected to occur. Suitable habitat is absent from the BSA.

Scientific Name	Common Name	Status (Federal/State/CRPR)	City of San Diego MSCP	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet above mean sea level)	Potential to Occur
Packera ganderi	Gander's ragwort	None/SR/1B.2	Covered	Chaparral (burned areas, gabbroic outcrops)/perennial herb/Apr–June/1,310–3,935	Not expected to occur. The BSA is outside of the elevational range for this species and suitable habitat is absent.
Pentachaeta aurea ssp. *aurea*	golden-rayed pentachaeta	None/None/4.2	None	Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Riparian woodland, Valley and foothill grassland/annual herb/Mar–July/260–6,070	Not expected to occur. The BSA is outside of the elevational range for this species.
Phacelia ramosissima var. *austrolitoralis*	south coast branching phacelia	None/None/3.2	None	Chaparral, Coastal dunes, Coastal scrub, Marshes and swamps (coastal salt); Rocky (sometimes), Sandy/perennial herb/Mar–Aug/15–985	Not expected to occur. The BSA is outside of the current known range of this species.
Phacelia stellaris	Brand's star phacelia	None/None/1B.1	None	Coastal dunes, Coastal scrub/annual herb/Mar–June/5–1,310	Moderate potential to occur. The BSA contains suitable habitat for this species, although this species was not detected during 2019 focused surveys. There is a historical occurrence documented immediately adjacent to the BSA to the north in Crown Point (SDNHM 2025).
Pinus torreyana ssp. *torreyana*	Torrey pine	None/None/1B.2	Covered	Chaparral, Closed-cone coniferous forest; Sandstone/perennial evergreen tree/NA/100–525	Known to occur. Although not naturally occurring, hundreds of ornamental Torrey pines were detected throughout the BSA. The BSA is located outside of the native range of this species.
Piperia cooperi	chaparral rein orchid	None/None/4.2	None	Chaparral, Cismontane woodland, Valley and foothill grassland/perennial herb/Mar–June/50–5200	Not expected to occur. Suitable habitat is absent from the BSA.
Pogogyne abramsii	San Diego mesa mint	FE/SE/1B.1	Narrow Endemic	Vernal pools/annual herb/Mar–July/295–655	Not expected to occur. Suitable habitat is absent from the BSA.
Pogogyne nudiuscula	Otay Mesa mint	FE/SE/1B.1	Narrow Endemic	Vernal pools/annual herb/May–July/295–820	Not expected to occur. The BSA is outside of the elevational range for this species and suitable habitat is absent.
Quercus dumosa	Nuttall's scrub oak	None/None/1B.1	None	Chaparral, Closed-cone coniferous forest, Coastal scrub; Clay, Loam, Sandy/perennial evergreen shrub/Feb–Apr(May–Aug)/50–1,310	Moderate potential to occur. The BSA contains suitable habitat for this species, although it was not detected during this species 2019 focused surveys. There are documented occurrences within the vicinity (SDNHM 2025).
Quercus engelmannii	Engelmann oak	None/None/4.2	None	Chaparral, Cismontane woodland, Riparian woodland, Valley and foothill grassland/perennial deciduous tree/Mar–June/165–4265	Not expected to occur. The BSA is outside of the elevational range for this species
Rosa minutifolia	small-leaved rose	None/SE/2B.1	Covered	Chaparral, Coastal scrub/perennial deciduous shrub/Jan–June/490–525	Not expected to occur. The BSA is outside of the elevational range for this species.
Salvia munzii	Munz's sage	None/None/2B.2	None	Chaparral, Coastal scrub/perennial evergreen shrub/Feb–Apr/375–3495	Not expected to occur. The BSA is outside of the elevational range for this species.
Selaginella cinerascens	ashy spike-moss	None/None/4.1	None	Chaparral, Coastal scrub/perennial rhizomatous herb/NA/65–2100	Moderate potential to occur. The BSA contains suitable habitat for this species, although this species was not detected during 2019 focused surveys. There are documented occurrences in the vicinity (SDNHM 2025).
Senecio aphanactis	chaparral ragwort	None/None/2B.2	None	Chaparral, Cismontane woodland, Coastal scrub; Alkaline (sometimes)/annual herb/Jan–Apr(May)/50–2,625	Low potential to occur. There is suitable habitat for this species within the BSA, although this species was not detected during 2019 focused surveys. There is a historical occurrence within the vicinity (SDNHM 2025).
Sidalcea neomexicana	salt spring checkerbloom	None/None/2B.2	None	Chaparral, Coastal scrub, Lower montane coniferous forest, Mojavean desert scrub, Playas; Alkaline, Mesic/perennial herb/Mar–June/50–5,020	Low potential to occur. There is suitable habitat for this species within the BSA, although this species was not detected during 2019 focused surveys. There is one historical occurrence documented in the vicinity (CDFW 2025).
Solanum xanti	purple nightshade	None/None/None	Covered	Coastal scrub, chaparral, cismontane woodland, lower montane coniferous forest/perennial herb / perennial shrub/June–July/0–8,858	Low potential to occur. There is suitable habitat for this species within the BSA, although this species was not detected during 2019 focused surveys. Documented occurrences are absent from the vicinity (SDNHM 2025).

Scientific Name	Common Name	Status (Federal/State/CRPR)	City of San Diego MSCP	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet above mean sea level)	Potential to Occur
Sphaerocarpos drewiae	bottle liverwort	None/None/1B.1	None	Chaparral, Coastal scrub; Openings/ephemeral liverwort/NA/295–1,970	Not expected to occur. The BSA is outside of the elevational range for this species
Stemodia durantifolia	purple stemodia	None/None/2B.1	None	Sonoran desert scrub (often mesic, sandy)/perennial herb/(Jan)Apr–Dec/590–985	Not expected to occur. The BSA is outside of the elevational range for this species and suitable habitat is absent.
Stipa diegoensis	San Diego County needle grass	None/None/4.2	None	Chaparral, Coastal scrub; Mesic (often), Rocky/perennial herb/Feb–June/ 35–2,625	Not expected to occur. The BSA is located outside of the current known range of this species.
Streptanthus bernardinus	Laguna Mountains jewelflower	None/None/4.3	None	Chaparral, Lower montane coniferous forest/perennial herb/May–Aug/2,200–8,205	Not expected to occur. The BSA is outside of the elevational range for this species
Stylocline citroleum	oil neststraw	None/None/1B.1	None	Chenopod scrub, Coastal scrub, Valley and foothill grassland; Clay/annual herb/ Mar–Apr/165–1,310	Not expected to occur. The BSA is outside of the elevational range for this species
Suaeda esteroa	estuary seablite	None/None/1B.2	None	Marshes and swamps (coastal salt)/perennial herb/(Jan–May)July–Oct/0–15	Known to occur. This species was detected at the Rose Creek Inlet, De Anza Cove, Enchanted Isle, the mouth of Tecolote Creek, Dog Beach, West Ski Isle, and KFMBMP/NWP during 2019 focused surveys.
Suaeda taxifolia	woolly seablite	None/None/4.2	None	Coastal bluff scrub, Coastal dunes, Marshes and swamps (coastal margins)/perennial evergreen shrub/Jan–Dec/0–165	Known to occur. This species was detected at Point De Anza, Enchanted Isle, through-out the bluffs of Fiesta Island, Tecolote Shores and South Shores Park, West Ski Isle, KFMBMP/NWP, the northern bank of the SDRFCC at Hospitality Point, Dog Beach, and the southern bank of the SDRFCC west of West Mission Bay Drive during 2019 focused surveys.
Tetracoccus dioicus	Parry's tetracoccus	None/None/1B.2	Covered	Chaparral, Coastal scrub/perennial deciduous shrub/Apr–May/540–3280	Not expected to occur. The BSA is outside of the elevational range for this species
Texosporium sancti-jacobi	woven-spored lichen	None/None/3	None	Chaparral (openings)/crustose lichen (terricolous)/NA/195–2165	Not expected to occur. The BSA is outside of the elevational range for this species and suitable habitat is absent.
Xanthisma junceum	rush-like bristleweed	None/None/4.3	None	Chaparral, Coastal scrub/perennial herb/Jan–Oct/785–3280	Not expected to occur. The BSA is outside of the elevational range for this species

Status Legend
Federal
FE: Federally listed as endangered
FT: Federally listed as threatened
State
SE: State listed as endangered
SR: State listed as rare
CRPR: California Rare Plant Rank
1B: Plants rare, threatened, or endangered in California and elsewhere
2B: Plants rare, threatened, or endangered in California, but more common elsewhere
3: Plants about which more information is needed – A Review List
4: Plants of Limited Distribution – A Watch List
Threat Rank
0.1 – Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
0.2 – Moderately threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat)
0.3 – Not very threatened in California (less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known)

Appendix I

Special-Status Wildlife Species Potential to Occur

Scientific Name	Common Name	Status (Federal/ State)	City of San Diego MSCP Subarea Plan	Habitat	Potential to Occur
Amphibians					
Anaxyrus californicus	arroyo toad	FE/SSC	Covered	Semi-arid areas near washes, sandy riverbanks, riparian areas, palm oasis, Joshua tree, mixed chaparral and sagebrush; stream channels for breeding (typically third order); adjacent stream terraces and uplands for foraging and wintering	Not observed on site. Not expected to occur. No records exist in the program area and suitable habitat is absent.
Rana draytonii	California red-legged frog	FT/SSC	Covered	Lowland streams, wetlands, riparian woodlands, livestock ponds; dense, shrubby or emergent vegetation associated with deep, still or slow-moving water; uses adjacent uplands	Not observed on site. Not expected to occur due to limited suitable habitat, lack of known occurrences in San Diego County, and overall urban surroundings.
Spea hammondii	western spadefoot	FPT/SSC	None	Primarily grassland and vernal pools, but also in ephemeral wetlands that persist at least 3 weeks in chaparral, coastal scrub, valley–foothill woodlands, pastures, and other agriculture	Not observed on site. Not expected to occur due to the lack of suitable habitat.
Reptiles					
Anniella stebbinsi	Southern California legless lizard	None/SSC	None	Coastal dunes, stabilized dunes, beaches, dry washes, valley–foothill, chaparral, and scrubs; pine, oak, and riparian woodlands; associated with sparse vegetation and moist sandy or loose, loamy soils	Not observed on site. Moderate potential to occur where suitable soils are present on site. Historic CNDDB records are present within the BSA and recent records exist south of the BSA (CDFW 2024).
Arizona elegans occidentalis	California glossy snake	None/SSC	None	Arid scrub, rocky washes, grasslands, chaparral, open areas with loose soil	Not observed on site. Low potential to occur. There are no recent records of this species in the program vicinity (CDFW 2024; iNaturalist 2025) and this species no longer occurs in many previously occupied areas along coastal southern California (Hansen and Shedd 2025)
Aspidoscelis hyperythra	orange-throated whiptail	None/WL	Covered	Low-elevation coastal scrub, chaparral, and valley–foothill hardwood	Not observed on site. Moderate potential to occur. Potentially suitable habitat is present in the undeveloped uplands in the program area and this species is known from Tecolote Creek, immediately east of Mission Bay.
Aspidoscelis tigris stejnegeri	San Diegan tiger whiptail	None/SSC	None	Hot and dry areas with sparse foliage, including chaparral, woodland, and riparian areas.	Not observed on site. Not expected to occur. The program area is outside of the species' known range (CDFW 2025),
Chelonia mydas	green sea turtle	FT/None	None	Shallow waters of lagoons, bays, estuaries, mangroves, eelgrass, and seaweed beds	Not observed. High potential to migrate and/or forage in the program area. Not expected to nest.
Crotalus ruber	red diamondback rattlesnake	None/SSC	None	Coastal scrub, chaparral, oak and pine woodlands, rocky grasslands, cultivated areas, and desert flats	Not observed. Not expected to occur due to the absence of important habitat features, such as cacti and large rocks and the lack of nearby records.
Masticophis fuliginosus	Baja California coachwhip	None/SSC	None	In California restricted to southern San Diego County, where it is known from grassland and coastal sage scrub. Open areas in grassland and coastal sage scrub.	Not observed. Not expected to occur. The program area is outside of the known range of this species (CDFW 2025).
Phrynosoma blainvillii	Blainville's horned lizard	None/SSC	Covered	Open areas of sandy soil in valleys, foothills, and semi-arid mountains including coastal scrub, chaparral, valley–foothill hardwood, conifer, riparian, pine–cypress, juniper, and annual grassland habitats	Not observed. Low potential to occur due to limited, fragmented coastal scrub habitat that is isolated from nearby occurrences by urban conditions and the absence of records from the program area (CDFW 2024, iNaturalist 2025; SDMMP 2025)

Scientific Name	Common Name	Status (Federal/ State)	City of San Diego MSCP Subarea Plan	Habitat	Potential to Occur
Salvadora hexalepis virgultea	coast patch-nosed snake	None/SSC	None	Brushy or shrubby vegetation; requires small mammal burrows for refuge and overwintering sites	Not observed. Low potential to occur. No records exist in the program vicinity and suitable habitat is not prevalent.
Thamnophis hammondii	two-striped gartersnake	None/SSC	None	Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools	Not observed. Low potential to occur in Rose Creek; not expected to occur elsewhere in the program area. Nearest known occurrence is approximately 5 miles northeast.
Thamnophis sirtalis ssp. (Southern California coastal plain from Ventura County to San Diego County, and from sea level to about 850 meters)	south coast gartersnake	None/SSC	None	Marsh and upland habitats near permanent water and riparian vegetation	Not observed. Low potential to occur. Suitable habitat is limited in the program area and the nearest record of this species is from 1928, more than 10 miles to the north of the program area (CDFW 2024).
Actinemys pallida	southwestern pond turtle	FPT/SSC	Covered	Slow-moving permanent or intermittent streams, ponds, small lakes, and reservoirs with emergent basking sites; adjacent uplands used for nesting and during winter	Not observed. Not expected to occur. No suitable habitat present.
Birds					
Accipiter cooperii (nesting)	Cooper's hawk	None/WL	Covered	Nests and forages in dense stands of live oak, riparian woodlands, or other woodland habitats often near water	Observed on site between West Point Loma Boulevard and Dog Beach and regularly observed in the program area (eBird 2025). High potential to nest in wooded areas within the program area
Agelaius tricolor (nesting colony)	tricolored blackbird	BCC/SSC, ST	Covered	Nests near freshwater, emergent wetland with cattails or tules, but also in Himalayan blackberry; forages in grasslands, woodland, and agriculture	Not observed on site Not expected to nest. Ongoing monitoring for this species as part of the tricolored blackbird statewide surveys has not recorded this species in the program area and suitable nesting habitat is limited to the emergent vegetation in Rose Creek. No suitable nesting habitat is present elsewhere in the program area.
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	None/WL	Covered	Nests and forages in open coastal scrub and chaparral with low cover of scattered scrub interspersed with rocky and grassy patches	Not observed on site. Low potential to occur due to limited, fragmented coastal scrub habitat.
Anarhynchos [formerly *Charadrius*] *nivosus nivosus* (nesting)	western snowy plover	FT, BCC/SSC	Covered	On coasts nests on sandy marine and estuarine shores; in the interior nests on sandy, barren or sparsely vegetated flats near saline or alkaline lakes, reservoirs, and ponds	Observed roosting on South Mission Beach, in the West San Diego River Flood Control Channel, and at Kendall-Frost Mission Bay Marsh Reserve. Not expected to nest. The species is known to winter in Mission Bay. However, nesting in Mission Bay has been largely unsuccessful, with the last known attempt at nesting in Mission Bay in 1995 (Unitt 2004).
Aquila chrysaetos (nesting & wintering)	golden eagle	None/FP, WL	Covered	Nests and winters in hilly, open/semi-open areas, including shrublands, grasslands, pastures, riparian areas, mountainous canyon land, open desert rimrock terrain; nests in large trees and on cliffs in open areas and forages in open habitats	Not observed on site. Not expected to occur. Suitable nesting and wintering habitat is absent and this species' territories are not found near developed areas like that which surrounds the program area.
Artemisiospiza belli belli	Bell's sage sparrow	None/WL	None	Nests and forages in coastal scrub and dry chaparral; typically in large, unfragmented patches dominated by chamise; nests in more dense patches but uses more open habitat in winter	Not observed on site. Not expected to occur. Chaparral is not present and scrub vegetation is fragmented and isolated by surrounding development. This species has been eliminated from most coastal areas in San Diego County (Unitt 2004).

Scientific Name	Common Name	Status (Federal/ State)	City of San Diego MSCP Subarea Plan	Habitat	Potential to Occur
Athene cunicularia (burrow sites & some wintering sites)	burrowing owl	BCC/SSC, SC	Covered	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows	Observed on site in central Fiesta Island (not nesting). High potential to occur (wintering, foraging, dispersal); not expected to nest. Records indicate the species is regularly detected in Mission Bay, but it is not expected to nest (CDFW 2025; eBird 2025; San Diego Zoo Institute for Conservation Research 2017; Unitt 2004,
Aythya americana (nesting)	redhead	None/SSC	None	Nests in deep (>3 ft) permanent or semi-permanent wetlands of at least 1 acre; 75% open water; emergent tules, Scirpus spp., and Typha spp. 3 feet in height; winters in coastal estuaries and large, deep ponds, lakes, and reservoirs of the interior	Observed on site in north Mission Bay, near Rose Creek Inlet. Known to winter but not expected to breed in the program area. San Diego County is at the southern extent if the redhead breeding range and the species has not been recorded breeding in Mission Bay.
Branta bernicla (wintering & staging)	brant	None/SSC	None	Nesting habitat includes the edges of saltmarshes in the low Arctic region; migratory habitats include shallow marine lakes; winter range includes intertidal mudflats in shallow marine waters with abundant eelgrass and/or green algae	Observed on site in north Mission Bay, near Kendall-Frost Mission Bay Marsh Reserve. Known to winter in Mission Bay.
Branta canadensis	Canada goose	None/None	Covered	Lakes, rivers, ponds, and other bodies of water; yards, park lawns, and agricultural fields	Not observed on site. High potential to occur. This species is known as a regular winter visitor and migrant in the program area.
Buteo regalis (wintering)	ferruginous hawk	None/WL	Covered	Winters and forages in open, dry country, grasslands, open fields, agriculture	Not observed on site. Not expected to occur due to lack of suitable foraging habitat.
Buteo swainsoni (nesting)	Swainson's hawk	None/ST	Covered	Nests in open woodland and savanna, riparian, and in isolated large trees; forages in nearby grasslands and agricultural areas such as wheat and alfalfa fields and pasture	Not observed on site. Not expected to nest on site. This species no longer breeds in Southern California and occurs only as a rare migrant in most of San Diego County.
Campylorhynchus brunneicapillus sandiegensis (San Diego & Orange Counties only)	coastal cactus wren	None/SSC	Covered	Southern cactus scrub patches	Not observed on site. Low potential to occur due to lack of suitable habitat.
Charadrius montanus (wintering)	mountain plover	BCC/SSC	Covered	Winters in shortgrass prairies, plowed fields, open sagebrush, and sandy deserts	Not observed on site. Low potential to winter in disturbed and open areas. This species was considered extirpated from the County as of 1991 (Unitt 2004). However, the species has been occasionally observed wintering in both San Diego Bay and Mission Bay in recent years.
Circus hudsonius (nesting)	northern harrier	BCC/SSC	Covered	Nests in open wetlands (marshy meadows, wet lightly-grazed pastures, old fields, freshwater and brackish marshes); also in drier habitats (grassland and grain fields); forages in grassland, scrubs, rangelands, emergent wetlands, and other open habitats	Observed on site on North Fiesta Island. Moderate potential to nest.
Coccyzus americanus occidentalis (nesting)	western yellow-billed cuckoo	FT/SE	None	Nests in dense, wide riparian woodlands and forest with well-developed understories	Not observed on site. Not expected to occur due to limited riparian habitat adjacent to urban conditions.
Coturnicops noveboracensis	yellow rail	BCC/SSC	None	Nesting requires wet marsh/sedge meadows or coastal marshes with wet soil and shallow, standing water	Not observed on site. Moderate potential to occur (and to nest). Marsh habitat is present within the BSA and a there is a recent occurrence from north of the KFMBMR.
Egretta rufescens	reddish egret	None/None	Covered	Freshwater marsh with emergent vegetation; in the Central Valley primarily nests and forages in rice fields and other flooded agricultural fields with weeds and other residual aquatic vegetation	Observed on site along San Diego River Flood Control Channel. High potential to occur as a nonbreeding winter visitor.

Scientific Name	Common Name	Status (Federal/ State)	City of San Diego MSCP Subarea Plan	Habitat	Potential to Occur
Elanus leucurus (nesting)	white-tailed kite	None/FP	None	Nests in woodland, riparian, and individual trees near open lands; forages opportunistically in grassland, meadows, scrubs, agriculture, emergent wetland, savanna, and disturbed lands	Observed on site in San Diego River Flood Control Channel, at Mariner's Point, and on Fiesta Island. Moderate potential to nest and forage.
Empidonax traillii extimus (nesting)	southwestern willow flycatcher	FE/SE	Covered	Nests in dense riparian habitats along streams, reservoirs, or wetlands; uses variety of riparian and shrubland habitats during migration	Not observed during 2024 focused surveys. Not expected to occur due to the absence of suitable habitat in the vast majority of the program area, negative survey results from Rose Creek, and the absence of any records of this species from Mission Bay, the SDRFCC, and surrounding areas.
Eremophila alpestris actia	California horned lark	None/WL	None	This subspecies of horned lark occurs on the state's southern and central coastal slope and in the San Joaquin Valley. Nests and forages in grasslands, disturbed lands, agriculture, and beaches.	Observed on site, including nesting, on Fiesta Island and at South Shores Park. Also observed at Dog Beach.
Falco mexicanus (nesting)	prairie falcon	None/WL	None	Forages in grassland, savanna, rangeland, agriculture, desert scrub, alpine meadows; nest on cliffs or bluffs	Not observed on site. Not expected to occur due to a lack of suitable nesting and foraging habitat.
Falco peregrinus anatum (nesting)	American peregrine falcon	FD/SD	Covered	Nests on cliffs, buildings, and bridges; forages in wetlands, riparian, meadows, croplands, especially where waterfowl are present	Observed flying over the San Diego River Flood Control Channel. Suitable foraging opportunities are present. Typical nesting sites (i.e., cliffs or tall buildings) are absent from most of the program area and nesting is not known from Mission Bay. Low potential to nest on bridges and in tall trees.
Haliaeetus leucocephalus (nesting and wintering)	bald eagle	FD/FP, SE	Covered	Nests in forested areas adjacent to large bodies of water, including seacoasts, rivers, swamps, large lakes; winters near large bodies of water in lowlands and mountains	Not observed on site. Low potential to occur due to limited trees suitable for nesting and the absence of nearby records. Bald eagle is not known to nest in San Diego County, with the only record from 1936 (Unitt 2004).
Ixobrychus exilis (nesting)	least bittern	None/SSC	None	Nests in freshwater and brackish marshes with dense, tall growth of aquatic and semi-aquatic vegetation	Not observed on site. Low potential to occur. Brackish marsh is present at the mouth of the San Diego River and freshwater marsh is present in Rose Creek. However, both areas likely lack the dense, tall emergent vegetation this species prefers. There are no records for this species in the program area, but it has been detected upstream of the program area in the San Diego River corridor (Unitt 2004, eBird 2025).
Larus californicus (nesting colony)	California gull	None/WL	None	Nests in alkali and freshwater lacustrine habitats; abundant in coastal and interior lowlands during non-nesting period	Observed on site on Dog Beach and Kendall-Frost Mission Bay Marsh Reserve. Expected to winter but not expected to nest in the program area. This species does not breed in coastal Southern California.
Laterallus jamaicensis coturniculus	California black rail	None/FP, ST	None	Tidal marshes, shallow freshwater margins, wet meadows, and flooded grassy vegetation; suitable habitats are often supplied by canal leakage in Sierra Nevada foothill populations	Not expected to occur. This species is extirpated from San Diego County, with the last known nesting in 1954 and the last vagrant in 1983 (Unitt 2004).
Numenius americanus (nesting)	long-billed curlew	None/WL	Covered	Nests in grazed, mixed grass, and short-grass prairies; localized nesting along the California coast; winters and forages in coastal estuaries, mudflats, open grassland, and cropland	Observed in north Mission Bay near Kendall-Frost Mission Bay Marsh Reserve and near Mariner's Point. Known to occur as a migrant and winter visitor in the program area. Not expected to nest.

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Pandion haliaetus (nesting)	osprey	None/WL	None	Large waters (lakes, reservoirs, rivers) supporting fish; usually near forest habitats, but widely observed along the coast	Observed nesting at Kendall Frost Mission Bay Marsh Reserve and at Robb Field. High potential to nest and forage.
Passerculus sandwichensis beldingi	Belding's savannah sparrow	BCC/SE	Covered	Nests and forages in coastal saltmarsh dominated by pickleweed (Salicornia spp.)	Observed on site in coastal salt marsh along San Diego River Flood Control Channel, on central Fiesta Island, and Kendall Frost Mission Bay Marsh Reserve during focused surveys conducted in 2019. Expected to nest in known breeding habitat at KFMBMR and along the SDRFCC; low potential to nest in SCSM habitat elsewhere in the program area, including on NFI, in the Rose Creek Inlet, and at the mouth of Tecolote Creek
Passerculus sandwichensis rostratus (wintering)	large-billed savannah sparrow	None/SSC	Covered	Nests and forages in open, low saltmarsh vegetation, including low halophytic scrub	Not observed on site. Moderate potential to winter.
Pelecanus erythrorhynchos (nesting colony)	American white pelican	BCC/SSC	None	Nests colonially on sandy, earthen, or rocky substrates on isolated islands in freshwater lakes; minimal disturbance from predators; access to foraging areas on inland marshes, lakes, or rivers; winters on shallow coastal bays, inlets, and estuaries	Observed on site in San Diego River Flood Control Channel. Not expected to nest. This species is a known winter visitor in Mission Bay, but the American white pelican is not known to nest in San Diego County (CDFW 2025; Unitt 2004).
Pelecanus occidentalis californicus (nesting colonies & communal roosts)	California brown pelican	FD/SD	Covered	Forages in warm coastal marine and estuarine environments; in California, nests on dry, rocky offshore islands	Observed on site and expected to occur during winter and migration, with some year-round nonbreeding residents present. Nesting is not expected to occur.
Phalacrocorax auritus (nesting colony)	Double-crested cormorant	None/WL	None	Nests in riparian trees near ponds, lakes, artificial impoundments, slow-moving rivers, lagoons, estuaries, and open coastlines; winter habitat includes lakes, rivers, and coastal areas	Observed on site in San Diego River Flood Control Channel. High potential as a migrant or winter visitor; low potential to breed. The species is common in the program area in the winter and as a migrant. Although it occurs in Mission Bay and the SDRFCC during the spring and summer, and trees lining the shoreline could potentially serve as nesting sites, this species is not known to nest in the program vicinity.
Phoebastria albatrus	short-tailed albatross	FE/SSC	None	Nests on isolated, windswept islands of the western Pacific; extremely rare in migration offshore along the California coast	Not observed on site. Not expected to occur due to urban surroundings.
Plegadis chihi (nesting colony)	white-faced ibis	None/WL	Covered	Nests in shallow marshes with areas of emergent vegetation; winter foraging in shallow lacustrine waters, flooded agricultural fields, muddy ground of wet meadows, marshes, ponds, lakes, rivers, flooded fields, and estuaries	Observed on site in Rose Creek Inlet. Not expected to nest. High potential to occur as a migrant and may forage during winter where suitable habitat is present.
Polioptila californica californica	coastal California gnatcatcher	FT/SSC	Covered	Nests and forages in various sage scrub communities, often dominated by California sagebrush and buckwheat; generally avoids nesting in areas with a slope of greater than 40%; majority of nesting at less than 1,000 feet above mean sea level	Not observed on site during 2019 focused surveys. Incidentally observed in the South Shores area during reconnaissance surveys conducted in 2024. Moderate potential to occur where suitable scrub habitat is present in the program area.
Rallus obsoletus levipes	light-footed Ridgway's rail	FE/FP, SE	Covered	Coastal wetlands, brackish areas, coastal saline emergent wetlands	Not observed on site during 2019 focused surveys. High potential to nest in known breeding habitat at KFMBMR and along the SDRFCC; low potential to nest in SCSM habitat elsewhere in the program

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					area, including on NFI, in the Rose Creek Inlet, and at the mouth of Tecolote Creek.
Rynchops niger (nesting colony)	black skimmer	None/SSC	None	Nests on barrier beaches, shell banks, spoil islands, and saltmarsh; forages over open water; roosts on sandy beaches and gravel bars	Observed on site at Stony Point (SW Fiesta Island). A year-round resident in San Diego County, where most birds breed in San Diego Bay at the salt works and winter in Mission Bay. There are no records of nesting in the program area, which is not identified as a part of the species' breeding range (CDFW 2025; Unitt 2004).
Setophaga petechia (nesting)	yellow warbler	None/SSC	None	Nests and forages in riparian and oak woodlands, montane chaparral, open ponderosa pine, and mixed-conifer habitats	Observed on site in 2024 in Rose Creek. Moderate potential to nest in riparian vegetation in Rose Creek.
Sialia mexicana	western bluebird	None/None	Covered	Nests in old-growth red fir, mixed-conifer, and lodgepole pine habitats near wet meadows used for foraging	Not observed on site. Not expected to occur due to the lack of suitable habitat.
Sternula antillarum browni (nesting colony)	California least tern	FE/FP, SE	Covered	Forages in shallow estuaries and lagoons; nests on sandy beaches or exposed tidal flats	Observed on site in West San Diego River Flood Control Channel, Mission Bay Channel, and Rose Creek Inlet (not nesting). High potential to nest on FAA Island and Mariner's Point and in designated preserves on Fiesta Island; low potential to nest elsewhere in Mission Bay where suitable conditions are present.
Thalasseus elegans (nesting colony)	elegant tern	BCC/WL	Covered	Inshore coastal waters, bays, estuaries, and harbors; forages over open water	Observed on site at Kendall Frost Mission Bay Marsh Reserve and at Dog Beach. Not expected to nest in the program area. Foraging is expected over open water.
Vireo bellii pusillus (nesting)	least Bell's vireo	FE/SE	Covered	Nests and forages in low, dense riparian thickets along water or along dry parts of intermittent streams; forages in riparian and adjacent shrubland late in nesting season	Not observed on site during 2024 focused surveys. Low potential to nest in the riparian vegetation in Rose Creek
Mammals					
Antrozous pallidus	pallid bat	None/SSC	None	Grasslands, shrublands, woodlands, forests; most common in open, dry habitats with rocky outcrops for roosting, but also roosts in man-made structures and trees	Not observed on site. Low potential to occur. This species is known from the KFMBMR (SDMMP 2025) and suitable foraging habitat is present in the program area. However, large rock outcrops and caves preferred by this species for roosting are not present.
Choeronycteris mexicana	Mexican long-tongued bat	None/SSC	None	Desert and montane riparian, desert succulent scrub, desert scrub, and pinyon–juniper woodland; roosts in caves, mines, and buildings	Not observed on site. Low potential to roost. Suitable roosting sites are not present in the program area and this species occurs in San Diego primarily as a migrant.
Corynorhinus townsendii	Townsend's big-eared bat	None/SSC	None	Mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also xeric areas; roosts in limestone caves and lava tubes, man-made structures, and tunnels	Not observed on site. Not expected to roost. Suitable roosting sites (caves or cave-like structures) are absent from the program area.
Dasypterus xanthinus	western yellow bat	None/SSC	None	Valley–foothill riparian, desert riparian, desert wash, and palm oasis habitats; below 2,000 feet above mean sea level; roosts in riparian and palms	Not observed on site. Not expected to occur due to the absence of suitable habitat.

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Euderma maculatum	spotted bat	None/SSC	None	Foothills, mountains, desert regions of southern California, including arid deserts, grasslands, and mixed-conifer forests; roosts in rock crevices and cliffs; feeds over water and along washes	Not observed on site. Not expected to roost. Suitable roosting sites (cliffs) are absent from the program area.
Eumops perotis californicus	western mastiff bat	None/SSC	None	Chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland; roosts in crevices in rocky canyons and cliffs where the canyon or cliff is vertical or nearly vertical, trees, and tunnels	Not observed on site. Not expected to roost. Typical roosting sites (vertical cliffs, tall buildings) are absent from the program area.
Neotoma lepida intermedia	San Diego desert woodrat	None/SSC	None	Coastal scrub, desert scrub, chaparral, cacti, rocky areas	Not observed on site. Not expected to occur due to limited, fragmented coastal scrub vegetation, an absence of rocky areas, and isolation from known occurrences.
Nyctinomops femorosaccus	pocketed free-tailed bat	None/SSC	None	Pinyon–juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oases; roosts in high cliffs or rock outcrops with drop-offs, caverns, and buildings	Not observed on site. Not expected to roost. Suitable roosting sites (high cliffs, outcrops, caverns, buildings) are absent from the program area.
Nyctinomops macrotis	big free-tailed bat	None/SSC	None	Rocky areas; roosts in caves, holes in trees, buildings, and crevices on cliffs and rocky outcrops; forages over water	Not observed on site. Low potential to occur. Typical rocky habitat and caves/cliffs suitable for roosting are absent from the program area. Low potential for the species to nest in tree holes.
Odocoileus hemionus	mule deer	None/None	Covered	Coastal sage scrub, chaparral, riparian, woodlands, and forest; often browses in open area adjacent to cover throughout California, except deserts and intensely farmed areas	Not observed on site. Not expected to occur. Suitable habitat is not present on site.
Perognathus longimembris pacificus	Pacific pocket mouse	FE/SSC	None	fine-grained sandy substrates in open coastal strand, coastal dunes, and river alluvium	Not expected to occur. Currently known from Dana Point Headlands in Orange County, CA and three locations on Marine Corps Base Camp Pendleton in San Diego County (Spencer 2005).
Puma concolor	mountain lion – Southern California/Central Coast ESU	None/SC	None	Scrubs, chaparral, riparian, woodland, and forest; rests in rocky areas and on cliffs and ledges that provide cover; most abundant in riparian areas and brushy stages of most habitats throughout California, except deserts	Not expected to occur. Suitable habitat is not present and the program area is surrounded by urban development.
Taxidea taxus	American badger	None/SSC	Covered	Dry, open, treeless areas; grasslands, coastal scrub, agriculture, and pastures, especially with friable soils	Not observed on site. Low potential to occur on site due to limited, fragmented suitable coastal scrub habitat.
Lasiurus frantzii	western red bat	None/SSC	None	Forest, woodland, riparian, mesquite bosque, and orchards, including fig, apricot, peach, pear, almond, walnut, and orange; roosts in tree canopy	Not observed on site. Low potential to roost. Trees are available for roosting, but this is species is highly associated with well-developed riparian vegetation that is not present in the program area.
Invertebrates					
Bombus crotchii	Crotch's bumble bee	None/SCE	None	Open grassland and scrub communities supporting suitable floral resources.	Not observed on site. Moderate potential to occur due to presence of suitable floral resources and nearby known occurrences.
Branchinecta sandiegonensis	San Diego fairy shrimp	FE/None	Covered	Vernal pools, non-vegetated ephemeral pools	Not observed on site. Not expected to occur given lack of vernal pools.
Callophrys thornei	Thorne's hairstreak	None/None	Covered	Interior cypress woodland dominated by host plant Hesperocyparis forbesii (Tecate cypress)	Not observed on site. Not expected to occur due to lack of suitable host plant.
Euphydryas editha quino	Quino checkerspot butterfly	FE/None	None	Annual forblands, grassland, open coastal scrub and chaparral; often soils with cryptogamic crusts and fine-textured clay; host plants include Plantago erecta, P. patagonica, and Antirrhinum coulterianum, among others	Not observed on site. Not expected to occur due to limited suitable habitat, an absence of host plants, and lack of nearby known occurrences.

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Lycaena hermes	Hermes copper	FT/None	None	Mixed woodlands, chaparral, and coastal scrub	Not observed on site. Not expected to occur The species has never been observed along the coast and the Program area is outside of the current known distribution.
Panoquina errans	wandering skipper	None/None	Covered	Saltmarsh	Not observed on site. High potential to occur. There are records of this species from the program area and suitable saltmarsh habitat is present, along with larval host plants and food plants..
Streptocephalus woottoni	Riverside fairy shrimp	FE/None	Covered	Vernal pools, non-vegetated ephemeral pools	Not observed on site. Not expected to occur given lack of vernal pools.
Danaus plexippus plexippus pop. 1	monarch – California overwintering population	FPT/None	None	Wind-protected tree groves with nectar sources and nearby water sources	Not observed on site. Low potential to overwinter due to the lack of wind-protected tree groves. High potential to occur as a migrant.

Status Legend
Federal
BCC: USFWS—Birds of Conservation Concern
FD: Federally delisted; monitored for 5 years
FE: Federally listed as endangered
FD: Federally delisted
FPT: Federally proposed for listing as threatened
FT: Federally listed as threatened
State
FP: CDFW Fully Protected species
SCE: State candidate for listing as endangered
SE: State listed as endangered
SSC: California Species of Special Concern
ST: State listed as threatened
WL: CDFW Watch List species

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