MONTGOMERY FIELD LOCALIZER PROJECT
CITY OF SAN DIEGO

BIOLOGICAL TECHNICAL REPORT

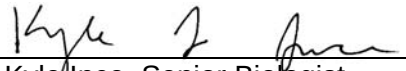
SEPTEMBER 27, 2010 (RECON)
REVISED NOVEMBER 25, 2015 (MERKEL & ASSOCIATES)
PROJECT NO. 212101

Prepared for:

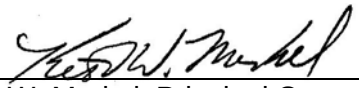
City of San Diego
Public Works Department
Engineering & Capital Projects
Contact: Mr. Darren Genova
525 B Street, Suite 750
San Diego, CA 92101
Phone: (619) 533-4659
Fax: (619) 533-5176
E-mail: JDeAngelis@sandiego.gov

Prepared by:

Merkel & Associates, Inc.
Contact: Mr. Kyle Ince
5434 Ruffin Road
San Diego, California 92123
Phone: (858) 560-5465
Fax: (858) 560-7779
E-mail: kince@merkelinc.com



Kyle Ince, Senior Biologist



Keith W. Merkel, Principal Consultant

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1.0 Summary

This report was initially prepared by RECON (RECON 2009) to describe pre-construction conditions and potential project impacts associated with the Montgomery Field (MYF) Localizer project (Project). Due to contracting constraints, the report has subsequently been updated by Merkel & Associates, Inc. (M&A) while maintaining much of the information and reporting format of the initial RECON document. The project was implemented under an emergency permit, in order to restore critical aviation safety services to Montgomery Field. Construction took place in January 2011 and was monitored by M&A.

This report describes the existing biological resources, project impacts, and a mitigation strategy for the Project. Information for this report was obtained from previous surveys/reports conducted by both Recon Environmental and Merkel & Associates. (Merkel & Associates, 2010, Recon Environmental 2008a, 2008b, and 2009) This report includes discussion pertaining to approximately 4.1 acres of land adjacent to the area where project impacts occurred. Mitigation has been proposed to occur on MYF, approximately 4,000 feet to the northeast of the localizer or approximately 1,000 feet east of the airfield's control tower. This area is proposed to serve as the mitigation area for vernal pool and non-native grassland impacts associated with the Project. A separate mitigation plan has been prepared and provided to the City (Merkel & Associates 2015).

During the rainy season of 2010 and 2011, VHF radio waves emitted by an on-site localizer, used to aid navigation of inbound aircraft during inclement weather, were being refracted by water ponding in an adjacent vernal pool. This condition created inaccurate readings and unsafe situations for airport users. The City of San Diego, under emergency status and consultation with United States Army Corps of Engineers (ACOE), Regional Water Quality Control Board (RWQCB), and United States Fish and Wildlife Service (USFWS), filled a portion of an adjacent vernal pool to bring the airfield up to Federal Aviation Administration (FAA) standards. The Study Area is located at the Montgomery Field airport, within the City of San Diego (City), California. Sensitive biological resources have been identified in the Study Area including vernal pools, non-native grassland vegetation, sensitive plant and wildlife species, and Jurisdictional wetlands. However, impacts incurred by the project were limited to vernal pool and non-native grassland habitats. Implementation of the emergency project resulted in impacts to the federally endangered San Diego fairy shrimp (*Branchinecta sandiegonensis*). Restoration of vernal pools and restoration of native upland habitat is required as mitigation for the emergency project impacts.

One sensitive plant species was identified within the Project study area during the Recon surveys. Graceful tar plant (*Holocarpha virgata ssp. elongata*) was found growing throughout upland areas of non-native grassland throughout the majority of the study area. Identification and impact analysis for this species were determined after project implementation because it was not in an identifiable phase of its development during the emergency work period. One additional sensitive plant, Orcutt's Brodiaea (*Brodiaea orcuttii*) was detected by M&A during subsequent surveys of the study area. A total of 8 plants were detected within the northern most portion of the Project study area.

A vernal pool (vp34), occupied by San Diego fairy shrimp, and its associated watershed were impacted by the emergency project. Consultation with ACOE and USFWS was conducted during construction to agree upon a course of action to minimize impacts to San Diego Fairy Shrimp.

A portion of the study area lies within the City's Multi-Habitat Planning Area (MHPA). The City manages all land uses within and adjacent to the MHPA in order to minimize impacts to the preserved lands. The Multiple Species Conservation Program (MSCP) provides Land Use Adjacency Guidelines that must be addressed by project proponents in order to demonstrate compliance with the MSCP (City of San Diego 1997). These guidelines include project design restrictions regarding drainage, toxins, lighting, noise, barriers, invasive species, and grading. These restrictions should be considered concurrent with project design. A total of 0.05 acre of non-native grassland within the MHPA was impacted by the emergency project activities. Mitigation for MHPA habitat loss will be required. A total of 1.80 acres of ACOE jurisdictional areas were delineated in the study area, including 1.72 acres of ACOE wetland jurisdictional areas (primarily vernal pools and hydrologic depressions) and 0.08 acre of ACOE non-wetland waters.

The project was implemented under an emergency CEQA exemption, ACOE RGP 63 with Section 7 Consultation, and RWQCB Water Quality Certification (WQC) in order to restore critical aviation safety services to Montgomery Field. Construction of the project took place in January 2011 and was monitored by M&A. As a result of minor difference in the project survey area and actions taken during the completion of the emergency activities, preparation of an updated biological resources report was prepared in order to revise impact acreages and incorporate additional relevant information regarding the Montgomery Field Localizer project.

Impacts incurred by the emergency project include: 0.19-acre of San Diego hardpan vernal pool, 1.2 acre of non-native grassland (outside City MHPA), 0.05-acre non-native grassland (within City MHPA), and 0.12-acre of disturbed habitat. Impacts to vernal pool habitats will be mitigated by restoration of vernal pools at a 5:1 ratio (0.95 acre). Impacts to non-native grasslands within the MHPA will be mitigated at a 1:1 ratio (0.05 acre) and impacts to non-native grasslands outside of the MHPA will be mitigated at a 0.5:1 ratio. Mitigation for all non-native grassland will be accomplished with establishing a minimum of 0.65 acre of grassland habitat within uplands areas of the vernal pool mitigation area. The entire mitigation area is located within the MHPA.

2.0 Introduction

Montgomery Field is a public airfield serving the San Diego region. The airfield serves as home to 600 aircraft and offers of variety of aircraft services and facilities (City of San Diego 2008). Montgomery Field hosts over 230,000 flight operations per year, making it the busiest airport in San Diego.

The FAA removed the localizer from service on January 4, 2011 out of concern for air traffic safety due to water pooling below the antenna following seasonal rainstorms. Pooled water deflects and distorts radio signals, thereby endangering landing aircraft operating under instrument flight rules (IFR), and thus posing a threat to the safety of life and property. Without the localizer, all aircraft, including San Diego Police Air Wing, Fire Rescue, medical or Life-Flights, news helicopters, and commercial cargo and passenger flights would not be able to utilize the airport during conditions of clouds, rains, or fog.

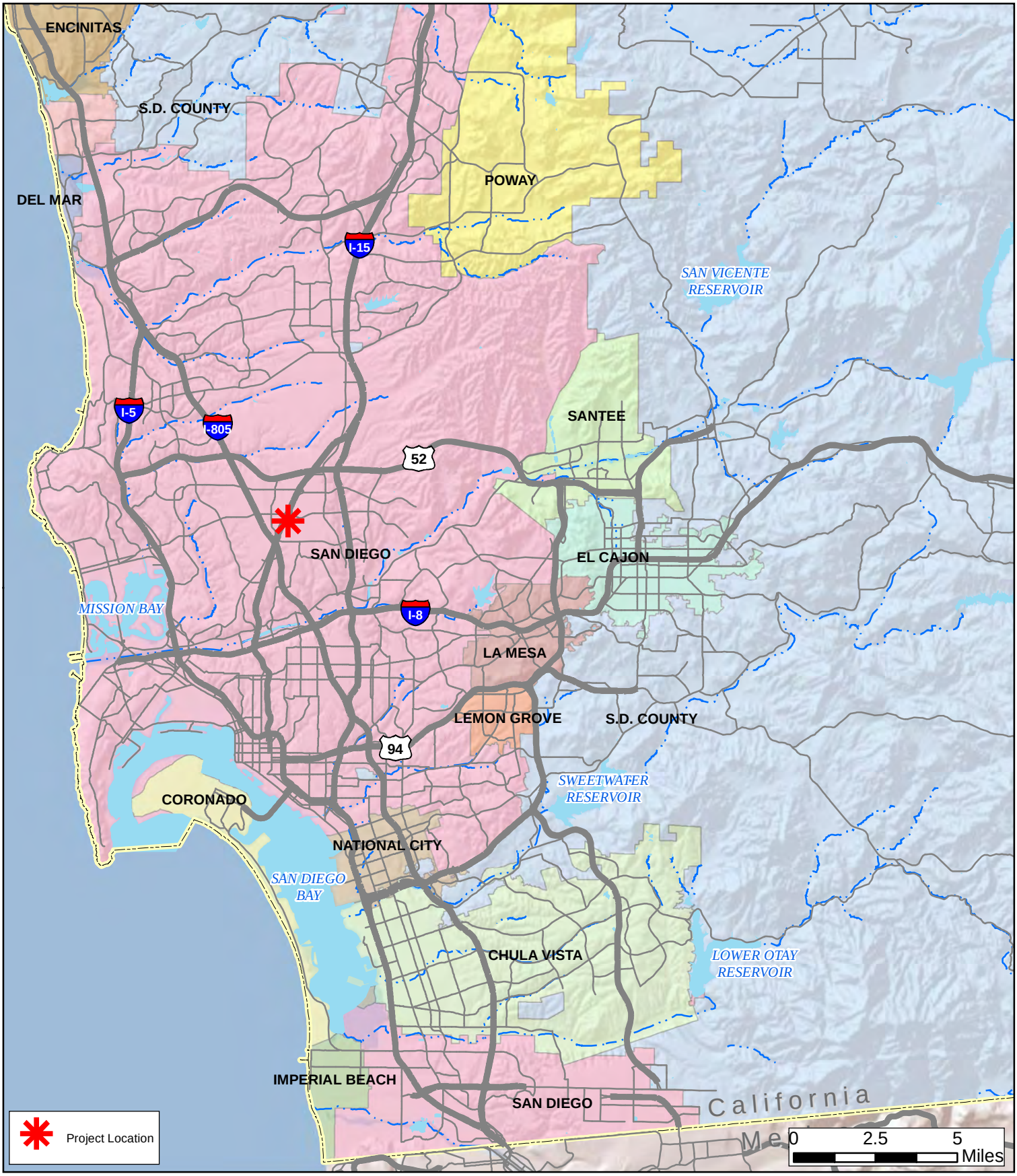
The emergency project was an emergency response to raise low elevations in critical areas of an existing localizer antenna on Runway 28R on Montgomery Field to prevent areas of standing water, which interfere with antenna operation. At the request of USFWS, a geosynthetic fabric was placed in pool areas at the contact between native pool sediments and the imported fill, and the low spots were filled with clean decomposed granite and contoured to ensure drainage is away from the critical areas as recommended by the Federal Aviation Administration (FAA). Due to the location of the localizer antenna, impacts to vernal pool habitat could not be completely avoided; however, the project was designed to minimize impacts to the pool and underlying soils to the greatest extent possible.

The low spots were raised by using clean imported fill and graded in a way to ensure drainage is away from the critical areas, as recommended by the FAA. The critical area boundary for this project is depicted in Attachment 5, As-Built Plans. Compaction was to 95% of the maximum dry density as found in ASTM D1557.

This report evaluates the pre-emergency project conditions of the study area, quantifies the impacts that resulted from implementation of the emergency project, as well as anticipated impacts resulting from restoration of vernal pools in the proposed mitigation area. Mitigation activities for the project including details of proposed vernal pool construction and maintenance are described in the Montgomery Field Localizer Project Mitigation Plan (Merkel and Associates, 2015).

3.0 Project Location

Montgomery Field is located near Kearny Mesa in the City of San Diego in western San Diego County, California (Figures 1, 2, 3, and 4). The approximately 21.0 acre (localizer site and mitigation site study area) is located in the U.S. Geological Survey (USGS) La Jolla Quadrangle, Township 16 South, Range 3 East, within the MYF (USGS 1975; Figure 2).



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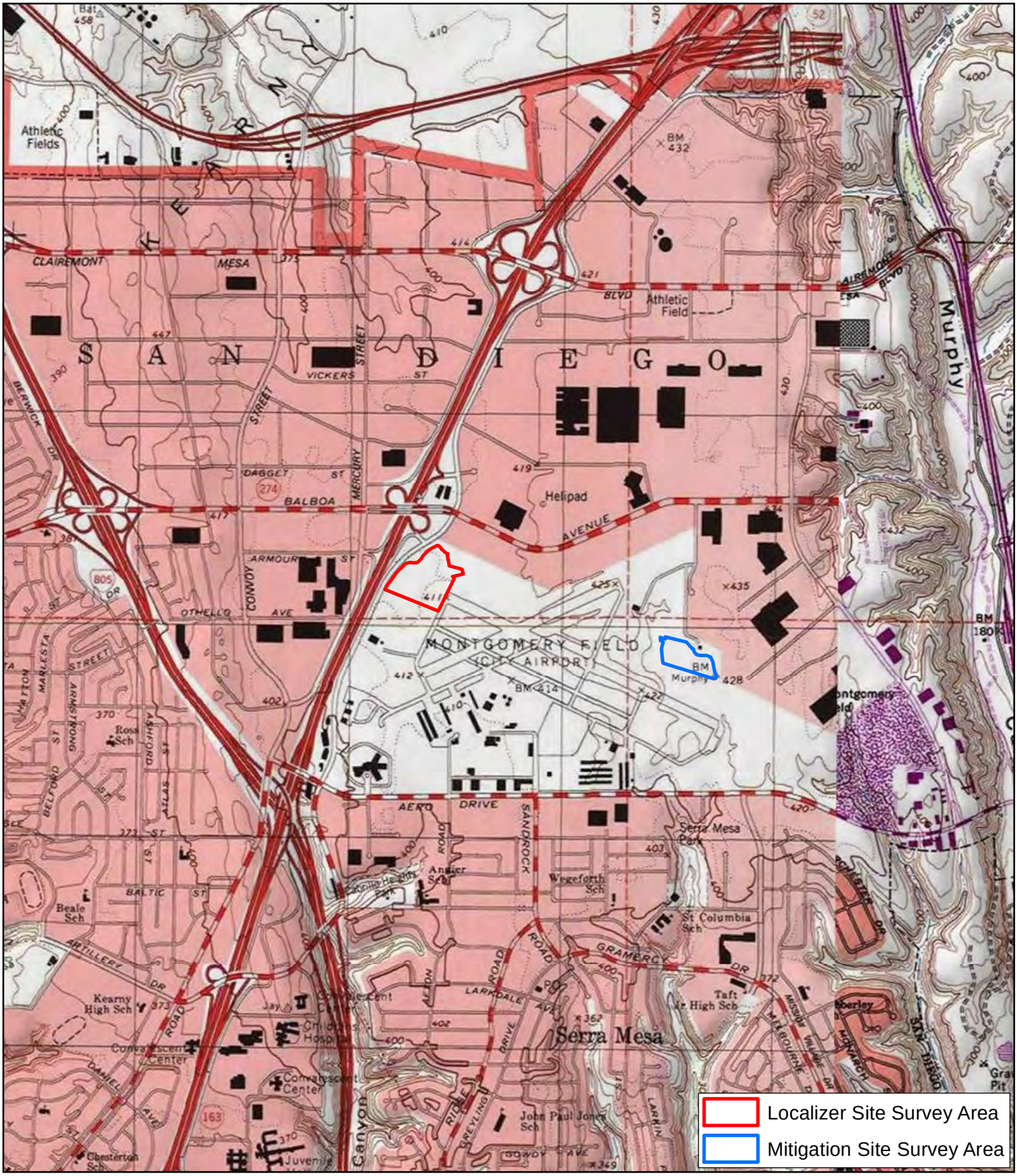
Regional Location
Montgomery Field Localizer Antenna Protection Project
San Diego, CA

Figure 1



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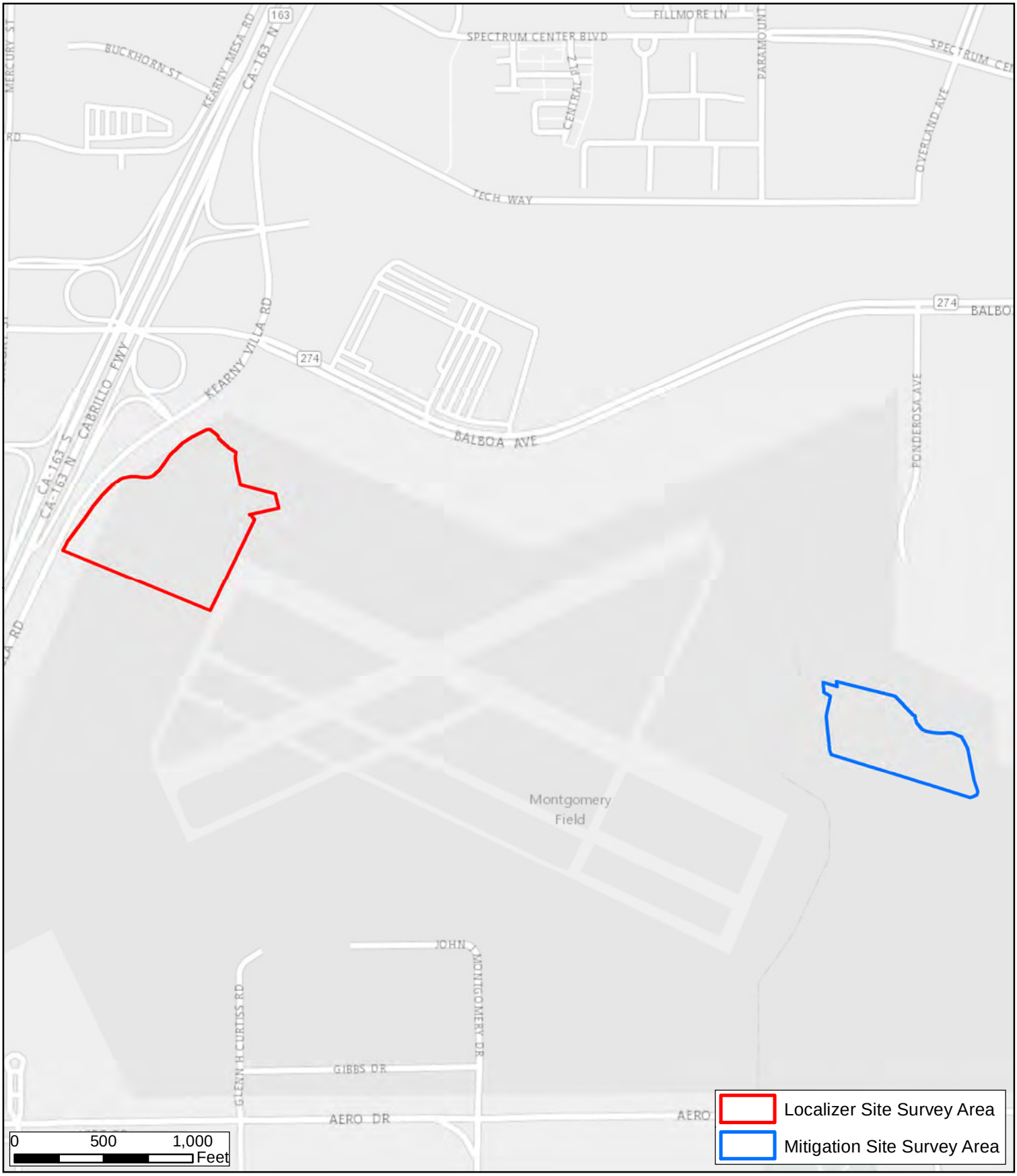
Project Location on USGS Map

Montgomery Field Localizer Antenna Protection Project

Source: USGS 7.5' La Jolla, CA Quadrangle

Figure 2



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Project Location on City 800' Map

Montgomery Field Localizer Antenna Protection Project

Figure 3

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Aerial Photograph of Survey Area

Montgomery Field Localizer Antenna Protection Project

Figure 4

4.0 Survey Methods

Data regarding biological resources on the project site were obtained through field reconnaissance and a literature review of applicable reference materials. The primary objectives of the field surveys were to assess the existing conditions of the on-site biological resources. The original surveys were conducted by RECON between the years 2007 and 2008 and field verified in 2009, prior to implementation of the emergency project (Table 1). Fieldwork focused on seven primary objectives: (1) vegetation mapping, (2) plant and wildlife species inventory, (3) focused rare plant surveys, (4) focused fairy shrimp survey, (5) focused burrowing owl breeding season surveys, (6) hydrology study and vernal pool mapping, and (7) jurisdictional resource delineation.

M&A conducted construction monitoring and project impact assessment surveys between January 11, 2011 and January 24, 2011 (M&A 2011a). Final impact acreages for the project were determined by comparing pre- and post-construction differentially corrected global positioning system (dGPS) pool and habitat boundary survey data. This information was then plotted over a rectified aerial photograph of the site and total impact area was then determined. This report draws from data collected in the Draft Montgomery Airfield Environmental Constraints Report (RECON 2008a), Draft Jurisdictional Determination (RECON 2008b), and the Biological Technical Report (RECON 2010). Vernal pool numbering system remains consistent with numbers used in previous reports (RECON 2008a-b).

4.1 Vegetation Mapping

RECON biologists, Cheri Bouchér and Kristin Syverson, mapped vegetation of the MYF airfield for the initial constraints report on July 11, 2007. RECON biologist Michael Nieto verified and micro-mapped vegetation details in specific relation to the area in the vicinity of the localizer on November 19, 2009. Vegetation communities and land cover types present were mapped at a scale of one-inch-equals-200-feet topographic map overlaying an aerial photograph of the site. The biologists covered all portions of the Project survey area on foot. Vegetation community classifications follow *Draft Vegetation Communities of San Diego County* (Holland, et. al. 2008). M&A biologist Steve Rink performed site-specific (i.e. project footprint) habitat verifications of the Project Survey Area during January 2011, before construction activities were performed. Sensitive species were documented. Flagging and/or fencing were installed to direct construction activities away from any sensitive resources (i.e. vernal pools), except where critically necessary, under the direction of City officials and FAA approved project plans. M&A biologists Kyle Ince and Joe Thompson conducted further investigations of the northern portion of the localizer study area during May and December of 2012. Mr. Ince also conducted a biological survey of the proposed mitigation site on March 16, 2015.

TABLE 1. SURVEY DATES, PERSONNEL, TIMES, AND WEATHER CONDITIONS FOR SURVEYS ON THE MONTGOMERY FIELD AIRPORT

Date	Surveyor	Type	Beginning Conditions	Ending Conditions	Results
*7/11/07	Cheri Bouchér, Kristen Syverson	Vegetation mapping, Plant and wildlife species inventory and assessment	7:00 am; 67 o F; 0-2 mph; 100 % cc	11:30 am; 76 o F; 0-4 mph; 5% cc	N/A
*12/24/07	Cheri Bouchér, Brenna Ogg, Shirley Innecken, Alex Fromer, Cindy Daverin	Fairy shrimp	10:00 am; 62 o F; 0-2 mph; 20% cc	3:00 pm; 68 o F; 0-4 mph; 20% cc	Present
*1/10/08	Cheri Bouchér, Brenna Ogg, Shirley Innecken, Alex Fromer, Cindy Daverin	Fairy shrimp	9:00 am; 56 o F; 0-3 mph; 25% cc	2:45pm; 58 o F; 0-3 mph; 10 %cc	Present
*1/24/08	Cheri Bouchér, Brenna Ogg, Shirley Innecken, Alex Fromer, Cindy Daverin	Fairy shrimp	8:45 am; 48 o F; 0-5 mph; 80% cc	2:30 pm; 53 o F; 0-4 mph; 80% cc	Present
*2/07/08	Cheri Bouchér, Brenna Ogg, Shirley Innecken, Alex Fromer, Cindy Daverin	Fairy shrimp	7:45 am; 53 o F; 1-4 mph; 30 %cc	10:45 am; 65 o F; 1-4 mph; 25 % cc	Present
*2/12/08	Cheri Bouchér, Brenna Ogg, Shirley Innecken, Alex Fromer, Cindy Daverin	Fairy shrimp	9:25 am; 58 o F, 0-2 mph; 0% cc	12:30 pm; 78 o F; 1-7 mph; 0% cc	Present
*2/26/08	Cheri Bouchér, Brenna Ogg, Shirley Innecken, Alex Fromer, Cindy Daverin	Fairy shrimp	9:15 am; 63 o F; 0-2 mph; 5% cc	11:50 am; 73 o F; 0-6 mpg; 5% cc	Present
*3/02/08	Cheri Bouchér, Matt Guilliams	Rare plant survey	8:15 am ; 54 o F; 0-2 mph; 0 % cc	2:30 pm; 65 o F; 1-5 mph; 15 0 % cc	N/A

Date	Surveyor	Type	Beginning Conditions	Ending Conditions	Results
*3/02/08	Diana Saucedo	Jurisdictional resource delineation	8:15 am ; 54 o F; 0-2 mph; 0 % cc	2:30 pm; 65 o F; 1-5 mph; 15 0 % cc	N/A
*3/11/08	Cheri Bouchér, Brenna Ogg, Shirley Innecken, Alex Fromer, Cindy Daverin	Fairy shrimp	8:15 am ; 63 o F; 0-1 mph; 10 % cc	10:00 am; 70 o F; 0-2 mph; 20 % cc	Present
*3/19/08	Cheri Bouchér, Matt Guilliams	Rare plant survey	8:30 am ; 58 o F; 0-2 mph; 100 % cc	2:00 pm; 72 o F; 0-2 mph; 15 % cc	N/A
*3/19/08	Cheri Bouchér, Jillian Bates, Matt Guilliams	Vernal pool Mapping	8:30 am ; 58 o F; 0-2 mph; 100 % cc	2:00 pm; 72 o F; 0-2 mph; 15 % cc	N/A
1-11-11	Stephen Rink	Pre-Construction Survey Personnel Briefing Dewater vernal pool #34 Construction monitoring	1000, 60°F, 2-3 mph, 0%cc	1620, 63°F, 2-3 mph, 0%cc	----
1-12-11	Stephen Rink	Dewater vernal pool #34 Install silt fencing Vernal pool soil salvage Construction monitoring	0700, 55°F, 1-2 mph, 0%cc	1645, 70°F 2-3mph, 0%cc	----
1-13-11	Stephen Rink Keith Merkel	Install silt fencing Install gravel along haul road Site meeting with USFWS, City of San Diego Construction monitoring	0645, 55°F, 1-2 mph, 0%cc	1430, 70°F 2-3mph, 0%cc	----
1-14-11	Stephen Rink Edward Ervin	Site staking Construction monitoring	0800, 63°F, 1-2 mph, 0%cc	1630, 70°F 2-3mph, 0%cc	----
1-15-11	Stephen Rink	Site meeting with City staff Construction monitoring	0650, 60°F, 0-1mph, 0%cc	0800, 61°F, 1-2 mph, 0%cc	----
1-17-11	Stephen Rink	Construction monitoring	0630, 62°F, 1-2 mph, 0%cc	1630, 82°F, 2-3 mph, 0%cc	----

Date	Surveyor	Type	Beginning Conditions	Ending Conditions	Results
1-18-11	Stephen Rink	Construction monitoring	0730, 63°F, 0-1 mph, 0%cc	1400, 80°F, 1-2 mph, 0%cc	----
1-19-11	Stephen Rink	Construction monitoring	0845, 62°F, 0-1 mph, 0%cc	1000, 63°F, 1-2 mph, 0%cc	----
1-20-11	Stephen Rink	Construction monitoring	1400, 70°F, 3-5 mph, 0%cc	1530, 70°F, 3-5 mph, 0%cc	----
1-21-11	Stephen Rink	Site Meeting with FAA, City Construction monitoring	0900, 63°F, 1-2 mph, 0%cc	1500, 73°F, 3-5 mph, 0%cc	----
3-16-15	Kyle Ince Thomas Valencia	Biological Survey of the Mitigation Area	1100 82°F, 0-5 mph, 15%cc	1400, 73°F 0-5 mph, 0%cc	----

* = Surveys conducted throughout western portion of Airport facilities for constraints analysis for Montgomery Field.

4.2 Species Inventory and Assessment

All plant species observed within the survey areas were documented, and plants that could not be identified in the field were identified later using taxonomic keys. The survey also included a directed search for sensitive plants that would have been apparent during the time of the survey. Limitations to the compilation of a comprehensive floral checklist were imposed by seasonal factors, such as blooming period and emergence of early spring annual species. Floral nomenclature for common plants follows Hickman (1993), and for sensitive plants follows California Native Plant Society (CNPS; 2001).

Animal species observed directly or detected from calls, tracks, scat, nests, or other sign were noted. The wildlife surveys were limited by seasonal and temporal factors. Nocturnal animals were not observed directly, as all surveys were performed during the day. In addition, species that are present within the area only during the winter may not have been detected. Vegetation community classifications follow *Draft Vegetation Communities of San Diego County* (Holland, et. al. 2008). Zoological nomenclature for birds is in accordance with the American Ornithologists' Union Checklist (1998) and Unitt (2004); for mammals with Baker et al. (2003) and Hall (1981); for amphibians and reptiles with Crother (2001) and Crother et al. (2003); and for invertebrates with Mattoni (1990) and Opler and Wright (1999).

4.3 Rare Plant Focused Surveys

RECON biologists, Cheri Bouchér and Matt Guilliams, conducted habitat assessments on March 19, 2008 to determine the potential for the survey area to be occupied by federally or state listed plant species. Determinations were made as to the suitability of the habitats in the survey area to support rare plant species.

Determination of the potential occurrence for listed, sensitive, or noteworthy species is based upon known ranges and habitat preferences for the species (Zeiner et al. 1988, 1990a, 1990b; State of California 2009a-b; CNPS 2001, 2009), species occurrence records from the California Natural Diversity Database (CNDDB) (State of California 2009a), the San Diego MSCP, and species occurrence records from other sites in the vicinity of the survey area.

For purposes of this report, species are considered to be sensitive if they are (1) listed by state or federal agencies as threatened or endangered or are proposed for listing; (2) on List 1B (considered endangered throughout its range) or List 2 (considered endangered in California but more common elsewhere) of the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Vascular Plants of California* (Skinner and Pavlik 1994); or (3) considered rare, endangered, or threatened by the CNDDB (State of California 2000a, 2000b) or the City of San Diego's Biology Guidelines (City of San Diego 2002) or local conservation organizations or specialists.

M&A performed pre-construction sensitive plant surveys within the area surrounding the localizer project survey area during January 2011. Although sensitive species were found within the survey area, none were observed within the project footprint.

4.4 Fairy Shrimp Focused Surveys

RECON performed focused surveys during the wet season of 2007/2008 to determine presence or absence of San Diego fairy shrimp (*Branchinecta sandiegonensis*) in vernal pools and other ponding depressions west and northwest of the runways at the Montgomery Field Airport. All surveys were conducted in accordance to U.S. Fish and Wildlife Service (USFWS) Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods (April 19, 1996). Mariposa Biology biologist Cindy Daverin (permit number TE-811615-4) and RECON biologist Brenna Ogg (RECON permit number TE-797665) preformed a total of seven wet season surveys. Surveys were conducted every two weeks beginning December 24, 2007, and continued until March 11, 2008.

M&A performed visual inspections for fairy shrimp in areas to be impacted by the Project, and in areas adjacent to haul roads etc during January 2011. The fairy shrimp occurred in high enough number, and were at a stage of maturity, to be readily observed, if present. All pools within the project footprint supported fairy shrimp populations during the project period.

4.5 Burrowing Owl Focused Surveys

Throughout the western portion of the airfield, phase I, II, and III focused surveys for western burrowing owl were conducted by Cheri Bouchér and Kristin Syverson in accordance to the California Burrowing Owl Consortium Protocol (1993), which requires a habitat assessment, a burrow and burrowing owl survey, census, and mapping. Phase I and II surveys were conducted on June 21, 2007. Phase III surveys were conducted on four separate dates: June 21, June 27, July 3, and July 9, 2007, from two hours before sunset to one hour after sunset. These surveys covered the entire western portion of the airfield and included all portions of the study area.

One western burrowing owl, a sensitive species, was observed during previous airfield surveys within non-native grassland (RECON 2008a), but not within or adjacent to the survey area. The burrowing owl burrow was observed approximately 2,500 feet to the south of the survey area for the Project.

4.6 Vernal Pool Mapping

The study area contains several sites with ponding, ephemeral water. Active vernal pools were distinguished from other, low lying depressions through an evaluation of vernal pool indicator species. Vernal pool indicator species were identified in accordance with ACOE listings (1997). Vernal pools on site were identified during wet season fairy shrimp surveys as well as a focused vernal pool plant survey conducted by Cheri Bouchér, Jillian Bates, and Christopher Guilliams on March 19, 2008.

4.7 Jurisdictional Delineation

A wetland delineation was performed by RECON biologist Diana Saucedo on May 2, 2008. RECON Biologists Erin McKinney and Michael Nieto confirmed the delineation within the survey area on September 30, 2008. The wetland delineation was performed according to the guidelines set forth by ACOE (1987, 2006). The wetland delineation was used to identify and map the extent of potential wetlands and waters of the U.S. and provide information regarding jurisdictional resources. Prior to conducting the delineation, the USGS 7.5-minute La Jolla quadrangle map was examined to aid in the determination of potential waters of the U.S. on-site. Once on-site, the potential areas were examined to determine the presence of any wetland parameters and any potential ACOE non-wetland waters of the U.S. and CDFW jurisdictional areas. The locations of the jurisdictional areas were marked on the one-inch-equals-200- feet aerial photograph.

5.0 Existing Conditions

5.1 Topography and Soils

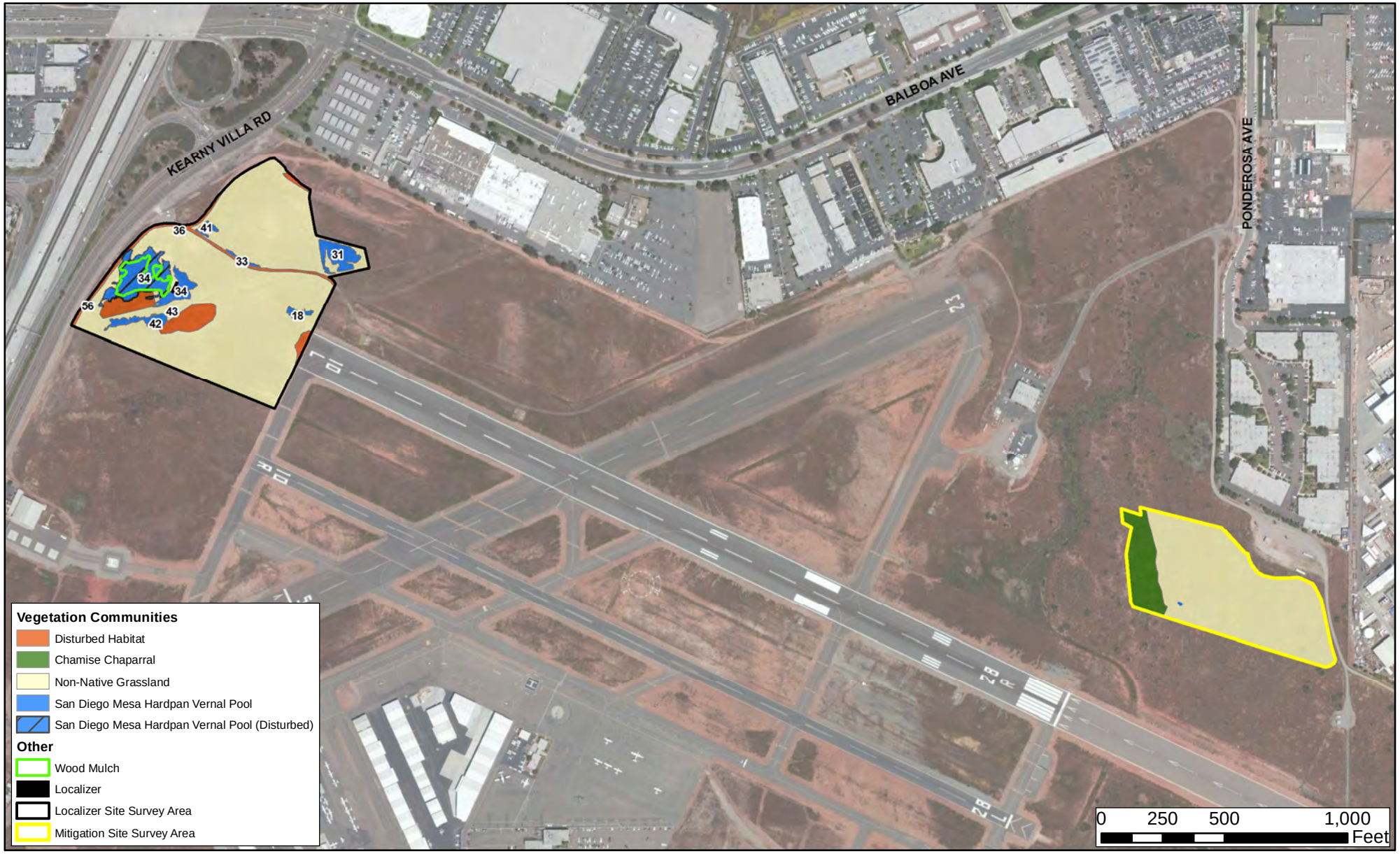
The survey area for the localizer site consists of approximately 14.5 acres and is located along the east side of Kearny Villa Road between Aero Drive and Balboa Avenue. The site is relatively flat, with minor topographic features ranging from approximately 408 to 417 feet above mean sea level (USGS 1975). A drainage swale runs east/west on the southern border of the survey area. The swale drains water from the landing strip and the surrounding airfield and terminates at a culverted headwall.

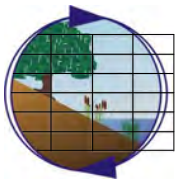
The proposed 7.0 acre mitigation site occurs on the Montgomery Airfield property approximately 1,000 feet east of the control tower. It is bordered to the north by an FAA maintenance/storage facility and to the east by an access road to this facility. The site is nearly flat, sloping perceptibly to the southwest and is primarily composed of non-native grassland vegetation. A sparsely shrub dominated chamise chaparral habitat occurs along the western boundary. No vernal pools and/or jurisdictional wetlands occur on the site. A utility easement containing an FAA electrical line that powers runway lights to the south crosses the site. Site elevation ranges from approximately 422 to 433 feet above mean sea level (USGS 1975).

The soil type within the study area was identified based on the reports and maps in the Soil Survey for the San Diego Area (U.S. Soil Conservation Service 1973). The basic soil type is Redding gravelly loam. Redding gravelly loam (RdC), 2 to 9 percent slopes, consists of well-drained, undulating to steep gravelly loams that have a gravelly clay subsoil and hardpan. These soils formed in old mixed cobbly and gravelly alluvium, a soil type historically associated with vernal pools, and account for all of the soils within the survey area.

5.2 Botany

Four vegetation communities were identified in the approximately 21.5-acre survey area: non-native grassland, disturbed habitat, San Diego mesa hardpan vernal pools and chamise chaparral. Pre-emergency project vegetation communities are summarized in Table 2 and illustrated in Figure 5. A total of 86 plant species were identified at the Montgomery Airfield (Attachment 1). Of this total, 48 (56 percent) are species native to southern California, and 38 (44 percent) are introduced species.





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Biological Resources Found within the Survey Area

Montgomery Field Localizer Antenna Protection Project

Figure 5

TABLE 2
PRE-EMERGENCY PROJECT VEGETATION COMMUNITIES AND LAND COVER TYPES (acres) WITHIN THE MYF LOCALIZER SURVEY AREA AND MITIGATION SURVEY AREA

Community or Type	Tier	Holland/ Oberbauer Codes	Acres
San Diego Mesa Hardpan Vernal Pool	*	44322	0.87
San Diego Mesa Hardpan Vernal Pool (Disturbed)	*	44322	0.86
Chamise Chaparral	IIIA	37200	1.08
Non-native Grassland	IIIB	42200	17.44
Disturbed Habitat	IV	11300	1.22
Total			21.47

* Wetland/Riparian vegetation communities do not have an assigned Tier, but are considered sensitive under Federal, state, and local jurisdictions.

5.2.1 San Diego Mesa Hardpan Vernal Pool

San Diego mesa hardpan vernal pools are shallow, isolated, ephemeral wetlands distinguished from other ephemeral wetlands in the region by a characteristic plant and animal species. San Diego mesa hardpan vernal pools were formerly common on flat, marine terraces north of San Diego, but have become rare with urban development (Holland 1986).

Eleven San Diego Mesa hardpan vernal pools comprising approximately 0.87 acre, excluding a disturbed vernal pool (described below) were mapped within the survey area. Plant species present within vernal pools include woolly marbles (*Psilocarphus brevissimus var. brevissimus*), Bigelow's plantain (*Plantago bigelovii*), hyssop loosestrife (*Lythrum hyssopifolium)*, toad rush (*Juncus bufonius*), and water pygmyweed (*Crassula aquatica*).

5.2.2 San Diego Mesa Hardpan Vernal Pool (Disturbed)

A single vernal pool (vp34) comprising approximately 0.86 acre was observed to be filled with approximately 6.5 cm of wood mulch and therefore, this habitat is described as San Diego mesa hardpan vernal pool (Disturbed). Airport personnel concluded that the mulch was deposited approximately ten years ago, before the vernal pools were identified, as a safety measure for aircraft overrunning runway 28R.

Remnant wetland species and some upland species were observed growing in the mulch including: yellow starthistle (*Centaurea sostitialis*), Doveweed (*Croton setigerus*), perennial ryegrass (*Lolium perenne*), hyssop loosestrife (*Lythrum hyssopifolium)*, Curly dock (*Rumex crispus*), and Prickly sow-thistle (*Sonchus asper*). Roots systems of upland species were observed to be growing laterally, using the mulch as a rooting substrate. Combined with the presence of remnant wetland species, it is assumed the hardpan beneath the mulch has remained intact.

The mulch filled portion of vp34 was observed to support adult fairy shrimp during the January 2011 M&A site surveys, indicating this portion of the pools remained in a functional, although degraded condition.

5.2.3 Chamise Chaparral

Approximately 1.08 acre of chamise chaparral occurs within the mitigation area. It primarily consists of common chamise (*Adenostoma fasciculatum*), with fewer numbers of laurel sumac (*Malosma laurina*) and scrub oak (*Quercus berberidifolia*). Non-native grasses including wild oat (*Avena barbata*) and red brome (*Bromus madrtensis* ssp. *rubens*) occur between the scattered shrubs. Annual forbs including blue toadflax (*Nuttallanthus texanus*) and fascicled tarplant (*Deinandra fasciulata*) were also noted amongst the grasses.

5.2.4 Non-native Grassland

Non-native grassland is an open vegetation community characterized by a sparse to dense cover of annual grasses reaching to three feet high, which may include numerous native wildflowers, particularly in years of high rainfall (Holland 1986). It is considered a sensitive vegetation community within the City's jurisdiction because it provides foraging habitat for raptors and suitable habitat for a variety of small mammals and invertebrates.

17.44 acres of non-native grassland were mapped within the survey area including the mitigation area. Plant species within the non-native grassland include wild oat (*Avena barbata*), ripgut grass (*Bromus diandrus)*, foxtail chess *(Bromus madritensis* ssp. *rubens)*, meadow barley *(Hordeum brachyantherum)*, wild barley (*Hordeum murinum)*, African fountaingrass (*Pennisetum setaceum*), purple needlegrass (*Nassella pulchra*), perennial ryegrass (*Lolium perenne*), and black mustard (*Brassica nigra*). Non-native grasslands within the western region of MYF area are actively mowed by airport personnel, resulting in lower than expected vegetation density, truncated habitat structure, and poor habitat quality for larger mammals and avian species.

5.2.4 Disturbed Habitat

Disturbed habitat is generally devoid of vegetation, but in a few cases support sparse vegetative growth. Species observed within the disturbed areas include: red brome (*Bromus madritensis ssp. rubens*), white-stemmed filaree (*Erodium cicutarium*), and wild oat. Approximately 1.22 acres of disturbed habitat are present within the survey area.

5.3 Zoology

Overall, the open, low growing vegetation within the survey area provides low value habitat for vertebrate wildlife species. San Diego mesa hardpan vernal pool habitat can provide higher quality wildlife habitat, acting as an ephemeral water source for aquatic invertebrates and amphibians. The following results have been compiled from data recorded for the 2008 Constraints Report and Jurisdictional Determination (RECON 2008 a-b). A list of the wildlife species detected during the Airfield surveys is provided in Attachment 2. The potential for sensitive species to occur within the survey area are discussed in Section 5.4 of this report.

5.3.1 Invertebrates

The expected distribution and abundance of invertebrates can be determined by a variety of habitat factors including the distribution of larval food plants and adult foraging and breeding requirements. Species common to upland communities are expected to be the most common invertebrate species on-site. Some species observed within the survey area include: ground beetles (*Eleodes ssp*.), harvester ants (*Pogonomyrmex californicum*), and San Diego fairy shrimp.

5.3.2 Amphibians

Amphibians require moisture for at least a portion of their life cycle, with many requiring a permanent water source for habitat and reproduction. Terrestrial amphibians have adapted to more arid conditions and are not completely dependent on a perennial or standing source of water. These species avoid desiccation by burrowing beneath the soil or leaf litter during the day and during the dry season.

Though two amphibian species, the western toad (*Bufo boreas halophilus*) and a Pacific treefrog (*Pseudacris regilla),* were observed during the airfield winter 2007/2008 surveys, they were not observed within the immediate vicinity of the MYF localizer Project survey area.

5.3.3 Reptiles

The diversity and abundance of reptile species varies with habitat type. Many reptiles are restricted to certain plant communities and soil types, although some of these species will also forage in adjacent communities. Other species are more ubiquitous using a variety of vegetation types for foraging and shelter.

One reptile species was observed during surveys, the side-blotched lizard (*Uta stansburiana*). Reptile species such as the common western fence lizard (*Sceloporus occidentalis*) and snake species such as the San Diego gopher snake (*Pituophis catenifer annectens*) are also expected to occur.

5.3.4 Birds

The diversity of bird species varies with respect to the character, quality, and diversity of vegetation communities present. Non-native grassland does not typically support a high diversity of bird species as it provides minimal habitat cover.

The bird species detected on-site typical of urban and open grassland habitats include: house sparrow (*Passer domesticus*), mourning dove (*Zenaida macroura marginella*), house finch (*Carpodacus mexicanus frontalis*), lesser goldfinch (*Carduelis psaltria hesperophilus*), common raven (*Corvus corax clarionensis*), red-tailed hawk (*Buteo jamaicensis*), and Bewick's wren (*Thyromanes bewickii*). One western burrowing owl, a sensitive species, was observed during previous airfield surveys within non-native grassland (RECON 2008a), but not within or adjacent to the study area. The burrowing owl burrow was observed approximately 2,000 feet to the south of the study area surrounding the localizer.

5.3.5 Mammals

Grassland communities typically provide cover and foraging opportunities for a variety of mammal species. Most mammal species are nocturnal and are typically detected during daytime surveys by observing their sign; such as tracks, scat, and burrows.

Southern pocket gopher (*Thomomys umbrinus*) soil mounds were observed throughout the survey area, and California ground squirrel (*Spermophilus beecheyi*) and cottontail rabbit (*Sylvilagus audubonii*) were abundant throughout the non-native grassland habitat.

5.4 Sensitive Biological Resources

5.4.1 Sensitivity Criteria

For purposes of this report, sensitive habitat types are those identified by the CNDDB, Holland (1986), or the City of San Diego (2002a). Reasons for the sensitive status of vegetation communities include restricted range, cumulative losses throughout the region, and a high number of endemic sensitive plant and wildlife species that occur in the vegetation communities. These vegetation communities are considered sensitive whether or not they have been disturbed. Approximately 20.25 acres of sensitive vegetation community occurs within the survey area. Table 2 shows the acreage of these vegetation communities (i.e., vernal pool, chamise chaparral, non-native grassland) within the survey area.

Local, state, and federal agencies regulate sensitive species and require an assessment of their presence or potential presence to be conducted on-site prior to the approval of any proposed development on a property. For the purposes of this report, species will be considered to be sensitive if they are: (1) listed by state or federal agencies as threatened or endangered or are proposed for listing; (2) on List 1B (considered endangered throughout its range) or List 2 (considered endangered in California but more common elsewhere) of the CNPS's *Inventory of Rare and Endangered Vascular Plants of California* (2001); (3) considered rare, endangered, or threatened by the CNDDB (State of California 2009a–2009b) and/or the City of San Diego's Biology Guidelines (City of San Diego 2002) or local conservation organizations or specialists. This includes the 14 plant species categorized as "narrow endemics" (plants of very limited distribution) by the City of San Diego. Noteworthy plant species are considered to be those that are on List 3 (more information about the plant's distribution and rarity needed) and List 4 (plants of limited distribution) of the CNPS Inventory. Sensitive habitat types are those identified by the CNDDB (Holland 1986) or identified by the City of San Diego (2002).

Raptors (birds of prey) and active raptor nests are protected by the California Fish and Game Code 3503, which states that it is "unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird" unless authorized (CDFG 1991).

Assessments for the potential occurrence of sensitive species are based upon known ranges, habitat preferences for the species, species occurrence records from the CNDDB, and species occurrence records from other sites in the vicinity of the project site.

All wetland areas, buffer areas (including vernal pool watersheds), and non-wetland waters of the U.S. are considered sensitive. ACOE regulates the discharge of dredged or fill material into waters of the U.S. (wetland and non-wetland jurisdictional waters) according to Section 404 of the Clean Water Act. An ACOE Regional General Permit (RGP) 63 was obtained for implementation of the emergency project. RGP 63 authorizes discharges of dredged or fill material into Waters of the United States, including wetlands, and/or work or structures in Navigable Waters of the United States for necessary repair and protection measures associated with an emergency situation. Section 401 of the Clean Water Act requires that a water quality certificate be obtained in conjunction with a Section 404 Permit. This certificate is processed through the RWQCB. A water quality certification was obtained for this project.

CDFW regulates all changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. With a few exceptions, CDFW jurisdictional areas overlap ACOE jurisdictional areas on a given site. However, riparian habitat, regardless of ACOE jurisdiction, is regulated by CDFW. Isolated waters are also protected by the state of California. No CDFW jurisdictional resources were found on-site.

5.4.2 Threshold of Significance

The environmental impacts relative to biological resources are assessed using impact significance criteria, which implement the policy statement contained in CEQA at Section 21001(c) of the Public Resource Code. This section reflects that the legislature has established it to be the policy of the state to:

> Prevent the elimination of fish or wildlife species due to man's activities, ensure that fish and wildlife populations do not drop below self perpetuating levels, and preserve for future generations representations of all plant and animal communities…

The following definitions will apply to the significance criteria for biological resources:

- "Endangered" means that the species is listed as endangered under state or federal law.
- "Threatened" means that the species is listed as threatened under state or federal law.
- "Sensitive habitat" refers to habitat for plants and animals (1) which plays a special role in perpetuating species using the habitat on the project site, and (2) without which there would be substantial danger that the population of that species would drop below self-perpetuating levels.
- "Substantial effect" means significant loss or harm of magnitude which, based on current scientific data and knowledge, (1) would cause a species or a native plant or animal community to drop below self-perpetuating levels on a statewide or regional basis or (2) would cause a species to become threatened or endangered.

Impacts to biological resources are considered significant if one or more of the following conditions would result from implementation of the proposed project:

- Direct loss of individuals of a state or federal listed threatened or endangered species.
- Substantial effect on a threatened or endangered species of animal or plant or the habitat of the species.
- Substantial effect on a locally sensitive habitat, plant species, or wildlife species.
- Substantial effect on a state or federally sensitive plant or wildlife species.
- Substantial effect on the movement of any resident or migratory fish or wildlife.
- Results in a net loss of wetlands. Any significant impacts to wetlands will be mitigated through habitat creation, restoration, and/or enhancement to a level considered less than significant.

It should be noted that no mitigation is required for impacts to non-native grassland habitat when impacted for the purpose of wetland or other native habitat creation, as stated in the City's Significance Determination Thresholds (City of San Diego, 2012a).

5.4.3 Sensitive Vegetation Communities

A vegetation community is classified as sensitive by the State of California (2007c), and the MSCP, if an endangered, threatened, or rare species may potentially occupy the community. Other reasons for the sensitive status of these vegetation communities include restricted range, cumulative losses throughout the region, and a high number of endemic sensitive plant and wildlife species that occur in these vegetation communities. These communities are considered sensitive whether or not they have been disturbed.

Two sensitive vegetation types San Diego hardpan vernal pools, and non-native grassland, were found in the study area surrounding the localizer prior to implementation of the emergency project (Figure 5). San Diego hardpan vernal pool is considered a wetland resource. The MSCP does not cover (i.e., provide permits) to impact wetland resources; therefore, wetland jurisdiction is deferred to ACOE and CDFW. Non-native grassland is considered a Tier IIIB (Common Upland) by the City of San Diego's Biology Guidelines (City of San Diego 2004). Non-native grassland and chamise chaparral, a City Tier IIIA habitat occur at the mitigation site.

5.4.4 Sensitive Plants

Attachment 3 provides a list of sensitive plant species that were observed within the survey area or have a potential to occur based on the ranges and habitat requirements of these species and includes an assessment of the likelihood of occurrence for these species. Three sensitive species, graceful tarplant (*Holocarpha virgata* ssp*. elongata*), Orcutt's brodiaea (*Brodiaea orcuttii*), and San Diego goldenstars

(*Bloomeria clevelandii*) were observed within the Montgomery Field survey area and are discussed below (Figure 6).

Graceful Tarplant (*Holocarpha virgata* ssp*. elongata*). Graceful tarplant is present within the non-native grassland habitat of the localizer project site (Figure 6). Graceful tarplant is a CRPR (CNPS 2012) List 4.2 species. A CRPR 4.2 listing identified plant species has a limited distribution and is fairly endangered in California. Graceful tarplant is ubiquitous throughout the upland portions of the study area surrounding the localizer project area (Figure 6). Hundreds of individuals were observed in non-native grassland habitat in this area. This strongly aromatic, sticky, annual herb in the sunflower family (Asteraceae) has a slender stem that may grow 4 feet tall and flowers blooming between July and November. It occurs in Orange, Riverside and San Diego counties. It may occur in coastal sage scrub and cismontane woodland (CNPS 2012), but it is most commonly found in grasslands below 2,500 feet (Hickman 1993). Usually there is little shrub cover where graceful tarplant is found, but non-native grasses and herbs may dominate the area (Reiser 2001).

Orcutt's Brodiaea (*Brodiaea orcuttii*): Orcutt's brodiaea is a CRPR (CNPS 2012) List 1B.1 species. A CRPR 1B.1 species is a plant that is seriously threatened in California. It is a covered species under the City's MSCP. This bulbiferous perennial is in the lily family (Liliaceae) and flowers from April through July. Its range is limited to San Diego, Riverside, and Orange Counties and Baja California, Mexico at elevations up to 5500 feet (Munz 1974). Typically it is found in chaparral and lower montane coniferous forest communities, particularly areas with vernally moist grasslands, mima mounds, or at the edge of vernal pools or streams (Reiser 2001). It is known to occur in clay, and sometimes serpentine, soils including Stockpen gravelly loam on Otay mesa and Redding gravelly loam on Mira Mesa (Reiser 2001).

Eight individual Orcutt's brodiaea plants were noted within the study area surrounding the localizer (Figure 6).

San Diego Goldenstars (*Bloomeria clevelandii*):

San Diego goldenstars is present within both the non-native grassland and chamise chaparral habitat within the mitigation area (Figure 6). Like Orcutt's brodiaea, this species is a CRPR (CNPS 2012) List 1B.1 species and is covered under the City of San Diego's MSCP. This species range is limited to San Diego County and Baja California, Mexico. It prefers grassland habitat particularly near or in mima mound topography in the vicinity of vernal pools. Several small populations (1 to 15) of this corm growing species were found on-site.

Sensitive Plants Found within the Survey Area

Montgomery Field Localizer Antenna Protection Project

Figure 6

5.4.5 Sensitive Wildlife

Attachment 4 provides a list of sensitive species that were observed within the study area or have a potential to occur based on the ranges and habitat requirements of these species, and includes an assessment of the likelihood of occurrence for these species. Vernal pools and other ponding areas within the survey area are capable or supporting San Diego fairy shrimp, which is discussed below.

San Diego fairy shrimp (*Branchinecta sandiegonensis*). The San Diego fairy shrimp is federally listed as endangered. This fairy shrimp occurs in limited populations in Santa Barbara and Orange Counties and in San Diego County from San Marcos and Ramona south to Otay Mesa and into northwestern Baja California, Mexico, at Valle de Las Palmas (USFWS 1997). The majority of San Diego fairy shrimp populations are located within San Diego County. San Diego fairy shrimp are restricted to vernal pools and prefer cool water temperatures. This species can also be found in ditches and road ruts that are located in degraded vernal pool habitat. Fairy shrimp remain dormant in cysts until pools fill during the rainy season. Nauplii emerge from cysts and develop into adults sometime between mid- December and early May (Eriksen and Belk 1999). Development takes between 10 to 20 days and is dependent on water temperature. Primary threats to this species are habitat destruction and fragmentation, alterations of wetland hydrology, off-road vehicle activity, and grazing (USFWS 1997).

Each of the hydrologic depressions within the survey area were surveyed seven times by RECON biologists between December 24, 2007 and March 11, 2008. Adult fairy shrimp were located in each of the depressions. Adult San Diego fairy shrimp were observed in vp34, the only pool impacted by the Project (Figure 7). Population estimates of San Diego fairy shrimp within each pool varied from hundreds in smaller pools to as large as one million in the larger pools.

This species was present in vp34 during the January 2011 project construction period. Although efforts were taken to minimize take on this species to the maximum extent practical, some impacts to this species were unavoidable.

5.4.6 Multi-Habitat Planning Area (MHPA)

The MHPA lands are included within the City of San Diego's MSCP Subarea Plan for habitat conservation. As shown on Figure 8, the MHPA occupies the southern portion of the Project survey area. However, only 0.05 acre of project impacts occurred within the MHPA.

5.4.7 Wildlife Movement Corridor

Wildlife movement corridors are defined as areas that connect suitable wildlife habitat areas in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features such as canyon drainages, ridgelines, or areas with vegetation cover provide corridors for wildlife travel. Wildlife movement corridors are important because they provide access to mates, food, and water; allow the dispersal of individuals away from high population density areas; and facilitate the gene flow between

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Sensitive Wildlife Found within the Survey Area

Montgomery Field Localizer Antenna Protection Project

Figure 7

N
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Survey Area and Project Impacts in Relation to the City of San Diego MHPA Lands

Montgomery Field Localizer Antenna Protection Project

Figure 8

populations (Beier and Loe 1992). Wildlife movement corridors are considered sensitive by resource and conservation agencies.

Although a small portion of the project lies within the MHPA, the site lacks connectivity with a true corridor that wildlife can move through. The site is within an airport that is surrounded by development. The undeveloped open space within the survey area likely acts as a "stepping stone" for avian species, but would not facilitate large terrestrial wildlife moving through the area, as they would be stopped at the north, south and west ends by roadways and to the east by airport facilities.

5.5 Jurisdictional Determination

5.5.1 ACOE Wetlands

ACOE non-wetland jurisdictional waters of the U.S. were delineated by the presence of an ordinary high water mark, drift lines, or cut banks, and a hydrologic connection to a navigable waterway. The acreage of the jurisdictional waters was determined by multiplying the length by the lateral extent of the ordinary high water mark or stream bank at selected locations.

The following delineation results are based on an on-site meeting with ACOE (December 2, 2009) and discussion concerning the post-Solid Waste Agency of Northern Cook County and Rapanos interpretations of vernal pools as isolated waters. After consulting a six-inch topographic relief map and a walk though of the survey area, ACOE asserted jurisdiction over all pools within the survey area, citing hydrologic connection to a man-made drainage swale with a significant nexus to Traditional

Navigable Waters (TNW). As ACOE has asserted jurisdiction, all ponding depressions within the survey area will be considered wetland waters of the U.S., while the man- made drainage swale south of the impact area will be considered non-wetland waters of the U.S. Table 3 summarizes the jurisdictional determination within the survey area. Figures 9 and 10 identify the locations of the jurisdictional areas according to ACOE, CDFW, RWQCB, and City of San Diego regulations. A discussion of resources within the project footprint and impacts is presented in Section 6.0.

TABLE 3

PRE-EMERGENCY PROJECT JURISDICTIONAL RESOURCES WITHIN THE MONTGOMERY FIELD LOCALIZER PROJECT SURVEY AREA AND MITIGATION SITE SURVEY AREA

Jurisdictional Resources	Acres
ACOE Jurisdiction	
Vernal Pool Wetlands	1.74
Non-wetland waters of the U.S.	0.07
ACOE total jurisdiction	**1.82**
CDFW Jurisdiction	0.00
RWQCB	1.82
City of San Diego vernal pools	1.67

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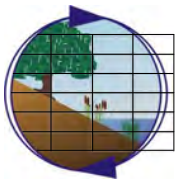
USACE Jurisdictional Areas within the Survey Area

Montgomery Field Localizer Antenna Protection Project

Figure 9



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City of San Diego/RWQCB Jurisdictional Areas within the Survey Area

Montgomery Field Localizer Antenna Protection Project

Figure 10

A total of 1.82 acres of ACOE jurisdictional waters were mapped within the localizer project study area and mitigation area prior to implementation of the emergency project (Figure 9). In accordance with Section 404 of the Clean Water Act (CWA), ACOE regulates the discharge of dredged or fill material into waters of the U.S. The term "waters of the United States" is defined as:

- All waters currently used, or used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters subject to the ebb and flow of the tide;
- All interstate waters including interstate wetlands;
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds; the use, degradation or destruction of which could affect foreign commerce including any such waters: (1) which could be used by interstate or foreign travelers for recreational or other purposes; or (2) from which fish or shell fish are, or could be taken and sold in interstate or foreign commerce; or (3) which are used or could be used for industries in interstate commerce.
- All other impoundments of waters otherwise as defined as waters of the United States under the definition;
- Tributaries of waters identified above;
- Territorial seas; and
- Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in the paragraphs above.

a. ACOE Wetlands

According to the 1987 ACOE manual, wetlands are defined as "those areas that are inundated or saturated by surface or groundwater 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 are delineated using three parameters: hydrophytic vegetation, wetland hydrology, and hydric soils. According to ACOE, indicators for all three parameters must be present to qualify as a wetland. 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 (ACOE 1987). The survey areas were considered to exhibit normal circumstances and a routine delineation was performed.

- **Hydrophytic Vegetation**. Hydrophytic vegetation is defined as "the sum total of macrophytic plant life growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content" (ACOE 1987). The potential wetland areas were surveyed by walking the project site and making observations of those areas exhibiting characteristics of

jurisdictional waters or wetlands. Vegetation within the potential jurisdictional areas was examined. The relative canopy cover of each species present was visually estimated. The dominant species were then recorded on a summary datasheet along with the associated wetland indicator status of those species. The wetland indicator status of each dominant species was determined by using the list of wetland plants for California provided by the USFWS (1997a).

The hydrophytic vegetation criterion is considered fulfilled at a location if greater than 50 percent of all the dominant species present within the vegetation unit have a wetland indicator status of obligate (OBL), facultative-wet (FACW), or facultative (FAC) (ACOE 1987). An OBL indicator status refers to plants that have a 99 percent probability of occurring in wetlands under natural conditions. An FACW indicator status refers to plants that occur in wetlands (67 to 99 percent probability), but are occasionally found in non-wetlands. An FAC indicator status refers to plants that are equally likely to occur in wetlands or non-wetlands (estimated probability 34 to 66 percent).

- **Wetland Hydrology**. Hydrologic information for the site was obtained by reviewing USGS topographic maps and by directly observing hydrology indicators in the field. Examples of wetland hydrology indicators may include, but are not limited to, inundation, watermarks, drift lines, sediment deposits, and drainage patterns. Evidence of flows, flooding, and ponding was recorded and the frequency and duration of these events were inferred.

  The wetland hydrology criterion is considered fulfilled at a location if, based upon the conclusions inferred from the field observations, an area has a high probability of being periodically inundated or has soils saturated to the surface at some time during the growing season to develop anaerobic conditions in the surface soil environment, especially the root zone (ACOE 1987).

- **Hydric Soils**. A hydric soil is a soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation (ACOE 1987). The hydric soil criterion is considered fulfilled at a location if soils in the area can be inferred to have a high groundwater table, evidence of prolonged soil saturation, or any indicators suggesting a long-term reducing environment in the upper 18 inches of the soil profile. Dello and Tujunga soil series are listed as hydric soils by the Natural Resource Conservation Service (U.S. Department of Agriculture 1995).

Vernal Pool Wetlands

Vernal pools are classified as “problem areas” because one or more of the traditional wetland indicators are missing (ACOE 1987). ACOE indicator species for vernal pools were used to identify jurisdiction vernal pools (ACOE 1997). The majority of the vernal pools on site contained San Diego fairy shrimp as an indicator species. Several other jurisdictional pools without fairy shrimp contained vernal pool plant indicators. Hydric soils were inferred as no soil tests pits were dug due to the documented presence of San Diego fairy shrimp. Ponding was observed directly in the field. These areas were mapped based on the distribution of hydrophytic vegetation and an inferred high water mark and supplemented by previous documentation. Vernal pools and their associated watersheds were observed throughout the survey area.

Approximately 1.72 acres of ACOE jurisdictional vernal pools were mapped during the pre-emergency construction field surveys within the survey area.

b. ACOE Non-wetland Jurisdictional Waters

The ACOE also requires the delineation of non-wetland jurisdictional waters. A total of 0.08 acre of non-wetland waters of the U.S. were mapped during the pre-emergency construction field surveys (Figure 9). These waters exhibited strong hydrology indicators, such as the presence of seasonal flows and an ordinary high watermark. An ordinary high watermark 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.

Areas delineated as non-wetland jurisdictional waters may lack wetland vegetation or hydric soil characteristics. Hydric soil indicators may be missing because topographic position precludes ponding and subsequent development of hydric soils. Absence of wetland vegetation can result from frequent scouring due to rapid water flow. These types of jurisdictional waters are delineated by the lateral and upstream/downstream extent of the ordinary high watermark of the particular drainage or depression.

c. SWANNC Discussion

Federal regulatory authority only extends to activities that affect interstate commerce pursuant to Article 1, Section 8 of the U.S. Constitution. In accordance with the interstate commerce requirement, ACOE restricted their jurisdiction on isolated (intrastate) waters, such as ponds or vernal pools lacking connection to waters of the U.S. prior to 1985. On September 12, 1985, the Environmental Protection Agency issued a memorandum asserting ACOE jurisdiction over isolated waters that are used or could be used by migratory birds or endangered species (ACOE 1998). This assertion became known as the "Migratory Bird Rule." Consequently, the definition of "waters of the United States" in ACOE regulations was modified to include isolated waters, such as vernal pools or mining ponds, which qualified under the Migratory Bird Rule.

On January 9, 2001, the Supreme Court of the United States issued a decision on *Solid Waste Agency of Northern Cook County* (SWANCC) *v. United States Army Corps of Engineers, et al.* with respect to whether the use of an isolated, intrastate pond by migratory birds is sufficient interstate commerce to warrant ACOE jurisdiction over that pond pursuant to Section 404 of the CWA. The Court held that the Migratory Bird Rule is not a fairly supported interpretation of the term "waters of the United States."

The SWANNC ruling, however, did not refute the 1985 decision made by the Court in *United States v. Riverside Bayview Homes, Inc.* (474 U.S. 121; Riverside Bayview). The 1985 Riverside Bayview decision upheld ACOE jurisdiction and Section 404's applicability to interstate waters, "navigable waters", and waters and wetlands adjacent to or connected to navigable waters (Pooley 2002). In the Riverside

Bayview case, the Court found that "Congress' concern for the protection of water quality and aquatic ecosystems indicated its intent to regulate wetlands 'inseparably bound up with'" jurisdictional waters (474 U.S. at 134; ACOE 2003), and since SWANNC upheld Riverside Bayview wetlands adjacent to navigable waters "clearly remain jurisdictional" (ACOE 2003). To date, the Supreme Court has not defined the term "adjacent" or stated whether the basis for adjacency is geographic or hydrologic proximity (ACOE 2003).

In conclusion, the SWANCC ruling denied ACOE jurisdiction over "non-navigable, isolated, intrastate" waters based only on use by migratory birds, but did not strike down any regulation or definition of "water of the United States" or adjacency.

d. Rapanos Decision

The *Rapanos v. United States* and *Carabell v. United States* cases (referred to collectively as the Rapanos case) heard by the Supreme Court in 2006 questioned whether the CWA covers wetlands that do not contain, and are not adjacent to, traditional navigable waters (Environmental Law Institute [ELI] 2007). The consolidated case included two lower court cases in which the ACOE had asserted jurisdiction over two different scenarios. At the first site, the wetlands shared a surface water connection with non-navigable tributaries of navigable waters. At the second site, the wetlands were separated by a berm from non-navigable tributaries of navigable waters. The Supreme Court overturned ACOE's assertion of jurisdiction at each of these sites and returned the cases back to the lower courts with a 5–4 decision. However, the 5–4 decision was split 4-1-4. The four dissenting justices, in an opinion authored by Justice Stevens, concluded that EPA's and the ACOE's interpretation of "waters of the United States" was a reasonable interpretation of the CWA (ACOE 2007). The five justices invalidating the lower court's decision did not agree on the reason the wetlands were not jurisdictional.

Justice Scalia, representing the four justices in agreement, and Justice Kennedy, in a solo opinion, wrote separate opinions, thereby, providing two separate tests or approaches from which the lower courts would now need to apply (ELI 2007). Justice Scalia's opinion would limit CWA jurisdiction to wetlands that are both adjacent to and have a continuous surface connection with "relatively permanent" bodies of water "connected to" traditional interstate navigable waters. Justice Kennedy wrote in his opinion that he concurred with the judgment to return the cases to the lower courts and defined CWA jurisdiction over wetlands adjacent to non-navigable tributaries where the wetlands have a "significant nexus" with navigable waters (ELI 2007).

Due to the split decision on the Rapanos case, there is some uncertainty as to how the lower courts will apply the decision. Justice Kennedy's opinion that a "significant nexus" is required seems to have become the criteria from which to determine CWA jurisdiction for many courts, including the Ninth Circuit Court.

On June 5, 2007, the EPA and ACOE issued guidance on how agency representatives will deal with CWA jurisdiction in light of the Rapanos decision. The effect of the joint guidance is that each jurisdictional delineation will include a determination of significant nexus and that each jurisdictional determination made by the ACOE will be coordinated with the EPA. The public review period for the

guidance expired on January 21, 2008. On January 28, 2008, ACOE published a memorandum outlining the coordination procedures for all jurisdictional determinations involving a significant nexus determination.

On May 2, 2011, the EPA and ACOE issued a notice of availability of a draft guidance update for how jurisdiction over waters under the Clean Water Act would be interpreted post-Rapanos (FR Vol. 76, 84:24479-24480). Under this new guidance the following waters are protected by the CWA: traditional navigable waters (including water bodies that have been found to be navigable-in-fact by a federal court, and waters which are currently used, historically have been used, or are susceptible to being used for commercial navigation); interstate waters (even if such waters are not traditional navigable waters (TNW)); and wetlands adjacent to either traditional navigable waters or non-wetland interstate waters.

In addition, the proposed guidance outlines guidance on methods to determine which waters are covered by the CWA pursuant to the standard set out in the Rapanos plurality opinion. In this vein, non-navigable tributaries are subject to CWA jurisdiction, if the tributary is connected to a downstream traditional navigable water, and flow in the tributary is at least seasonal. Wetlands that directly abut relatively permanent waters are also covered by the CWA.

The following types of waters are covered by the CWA if a fact-specific analysis determines they have a "significant nexus" to traditional navigable waters or interstate waters:

• tributaries to traditional navigable waters or to interstate waters;

• wetlands adjacent to jurisdictional tributaries to TNWs or interstate waters; and

• waters that fall under the "other waters" category of the regulations, including intrastate lakes, rivers, and mudflats.

According to the proposed guidance, waters have the requisite "significant nexus" "if they, either alone or in combination with similarly situated waters in the region, significantly affect the chemical, physical, or biological integrity of TNWs or interstate waters." Notably, the guidance provides considerable latitude to the determination of significant nexus by its construct.

Under the proposed guidance, waters that are not covered by the CWA include artificially irrigated areas which would revert to upland if the irrigation ceased; artificial lakes or ponds which are used for stock watering, irrigation, settling basins, or rice growing; artificial reflecting pools or swimming pools excavated in uplands; water-filled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill; groundwater drained through subsurface drainage systems; and erosional features, swales and ditches that are not tributaries or wetlands.

The adoption of the guidance as provided would result in a considerable reassertion of federal regulatory jurisdiction over waters regulated prior to the SWANCC and Rapanos Supreme Court rulings. This would include potential recapture of regulatory purview over isolated vernal pools in addition to those the Corps has irregularly regulated based on high water spill out to drainage systems that are tributary to a TNW. Comments are still being evaluated regarding these guidelines and a final guidance has not been issued.

e. Brewster Decision

On October 13, 2006, a Federal Court Judge ruled that the City of San Diego's incidental take permit, issued by the USFWS, would permit "monumental destruction" of vernal pool species. The court found that language within the City's MSCP allowed for "guarantee(d) development" of vernal pools without assurances that the City of San Diego would "fund its share of the conservation plan." The Court stated that the MSCP for the City of San Diego was written with the assumption that "vernal pools would be protected as 'wetlands' under the CWA." The Court found, however, that it was clear that the ACOE would "not undertake review through its CWA permit process of impacts to isolated vernal pools." The City of San Diego has relinquished coverage of the seven pool species and is in the process of preparing a City-wide Habitat Conservation Plan (HCP) for vernal pools species and associated habitat. Montgomery Field will be included in the HCP analysis and will be managed consistent with updated conditions of coverage upon adoption of a new vernal pool HCP.

In January 2011, the Ninth Circuit Court of Appeals agreed that the case was moot because the City relinquished its Incidental Take Permit for vernal pool species. In May 2011, Judge Brewster subsequently vacated his jurisdiction.

5.5.2 California Department of Fish and Wildlife

Under Sections 1600–1607 of the Fish and Game Code, CDFW regulates activities that would divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. CDFW has jurisdiction over riparian habitats (e.g., southern willow scrub and disturbed riparian) associated with watercourses. Jurisdictional waters are delineated by the outer edge of riparian vegetation or at the top of the bank of streams or lakes, whichever is wider.

Per discussion with CDFW staff and City of San Diego staff on November 11th, 2009, it was concluded that CDFW would not take jurisdiction over isolated wetlands at Montgomery Field unless California State listed species were present. As no California State listed species were observed during emergency project pre-construction surveys, CDFW does not assume jurisdiction over any vernal pools or ponding areas within the Project area.

5.5.3 Regional Water Quality Control Board

RWQCB is the regional agency responsible for protecting water quality in California. The jurisdiction of this agency includes all waters of the state and all waters of the United States as mandated by both the federal CWA and the California Porter-Cologne Water Quality Control Act. State waters are all waters that meet one of three criteria, hydrology, hydric soils, or wetland vegetation, and generally include, but are not limited to, all waters under the jurisdiction of ACOE and CDFW. Impacts to isolated wetlands are regulated by the RWQCB under the Porter-Cologne Water Quality Act.

5.5.4 City of San Diego Vernal Pools

A total of 1.67 acres of City of San Diego vernal pools were mapped within the study area. City of San Diego jurisdictional resources are depicted on Figure 10. The City of San Diego distinguishes vernal pools from other seasonal depressions by the presence of ACOE vernal pool plant indicator species (ACOE 1997). The vernal pool vegetation requirement seeks to separate vernal pools from road ruts and other seasonal ponding areas (City of San Diego 2002). For example, although vernal pool 18 was observed to contain San Diego fairy shrimp (a ACOE indicator species), it does not contain vernal pool plant indicator species, and therefore is not considered for City of San Diego vernal pool designation.

6.0 Project Impacts

6.1 MYF Localizer Project

The City of San Diego (the City) installed compacted decomposed granite to fill ponding areas within any potential refraction area in front of the Instrument Landing System (ILS) localizer on the west side of Runway 28R in January 2011 (M&A 2011a). Imported material was free of organics, construction debris, and any pernicious chemical residues. The material was used to raise the grade of the FAA defined "critical area" to match the adjacent localizer pad (see Attachment 5). The filled area was graded to drain away from the critical area, as defined by the FAA.

Material was transported by truck, spread by a rubber-tired skid loader, and compacted using a non-riding mechanical compactor.

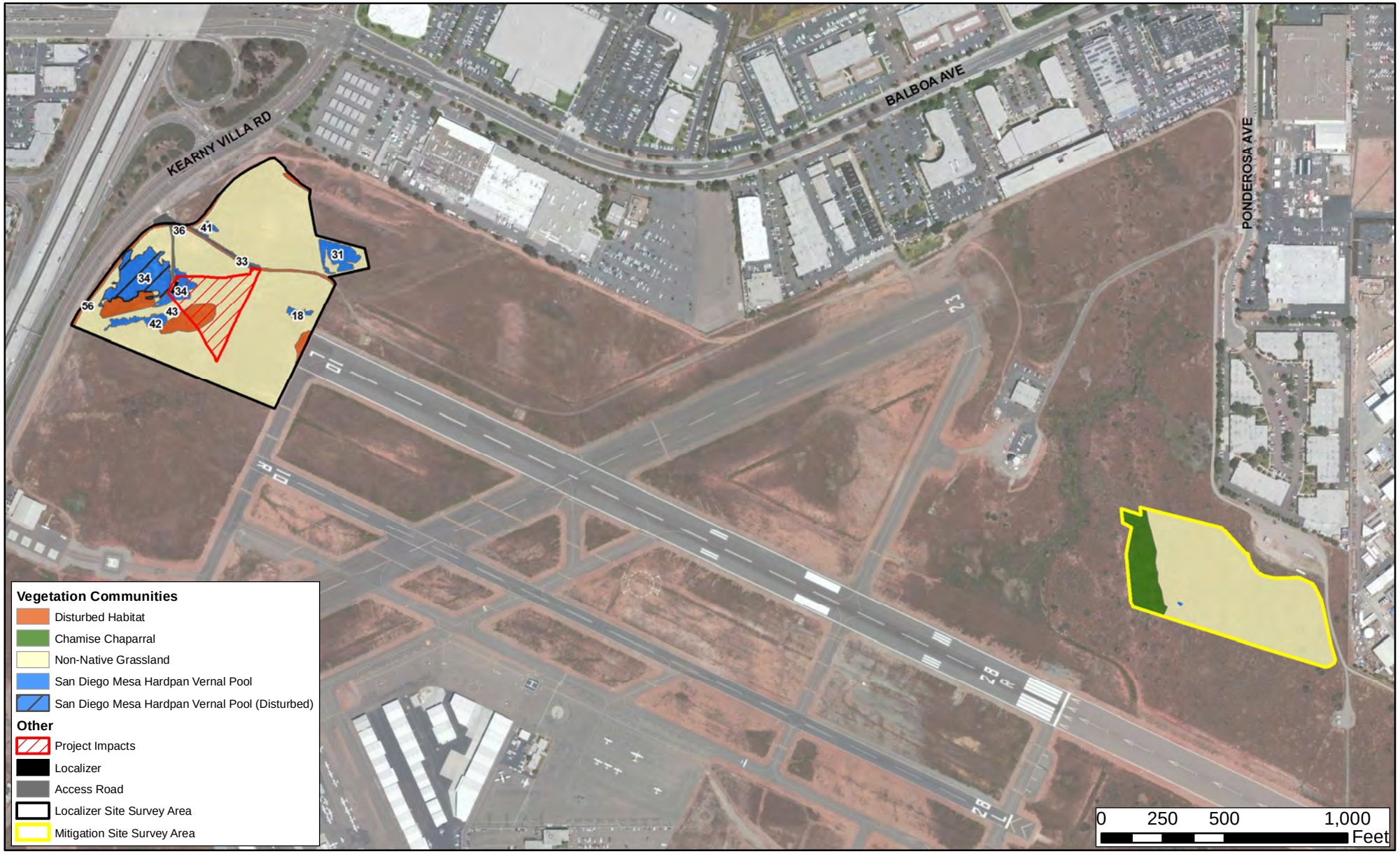
Impacts to biological resources were assessed according to guidelines set forth in the City of San Biology Guidelines (2012).

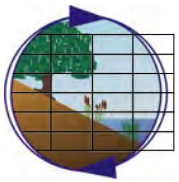
6.2 Vegetation Community Impacts

As shown summarized in Table 4 and shown on Figure 11, a total of 1.56 acres of habitat was impacted by the localizer project. Total acreage required for mitigation is 1.6 acres to include 0.95 acre of vernal pool and 0.65 acres of non-native grassland.

Table 4. Pre-construction and Habitat Impacts, Jurisdictions, and Mitigation Summaries.

Habitat	Habitat TIER	Agency Jurisdiction	Impacts (acre)	Mitigation Ratio	Total Mitigation (acre)
MYF San Diego Mesa Vernal Pool	----	ACOE, RWQCB, City of San Diego	0.19	5:1	**0.95**
MYF Non-Native Grassland	IIIB	----	1.2	0.5:1	**0.60**
MYF Non-Native Grassland (within MHPA)	IIIB		0.05	1:1	**0.05**
MYF Disturbed Habitat	IV	----	0.12	----	----
		TOTAL	**1.56**		**1.60**





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Impacts to Biological Resources Found within the Survey Area

Montgomery Field Localizer Antenna Protection Project

Figure 11

Project mitigation will require conversion of 1.6 acre of non-native grassland to 0.95 acre of vernal pool habitat and 0.65 acre of non-native grassland vegetation.

6.3 Wildlife Impacts

No small mammals, amphibians, or reptiles were impacted during construction of the emergency Project. Although mammal burrows were observed in the western portion of the Project survey area, the progress of construction was slow and no native soil grading occurred. Most potentially affected species were able to move out of the way. Indirect impacts associated with the project included a temporary increase in noise from fill installation and compaction during construction. These impacts did not reduce the wildlife populations on adjacent lands below self-sustaining levels; therefore, these impacts are considered less than significant.

Small mammal burrows, mostly those of southern pocket gophers are present in low densities in the mitigation area. Side blotched lizards and to a lesser extent, gopher snakes may be present in some of these burrows as well. It is possible that one or more of these species may be taken as a result of grading activities. The proposed mitigation is expected to benefit native wildlife with the conversion of areas of non-native habitat to native habitat.

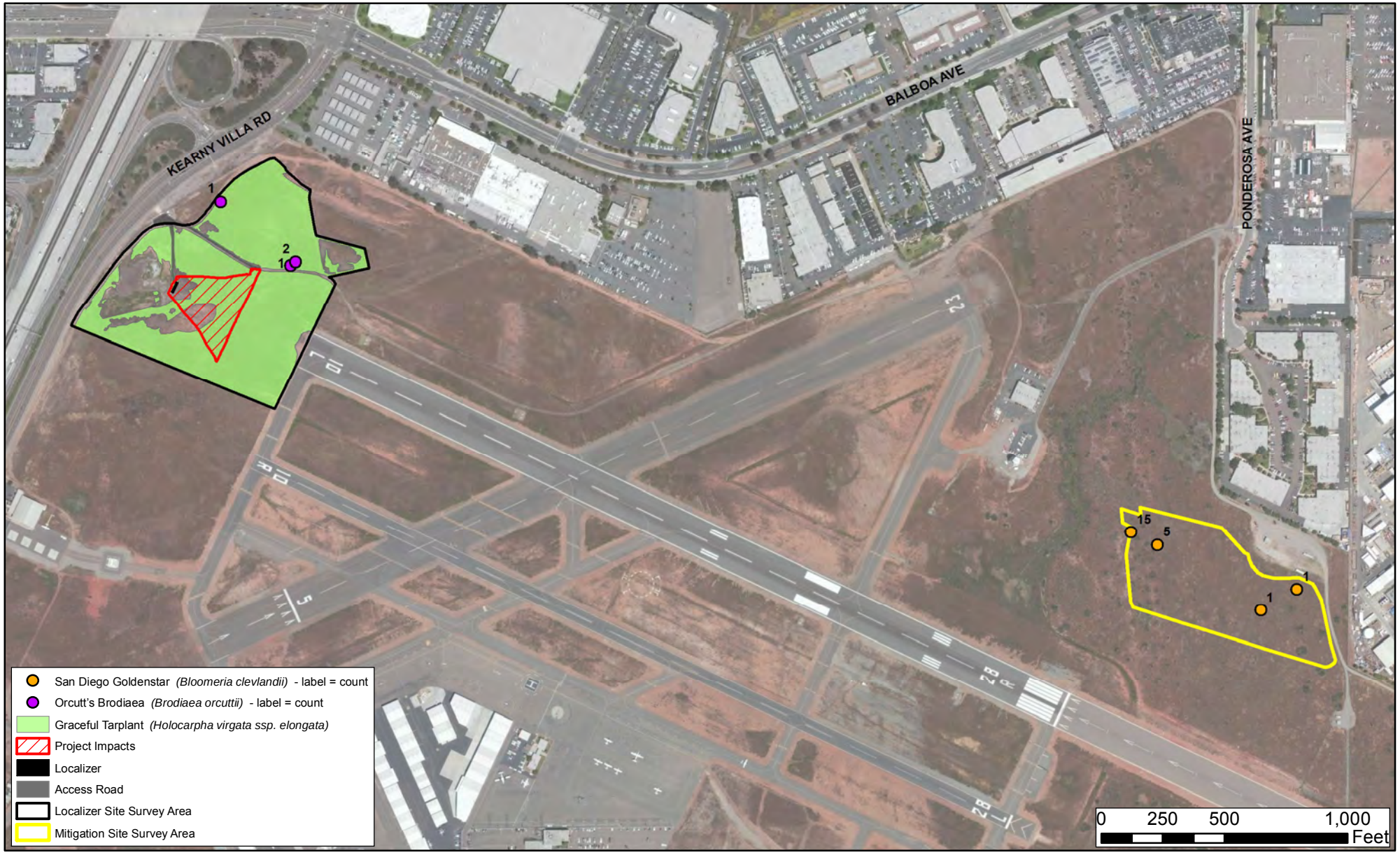
6.4 Sensitive Biological Resources Impacts

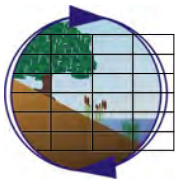
6.4.1 Sensitive Vegetation Communities

The San Diego Mesa vernal pool and non-native grassland vegetation on-site are considered sensitive biological resources under the City Biological Guidelines. As shown in Table 4, project related impacts to San Diego mesa vernal pools and non-native grassland vegetation total 1.56 acres. These impacts are considered significant and will require mitigation. It should be noted that no impacts to the 263 square foot (i.e., 0.01 acre) vernal pool located at the mitigation site will occur. The mitigation plan has been designed to protect this pool in place (Merkel & Associates 2015).

6.4.2 Sensitive Plants

One species of sensitive plant, graceful tarplant (*Holocarpha virgata* ssp*. elongata*), was expected to be impacted by construction activities (Figure 12). Graceful tarplant is a CRPR list 4.2 species and is ubiquitous throughout the open space at Montgomery Field. It has previously been observed colonizing non-native grassland and disturbed areas. Approximately 100 individuals were expected to have been affected by the emergency project activities. As the total population of graceful tarplant at Montgomery field is likely in the tens of thousands, an adjacent seed source is readily available, and that it colonizes disturbed areas on the site, the potential cumulative effects of the emergency project on the total population is negligible.





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Impacts to Sensitive Plants Found within the Survey Area

Montgomery Field Localizer Antenna Protection Project

Figure 12

Impacts to non-native grassland have been included in the mitigation program to account for losses of this habitat caused by the overall project. Graceful tarplant has been included in the plant palette for revegetation to account for potential losses due to construction activities.

No impacts to Orcutt's brodiaea were expected to have occurred from the Project. A total of 22 San Diego goldenstars have been mapped within the site's mitigation area. These plants will be salvaged, properly stored in a dry/cool environment and then reintroduced to the mitigation area following final acceptance of the grading.

6.4.3 Sensitive Wildlife

The San Diego fairy shrimp (*Branchinecta sandiegonensis*) a federally listed endangered species, was identified within vernal pool #34 and was impacted by the emergency project (Figure 13). Although steps were taken to reduce take on this species to the maximum extent possible, impacts were nonetheless incurred. Population estimates of this species within the portion of the pool to be filled were in the hundreds, although there was no indication that the fairy shrimp were particularly different in their occurrence densities here than elsewhere in the pool. A large percentage of the population was extracted from the impacted pool using a sein and relocated to a safer location within the pool prior to placement of fill.

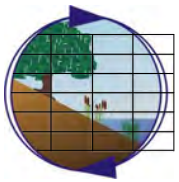
No fairy shrimp or other sensitive wildlife species are expected to be affected by the construction of vernal pools, due primarily to their absence from the areas proposed for restoration.

6.4.4 Multi-Habitat Planning Area (MHPA)

As shown in Figure 8 and Table 4, 0.05 acre of impacts to non-native grassland occurred as a result of construction within MHPA boundaries. In addition to increased mitigation ratios, the following provides Land Use Adjacency Guidelines that were addressed by project proponents in order to demonstrate compliance with the MSCP (City of San Diego 1997). The mitigation area is located within the boundaries of the MHPA.

6.4.4.1 Drainage

The existing drainage of the localizer project area drains into the MHPA. Due to the subtle topography of the area, the drainage needs of the project, and potential deleterious effects to surrounding vernal pool watersheds, drainage from the filled area will likely, and by biological standards should, enter the MHPA. Only clean decomposed granite was used during the emergency project, and grading of the site was conducted to ensure lateral runoff from the fill area. Therefore, pre and post-construction drainage from emergency project is not expected to degrade or harm the natural environment or ecosystem processes within the MHPA.



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Impacts to Sensitive Wildlife Found within the Survey Area

Montgomery Field Localizer Antenna Protection Project

Figure 13

The mitigation area is entirely within the boundaries of the MHPA. Typical erosion control devises (e.g., silt fence, straw wattles) will be installed in order to contain drainage to within the mitigation area until the soils have been stabilized or the goals of the restoration effort have been achieved.

6.4.4.2 Toxics

The MHPA is downslope from the emergency project. MHPA lands and therefore may have received a small amount of run-off during construction, but due to reasons in Section 6.4.4.1, did not receive toxins. No toxins are expected to be introduced to the MHPA by the proposed restoration activities. Nonetheless, erosion control devises will be used to reduce surface flows outside the boundaries of the restoration effort thereby minimizing any potential for toxins leaving the site.

6.4.4.3 Lighting

No lighting was installed as part of construction and similarly, none will be installed as a result of vernal pool wetland construction. Therefore, no lighting impacts are associated with the project.

6.4.4.4 Noise

As the emergency project occurred at the end of an active runway, any noise associated with construction was well beneath average ambient levels. Similarly, noise levels associated with vernal pool construction activities are also expected to be much lower than average ambient levels. The emergency project and mitigation activities would not have any lasting noise effects on the MHPA.

6.4.4.5 Barriers

The emergency project area is located within an active airport and is closed to public access. A large, barbed wire fence and airport patrols actively restrict access and therefore, the construction of barriers affecting the MHPA are not an issue that is associated with any part of the project.

6.4.4.6 Invasives

No invasive non-native plant species were introduced during emergency construction into areas in or adjacent to the MHPA. Construction of mitigation vernal pools and native upland habitat restoration that will occur adjacent to the MHPA is designed to remove existing exotic plant species. No invasive exotic species will be introduced.

6.4.4.7. Grading/Land Development

The filling on of a portion of vp #34 resulted in the leveling of several vertical inches of concave vernal pool topography totaling approximately 0.19 acre. The construction of vernal pool habitat and native grassland habitat in what is presently nearly flat non-native grassland habitat will result in a subtle increase in topographic relief due to the construction of concave vernal pools and convex mima mounds.

6.4.5 Wildlife Movement Corridor

The site does not act as a wildlife movement corridor; therefore, there the emergency project resulted in no impacts to wildlife movement and none are expected from the construction of mitigation vernal pools.

6.4.6 Jurisdictional Resources

A total of 0.19 acre of ACOE, RWQCB and City of San Diego vernal pool resources were impacted by the emergency construction activities. A Section 404 RGP 63 permit with Section 7 Consultation from ACOE and a 401 Water Quality Certificate from the RWQCB were obtained. No impacts to CDFW jurisdictional resources were incurred. Mitigation in the form of vernal pool creation and enhancement will be implemented for impacts to vernal pools. This information is summarized Table 4.

7.0 Mitigation Measures

Mitigation is required for project impacts that are considered significant under CEQA, including impacts to sensitive or listed species, sensitive vegetation communities, and jurisdictional waters. Mitigation is intended to reduce the impacts to a level less than significant. Mitigation measures typically employed include avoidance and habitat preservation, habitat restoration, and the payment of fees into a mitigation bank.

Original mitigation measures included in this report assumed that emergency project construction and restoration activities would occur during the dry season. As the emergency construction took place during the rainy season, Section 7 Consultation was initiated with the USFWS through the ACOE to determine any modifications to project design.

No mitigation is required for impacts to non-native grassland habitat when impacted for the purpose of wetland or other native habitat creation, as stated in the City's Significance Determination Thresholds (City of San Diego, 2012a).

7.1 Sensitive Vegetation Communities

Mitigation is required for the permanent and temporary impacts to sensitive vegetation. As shown in Table 4, 1.6 acres of mitigation is required for impacts to sensitive habitat that occurred as a result of the emergency project, including 0.95 acres of vernal pool habitat mitigation and 0.65 acres of non-native grassland habitat mitigation.

7.1.1 Vernal Pool Mitigation and Avoidance Measures

A total of 0.95 acres of mitigation for vernal pool habitat will be required. Mitigation will take the form of restoration (i.e., creation) and enhancement of vernal pool habitat. A mitigation plan has been developed for the project that specifies a total of 2.43 acre of vernal pool restoration within a 6.97 acre area located on MYF (M&A 2015). Topsoil has been salvaged from the impact areas and stored on-site for use in the mitigation program. Additional seed will be collected in vernal pools located at the east end of MYF to supplement the salvaged material. A 5-year monitoring and weeding plan for the mitigation area has also been included in the mitigation plan.

In order to minimize project impacts during construction, the contractor, under the supervision of a qualified biologist, performed the following actions:

- Clearly marked avoidance areas on all project maps provided to the contractor.
- Vernal pools and supporting wetlands adjacent to construction were marked with silt fencing and high visibility flagging to reduce the potential for impacts.

- Implemented a contractor education program. This program focused on (1) the purpose for resource protection; (2) identification of sensitive resource areas in the field (e.g., areas delineated on maps and by flags or fencing); (3) environmentally responsible construction practices and protection measures; (4) protocol to resolve conflicts that may arise at any time during the construction process; and (5) ramifications of noncompliance.

- A qualified biologist monitored construction activities to ensure compliance with vernal pool avoidance protocols.

- Controlled and minimized erosion and siltation of off-site areas during construction particularly adjacent to on and off-site sensitive biological resources such as vernal pools.

- Ensured that only water from natural precipitation enters vernal pool watersheds. All side-spray trucks and other watering devices avoided vernal pool watersheds.

No trash or construction materials encroached upon the fenced off vernal pool watersheds.

7.1.2 Non-native Grassland Mitigation

Mitigation for impacts to non-native grassland associated with the emergency project will entail seeding the upland areas of the mitigation area with native grassland vegetation. A minimum of 0.65 acre of grassland habitat within the mitigation area will be created and conserved as specified in the mitigation and monitoring plan for the project (M&A 2015).

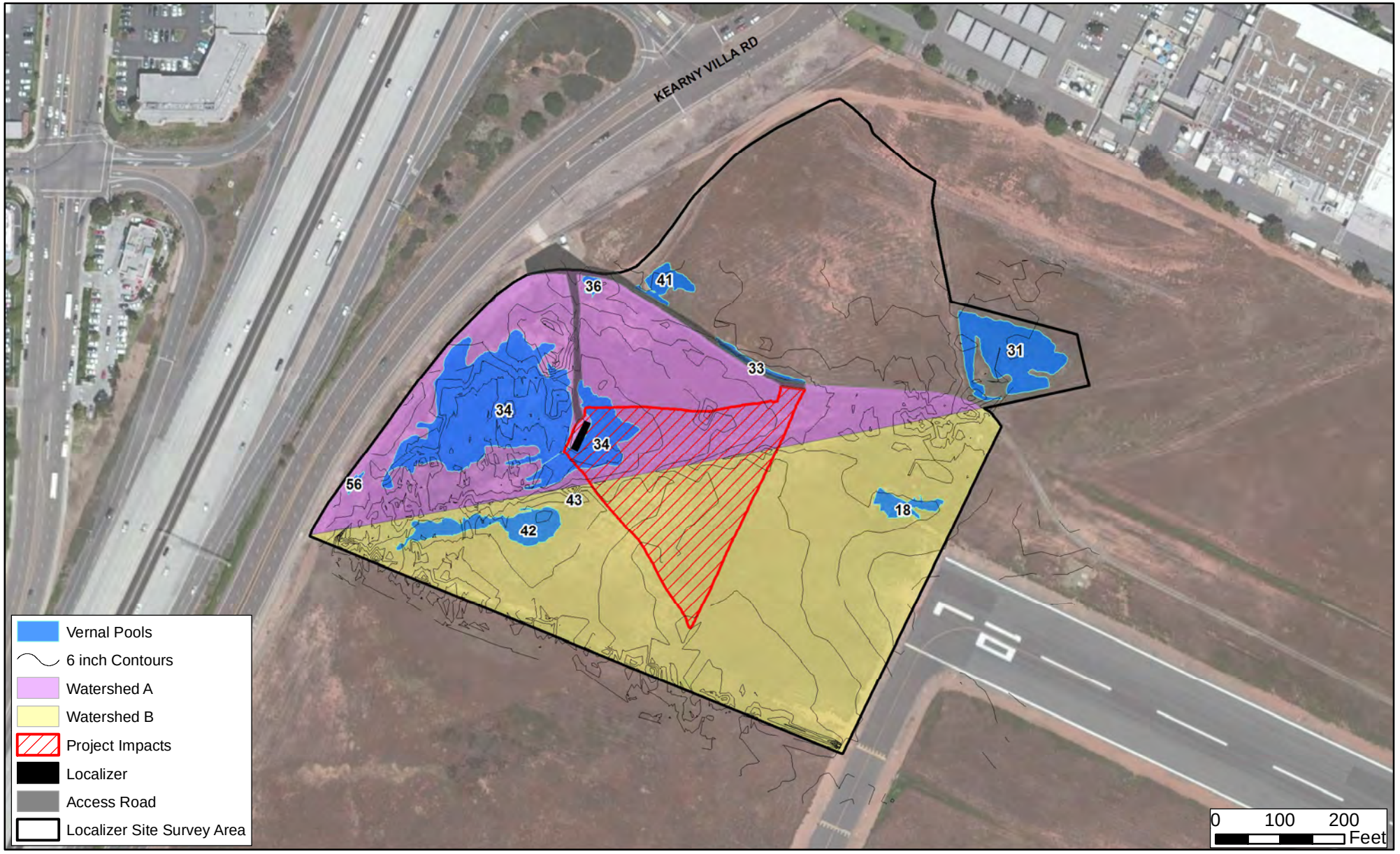
7.2 Sensitive Wildlife

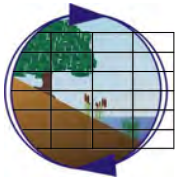
Following consultation with the USFWS, a 5:1 mitigation ratio has been required for impacts to an active vernal pool. A 5:1 impact ratio has been incorporated into the project mitigation plan. San Diego fairy shrimp in vp34 were permanently impacted by construction activities (Figure 14). Because of its sensitive status, impacts to the San Diego fairy shrimp were minimized to the maximum extent practicable. Project design incorporated directives to protect against harmful edge effects to shrimp populations. In addition, the Fish and Wildlife Service was consulted during the project to agree upon a course of action to minimize impacts to sensitive vernal pool resources. In conjunction to any federal requirements issued during consultation, the contractor also incorporated the following measures:

- Salvaged soils containing fairy shrimp cysts from the pool to be impacted prior to construction for use in restoration.

- Seined adult fairy shrimp from impact area and released in preserve area prior to construction impacts.

- A temporary check-dam was installed to separate the portion of the pool to be impacted from the portion of the pool to be preserved.





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Impacts to Watersheds within the Survey Area

Montgomery Field Localizer Antenna Protection Project

Figure 14

In addition to general vernal pool avoidance measures discussed in section 7.1.1, several species specific measures were also implemented to minimize indirect impacts to San Diego fairy shrimp:

- Barrier fencing (orange silt fencing with snow fence on top) was placed at the project boundary limits near any vernal pool complexes to avoid inadvertent impacts.

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ATTACHMENT 1
PLANT SPECIES OBSERVED WITHIN THE MONTGOMERY FIELD SURVEY AREA

Scientific Name	Common Name	Habitat	Origin
	FERNS		
MARSILEACEAE	**MARSILEA FAMILY**		
Pilularia americana A. Braun	pill-wort	VP	N
	ANGIOSPERMS: DICOTS		
AIZOACEAE	**FIG-MARIGOLD FAMILY**		
Carpobrotus edulis (L.) Bolus.	hottentot fig	NNG	I
AMARANTHACEAE	**AMARANTH FAMILY**		
Chenopodium album L.	lamb's quarters, pigweed*	NNG	I
Salsola tragus L.	Russian thistle, tumbleweed*	NNG	I
ANACARDIACEAE	**SUMAC OR CASHEW FAMILY**		
Malosma laurina (Nutt.) Abrams	laurel sumac	NNG	N
APIACEAE (UMBELLIFERAE)	**CARROT FAMILY**		
Foeniculum vulgare Mill.	fennel	NNG	I
Sanicula arguta (Torrey & Gray) Coult.& Rose	sharp-tooth sanicle	NNG	N
ASTERACEAE	**SUNFLOWER FAMILY**		
Artemisia californica Less.		NNG	I
Baccharis sarothroides Gray	broom baccharis	NNG	N
Centaurea melitensis L.	tocolote	NNG	I
Conyza canadensis (L.) Cronq.	horseweed	NNG	N
Cotula coronopifolia L.	brass-buttons	VP	I
Deinandra [=*Hemizonia*] *fasciculata* (DC.) Greene	golden tarplant	NNG	N
Dimorphotheca pluvialis Moench	African daisy	NNG	I
Gnaphalium californicum DC.	green everlasting	NNG	N
Heterotheca grandiflora Nutt.	telegraph weed	NNG	N
Holocarpha virgata (A. Gray) D. D. Keck ssp. *elongata* D. D. Keck	graceful tarplant*	NNG	N
Hypochoeris glabra L.	Smooth cat's ears	NNG	I
Lactuca serriola L.	prickly lettuce	NNG	I
Logfia gallica (L.) Coss & Germ.	daggerleaf cottonrose		
Osteospermum ecklonis (DC.) Nolindh	African daisy	NNG	I

Scientific Name	Common Name	Habitat	Origin
Psilocarphus brevissimus Nutt. var. *brevissimus*	dwarf woolly-heads	NNG, VP	N
Sonchus asper (L.) Hill ssp. *asper*	prickly sow thistle	NNG	I
Taraxacum officinale F.H. Wigg	common dandelion	NNG	I
BORAGINACEAE	**BORAGE FAMILY**		
Eriodictyon trichocalyx A.A. Heller var. *lanatum* (Brand) Jepson	hairy yerba santa*	NNG	N
Plagiobothrys acanthocarpus (Piper) I.M. Johnston	adobe allocarya	NNG	N
BRASSICACEAE (CRUCIFERAE)	**MUSTARD FAMILY**		
Brassica tournefortii	Sahara mustard	NNG	I
Brassica nigra (L.) Koch.	black mustard	NNG	I
Hirschfeldia incana	short-pod mustard	NNG	I
CALLITRICHACEAE	**WATER-STARWORT FAMILY**		
Callitriche heterophylla var. bolanderi	Bolander's water starwort	VP	N
Callitriche marginata Torrey	water-starwort	VP	N
CARYOPHYLLACEAE	**PINK FAMILY**		
Silene gallica L	common catchfly	VP	I
Spergularia bocconi (Scheele) Merino.	sand spurrey	NNG	I
Stellaria media	common chickweed	NNG	I
.			
CHENOPODIACEAE	**GOOSEFOOT FAMILY**		
Chenopodium murale L.	Nettle-leaf goosefoot	NNG	**I**
CRASSULACEAE	**STONECROP FAMILY**		
Crassula aquatica (L.) Schoen.	stone-crop	VP	N
Crassula connate (Ruiz & Pav.) Berger	Dwarf Stonecrop	NNG	N
ELATINACEAE	**WATERWORT FAMILY**		
Elatine brachysperma A. Gray	waterwort	VP	N
EUPHORBIACEAE	**SPURGE FAMILY**		
Croton [=*Eremocarpus*] *setigerus* Hook.	dove weed	NNG	N
FABACEAE (LEGUMINOSAE)	**LEGUME FAMILY**		
Lotus scoparius (Nutt. in Torrey & A. Gray) Ottley var. *scoparius*	California broom	NNG	N

Scientific Name	Common Name	Habitat	Origin
Lotus strigosus (Nutt.) *Greene*	arroyo lupine	NNG	N
Lupinus succulentus Koch	Bishop's lotus	NNG	N
Lupinus bicolor Lindl.	miniature lupine	NNG	N
Melilotus albus Medikus	white sweet clover	NNG	I
FAGACEAE	**OAK FAMILY**		
Quercus dumosa Nutt.	Nuttall's scrub oak	NNG	N
GERANIACEAE	**GERANIUM FAMILY**		
Erodium botrys (Cav.) Bertol.	pin-clover	NNG	I
Erodium cicutarium (L.) L'Hér. ex Aiton	white-stemmed filaree	NNG	I
LYTHRACEAE	**LOOSESTRIFE FAMILY**		
Lythrum hyssopifolia L.	grass poly	NNG, VP	I
MYRTACEAE	**MYRTLE FAMILY**		
Eucalyptus globulus Labill.	blue gum	NNG	I
PLANTAGINACEAE	**PLANTAIN FAMILY**		
Plantago bigelovii	Bigelow's plantain	VP	N
Plantago elongata Pursh	plantain	VP	N
Plantago erecta Morris	dot-seed plantain	VP	N
POLYGONACEAE	**BUCKWHEAT FAMILY**		
Eriogonum fasciculatum Benth. var. *fasciculatum*	California buckwheat	NNG	N
Rumex crispus L.	curly dock	NNG, VP	I
PRIMULACEAE	**PRIMROSE FAMILY**		
Centunculus minimus	Chaffweed	VP	N
ROSACEAE	**ROSE FAMILY**		
Adenostoma fasciculatum Hook. & Arn.	chamise	CC	N
RUBIACEAE	**MADDER FAMILY**		
Galium aparine L.	Narrow-leaf bed straw	NNG	N
Galium nuttallii Gray. ssp. *nuttallii*	Nuttall's bed straw	NNG	N
SCROPHULARIACEAE	**FIGWORT FAMILY**		
Castilleja exserta (A.A. Heller) Chuang & Heckard	purple owl's clover	NNG	N
Linaria canadensis (L.) Dumm-Cours.	scarlet bugler	NNG	N
Penstemon centranthifolius (Benth.) Benth.	blue toadflax	NNG	N
Veronica peregrina L. ssp. *xalapensis* (Kunth) Pennell	neckweed	VP	N

Scientific Name	Common Name	Habitat	Origin
SOLANACEAE	**NIGHTSHADE FAMILY**		
Solanum americanum Miller	nightshade	NNG	N
	ANGIOSPERMS: MONOCOTS		
AGAVACEAE	**CENTURY PLANT FAMILY**		
Chlorogalum parviflorum S. Watson	soap plant	NNG	N
ARECACEAE	**PALM FAMILY**		
Washingtonia robusta Wendl.	Washington palm	NNG	I
CYPERACEAE	**SEDGE FAMILY**		
Cyperus esculentus L.	nut-grass	NNG	N
Eleocharis macrostachya Britton	pale spikerush	VP	N
IRIDACEAE	**IRIS FAMILY**		
Sisyrinchium bellum Wats.	blue-eyed-grass	NNG	N
JUNCACEAE	**RUSH FAMILY**		
Juncus bufonius L.	toad rush	VP	N
Juncus mexicanus Willd.	Mexican rush	VP	N
JUNCAGINACEAE	**ARROW-GRASS FAMILY**		
Lilaea scilloides (Poir.) Haum.	flowering-quillwort	VP	N
POACEAE (GRAMINEAE)	**GRASS FAMILY**		
Avena barbata Link	slender wild oat	NNG	I
Bromus diandrus Roth.	ripgut grass	NNG	I
Bromus madritensis L. ssp. *rubens* (L.) Husnot	foxtail chess	NNG	I
Cynodon dactylon (L.) Pers.	Bermuda grass	NNG	I
Deschampsia danthonioides (Trin.) Munro	annual hairgrass	VP	N
Hordeum brachyantherum Nevski.	meadow barley	NNG	N
Hordeum murinum L.	wild barley	NNG	I
Lamarckia aurea (L.) Moench.	goldentop	NNG	I
Lolium perenne L.	perennial ryegrass	NNG	I
Nassella pulchra (A. Hitchc.) Barkworth	purple needlegrass	NNG	N
Pennisetum setaceum Forsskal	fountain grass	NNG	I
THEMIDACEAE	**BRODIAEA FAMILY**		
Bloomeria clevelandii	San Diego Goldenstar	NNG	N
Brodiaea orcuttii	Orcutt's brodiaea	NNG	N
Muilla maritima (Torrey) S. Watson	common muilla*	NNG	N
Dichelostemma capitatum subsp. capitatum	blue dicks	NNG	N

HABITATS

AG = Agriculture
BS = Baccharis scrub
CC = Chamise chaparral
CD = Coastal dunes
CF = Coniferous forest
CSS = Coastal sage scrub
FM = Freshwater marsh
FW = Foothill woodland
H = Horticultural
M = Mesic areas and wetlands
MC = Southern mixed chaparral
MF = Mule fat scrub
MSS = Maritime succulent scrub
NG = Native grasslands
NNG = Non-native grassland
O = Open places, waste places, roadsides, burns, etc.
OW = Oak woodland
RW = Riparian woodland
SM = Saltwater marsh
SMC = Southern maritime chaparral
VP = Vernal pools

OTHER TERMS

N = Native to locality
I = Introduced species from outside locality

ATTACHMENT 2
WILDLIFE SPECIES OBSERVED/DETECTED ON MONTGOMERY AIRFIELD

Scientific Name	Common Name	Occupied Habitat	On-site Abundance/ Seasonality (Birds Only)	Evidence of Occurrence
INVERTEBRATES (Nomenclature from Erikson and Belk 1999; Hogue 1993)				
TENEBRIONIDAE				
Eleodes sp.	Darkling Beetle	NNGL		O
FORMINICIDAE				
Pogonomyrmex californicus	California harvester ant	NNGL		O
ANOSTRACANS	**FAIRY SHRIMP**			
Branchinecta sandiegonensis	San Diego fairy shrimp	VP		O
AMPHIBIANS (Nomenclature from Crother 2001 and Crother et al. 2003)				
BUFONIDAE	**TRUE TOADS**			
Bufo boreas halophilus	California (= western) toad	VP		O
REPTILES (Nomenclature from Crother 2001 and Crother et al. 2003)				
IGUANIDAE	**IGUANID LIZARDS**			
Uta stansburiana	common side-blotched lizard	NNGL		O
SCINCIDAE	**SKINKS**			
Eumeces skiltonianus interparietalis	Coronado skink	NNGL		O
BIRDS (Nomenclature from American Ornithologists' Union 1998 and Unitt 2004)				
ACCIPITRIDAE	**HAWKS, KITES, & EAGLES**			
Buteo jamaicensis	red-tailed hawk	F	/ Y	O
CHARADRIIDAE	**LAPWINGS & PLOVERS**			
Charadrius vociferus vociferus	killdeer	NNGL	/ Y	O
SCOLOPACIDAE	**SANDPIPERS & PHALAROPES**			
Tringa melanoleuca	greater yellowlegs	NNGL	/ M	O
COLUMBIDAE	**PIGEONS & DOVES**			
Columba livia	rock dove (I)	NNGL	/ Y	O
Zenaida macroura marginella	mourning dove		/ Y	O

Scientific Name	Common Name	Occupied Habitat	On-site Abundance/ Seasonality (Birds Only)	Evidence of Occurrence
STRIGIDAE	**TYPICAL OWLS**			
Athene cunicularia hypugaea	western burrowing owl	NNGL	/ Y, W	O
TROCHILIDAE	**HUMMINGBIRDS**			
Calypte anna	Anna's hummingbird	NNGL	/ Y	O
TYRANNIDAE	**TYRANT FLYCATCHERS**			
Sayornis saya	Say's phoebe	NNGL	/ W	O
Tyrannus verticalis	western kingbird	NNGL	/ S	O
CORVIDAE	**CROWS, JAYS, & MAGPIES**			
Corvus corax clarionensis	common raven	NNGL	/ Y	O
HIRUNDINIDAE	**SWALLOWS**			
Petrochelidon pyrrhonota tachina	cliff swallow	NNGL	/ S	O
Stelgidopteryx serripennis	northern rough-winged swallow	NNGL	/ S	O
TROGLODYTIDAE	**WRENS**			
Thryomanes bewickii	Bewick's wren	NNGL	/ Y	O
TURDIDAE	**THRUSHES**			
Turdus migratorius	American robin	NNGL	/ W	O
MIMIDAE	**MOCKINGBIRDS & THRASHERS**			
Mimus polyglottos polyglottos	northern mockingbird	NNGL	/ Y	O
FRINGILLIDAE	**FINCHES**			
Carduelis psaltria hesperophilus	lesser goldfinch	NNGL	/ Y	O
Carpodacus mexicanus frontalis	house finch	NNGL	/ Y	O
LEPORIDAE	**RABBITS & HARES**			
Sylvilagus bachmani	brush rabbit	NNGL		O
SCIURIDAE	**SQUIRRELS & CHIPMUNKS**			
Spermophilus beecheyi	California ground squirrel	NNGL		O
GEOMYIDAE	**POCKET GOPHERS**			
Thomomys umbrinus	Southern pocket gopher	NNGL		O
CERVIDAE	**DEER**			
Odocoileus hemionus	mule deer	NNGL		O

HABITATS
F = Flying Overhead
NNGL = Non-native grassland
VP = Vernal Pool

EVIDENCE OF OCCURRENCE
O = Observed

SEASONALITY (Birds only)
M = Migrant; uses site for brief periods of time, primarily during spring and fall months
S = Spring/summer resident; probable breeder on-site or in vicinity
Y = Year-round resident; probable breeder on-site or in vicinity

ABUNDANCE (based on Garrett and Dunn 1981)
C = Common to abundant; almost always encountered in proper habitat, usually in moderate to large numbers
F = Fairly common; usually encountered in proper habitat, generally not in large numbers
U = Uncommon; occurs in small numbers or only locally

ATTACHMENT 3
SENSITIVE PLANT SPECIES OBSERVED (†) OR WITH THE POTENTIAL FOR OCCURRENCE ON OR WITHIN THE MONTGOMERY FIELD SURVEY AREA

Species' Scientific Name/ Common Name	Sensitivity Code & Status (Federal, State, CNPS, County of San Diego)	Habitat Preference/ Requirements	Verified On Site Yes/ No (Direct/ Indirect Evidence)	Potential to Occur On Site (Observed or L/M/H/U)	Factual Basis for Determination of Occurrence Potential
ANGIOSPERMS: DICOTS					
APIACEAE	**CARROT FAMILY**				
Eryngium aristulatum var. *parishii* San Diego button-celery	FE, CE, 1B, Group A, MSCP	Annual/perennial herb; vernal pools, mesic areas of coastal sage scrub and grasslands, blooms April–June; elevation less than 2,000 feet.	No	L	Although vernal pool habitat and soil characteristics on-site are suitable for this species, it was not observed during focused survey. Species is known to occur in the project vicinity (CNDDB 2007)
ASTERACEAE	**SUNFLOWER FAMILY**				
Holocarpha virgata ssp. *elongata* Graceful tarplant	4, Group D	Annual herb; coastal sage scrub, cismontane woodland, valley and foothill grassland, chaparral; blooms July–Nov.; elevation 200–3,600 feet.	Yes	Observed	Species was observed throughout the localizer study area.
CACTACEAE	**CACTUS FAMILY**				
Ferocactus viridescens San Diego barrel cactus	2, Group B, MSCP	Succulent; chaparral, coastal sage scrub, valley and foothill grassland, vernal pools; blooms May–June; elevation less than 1,500 feet.	No	U	Species is known to occur in the project vicinity (CNDDB 2007), but is not expected to occur on-site due to lack of suitable habitat.

Species' Scientific Name/ Common Name	Sensitivity Code & Status (Federal, State, CNPS, County of San Diego)	Habitat Preference/ Requirements	Verified On Site Yes/ No (Direct/ Indirect Evidence)	Potential to Occur On Site (Observed or L/M/H/U)	Factual Basis for Determination of Occurrence Potential
ERICACEAE	**HEATH FAMILY**				
Comarostaphylis diversifolia ssp. *diversifolia* Summer holly	1B, Group A	Evergreen shrub; chaparral; blooms April–June; elevation less than 1,800 feet.	No	U	Species is known to occur in the project vicinity (CNDDB 2007), but is not expected to occur on-site due to lack of suitable habitat.
FAGACEAE	**OAK FAMILY**				
Quercus dumosa Nuttall's scrub oak	1B, Group A	Evergreen shrub; closed-cone coniferous forest, coastal chaparral, coastal sage scrub, sandy and clay loam soils; blooms Feb.–March; elevation less than 1,300 feet.	No	U	A small population was observed 2,500 feet to the south of the MYF Localizer site.
LAMIACEAE	**MINT FAMILY**				
Pogogyne abramsii San Diego mesa mint	FE, CE, 1B, Group A, MSCP	Annual herb; vernal pools; blooms April–July; elevation 300–700 feet.	No	L	Although vernal pool habitat and soil characteristics on-site are suitable for this species, it was not observed during focused survey. Species is known to occur in the project vicinity (CNDDB 2007)

Species' Scientific Name/ Common Name	Sensitivity Code & Status (Federal, State, CNPS, County of San Diego)	Habitat Preference/ Requirements	Verified On Site Yes/ No (Direct/ Indirect Evidence)	Potential to Occur On Site (Observed or L/M/H/U)	Factual Basis for Determination of Occurrence Potential
POLEMONIACEAE	**PHLOX FAMILY**				
Navarretia fossalis Spreading navarretia	FT, 1B, Group A, MSCP	Annual herb; vernal pools, marshes and swamps, chenopod scrub; blooms April–June; elevation 100–4,300 feet.	No	L	Although vernal pool habitat and soil characteristics on-site are suitable for this species, it was not observed during focused survey. Species is known to occur in the project vicinity (CNDDB 2007)
Navarretia prostrata Prostrate navarretia	1B	Annual herb; coastal sage scrub, perennial alkaline grasslands, vernal pools; blooms April–July; elevation 50–2,300 feet.	No	L	Although vernal pool habitat and soil characteristics on-site are suitable for this species, it was not observed during focused survey. Species is not known to occur in the project vicinity (CNDDB 2007)
POLYGONACEAE	**BUCKWHEAT FAMILY**				
Chorizanthe polygonoides var. *longispina* Long-spined spineflower	1B, Group A	Clay soils; openings in chaparral, coastal sage scrub, near vernal pools and montane meadows, April–July.	No	U	Species is known to occur in the project vicinity (CNDDB 2007), but is not expected to occur on-site due to lack of suitable habitat and soil.
RHAMNACEAE	**BUCKTHORN FAMILY**				
Ceanothus verrucosus Wart-stemmed ceanothus	2, Group B, MSCP	Evergreen shrub; chaparral; blooms Dec.–April; elevation less than 1,300 feet.	No	U	Species is known to occur in the project vicinity (CNDDB 2007), but is not expected to occur on-site due to lack of suitable habitat.

Species' Scientific Name/ Common Name	Sensitivity Code & Status (Federal, State, CNPS, County of San Diego)	Habitat Preference/ Requirements	Verified On Site Yes/ No (Direct/ Indirect Evidence)	Potential to Occur On Site (Observed or L/M/H/U)	Factual Basis for Determination of Occurrence Potential
POACEAE	**GRASS FAMILY**				
Hordeum intercedens Vernal barley	3, Group C	Annual herb; coastal dunes, coastal sage scrub, valley and foothill grassland, vernal pools; blooms March–June; elevation less than 3,000 feet.	No	L	Although vernal pool habitat and soil characteristics on-site are suitable for this species, it was not observed during focused survey. Species is known to occur in the project vicinity (CNDDB 2007)
Orcuttia californica California Orcutt grass	FE, CE, 1B, Group A, MSCP	Annual herb; vernal pools; blooms April–August; elevation 50–2,200 feet.	No	L	Although vernal pool habitat and soil characteristics on-site are suitable for this species, it was not observed during focused survey. Species is known to occur in the project vicinity (CNDDB 2007)
THEMIDACEAE					
Brodiaea orcuttii Orcutt's brodiaea	1B, Group A, MSCP	Perennial herb (bulbiferous); closed cone coniferous forest, chaparral, meadows and seeps, valley and foothill grassland, vernal pools, mesic, clay soil; blooms May–July; elevation less than 5,300 feet.	No	M	A moderately sized population was found adjacent, but NOT within, the MYF Localizer project
Muilla clevelandii San Diego goldenstar	1B, Group A, MSCP	Perennial herb (bulbiferous); chaparral, coastal sage scrub, valley and foothill grassland, vernal pools, clay soils; blooms May; elevation 170–1,500 feet.	Yes	Observed	At total of 22 plants were observed within the mitigation site. These plants will be salvaged and reintroduced to the mitigation site following final grading.

POTENTIAL TO OCCUR

U = Unlikely
L = Low potential
M = Moderate potential
H = High potential
O = Observed

FEDERAL CANDIDATES AND LISTED PLANTS

FE = Federally listed endangered
FT = Federally listed threatened
FC = Federal candidate for listing as endangered or threatened

STATE LISTED PLANTS

CE = State listed endangered
CR = State listed rare
CT = State listed threatened

COUNTY OF SAN DIEGO

NE = Narrow endemic
MSCP = Multiple Species Conservation Program covered species
Group A = Plants rare, threatened, or endangered in California
Group B = Plants rare, threatened, or endangered in California but more common elsewhere
Group C = Plants which may be quite rare but need more information to determine true rarity
Group D = Plants limited in distribution and uncommon but not presently rare or endangered

CALIFORNIA NATIVE PLANT SOCIETY LISTS

1A = Species presumed extinct.
1B = Species rare, threatened, or endangered in California and elsewhere. These species are eligible for state listing.
2 = Species rare, threatened, or endangered in California but more common elsewhere. These species are eligible for state listing.
3 = Species for which more information is needed. Distribution, endangerment, and/or taxonomic information is needed.
4 = A watch list of species of limited distribution. These species need to be monitored for changes in the status of their populations.

ATTACHMENT 4
SENSITIVE WILDLIFE SPECIES
OBSERVED (†) OR WITH THE POTENTIAL FOR OCCURRENCE ON OR WITHIN THE MONTGOMERY FIELD SURVEY AREA

Species	Status	Habitat/Comments	Occurrence
FAIRY SHRIMP (Nomenclature from Eriksen and Belk 1999)			
ANOSTRACANS	**FAIRY SHRIMP**		
San Diego fairy shrimp *Branchinecta sandiegonensis*	FE, MSCP, *	Vernal pools.	San Diego fairy shrimp were observed in vernal pools and other ponding areas throughout the survey area.
BUTTERFLIES (Nomenclature from Mattoni 1990 and Opler and Wright 1999)			
NYMPHALIDAE	**BRUSH-FOOTED BUTTERFLIES**		
Quino checkerspot butterfly *Euphydryas editha quino*	FE	Open, dry areas in foothills, mesas, lake margins. Larval host plant *Plantago erecta.* Adult emergence mid-January through April.	Not expected to occur within the survey area. The survey area is outside of the USFWS survey area, and the regularly mowed non-native grassland on-site provides marginally suitable habitat for this species.
AMPHIBIANS (Nomenclature from Crother 2001 and Crother et al. 2003)			
PELOBATIDAE	**SPADEFOOT TOADS**		
Western spadefoot *Spea hammondii*	CSC, FSS, *	Vernal pools, floodplains, and alkali flats within areas of open vegetation.	Low potential to occur. Vernal pool habitat on-site is suitable for this species, but it was not observed during focused fairy shrimp surveys. Species is known to occur in the project vicinity (CNDDB 2007)
REPTILES (Nomenclature from Crother 2001 and Crother et al. 2003)			
IGUANIDAE	**IGUANID LIZARDS**		
Coast horned lizard *Phrynosoma coronatum* (San Diego/blainvillii population)	FSS, CSC, MSCP, *	Chaparral, coastal sage scrub with fine, loose soil. Partially dependent on harvester ants for forage.	Species is known to occur in the project vicinity (CNDDB 2007), but is not expected to occur on-site due to lack of suitable scrub habitat.

TEIIDAE	**WHIPTAIL LIZARDS**		
Belding's orange-throated whiptail *Aspidoscelis hyperythra beldingi*	CSC, MSCP, *	Chaparral, coastal sage scrub with coarse sandy soils and scattered brush.	Species is known to occur in the project vicinity (CNDDB 2007), but is not expected to occur on-site due to lack of suitable scrub habitat.
BIRDS (Nomenclature from American Ornithologists' Union 1998, 7th ed. and Unitt 2004)			
STRIGIDAE	**TYPICAL OWLS**		
Western burrowing owl (burrow sites & some wintering sites) *Athene cunicularia hypugaea*	FSS, BCC, CSC, MSCP	Grassland, agricultural land, coastal dunes. Require rodent burrows. Declining resident.	This species was observed within the greater Montgomery Field survey area, approximately 2,500 feet to the south of the MYF Localizer project area.
SYLVIIDAE	**GNATCATCHERS**		
Coastal California gnatcatcher *Polioptila californica californica*	FT, CSC, MSCP, *	Coastal sage scrub, maritime succulent scrub. Resident.	Species is known to occur in the project vicinity (CNDDB 2007), but is not expected to occur on-site due to lack of suitable scrub habitat.

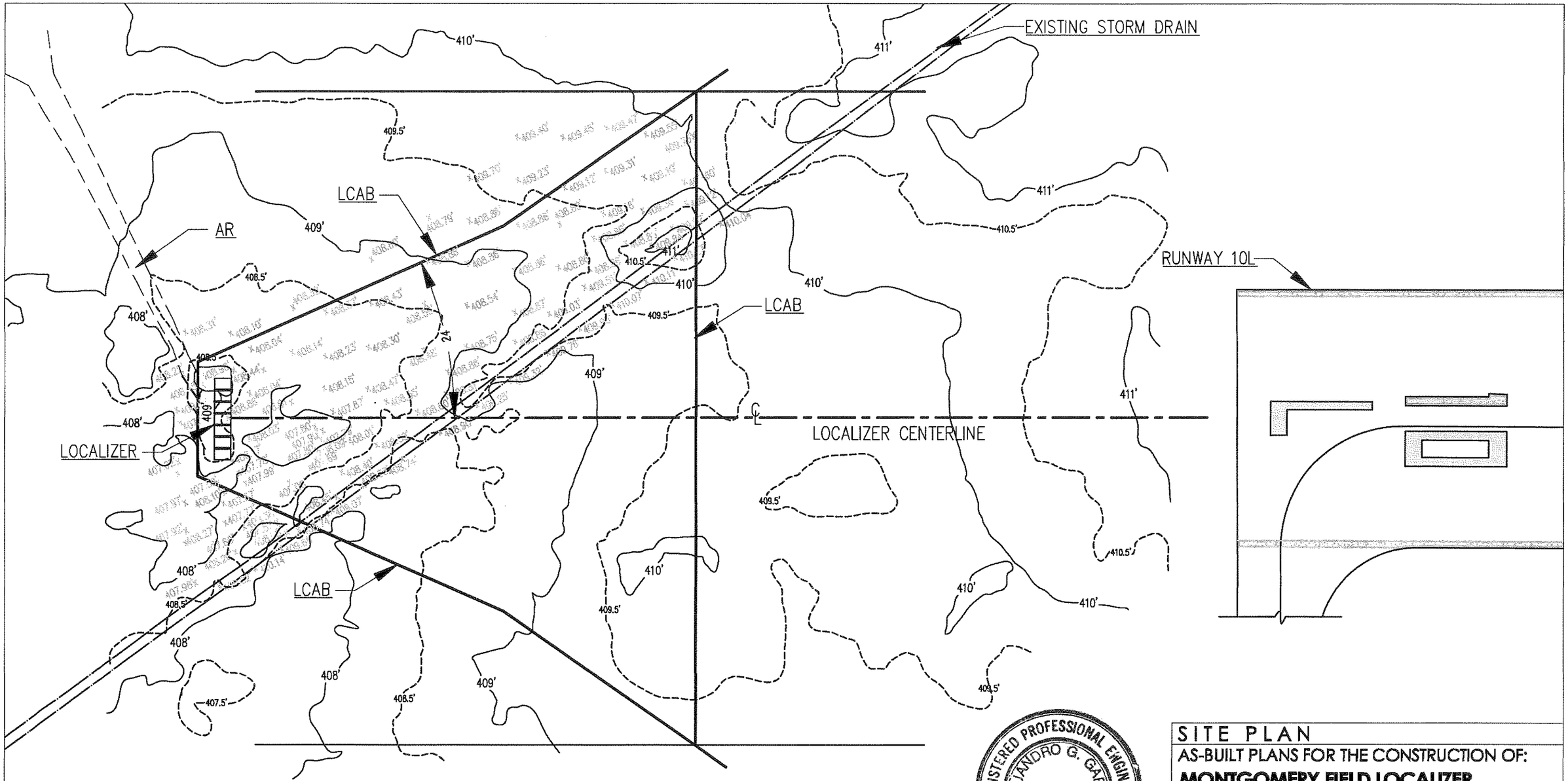
FEDERAL/STATE LISTED

FE = Federally listed endangered
FSS = Federal (BLM and USFS) sensitive species
FT = Federally listed threatened
SE = State listed endangered

OTHER

BCC = U.S. Fish and Wildlife Service Birds of Conservation Concern species
CSC = California Department of Fish and Game species of special concern
MSCP = City of San Diego Multiple Species Conservation Program covered species
* = Taxa listed with an asterisk fall into one or more of the following categories:
- •Taxa considered endangered or rare under Section 15380(d) of CEQA guidelines
- •Taxa that are biologically rare, very restricted in distribution, or declining throughout their range
- •Population(s) in California that may be peripheral to the major portion of a taxon's range, but which are threatened with extirpation within California
- •Taxa closely associated with a habitat that is declining in California at an alarming rate (e.g., wetlands, riparian, old growth forests, desert aquatic systems, native grasslands)

ATTACHMENT 5
As-Built Plans For The Construction Of Montgomery Field Localizer Emergency Remediation



ABBREVIATIONS & SYMBOLS

LCAB.....LOCALIZER CRITICAL AREA BOUNDARY

AR.....ACCESS ROAD

INDICATES NEW ELEVATION ——→ (N) XXX.XX'

INDICATES EXISTING ELEVATION ——→ (E) XXX.XX'

0 30 60 120

GRAPHIC SCALE

REGISTERED PROFESSIONAL ENGINEER
ALEJANDRO G. GARCIA
No. 51507
Exp 6/30/12
CIVIL
STATE OF CALIFORNIA

TRUE NORTH

SITE PLAN

AS-BUILT PLANS FOR THE CONSTRUCTION OF:

MONTGOMERY FIELD LOCALIZER EMERGENCY REMEDIATION

SHEET 1 OF 5

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING & CAPITAL PROJECTS DEPARTMENT

I.O. NO. 21000379

FOR CITY ENGINEER — DATE 3/18/11

DIVISION HEAD

DESCRIPTION	BY	APPROVED	DATE	FILMED
AS-BUILT	J.A.		03/18/2011	

PROJECT MANAGER

NAD COORDINATES

LAMBERT COORDINATES

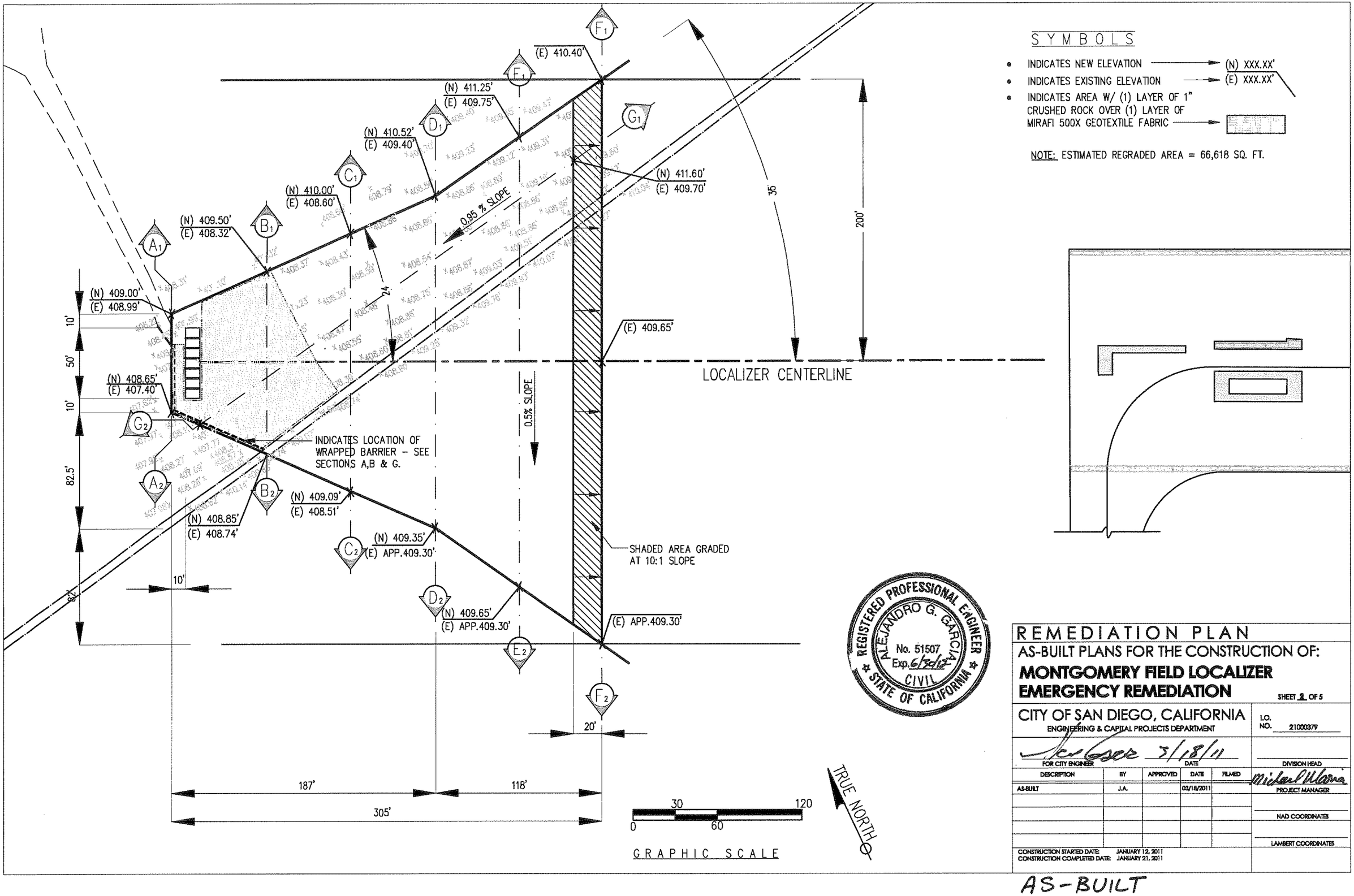
CONSTRUCTION STARTED DATE: JANUARY 12, 2011
CONSTRUCTION COMPLETED DATE: JANUARY 21, 2011

AS-BUILT

SYMBOLS

- INDICATES NEW ELEVATION → (N) XXX.XX'
- INDICATES EXISTING ELEVATION → (E) XXX.XX'
- INDICATES AREA W/ (1) LAYER OF 1" CRUSHED ROCK OVER (1) LAYER OF MIRAFI 500X GEOTEXTILE FABRIC →

NOTE: ESTIMATED REGRADED AREA = 66,618 SQ. FT.



REGISTERED PROFESSIONAL ENGINEER
ALEJANDRO G. GARCIA
No. 51507
Exp. 6/30/12
CIVIL
STATE OF CALIFORNIA

REMEDIATION PLAN

AS-BUILT PLANS FOR THE CONSTRUCTION OF:

MONTGOMERY FIELD LOCALIZER EMERGENCY REMEDIATION

SHEET 3 OF 5

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING & CAPITAL PROJECTS DEPARTMENT

I.O. NO. 21000379

FOR CITY ENGINEER — DATE 3/18/11

DIVISION HEAD

DESCRIPTION	BY	APPROVED	DATE	FILMED
AS-BUILT	J.A.		03/16/2011	

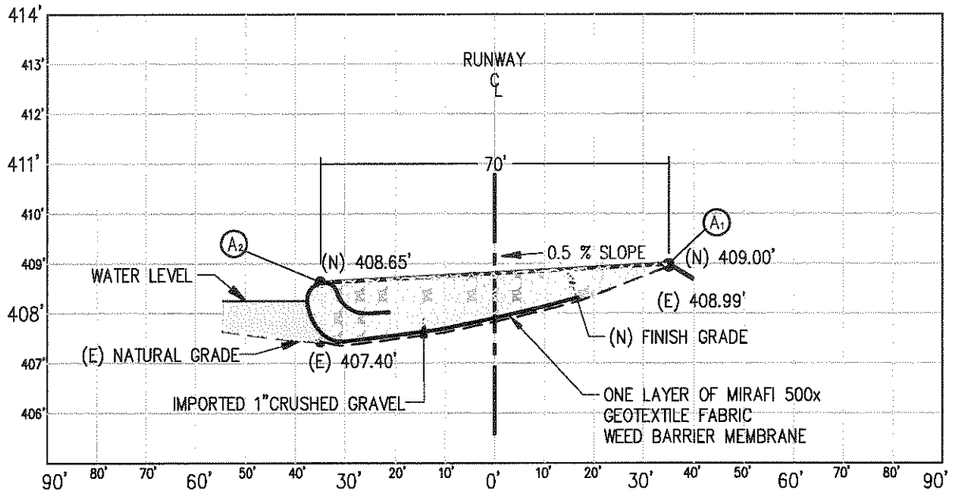
Michael Ulana
PROJECT MANAGER

NAD COORDINATES

LAMBERT COORDINATES

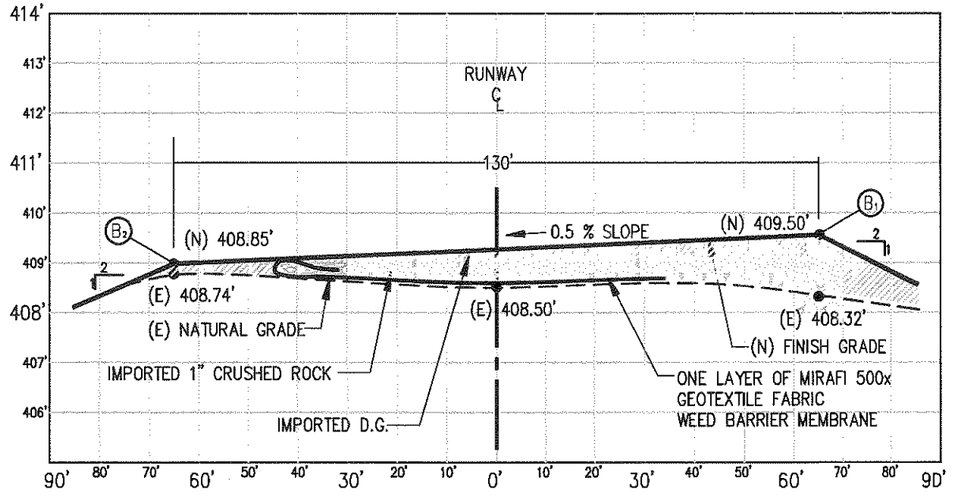
CONSTRUCTION STARTED DATE: JANUARY 12, 2011
CONSTRUCTION COMPLETED DATE: JANUARY 21, 2011

AS-BUILT



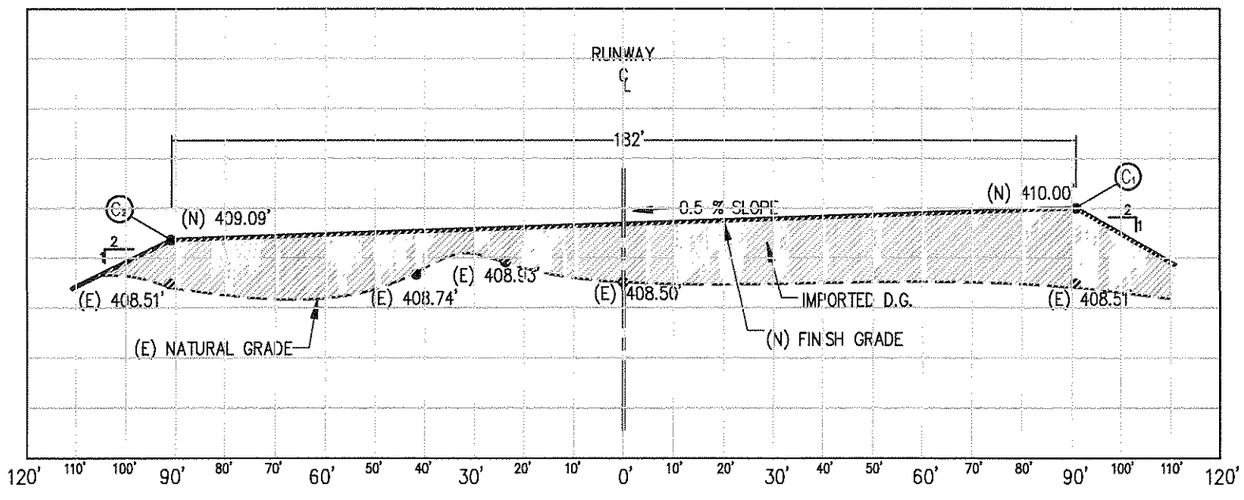
CROSS SECTION – AA

SCALE: HORIZONTAL: 1" = 30', VERTICAL: 1" = 3'



CROSS SECTION – BB

SCALE: HORIZONTAL: 1" = 30', VERTICAL: 1" = 3'



CROSS SECTION – CC

SCALE: HORIZONTAL: 1" = 30', VERTICAL: 1" = 3'

REGISTERED PROFESSIONAL ENGINEER
ALEJANDRO G. GARCIA
No. 51507
Exp. 6/30/12
CIVIL
STATE OF CALIFORNIA

SECTIONS A, B, & C

AS-BUILT PLANS FOR THE CONSTRUCTION OF:

MONTGOMERY FIELD LOCALIZER EMERGENCY REMEDIATION

SHEET 3 OF 5

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING & CAPITAL PROJECTS DEPARTMENT

I.O. NO. 21000379

FOR CITY ENGINEER — DATE 3/18/11

DIVISION HEAD

DESCRIPTION	BY	APPROVED	DATE	FILMED
AS-BUILT	J.A.		03/18/2011	

Michael Morris
PROJECT MANAGER

NAD COORDINATES

LAMBERT COORDINATES

CONSTRUCTION STARTED DATE: JANUARY 12, 2011
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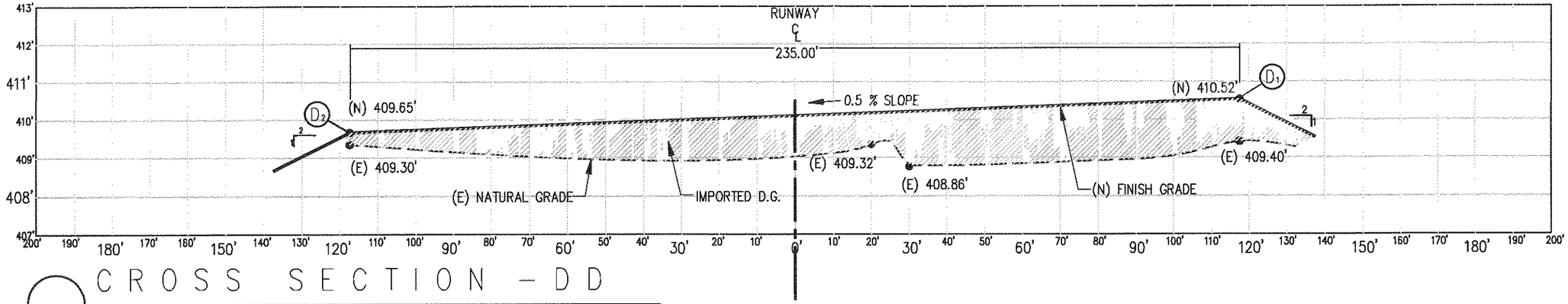
AS-BUILT



CROSS SECTION - DD

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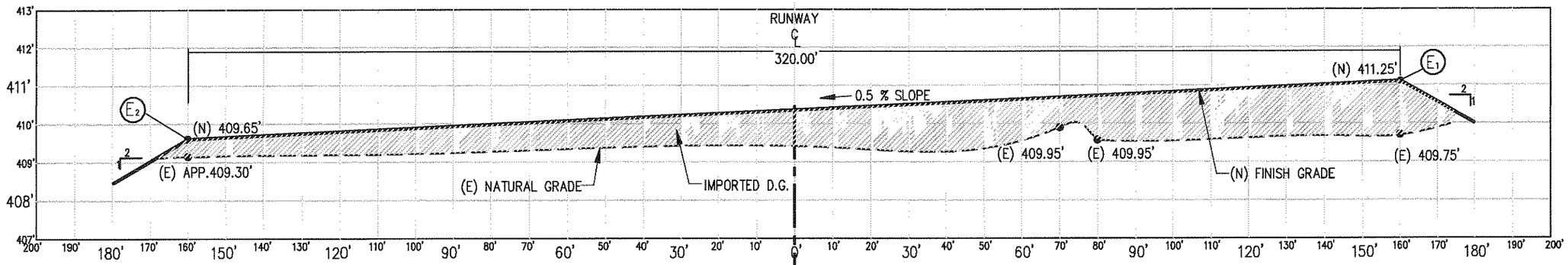

CROSS SECTION - EE

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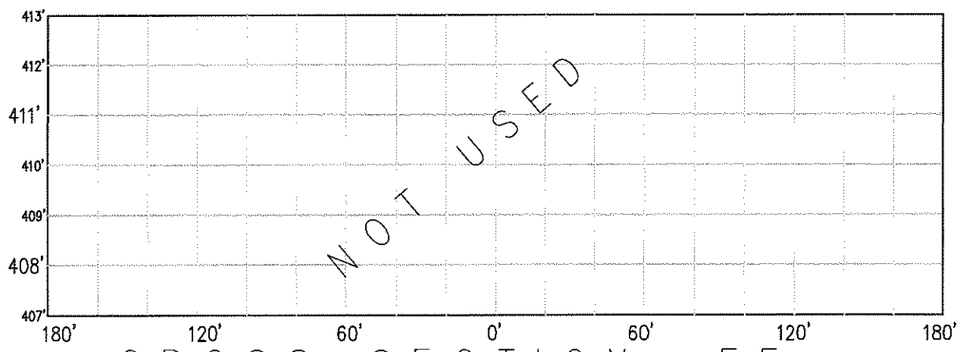

CROSS SECTION - FF

SCALE: HORIZONTAL: 1" = 30', VERTICAL: 1" = 3'

REGISTERED PROFESSIONAL ENGINEER
ALEJANDRO G. GARCIA
No. 51507
Exp. 6/30/12
CIVIL
STATE OF CALIFORNIA

SECTIONS D, E & F

AS-BUILT PLANS FOR THE CONSTRUCTION OF:

MONTGOMERY FIELD LOCALIZER EMERGENCY REMEDIATION

SHEET 4 OF 5

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING & CAPITAL PROJECTS DEPARTMENT

I.O. NO. 21000379

FOR CITY ENGINEER — DATE 3/18/11

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AS-BUILT	J.A.		03/18/2011	

PROJECT MANAGER

NAD COORDINATES

LAMBERT COORDINATES

CONSTRUCTION STARTED DATE: JANUARY 12, 2011
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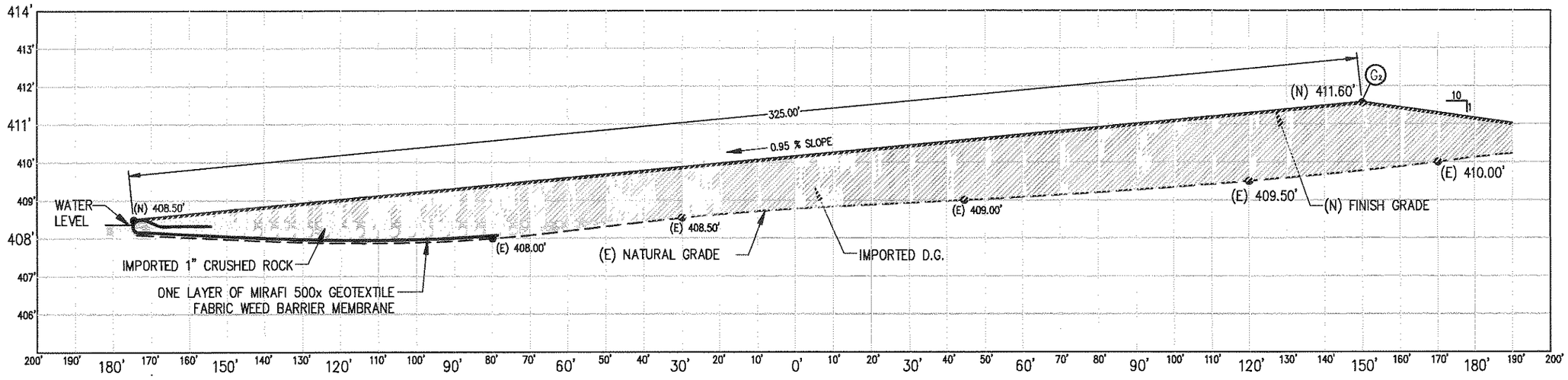
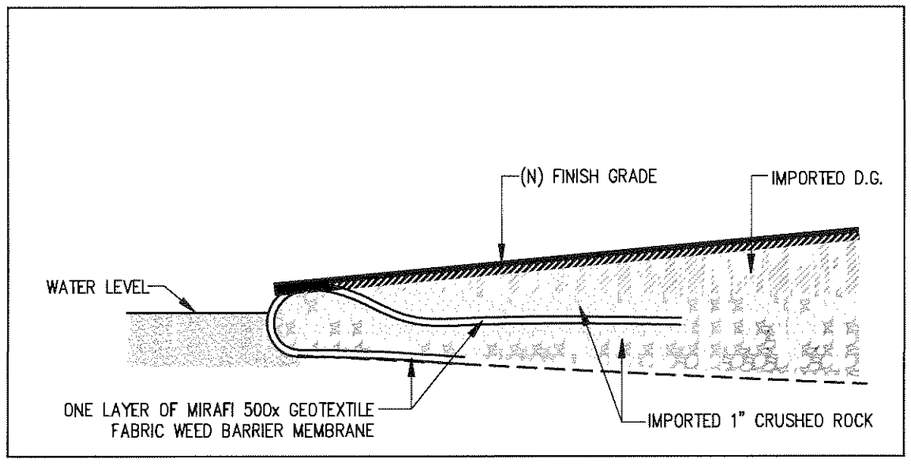
AS-BUILT



CROSS SECTION - GG

SCALE: HORIZONTAL: 1" = 30', VERTICAL: 1" = 3'



BARRIER ENLARGED DETAIL

NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
ALEJANDRO G. GARCIA
No. 51507
Exp. 6/30/12
CIVIL
STATE OF CALIFORNIA

SECTIONS G.

AS-BUILT PLANS FOR THE CONSTRUCTION OF:

MONTGOMERY FIELD LOCALIZER EMERGENCY REMEDIATION

SHEET 8 OF 5

CITY OF SAN DIEGO, CALIFORNIA
ENGINEERING & CAPITAL PROJECTS DEPARTMENT

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FOR CITY ENGINEER — DATE 3/18/11

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PROJECT MANAGER

NAD COORDINATES

LAMBERT COORDINATES

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AS-BUILT