



WILDOMAR MASTER DRAINAGE PLAN LATERAL C-1 STORM DRAIN PROJECT

DETERMINATION OF BIOLOGICALLY EQUIVALENT OR SUPERIOR PRESERVATION

City of Wildomar, Riverside County, California

Assessor's Parcel Numbers:

380-050-002

380-050-003

380-050-007

380-050-008

380-050-009

380-050-010

380-050-011

380-050-012

Submitted to:

Albert A. Webb Associates
3788 McCray Street
Riverside, California 92506

Contact: Cheryl DeGano
(951) 320-6052

Submitted by:

AMEC Environment & Infrastructure, Inc.
3120 Chicago Avenue, Suite 110
Riverside, CA 92507

Contact: Michael D. Wilcox
(951) 369-8060 ext. 225

April 2015

AMEC Project No. 1455400608



Table of Contents

	<u>Page</u>
1.0 INTRODUCTION	1
2.0 DEFINITION OF PROJECT AREA	1
3.0 AVOIDANCE/MINIMIZATION	2
4.0 BIOLOGICAL RESOURCES	4
4.1 Project Relationship to the Western Riverside County MSHCP	4
4.2 Biological/Hydrological Resources Assessments	4
5.0 QUANTIFICATION OF UNAVOIDABLE IMPACTS.....	5
6.0 FINDINGS	5
6.1 Effects on Conserved Habitats	5
6.2 Effects on the Riparian/Riverine and Vernal Pool Planning Species.....	5
6.3 Effects on Riparian Linkages and Function of the Conservation Area	5
7.0 REFERENCES	6

Appendices

- Appendix A Map Figures
- Appendix B Wildomar Master Drainage Plan Lateral C-1 Storm Drain Project Biological Resources Assessment, Focused Survey for Burrowing Owl and Western Riverside County Multiple Species Habitat Conservation Plan Consistency Analysis
- Appendix C Wildomar Master Drainage Plan Lateral C-1 Storm Drain Project Jurisdictional Delineation Report

1.0 INTRODUCTION

A Determination of Biologically Equivalent or Superior Preservation (DBESP) Report is required for impacts to Riparian/Riverine areas/Vernal Pools as required by the Western Riverside Multiple Species Habitat Conservation Plan (WRMSHCP), as defined by the WRMSHCP (Section 6.1.2, pages 6-21 and 6-22 of the WRMSHCP). A DBESP shall be made to ensure replacement of any lost functions and values of habitat as it relates to covered species. Projects that prepare a DBESP are still subject to all State and Federal regulations related to wetland habitats, streambeds, and “waters.”

2.0 DEFINITION OF PROJECT AREA

The proposed project includes the installation of approximately 2,400 linear feet of an underground storm drain with an estimated diameter of 90 inches and 66 inches and will also include ancillary structures. The project will connect to the existing reinforced concrete box culvert under Palomar Street that is part of the District’s Wildomar Master Drainage Plan Lateral C. The proposed storm drain was designed to safely carry the 100-year storm runoff. The proposed storm drain will only convey high flows and it will allow low flows to continue down the natural watercourse.

The project encompasses approximately 2.46 acres, located within Refa Street from Palomar Street to Charles Street and in Charles Street southeasterly to Woshka Lane (Appendix A, Figure 1). A 500-foot lateral storm drain will extend northwesterly from the Charles Street and Refa Street intersection to Billie Ann Road. Specifically, it is located within Section 35 of Township 6 South, Range 4 West, as shown on the United States Geological Survey (USGS) 7.5 minute Wildomar, California quadrangle. The proposed project includes Assessor Parcel Numbers (APNs) 380-050-002, 380-050-003, 380-050-007, 380-050-008, 380-050-009, 380-050-010, 380-050-011 and 380-050-012. The geographic coordinates near the middle of the site are 33.60091° North latitude and 117.26430° West longitude. The proposed project site is bordered to the northwest and southeast by large-lot rural residential housing, to the northeast by single-family tract homes, and to the southwest by single-family residential tract homes and large-lot rural residences. See Appendix A and B for site photographs.

The portions of the project having the potential to impact biological resources are generally located where the project traverses areas outside of the existing roadways south of the intersection of Charles Street and Woshka Lane, in line with Charles Street from Billie Anne Road to Refa Street and at the northeast intersection of Refa Street and Palomar Street (Appendix A, Figures 1-6). Within this area are two drainages that are traversed by the proposed project in three locations. Drainage A supports riparian vegetation and has an earthen bottom and is traversed by the proposed project alignment in two places south of Billie Ann Road and west of Refa Street (Appendix A, Figure 2). Drainage B also supports riparian vegetation, has an earthen bottom and is present and at the northwest terminus of the project alignment at the intersection of Charles Street and Woshka Lane (Appendix A, Figure 2). The areas surrounding the alignment and outside of the onsite riparian vegetation are disturbed

vacant lands dominated by non-native grasses and herbaceous species or residential properties supporting ornamental landscaping trees, shrubs, grasses and annuals. Several oak trees were observed adjacent to the project alignment. These include one non-native oak, several saplings and what appeared to be a coast live oak located adjacent to the alignment within a parcel of private property where site access was not granted (Appendix A, Figure 3). Topography of the site is relatively flat. The elevation ranges from approximately 1,230-1,276 feet above mean sea level (MSL). Mapped onsite soils are comprised of the following classifications (Appendix A, Figure 4):

- GyC2: Greenfield sandy loam, 2 to 8 percent slopes, eroded
- HfD: Hanford sandy loam, 2-15 percent slopes
- MmB: Monserate sandy loam, 0 to 5 percent slopes
- MmC2: Monserate sandy loam, 5 to 8 percent slopes, eroded
- MnD2: Monserate sandy loam, shallow, 5 to 15 percent slopes, eroded
- MnE3: Monserate sandy loam, shallow, 15-25% slopes, severely eroded
- PaA: Pachappa fine sandy loam, 0-2% slopes
- PIB: Placentia fine sandy loam, 0-5% slopes
- PID: Placentia fine sandy loam, 5-15% slopes

None of these soil types are predominantly clay, alkali or known to be specifically associated with any special-status flora, fauna or support vernal pools.

3.0 AVOIDANCE/MINIMIZATION

Section 6.1.2 of the MSHCP states that the project proponent shall ensure that, through the California Environmental Quality Act (CEQA) process, project applicants develop project alternatives demonstrating efforts that first avoid, and then minimize direct and indirect effects to wetlands. An avoidance alternative shall be selected, if feasible. If an avoidance alternative is not feasible, a practicable alternative that minimizes direct and indirect effects to riparian/riverine areas and vernal pools and associated functions and values to the greatest extent possible shall be selected. Those impacts that are unavoidable shall be mitigated such that the lost functions and values as they relate to covered species are replaced as set forth under the DBESP.

A 100-percent avoidance alternative for this project is not feasible due to the inability for the existing drainage and flood control features to convey 100-year storm flows, which is a localized drainage problem. However, various minimization/mitigation measures and project design features have been incorporated and/or will be implemented to reduce impacts to the greatest extent possible:

- The project will be constructed primarily in existing city streets, where possible, which will have no permanent impacts to undisturbed areas.

- Best Management Practices (BMP) will be implemented to minimize impacts caused by dust, run-off, trash, etc.
- Direct impacts to riverine/riparian habitat will be minimized to the greatest extent feasible.
- Construction in and/or adjacent to areas potentially occupied by actively nesting bird species protected by the Migratory Bird Treaty Act (MBTA) will be conducted outside of the avian nesting bird season where feasible. The nesting season for most species in the project area is from approximately 1 February to 31 August. Should avoidance of the bird nesting season be determined to be unfeasible, a focused nesting bird survey will be conducted by a qualified biologist up to 14 days prior to commencement of project activities potentially affecting nesting birds. A 300-foot buffer zone area surrounding the project alignment will also be surveyed at this time for actively nesting bird species that may be indirectly affected by project construction and operations.

If an active nest is observed within 300 feet for songbirds, or 500 feet for raptors or listed species, of construction activities, an exclusion zone (no ingress/egress of personnel or equipment at a minimum radius of 300 feet for songbirds or 500 feet for raptors/listed species, around the nest site). The prescribed exclusion zone distances are generally required by the California Department of Fish and Wildlife (CDFW) for projects potentially affecting nesting avian species. A reduction in the exclusion zone distances, where necessary, may be negotiated through consultation with the CDFW and the USFWS on a case by case basis. Observation of the project exclusion zone areas will remain in effect until all young have fledged.

Reference to these requirements and to the MBTA shall be included in the construction specifications.

When construction activities and/or vegetation removal are proposed to occur during the non-breeding season (1 September to January 31), a nesting bird survey is not required, no further studies are necessary, and no mitigation would be required.

- Potentially suitable habitat (i.e., riparian vegetation) for the federally- and state-listed as endangered least Bell's vireo (*Vireo bellii pusillus*) occurs directly adjacent to the project site. There will be no direct impacts to least Bell's vireo habitat. A focused survey for this species should be conducted to determine if it occurs adjacent to the project site (Appendix A, Figure 5). If the focused survey results in negative findings, no further monitoring will be required. If least Bell's vireo is observed, then a biological monitor shall be required to be present at the project site until all construction activities have been completed. If focused least Bell's vireo surveys are not conducted, the project proponent can construct outside of the least Bell's vireo nesting season (September 1st – March 1st).
- Project features have been designed to avoid undisturbed habitats to the greatest extent practicable.

4.0 BIOLOGICAL RESOURCES

4.1 Project Relationship to the Western Riverside County MSHCP

The Project alignment is located within the Elsinore Area Plan of the MSHCP. The alignment is not located within any MSHCP cells, corridors, or Criteria Areas (Riverside County Integrated Project [RCIP] 2003). The alignment is also not located immediately adjacent to any MSHCP cells, corridors, or Criteria Areas. For these reasons, implementation of the proposed Project is not expected to interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident migratory wildlife corridors, or impede the use of native wildlife nursery sites and is expected to have no effect on MSHCP reserve assembly or conservation areas.

4.2 Biological/Hydrological Resources Assessments

As part of the CEQA review for the proposed project, an assessment of biological resources and focused survey for burrowing owl (*Athene cunicularia*) was performed and is attached as Appendix A. A determination of jurisdictional waters and wetlands was also performed and is attached as Appendix B. A brief summary of the findings contained in these reports is presented below.

No special-status or covered species (including burrowing owl) were observed during the biological resources assessment and focused survey for burrowing owl. Riparian/riverine habitats dominated by willows (*Salix* spp.), Fremont cottonwood (*Populus fremontii*) and mulefat (*Baccharis salicifolia*), which are suitable for least Bell's vireo, a federally-listed and State-listed endangered species, are located in several areas directly adjacent to the project alignment (Appendix A, Figure 5). Habitat for the federally-listed and State-listed endangered southwestern willow flycatcher (*Empidonax traillii extimus*), is however not present onsite or near the project site. The riparian habitats are located within a privately owned vacant lot south of Billie Anne Road, west of Refa Street, west of the intersection of Refa Street and Charles Street and south of the intersection of Charles Street and Woshka Lane. Although suitable burrows and habitat suitable for burrowing owl were present on and immediately adjacent to the project alignment, burrowing owls were not observed during the focused survey conducted in accordance with MSHCP protocol in the areas surveyed. Adjacent properties include vacant, undeveloped lots that are also suitable for burrowing owls, however access to some these areas was not granted by the property owners.

The project traverses two (2) small unnamed drainages, both blue-line streams supporting riparian vegetation, at four locations of the alignment (Appendix A, Figure 6). Both of the drainages meet the definition of "Waters of the State of California (WSC)", "Waters of the United States (WUS)" and meet the definition of a "riparian/riverine" area as defined by the MSHCP (Appendix B). No vernal pools or habitats suitable for listed fairy shrimp species are present along the alignment.

5.0 QUANTIFICATION OF UNAVOIDABLE IMPACTS

The proposed project will permanently impact 0.03 acre of riparian/riverine habitat. All impacted riparian/riverine areas currently contain either rip-rap or concrete. There will be no permanent impacts to undisturbed riparian/riverine habitat. No mitigation is proposed for impacts to concrete and rip-rap.

6.0 FINDINGS

Implementation of the proposed impact avoidance, minimization and mitigation measures will allow the project to be biologically equivalent or superior to that which would occur under an avoidance alternative without these measures.

6.1 Effects on Conserved Habitats

The riverine/riparian areas currently on the site are not part of any planned MSHCP conservation effort, and are not adjacent to proposed conservation lands. The minimal impacts to these areas will have no effect on conserved habitats.

6.2 Effects on the Riparian/Riverine and Vernal Pool Planning Species

The proposed project will not directly impact any riparian habitat. There is riparian habitat directly adjacent to the project. It is possible that least Bell's vireo occupy the riparian habitat adjacent to the project. A focused survey for least Bell's vireo has not been conducted for this project to date and is recommended to conclusively determine the status of this species in the area. No impact to vernal pools or vernal pool species are anticipated. Indirect impacts, such as dust, noise, lighting, run-off, etc. will be minimized by BMP implementation.

6.3 Effects on Riparian Linkages and Function of the Conservation Area

The site is not located within or adjacent to MSHCP linkages or conservation areas, therefore implementation of the proposed project will have no effect on linkages or functions of conservation areas.

7.0 REFERENCES

AMEC. 2014a. Wildomar Master Drainage Plan Lateral C-1 Storm Drain Project: Biological Resources Assessment, Focused Survey for Burrowing Owl and Western Riverside County Multiple Species Habitat Conservation Plan Consistency Analysis. Unpub. report dated 18 August 2014 and submitted to Albert A. Webb Associates.

AMEC. 2014b. Jurisdictional Delineation Report: Lateral C-1 Storm Drain Project, City of Wildomar, Riverside County, California. Unpub. report dated August 2014 and submitted to Albert A. Webb Associates.

United States Department of Agriculture (USDA). 2011. Natural Resources Conservation Service. Web Soil Survey. Online at:
<http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>

Western Riverside County Multiple Species Habitat Conservation Plan. Volume 1, The Plan. Online at: <http://www.rctlma.org/mshcp/volume1/index.html>

APPENDIX A

Map Figures



APPENDIX B

Wildomar Master Drainage Plan Lateral C-1 Storm Drain Project

Biological Resources Assessment, Focused Survey for Burrowing Owl and
Western Riverside County Multiple Species Habitat Conservation Plan
Consistency Analysis

AMEC 2014



APPENDIX C

Jurisdictional Delineation Report

Lateral C-1 Storm Drain Project

City of Wildomar, Riverside County, California

AMEC 2014

APPENDIX A

Map Figures



Prepared by: Mindy Boehm, AMEC Source: 201401641.AV.OUT - 2000 Exploded

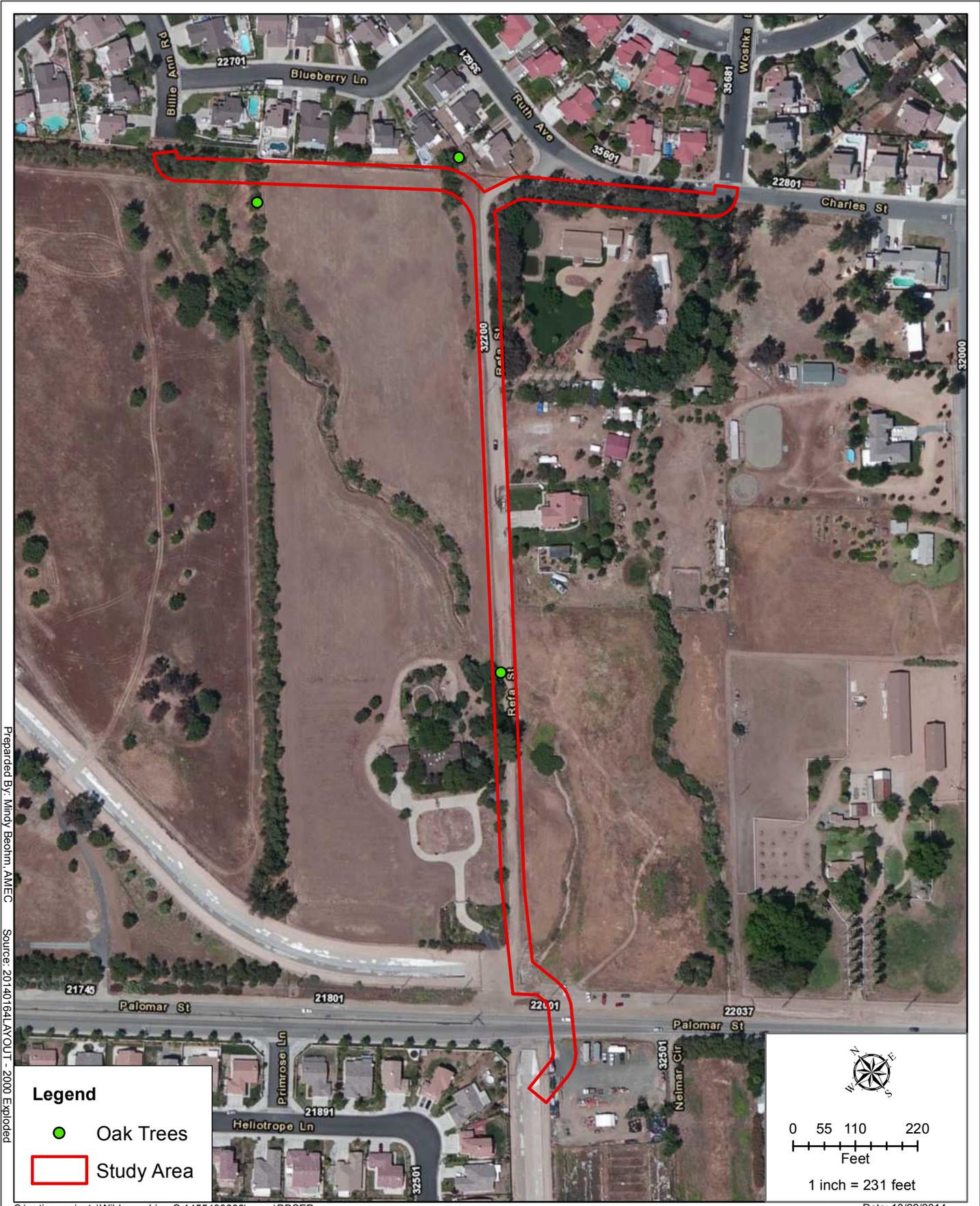
S:\active projects\Wildomar Line C 1455400608\maps\DBSEP

Date: 10/22/2014



VICINITY & LOCATION
WILDOMAR MASTER DRAINAGE PLAN
LATERAL C-1 STORM DRAIN PROJECT

FIGURE
1



Prepared By: Mindy Boehm, AMEC Source: 201401641 AV/OUT - 2000 Exploded

S:\active projects\Wildomar Line C 1455400608\maps\DBSEP

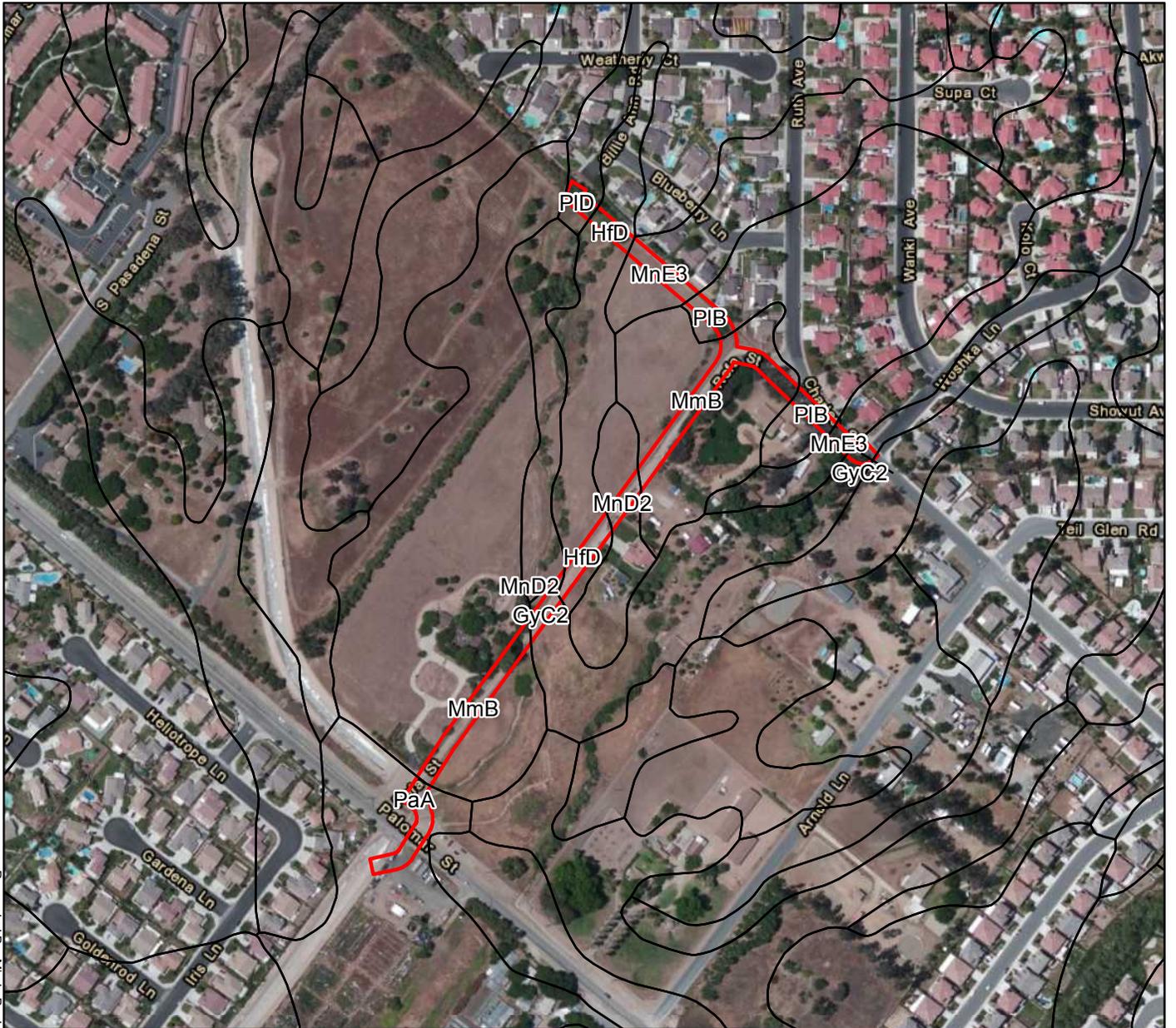
Date: 10/22/2014



OAKS
WILDOMAR MASTER DRAINAGE PLAN
LATERAL C-1 STORM DRAIN PROJECT

FIGURE

3



Legend



Study Boundary

GyC2: Greenfield sandy loam, 2-8% slopes, eroded

HfD: Hanford sandy loam, 2-15% slopes

MmB: Monserate sandy loam, 0-5% slopes

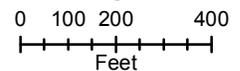
MnD2: Monserate sandy loam, shallow, 5-15% slopes, eroded

MnE3: Monserate sandy loam, shallow, 15-25% slopes, severely eroded

PaA: Pachappa fine sandy loam, 0-2% slopes

PIB: Placentia fine sandy loam, 0-5% slopes

PID: Placentia fine sandy loam, 5-15% slopes



1 inch = 400 feet

Prepared By: Mindy Boehm, AMEC Source: NRCS soils.mart.ca.679

S:\active projects\Wildomar Line C 1455400608\maps\DBESP

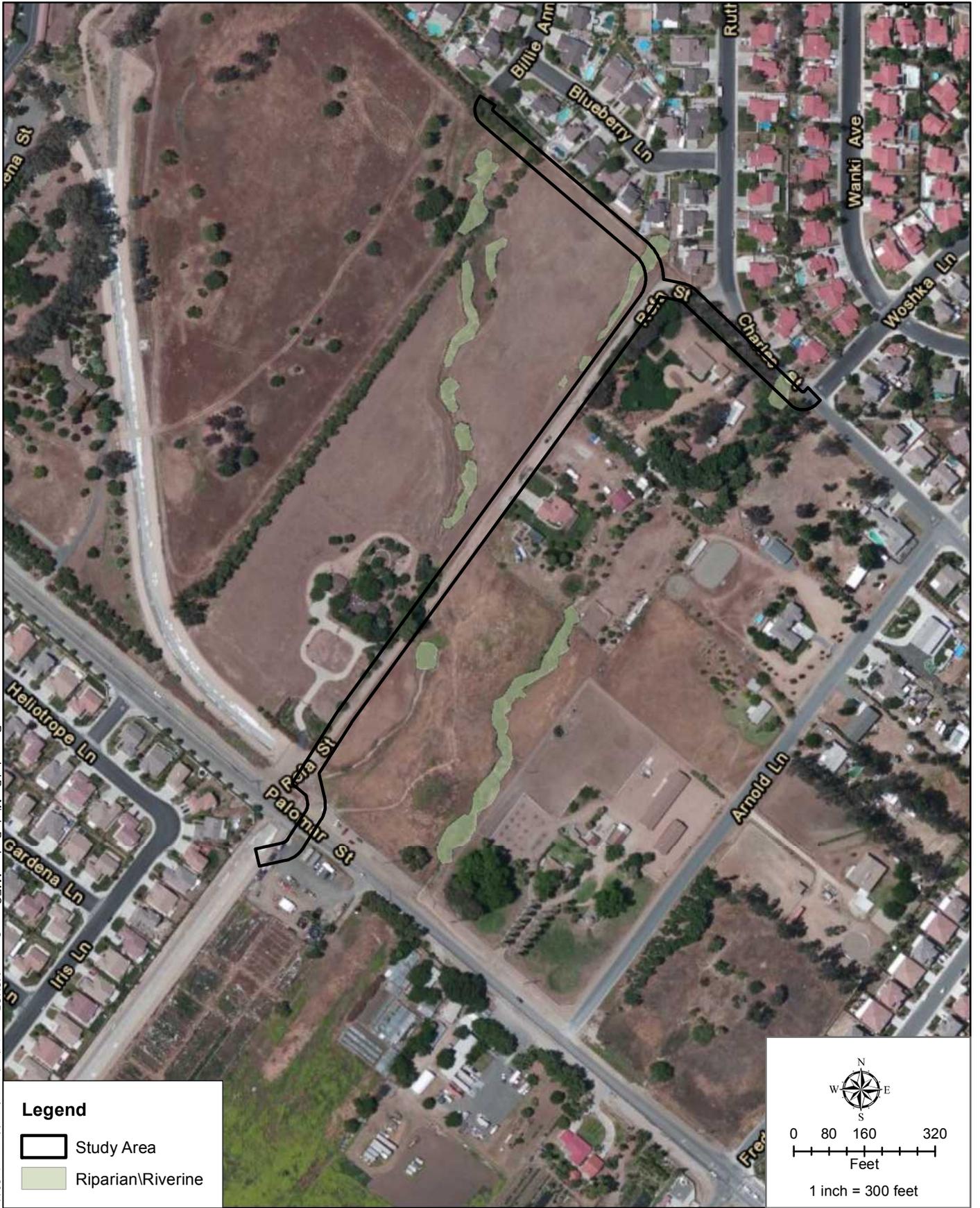
Date: 10/22/2014



SOILS MAP
WILDOMAR MASTER DRAINAGE PLAN
LATERAL C-1 STORM DRAIN PROJECT

FIGURE

4



Prepared By: Mindy Boehm, AMEC Source: MSHCP vegetation layer, riverside county 2011

S:\active projects\Wildomar Line C 1455400608\maps\DBESP

Date: 10/22/2014



RIPARIAN VEGETATION, POTENTIAL LEAST BELL'S VIREO HABITAT
WILDOMAR MASTER DRAINAGE PLAN
LATERAL C-1 STORM DRAIN PROJECT

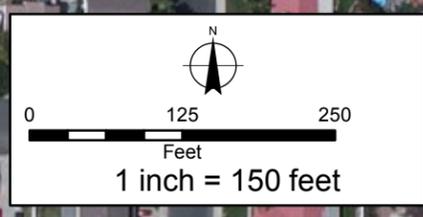
FIGURE
5



Prepared by: Scot Chandler, AMEC Date prepared: 1/9/2015

Legend

- Storm Drain Alignment
- Proposed Storm Drain
- Waters of the US, Waters of the State, CDFW and MSHCP Jurisdiction
- CDFW and MSHCP Jurisdiction Only
- Permanent Impacts
- Existing Culvert
- Off-site Drainage Path
- Photo Point
- Wetland Sampling Point



Jurisdictional Delineation Map

Wildomar Line C Project

FIGURE

6





APPENDIX B

Wildomar Master Drainage Plan Lateral C-1 Storm Drain Project

Biological Resources Assessment, Focused Survey for Burrowing Owl and
Western Riverside County Multiple Species Habitat Conservation Plan
Consistency Analysis

AMEC 2014



DRAFT

**Wildomar Master Drainage Plan
Lateral C-1 Storm Drain Project**

**BIOLOGICAL RESOURCES ASSESSMENT, FOCUSED SURVEY FOR BURROWING OWL
AND WESTERN RIVERSIDE COUNTY MULTIPLE SPECIES HABITAT CONSERVATION
PLAN CONSISTENCY ANALYSIS**

18 August 2014

Riverside County Assessor's Parcel Numbers:

**380-040-003
380-040-004
380-050-002
380-050-003
380-050-007
380-050-008
380-050-009**

Section 35, Range 4 West, Township 6 South of the USGS 7.5' Wildomar, California quadrangle

Submitted to:

Albert A. Webb Associates

3788 McCray Street
Riverside, CA 92506

Contact: Cheryl DeGano
(951) 248-4263

Submitted by:

AMEC Environment and Infrastructure, Inc.

3120 Chicago Avenue, Suite 110
Riverside, CA 92507

Contact: Michael D. Wilcox, Wildlife Biologist
michael.wilcox@amec.com
(951) 369-8060

Principal Investigator and Report Preparer

Fieldwork Performed 3 & 17 July 2014; 5, 11 & 18 August 2014 by:
Michael D. Wilcox and 25 July 2014 by Scot Chandler



AMEC Earth & Environmental, Inc. (AMEC) conducted a habitat assessment and consistency analysis on the alignment of the Wildomar Master Drainage Plan Lateral C-1 Storm Drain Project in the City of Wildomar, Riverside County, California (Project). The proposed project includes the installation of approximately 2,400 linear feet of an underground storm drain and is anticipated to result in a site disturbance of 2.46 acres. Vegetation communities traversed by the proposed alignment primarily include highly disturbed areas of non-native grassland, existing developed areas (road ways and landscaped residential properties) and several strips of mixed willow riparian habitat. The Project alignment is located within a portion of the Lake Elsinore Area Plan of the MSHCP. The alignment is not located within, or adjacent to any MSHCP cells, cell groups, corridors or Criteria Areas. For these reasons, implementation of the proposed Project is expected to have no effect on MSHCP reserve assembly or conservation areas. There are no survey areas for any amphibian or mammalian species or any special linkage areas onsite. The entire alignment is, however, within the MSHCP survey area for the burrowing owl (*Athene cunicularia*) and suitable habitat for the burrowing owl is present throughout. For these reasons, a focused survey for burrowing owl was conducted in accordance with MSHCP survey guidelines. No burrowing owls, or sign thereof, were detected on or immediately adjacent to the alignment. One area of the project alignment, however, traverses a fenced area of private property that was inaccessible at the time of the surveys. This inaccessible area contains suitable burrowing owl habitat and is likely to contain suitable sheltering/nesting opportunities for burrowing owl (i.e., California ground squirrel [*Spermophilus beecheyi*]) as ground squirrels were observed on this property from offsite. Although no active bird nests were observed, nesting birds protected by the Migratory Bird Treaty Act (MBTA) are likely to occur onsite. For these reasons, nesting bird surveys are recommended if Project activities are proposed for the nesting season (1 February-31 August). No suitable habitat is present for the listed coastal California gnatcatcher (*Polioptila californica californica*) or southwestern willow flycatcher (*Empidonax traillii extimus*). Potentially suitable habitat for least Bell's vireo (*Vireo bellii pusillus*) is, however, present within the riparian vegetation located along two onsite drainages and within one strip of habitat not associated with a drainage. If removal or disturbance to riparian vegetation or project-generated noise greater than 60 decibels (dB) is proposed to occur during the nesting season (1 February-31 August) a focused survey for least Bell's vireo may be required. Several oak trees were observed at several locations along the alignment. It is unclear if these trees will be impacted by implementation of the proposed project as two are located on inaccessible private property and the limits of project disturbance were not marked. There are no vernal pools along the project alignment.

TABLE OF CONTENTS

	<u>Page</u>
1.0 PROJECT AND PROPERTY DESCRIPTION	2
1.1 Fieldwork	2
1.2 Topography/Hydrology.....	2
1.3 Soils Analysis.....	3
1.4 Vegetation.....	3
1.5 Oak Trees.....	4
1.6 Jurisdictional Waters Assessment.....	4
1.7 Migratory Bird Treaty Act (MBTA) and other bird related issues, including Burrowing Owl, Coastal California Gnatcatcher, Least Bell’s Vireo, and Southwestern Willow Flycatcher	5
2.0 MSHCP COMPLIANCE	6
2.1 MSHCP Section 3.2.2 Project Relationship to Reserve Assembly	6
2.2 MSHCP Section 6.1.2 Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools/Fairy Shrimp	6
2.3 MSHCP Section 6.1.3 Protection of Narrow Endemic Plant Species and Criteria Area Plant Species	7
2.4 Habitat Assessment, Burrow Search and Focused Survey for Burrowing Owl	7
2.5 MSHCP Section 6.3.2 Additional Survey Needs and Procedures.....	7
3.0 LITERATURE CITED AND REFERENCES	8

TABLE

Table 1. Focused Burrowing Owl Survey Field Data.....	7
---	---

APPENDICES

Appendix I. Species List: Vascular Plants.....	I-1
Appendix II. Species List: Vertebrate Animals	II-1
Appendix III. Site Photos	III-1
Appendix IV. Map Figures.....	IV-1

1.0 PROJECT AND PROPERTY DESCRIPTION

Albert A. Webb Associates (Webb) contracted AMEC Environment and Infrastructure, Inc. (AMEC) to perform a biological resources assessment, focused survey for burrowing owl (*Athene cunicularia*) and consistency analysis for the Wildomar Master Drainage Plan Lateral C-1 Storm Drain Project (project) in accordance with the requirements of the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). Riverside County Flood Control and Water Conservation District (District) proposes the construction of the project located in the City of Wildomar, Riverside County, California (Figure 1 in Appendix IV).

The proposed project includes the installation of approximately 2,400 linear feet of an underground storm drain with an estimated diameter of 84 inches and 66 inches and will also include ancillary structures. The project will connect to the existing reinforced concrete box culvert under Palomar Street that is part of the District's Wildomar Master Drainage Plan Lateral C. The proposed storm drain was designed to safely carry the 100-year storm runoff.

Site disturbance resulting from project implementation is anticipated to encompass approximately 2.46 acres, which includes a 20-foot buffer around the centerline of the alignment. For the purpose of the burrowing owl survey, a 150-meter (approximately 500-foot) buffer area of appropriate habitat surrounding the alignment was assessed and surveyed, where accessible, in accordance with MSHCP survey protocol. The proposed project is located within Refa Street from Palomar Street to Charles Street and in Charles Street southeasterly to Woshka Lane. A 500-foot lateral will extend northwesterly from the Charles Street and Refa Street intersection to Billie Ann Road. Specifically, it is located within Section 35 of Township 6 South, Range 4 West, as shown on the United States Geological Survey (USGS) 7.5 minute Wildomar, California quadrangle (Figure 2). The geographic coordinates near the middle of the site are 33.60091° North latitude and 117.26430° West longitude. The proposed project site is bordered to the northwest and southeast by large-lot rural residential housing, to the northeast by single-family tract homes, and to the southwest by single-family residential tract homes and large-lot rural residences.

The Project alignment occurs on at least portions of the following Riverside County Assessor's Parcel Numbers (APNs): 380-040-003, 380-040-004, 380-050-002, 380-050-003, 380-050-007, 380-050-008 and 380-050-009.

1.1 Fieldwork

A general biological assessment and habitat assessment for burrowing owl was conducted on 3 July 2014 by AMEC senior biologist Michael D. Wilcox. A burrow search for burrowing owl and the first visit of the focused survey for burrowing owl was conducted by Wilcox on 17 July 2014. Three follow-up visits to complete the focused survey for burrowing owl were conducted by Wilcox on 5 August, 11 August and 13 August 2014. Weather conditions were mild during the field assessment and focused surveys (Table 1 below). Lists of all plant and vertebrate species detected are attached as Appendices I & II. Representative site photographs are included in Appendix III.

1.2 Topography/Hydrology

Topography of the alignment is relatively flat with elevations ranging between approximately 1,230-1,276 feet above average mean sea level (AMSL), gradually rising in elevation from the southwest to the northeast.

The project alignment has been subjected to a variety of anthropomorphic site disturbances which has resulted in very limited undisturbed natural habitat remaining on or immediately adjacent to the alignment (Photos 1-6 in Appendix III). Site disturbances observed included existing roads (i.e., Refa Street, Charles Street, Palomar Street), rural ranch-style residences, single-family residential tract development and undeveloped vacant fields. The undeveloped vacant fields appear to have been subjected to vegetation clearing (presumably for agriculture, weed abatement and/or fire suppression) at some time in the past. Surrounding land use consists of a mixture of rural residential homes/ranchettes, single-family tract home development and vacant, undeveloped fields.

Two (2) small unnamed drainages, both blue-line streams, are crossed (or impacted) at four locations of the alignment (Figure #). Both of these drainages meet the definition of “Waters of the State of California (WSC)” and “Waters of the United States (WUS)” (Section 1.4). No vernal pools, however, were observed.

1.3 Soils Analysis

Nine (9) mapped soil types are mapped along the Project alignment (Figure 2 in Appendix IV). These are summarized below:

- GyC2: Greenfield sandy loam, 2 to 8 percent slopes, eroded
- HfD: Hanford sandy loam, 2-15 percent slopes
- MmB: Monserate sandy loam, 0 to 5 percent slopes
- MmC2: Monserate sandy loam, 5 to 8 percent slopes, eroded
- MnD2: Monserate sandy loam, shallow, 5 to 15 percent slopes, eroded
- MnE3: Monserate sandy loam, shallow, 15-25% slopes, severely eroded
- PaA: Pachappa fine sandy loam, 0-2% slopes
- PIB: Placentia fine sandy loam, 0-5% slopes
- PID: Placentia fine sandy loam, 5-15% slopes

None of these soil types are predominantly clay, alkali or known to be specifically associated with any special-status flora, fauna or support vernal pools.

1.4 Vegetation

Most of the proposed project alignment is located within existing paved and/or highly compacted dirt surfaces of public roadways (i.e., Refa Street and Charles Street). One area of the alignment, however, traverses an undeveloped vacant field located west of the intersection of Refa Street and Charles Street (Photos 1 & 4 in Appendix III, Figure 1 in Appendix IV). Two narrow, intermittent strips of trees and shrubs (i.e., Peruvian pepper [*Schinus molle*], willows [*Salix* spp.] and mulefat [*Bacharris salicifolia*]) will be crossed by this portion of the alignment. Additionally, a small patch of cattails (*Typha* sp.) and bullrush (*Scirpus* sp.) is located at the northwestern terminus of this portion of the alignment. Vegetation present in the undeveloped areas and along the roadside margins of project alignment consists primarily of non-native grassland (Figure 3 in Appendix IV) dominated by ruderal, weedy and invasive exotic plant species, a remnant of past anthropogenic disturbances such as weed abatement and fire control practices (Photos 1-6 in Appendix III). Other areas along the alignment are vegetated with ornamental shrubs, trees and ground cover as these areas serve as property boundaries and residential landscaping. Conversely, several areas along the alignment were entirely barren, having been very recently disced or otherwise cleared of all vegetation presumably to

serve as firebreaks or weed control. Representative, conspicuous and dominant plant species identified along the alignment included mostly dormant or dead, mustards (*Brassica* spp.) and bromes (*Bromus* spp.), slender wild oats (*Avena barbata*) and vinegar weed (*Trichostema lanceolatum*). Landscaped, ornamental trees present along the alignment include Peruvian pepper (*Schinus molle*), gum trees (*Eucalyptus* spp.), Australian acacia (*Acacia* sp.), Aleppo pine (*Pinus halepensis*), Chinaberry (*Melia azedarach*), almond (*Prunus dulcis*) and shrubs are also present intermittently throughout the alignment, usually planted along fence lines, as windbreaks or decoratively around residential dwellings, ranchettes and/or industrial and commercial development.

1.5 Oak Trees

There are several oak trees that occur intermittently along portions of the alignment (Figure 4 in Appendix IV). What appears (from a distance) to be a coast live oak (*Quercus agrifolia*) is present on a parcel of inaccessible private property just west of the intersection of Refa Street and Charles Street. This tree appears to be outside, just north of the proposed project alignment. However, since the area is inaccessible (permission to access by the property owner was not granted) and entirely fenced, and because the limits of the right of way were not marked, AMEC can only estimate and speculate whether this tree is within or outside of the project disturbance area. Several sapling coast live oaks are also present near the western end of the alignment (Figure 4 in Appendix IV). These oak saplings appear to be south of the proposed alignment and are under the size threshold (2" diameter at breast height) to be covered under the Riverside County Oak Tree Management Guidelines. In addition to the native oaks, at least one non-native oak tree is also present along the alignment. A single southern live oak (*Quercus virginiana*) is present on a parcel of inaccessible private property but hangs over the property line on to Refa Street. This tree, along with many other ornamental trees and shrubs along the alignment may require trimming and the project disturbance may extend into the drip line of these trees.

Riverside County Oak Tree Management Guidelines, approved by the Board of Supervisors on March 2, 1993, provides protection of oak trees (*Quercus* spp.) greater than two (2) inches in diameter at breast height (4.5 feet above the ground) for single tree trunk or the sum of the diameter of multiple tree trunks at breast height. The guidelines also protect the area surrounding oak trees to a distance of 10 feet or the height of the tree, whichever is greater. The area that is defined as the "drip line" (i.e., the outer edge of the perimeter of the trees branches) is also protected by the guidelines.

1.6 Jurisdictional Waters Assessment

A delineation of jurisdictional waters was conducted to determine the presence of state and federal jurisdiction that is potentially subject to regulation by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA), Regional Water Quality Control Board (RWQCB) under Section 401 of the CWA and Porter Cologne Water Quality Control Act, California Department of Fish and Wildlife (CDFW) under Section 1602 of the California Fish and Game Code, and County of Riverside under the MSHCP.

USACE and RWQCB jurisdiction was delineated to the ordinary high water mark (OHWM). CDFW jurisdiction was delineated by measuring the elevations of land that confine a stream to a definite course when its waters rise to their highest level and to the extent of associated riparian

vegetation. Riparian/riverine areas jurisdictional under the MSHCP were mapped similar to CDFW jurisdiction but also included riparian areas not associated with a watercourse.

Field surveys of the project site were conducted by AMEC delineator Scot Chandler on 25 July 2014. Surveys consisted of walking the entire project site and identifying potentially jurisdictional water features. Visual observations of vegetation types and changes in hydrology were used to locate areas for evaluation. Weather conditions during delineation fieldwork were conducive for surveying with clear skies.

The project site contains two jurisdictional drainages that are traversed by the project alignment several times and an additional strip of riparian vegetation, not associated with a definable drainage that is also crossed by the alignment. The proposed project will temporarily impacts 0.033 acre and permanently impact 0.004 acre of USACE and RWQCB jurisdiction, will temporarily impact 0.036 acre and permanently impact 0.011 acre of CDFW jurisdiction, and will temporarily impact 0.036 acre and permanently impact 0.164 acre of MSHCP jurisdiction (AMEC 2014).

1.7 Migratory Bird Treaty Act (MBTA) and other bird related issues, including Burrowing Owl, Coastal California Gnatcatcher, Least Bell's Vireo, and Southwestern Willow Flycatcher

There is no suitable habitat (i.e., coastal sage scrub or chaparral) for the listed coastal California gnatcatcher (*Polioptila californica californica*) anywhere along the Project alignment. There is also no suitable habitat (i.e., extensive areas of multi-layered riparian vegetation and surface water or saturated soils for at least a portion of the year) for southwestern willow flycatcher (*Empidonax traillii extimus*) anywhere along the alignment. Two of the drainages traversed by the project contain riparian vegetation that is potentially suitable habitat for least Bell's vireo (*Vireo bellii pusillus*). The areas of the drainage containing potentially suitable least Bell's vireo habitat, however, are largely areas that would not likely be directly impacted by the proposed project as much of the riparian habitat is located away from the proposed alignment. Additionally, it should be noted that much of the riparian habitat that is potentially suitable for least Bell's vireo habitat was located on inaccessible, fenced private property to the west, northwest and south of the proposed project alignment. One small area, within another drainage was located at the northeastern project terminus, southwest of the intersection of Charles Street and Woshka Lane (Figure 5 in Appendix IV).

The MSHCP does not provide coverage or conservation of birds protected by the federal Migratory Bird Treaty Act (MBTA) therefore impacts to native birds are not permitted under any part of the MSHCP. A variety of birds protected by the MBTA were observed along the alignment during the field assessment, some with potential nest onsite and/or immediately adjacent to the Project alignment. No nests or nesting behavior, however, were observed during the surveys. Representative examples of birds with potential to nest onsite include, but are not limited to, house finch (*Haemorrhous mexicanus*), Anna's hummingbird (*Calypte anna*), mourning dove (*Zenaida macroura*), killdeer (*Charadrius vociferus*), California towhee (*Melozone crissalis*) and California horned lark (*Eremophila alpestris actia*). Because impacts to nesting birds are not covered by the MSHCP, any activities that could potentially cause disruption of natural nesting behavior or directly disturb an active nest or nesting bird must be minimized or avoided. Although there is no established protocol for nest avoidance, regulatory agencies generally recommend avoidance buffers of about 500 feet for birds-of-prey, and 100–

300 feet for songbirds, however this is often determined on a case by case, or project by project basis. The nesting season for most species in the Project area is from approximately 1 February to 31 August. Avoidance of Project activities that have the potential to disturb nesting birds during the nesting season is the easiest way to avoid impacts. If it is not feasible to avoid such Project activities during the nesting season, nesting bird surveys conducted by a qualified biologist should be completed prior to any such activities. If active nests are found, they should be avoided through the establishment of an adequate “no disturbance buffer zones” (generally 100’-500’) and observed by Project activities until after the young have fledged.

The entire project alignment is within the Burrowing Owl Survey Area as defined by the MSHCP. Suitable habitat for Burrowing owl is present throughout undeveloped portions of the alignment. Additionally, many California ground squirrel (*Spermophilus beecheyi*) burrows were observed and mapped during the focused burrow search phase of the assessment. For these reasons, a focused nesting season survey for burrowing owl in accordance with the requirements of the MSHCP was conducted. The burrowing owl survey is discussed in Section 2.4 below.

2.0 MSHCP COMPLIANCE

2.1 MSHCP Section 3.2.2 Project Relationship to Reserve Assembly

The Project alignment is located within the Elsinore Area Plan of the MSHCP. The alignment is not located within any MSHCP cells, corridors, or Criteria Areas (Riverside County Integrated Project [RCIP] 2003). The alignment is also not located immediately adjacent to any MSHCP cells, corridors, or Criteria Areas. For these reasons, implementation of the proposed Project is expected to have no effect on MSHCP reserve assembly or conservation areas.

There are no requisite survey areas for any amphibian or mammalian species along the Project alignment (Riverside County Integrated Project [RCIP] 2003).

2.2 MSHCP Section 6.1.2 Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools/Fairy Shrimp

The site traverses two natural drainages that qualify as WSC and WUS. Project impacts to these areas trigger riparian/riverine protection under the MSHCP. Willows (*Salix* spp.), Fremont cottonwoods (*Populus fremontii*), mulefat (*Baccharis salicifolia*) and cattails are intermittently present along several areas along two drainages traversed by the project alignment. These drainages flow into a concrete-lined channel just north of Palomar Street .

No vernal pools, or areas considered to have potential for vernal pooling were observed along the alignment. Focused surveys for listed fairy shrimp are not recommended for this project.

Potentially suitable riparian habitat for least Bell’s vireo is intermittently present within two drainages traversed by portions of the project alignment. The areas of potentially suitable habitat, however, are generally not located at the alignment/drainage crossings. The potentially suitable habitat is primarily located offsite, west, northwest and south of the portions of the project alignment. Habitat suitable for southwestern willow flycatcher is not present anywhere along the Project alignment.

2.3 MSHCP Section 6.1.3 Protection of Narrow Endemic Plant Species and Criteria Area Plant Species

The Project alignment is not located within any requisite Narrow Endemic Plant Species Survey Areas or Criteria Area Plant Survey Areas.

2.4 Habitat Assessment, Burrow Search and Focused Survey for Burrowing Owl

The entire Project alignment is within a designated survey area for the burrowing owl as required by the MSHCP. Habitat for burrowing owl was assessment was over the entire Project alignment and adjacent habitats (out to 500 feet of the alignment where accessible) in accordance with MSHCP “Burrowing Owl Survey Instructions” (County of Riverside 2006a). During the assessment the Project alignment was methodically searched for burrowing owls, their sign (burrows, pellets, scat, litter, and animal dung) and components of suitable burrowing owl habitat. No burrowing owls or their sign were observed on or adjacent to the site during the field visit. Many California ground squirrel burrows, which are suitable for and often used by burrowing owls were observed, however throughout the Project alignment. Undeveloped open space suitable for burrowing owl foraging, wintering and breeding is also present throughout much of the Project alignment (Figure 6 in Appendix IV and photos 1-6 in Appendix III).

For these reasons, a focused breeding season survey for burrowing owl was conducted by AMEC on four separate days in accordance with the MSHCP “Burrowing Owl Survey Instructions” (County of Riverside 2006a). Focused burrowing owl surveys were conducted during the morning hours (1 hour before to 2 hours after sun rise) of 17 July 2014 and on 5, 11 and 13 August 2014.

Table 1. Focused Burrowing Owl Survey Field Data

Date	Time	Sky (% cloud cover)	Temperature (°Fahrenheit)	Wind (miles per hour)
17 July 2014	0500-0800	Cloudy (100)	65-69	1-3
5 August 2014	0530-0800	Clear (0)	58-67	0-3
11 August 2014	0530-0800	Partly cloudy (25)	66-77	0-1
13 August 2014	0530-0830	Overcast-partly cloudy (100-25)	64-68	0-4

No burrowing owls, or sign thereof, were observed anywhere onsite or within the 500 foot buffer zone area surveyed, as required by the Burrowing Owl Survey Instructions. It should be noted, however, that one portion of the proposed alignment is located on fenced private property that was inaccessible and thus not surveyed

2.5 MSHCP Section 6.3.2 Additional Survey Needs and Procedures

Because riparian vegetation and two drainages, which are blue-line streams, are traversed by several areas of the proposed alignment, Riverside County will require a Determination of Biologically Equivalent or Superior Preservation (DBESP) analysis in accordance with MSHCP guidelines.

If project implementation proposes to remove or disturb to riparian vegetation and/or result in project-generated noise greater than 60 decibels (dB) during the nesting season (1 February-31 August) a focused survey for least Bell’s vireo would likely be required.

Thirty (30) days or less prior to ground-disturbing Project activities, a pre-construction survey for burrowing owl is required to ensure that the area has not been occupied since completion of the focused surveys.

Any burrowing owls, or territories present must be avoided during the breeding season (defined by MSHCP guidelines as 1 March – 31 August). Any burrowing owls which cannot be avoided by the project will need to be relocated in the non-breeding season, with guidance from Riverside County and the CDFW.

3.0 LITERATURE CITED AND REFERENCES

- AMEC Environment & Infrastructure, Inc. 2014. Jurisdiction Delienation Report, Lateral C-1 Storm Drain Project. Unpub. report prepared for Albert A. WEBB Associates dated August 2014.
- American Ornithologists' Union. 2014. AOU Checklist of North and Middle American Birds. Accessed online at: <http://checklist.aou.org/>
- California Bird Records Committee. 2014. Official California Checklist. Accessed online at: http://californiabirds.org/ca_list.asp
- California Department of Fish and Game (CDFG). 2008. Complete List of Amphibian, Reptile, Bird and Mammal Species in California. Accessed online at: http://www.dfg.ca.gov/biogeodata/cwhr/pdfs/species_list.pdf
- California Department of Fish and Wildlife (CDFW). 2014. California Natural Diversity Data Base, Rarefind 5 report for the Perris, Lakeview, Romoland and Winchester quadrangles. Accessed online at: <http://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp>
- County of Riverside Environmental Programs Department. 2006a. Burrowing Owl Survey Instructions for the Western Riverside County Multiple Species Habitat Conservation Plan Area. March 29, 2006. Accessed online at: http://www.rctlma.org/epd/documents/survey_protocols/burrowing_owl_survey_instructions.pdf
- Jepson Flora Project. 2013. Jepson eFlora. Accessed online at: <http://ucjeps.berkeley.edu/IJM.html>
- Riverside County Integrated Project [RCIP]. 2003. MSHCP Final Documents and Online Parcel Finder for MSHCP requirements. Accessed online at: <http://www.rcip.org/conservation.htm>
- United States Department of Agriculture, Natural Resources Conservation Service. 2013. Web Soil Survey. Accessed online at: <http://websoilsurvey.nrcs.usda.gov/app/>
- USFWS. 2012. Bird Laws and Treaties. Accessed online at: <http://www.fws.gov/migratorybirds/RegulationsandPolicies.html>

APPENDIX I
VASCULAR PLANTS

VASCULAR PLANTS

SYMBOLS AND ABBREVIATIONS:

- * Nonnative species
 - ** Sensitive species
 - sp. Plant identified only to genus; species unknown (plural = spp.)
 - cf. Uncertain identification, but plant specimen "compares favorably" to named species (from Latin *confer*: compare [with]).
-

This list reports only plants observed on the site by this study. Plants that were clearly planted ornamentals or agricultural plantings are not included. Other species may have been overlooked or undetectable due to their growing season. Plants were identified from keys, descriptions and drawings in Jepson 2013, and nomenclature and systematics follow that source. Plants of uncertain identity were taken to the UC Riverside Herbarium for identification.

GYMNOSPERMS

Pinaceae

**Pinus halepensis*

Pine Family

Aleppo pine

EUDICOT ANGIOSPERMS

Amaranthaceae

**Amaranthus albus*

Amaranth Family

pigweed amaranth

Anacardaceae

**Schinus molle*

Cashew Family

pepper tree

Asteraceae

Baccharis salicifolia ssp. *salicifolia*

**Centaurea melitensis*

**Cirsium vulgare*

Deinandra paniculata

Erigeron canadensis

Helianthus annuus

Heterotheca grandiflora

**Lactuca serriola*

**Taraxacum officinale*

Sunflower Family

mule fat

totalote

bull thistle

paniculate tarplant

horseweed

annual sunflower

telegraph weed

prickly lettuce

common dandelion

Brassicaceae

**Hirschfeldia incana*

**Sisimbrium irio*

Mustard Family

shortpod mustard

London rocket

Chenopodiaceae

**Salsola tragus*

Chenopod Family

Russian thistle

Euphorbiaceae

Croton setigerus

Euphorbia Family

dove weed

Fabiaceae

**Acacia* sp.
Lotus purshianus

Fagaceae

**Quercus virginiana*
Quercus agrifolia

Geraniaceae

**Erodium cicutarium*

Hamamelidaceae

**Liquidambar styraciflua*

Lamiaceae

**Marubium vulgare*
Trichostema lanceolatum

Malvaceae

**Malva parviflora*

Meliaceae

**Melia azedarach*

Platanaceae

Platanus racemosa

Polygonaceae

**Melilotus indicus*

Rosaceae

**Prunus dulcis*

Salicaceae

Populus fremontii
Salix sp.

Tamaricaceae

**Tamarix ramosissima*

MONOCOT ANGIOSPERMS**Areaceae**

**Washingtonia* sp.

Euphorbia Family

Australian acacia
Spanish clover

Beech Family

Eastern live oak
coast live oak

Geranium Family

redstem filaree

Witch-hazel Family

liquidambar

Mint Family

horehound
vinegar weed

Mallow Family

cheeseweed

Mahogany Family

China berry

Sycamore Family

Western sycamore

Buckwheat Family

sourclover

Rose Family

almond

Willow Family

Fremont cottonwood
willow tree

Tamarisk Family

salt-cedar

Palm Family

fan palm

Cyperaceae

Carex sp.

Poaceae

**Avena barbata*

**Bromus diandrus*

**Bromus madritensis* ssp. *rubens*

**Cynodon dactylon*

**Schismus* sp.

Typhaceae

Typha sp.

Sedge Family

sedge

Grass Family

slender wild oat

ripgut brome

red brome

Bermuda grass

Mediterranean grass

Cattail Family

cattail

APPENDIX II
VERTEBRATE ANIMALS

VERTEBRATE ANIMALS

SYMBOLS AND ABBREVIATIONS:

- * Nonnative species
 - ** Sensitive species
 - sp. Animal identified only to genus; species unknown (plural = spp.)
-

This list reports only animals or their sign observed on the site by this study. Other species may have been overlooked or undetectable due to their activity patterns. Nomenclature and taxonomy for fauna observed on site follows the American Ornithologists' Union Checklist (2013) for avifauna, Crother et. al (2012) for herpetofauna and CDFG (2008) for mammals.

AMPHIBIANS & REPTILES

Hylidae

Pseudacris hypochondriaca

Treefrogs

Baja California chorus frog

Phrynosomatidae

Sceloporus occidentalis
Uta stansburiana

Horned Lizards and allies

western fence lizard
side-blotched lizard

BIRDS

Cathartidae

Cathartes aura

New World Vultures

turkey vulture

Accipitridae

Buteo jamaicensis
Buteo lineatus

Hawks, Old World Vultures, Harriers

Red-tailed hawk
Red-shouldered hawk

Columbidae

**Columba livia*
Streptopelia decaocto
Zenaida macroura

Pigeons and Doves

rock pigeon
Eurasian collared dove
mourning dove

Trochilidae

Calypte anna

Hummingbirds

Anna's hummingbird

Picidae

Colaptes auratus
Melanerpes formicivorus
Picoides nuttallii

Worldpeckers

northern flicker
acorn woodpecker
Nuttall's woodpecker

Falconidae

Falco sparverius

Falcons

American kestrel

Charadriidae

Charadrius vociferus

Plovers and Relatives

killdeer

Tyrannidae

Sayornis nigricans
Sayornis sayi
Tyrannus vociferans

Corvidae

Aphelocoma californica
Corvus brachyrhynchos
Corvus corax

Hirundinidae

Hirundo rustica

Sturnidae

**Sturnus vulgaris*

Emberizidae

Chondestes grammacus
Melospiza crissalis
Melospiza melodia

Fringillidae

Carduelis psaltria
Haemorhous mexicanus

Troglodytidae

Thryomanes bewickii

Turdidae

Sialia mexicana

Mimidae

Mimus polyglottos

Aegithalidae

Psaltriparus minimus

Passeridae

**Passer domesticus*

MAMMALS**Geomyidae**

Thomomys bottae

Sciuridae

Spermophilus beecheyi

Tyrant Flycatchers

black phoebe
Say's phoebe
Cassin's kingbird

Crows and Jays

western scrub jay
American crow
common raven

Swallows

barn swallow

Starlings

European starling

Sparrows

lark sparrow
California towhee
song sparrow

Finches

lesser goldfinch
house finch

Wrens

Bewick's wren

Thrushes

western bluebird

Mockingbirds, Thrashers and Allies

northern mockingbird

Long-tailed Tits

bushtit

Old World Sparrows

house sparrow

Pocket Gophers

Botta's pocket gopher (holes, mounds)

Squirrels

California ground squirrel

Rabbits and Hares

Sylvilagus audubonii

Leporidae

desert cottontail

APPENDIX III
SITE PHOTOGRAPHS

Wildomar Master Drainage Plan Lateral C-1 Storm Drain Project



Photo 1. Representative condition of the Refa Street portion of alignment (center of dirt road). The portion of the alignment traversing the private property on left (background) was inaccessible at the time of surveys. View facing north.



Photo 2. Representative condition of the Refa Street portion of alignment (center of dirt road). The portion of the alignment traversing the private property on right was inaccessible at the time of surveys. View facing south.

Wildomar Master Drainage Plan Lateral C-1 Storm Drain Project



Photo 3. Representative condition of location of proposed alignment tie-in to existing flood control channel at northeast junction of Refa Street and Palomar Street. Private property at this location was accessible and surveyed for burrowing owl. View facing north.



Photo 4. Potentially suitable least Bell's vireo habitat (background) and burrowing owl habitat (foreground) located on inaccessible private property traversed by a portion of the proposed alignment and immediately adjacent to other portions of the alignment. View facing west.

Wildomar Master Drainage Plan Lateral C-1 Storm Drain Project



Photo 5. Representative condition of the northwestern terminus of the proposed alignment (approximate center of pic). View facing north.



Photo 6. Representative California ground squirrel burrow suitable for burrowing owl.

APPENDIX IV

MAP FIGURES



Prepared By: Mindy Boehm, AMEC Source: 201401641.AV.OUT - 2000 Exploded

Legend

Study Area


 0 125 250 500
 Feet
 1 inch = 500 feet

S:\active projects\Wildomar Line C 1455400608\maps

Date: 8/6/2014



Vicinity & Location
Wildomar Line C Project

FIGURE
1



Legend



Study Boundary

GyC2: Greenfield sandy loam, 2-8% slopes, eroded

HfD: Hanford sandy loam, 2-15% slopes

MmB: Monserate sandy loam, 0-5% slopes

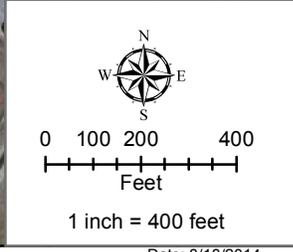
MnD2: Monserate sandy loam, shallow, 5-15% slopes, eroded

MnE3: Monserate sandy loam, shallow, 15-25% slopes, severely eroded

PaA: Pachappa fine sandy loam, 0-2% slopes

PIB: Placentia fine sandy loam, 0-5% slopes

PID: Placentia fine sandy loam, 5-15% slopes



Prepared by: Mindy Boehm, AMEC Source: NRCS soilsmat ca 679

S:\active projects\Wildomar Line C 1455400608\maps

Date: 8/18/2014



Soils Map
Wildomar Line C Project

FIGURE

2

Prepared By: mindy_bashm, AMEC Source: sd alignment



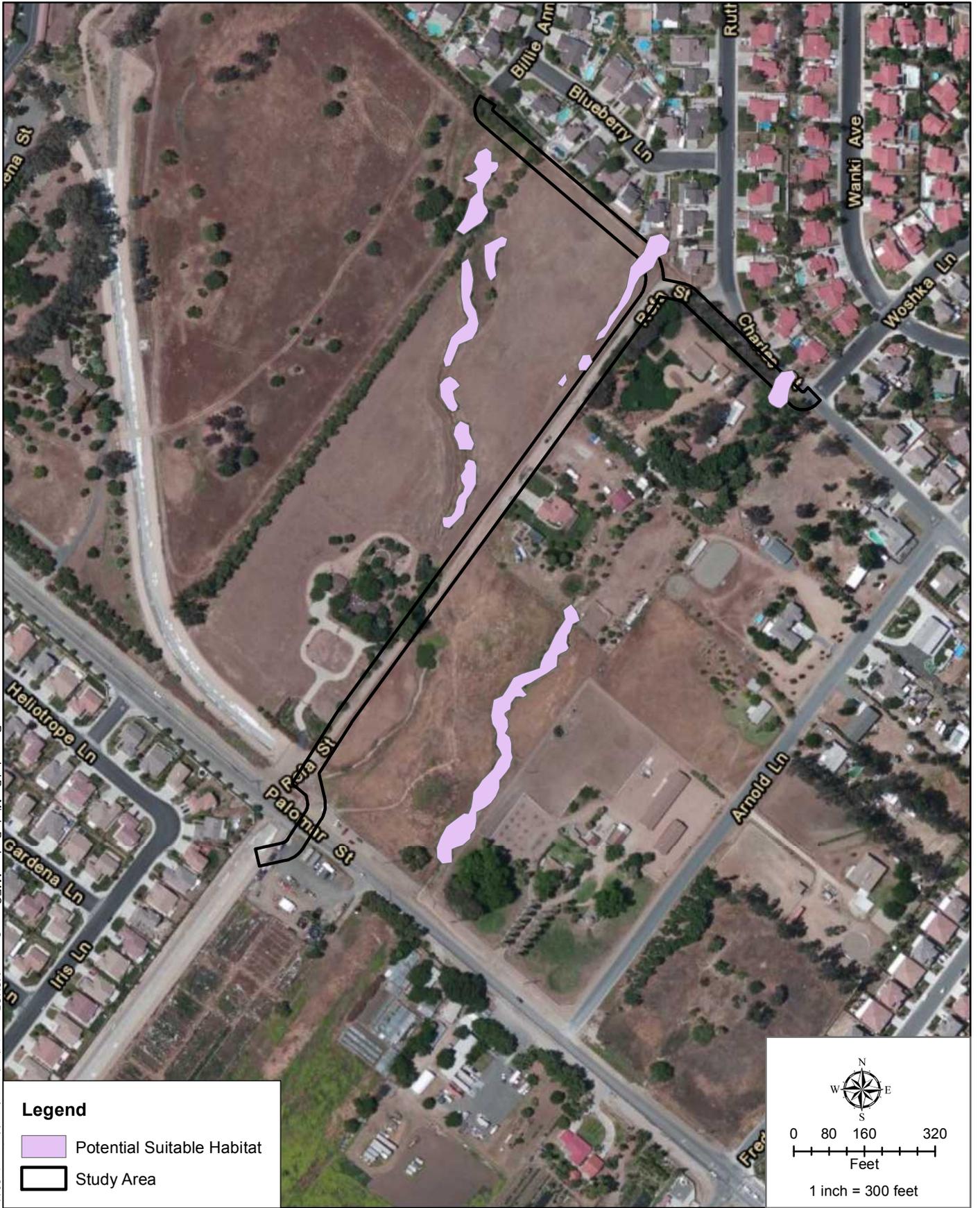
S:\active projects\Wildomar Line C 1455400608\maps



Oak Trees Map
Wildomar Line C Project

FIGURE

4



Prepared By: Mindy Boehm, AMEC
 Source: MSHCP vegetation layer, riverside county 2011

S:\active projects\Wildomar Line C 1455400608\maps



Least Bell's Vireo Habitat Map
Wildomar Line C Project

FIGURE
5

Prepared By: mindy.beahm, AMEC
Source: sd alignment



Legend

- California Ground Squirrel Burrows Suitable for Burrowing Owls
- ▭ Project Boundary
- ▭ 500 ft Survey Area



0 75 150 300
Feet

1 inch = 300 feet

S:\active projects\Wildomar Line C 1455400608\maps

Date: 8/18/2014



Burrowing Owl Survey Results Map
Wildomar Line C Project

FIGURE

6



APPENDIX C

Jurisdictional Delineation Report

Lateral C-1 Storm Drain Project

City of Wildomar, Riverside County, California

AMEC 2014

JURISDICTIONAL DELINEATION REPORT

LATERAL C-1 STORM DRAIN PROJECT

CITY OF WILDOMAR, RIVERSIDE COUNTY, CALIFORNIA

Prepared for:

**Albert A. Webb Associates Inc.
3788 McCray Street
Riverside, California 92506
Office: (951) 686-1070
Fax: (951) 788-1256**

Contact: Cheryl DeGano

Prepared by:

**AMEC Environment & Infrastructure, Inc.
3120 Chicago Avenue, Suite 110
Riverside, California 92507**

**Principal Investigator:
Scot Chandler**

August 2014

AMEC Project No. 1455400608

TABLE OF CONTENTS

	PAGE
ACRONYMS AND ABBREVIATIONS.....	III
1.0 INTRODUCTION	1-1
1.1 Project Description	1-1
1.2 Project Location	1-1
2.0 ENVIRONMENTAL SETTING.....	2-1
2.1 Existing Conditions.....	2-1
2.2 Hydrology	2-1
2.3 Vegetation	2-1
2.4 Soils	2-1
2.5 National Wetlands Inventory.....	2-2
3.0 REGULATORY FRAMEWORK.....	3-1
3.1 U.S. Army Corps of Engineers.....	3-1
3.1.1 Waters of the U.S.	3-1
3.1.2 Wetlands and Other Special Aquatic Sites.....	3-2
3.1.3 Supreme Court Decisions.....	3-2
3.2 Regional Water Quality Control Board.....	3-3
3.3 California Department of Fish and Wildlife.....	3-3
3.4 Western Riverside County MSHCP	3-3
4.0 METHODS.....	4-1
5.0 RESULTS	5-1
5.1 Drainage A	5-1
5.2 Drainage B	5-1
5.3 Jurisdictional Determination	5-1
6.0 IMPACTS TO JURISDICTIONAL AREAS.....	6-1
6.1 Mitigation.....	6-1
6.2 Permitting Requirements	6-2
6.2.1 U.S. Army Corps of Engineers.....	6-2
6.2.2 Regional Water Quality Control Board	6-2
6.2.3 California Department of Fish and Wildlife	6-3
6.2.4 Western Riverside County MSHCP	6-3
7.0 REFERENCES	7-1

LIST OF TABLES

Table 1	Summary of Impacts to Jurisdictional Areas	6-1
---------	--	-----

LIST OF FIGURES

Figure 1.	Regional Location Map	1-3
Figure 2.	Topographic Map.....	1-5
Figure 3.	Soils Map.....	2-3
Figure 4.	Jurisdictional Delineation Map	5-3

Jurisdictional Delineation Report
Lateral C-1 Storm Drain Project
City of Wildomar, Riverside County, California
AMEC Project No. 1455400608
August 2014

TABLE OF CONTENTS (Cont.)

LIST OF APPENDICES

APPENDIX A SITE PHOTOGRAPHS
APPENDIX B WETLAND DETERMINATION DATA FORMS

ACRONYMS AND ABBREVIATIONS

AMEC	AMEC Environment and Infrastructure, Inc.
AMSL	above mean sea level
CEQA	California Environmental Quality Act
CDFW	California Department of Fish and Wildlife
CWA	Clean Water Act
DBESP	Determination of Biologically Equivalent or Superior Preservation
District	Riverside County Flood Control and Water Conservation District
EPA	Environmental Protection Agency
FAC	facultative
FACU	facultative upland
FACW	facultative wetland
GIS	Geographic Information System
IP	Individual Permit
MSHCP	Multiple Species Habitat Conservation Plan
NEPA	National Environmental Policy Act
NL	not listed
NWI	National Wetlands Inventory
NWP	Nationwide Permit
OBL	obligate
OHWM	ordinary high water mark
Rapanos	Rapanos v. U.S. and Carabell v. U.S.
RPW	relatively permanent waterway
RWQCB	Regional Water Quality Control Board
SWANCC	Solid Waste Agency of Northern Cook County v. USACE
TNW	traditionally navigable waterway
UPL	upland
USACE	U.S. Army Corps of Engineers
USDA	United States Department of Agriculture, Natural Resources Conservation Service
USFWS	United States Fish and Wildlife Service
USGS	U.S. Geological Survey

Jurisdictional Delineation Report
Lateral C-1 Storm Drain Project
City of Wildomar, Riverside County, California
AMEC Project No. 1455400608
August 2014

WSC	Waters of the State of California
WUS	Waters of the United States

1.0 INTRODUCTION

The City of Wildomar is proposing to develop the Wildomar Master Drainage Plan Lateral C-1 Storm Drain Project (proposed project). Albert A. Webb Associates retained AMEC Environment and Infrastructure, Inc. (AMEC) to determine the potential for impacts to jurisdictional waters from the development of the proposed project.

This report presents regulatory framework, methods, and results of a delineation of jurisdictional waters, wetlands, and associated riparian habitat potentially impacted by the development of the proposed project. The purpose of the delineation is to determine the extent of state and federal jurisdiction within the project area potentially subject to regulation by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA), Regional Water Quality Control Board (RWQCB) under Section 401 of the CWA and Porter Cologne Water Quality Control Act, California Department of Fish and Wildlife (CDFW) under Section 1602 of the California Fish and Game Code, and the County of Riverside under the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP).

1.1 Project Description

The proposed project is being developed under a cooperative agreement between the City of Wildomar and the Riverside County Flood Control and Water Conservation District (District). The proposed project includes the installation of approximately 2,400 linear feet of an underground storm drain with an estimated diameter of 84 inches and 66 inches and will also include appurtenant structures. The project will connect to the existing reinforced concrete box culvert under Palomar Street that is part of the District's Wildomar Master Drainage Plan Lateral C. The proposed storm drain will be designed to safely carry the 100-year storm runoff.

1.2 Project Location

The study area encompasses 2.13 acres and includes a 15-foot buffer (30 feet wide) around the centerline of the proposed storm drain location and in some areas is wider where impacts are anticipated. The study area is located in the city of Wildomar, Riverside County, California (Figure 1). The proposed project is located along Refa Street from approximately Palomar Street to the Charles Street and Woshka Lane intersection. A 500-foot lateral will also extend northwesterly from the Charles Street and Refa Street intersection to Billie Ann Road. Specifically, the study area is located within Section 35 of Township 6 South, Range 4 West, as shown on the United States Geological Survey (USGS) 7.5 minute Wildomar, California quadrangle (Figure 2). The geographic coordinates near the middle of the site are 33.60091° North latitude and 117.26430° West longitude.

Jurisdictional Delineation Report
Lateral C-1 Storm Drain Project
City of Wildomar, Riverside County, California
AMEC Project No. 1455400608
August 2014

This page intentionally left blank



Prepared By: Mindy Boehm, AMEC Source: 201401641 AV/OUT - 2000 Exploded

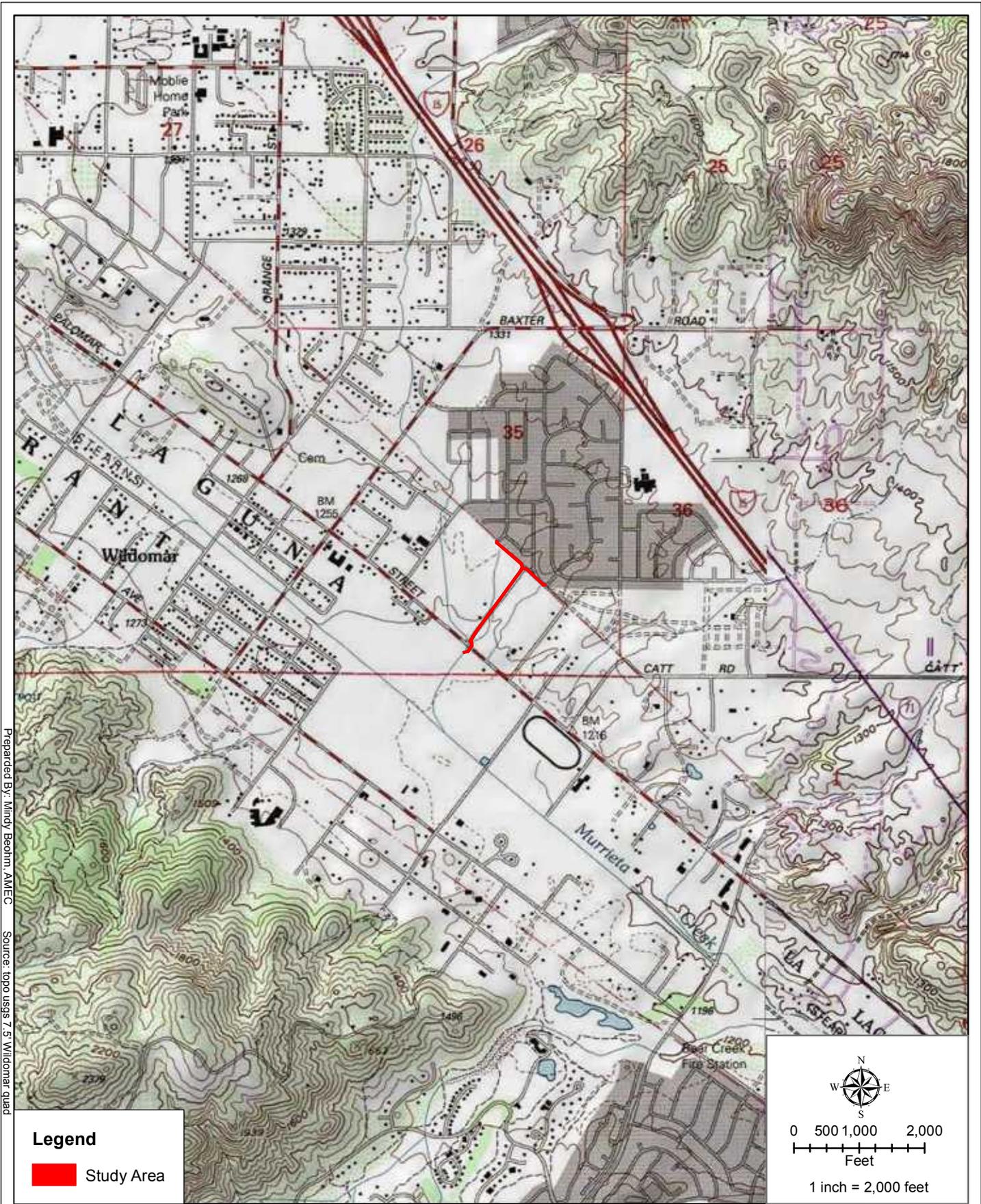


Vicinity & Location
Wildomar Line C Project

FIGURE
1

Jurisdictional Delineation Report
Lateral C-1 Storm Drain Project
City of Wildomar, Riverside County, California
AMEC Project No. 1455400608
August 2014

This page intentionally left blank



Prepared by: Mindy Boehm, AMEC Source: topo usgs 7.5 Wildomar quad



Topographic Map
Wildomar Line C Project

FIGURE

Jurisdictional Delineation Report
Lateral C-1 Storm Drain Project
City of Wildomar, Riverside County, California
AMEC Project No. 1455400608
August 2014

This page intentionally left blank

2.0 ENVIRONMENTAL SETTING

2.1 Existing Conditions

A majority of the study area occurs within Refa Street, an unimproved dirt road. The remainder occurs along the undeveloped northeast edge of rural residential parcels adjacent to single-family tract homes.

The proposed project site is bordered to the northwest and southeast by large-lot rural residential housing, to the northeast by single-family tract homes, and to the southwest by single-family residential tract homes, large-lot rural residences, and undeveloped land.

Elevations within the study area range from approximately 1,270 feet above mean sea level (AMSL) along the northeast portion of the alignment, to 1,230 feet AMSL at the southwest end of the storm drain alignment.

2.2 Hydrology

The average rainfall for the area is 12.01 inches per year and the average snowfall is 0.6 inch per year (Western Regional Climate Center, 2014). Weather data was recorded at the nearby city of Lake Elsinore, approximately 6 miles northwest of the project site.

The study area is within the Santa Margarita River watershed. The site receives hydrology from the residential tract home development to the northeast after which it flows through natural watercourses through the site. Runoff from the site generally flows southeast in a concrete lined channel for ¼ mile before reaching Murrieta Creek. Murrieta Creek flows for approximately 12 miles before reaching the Santa Margarita River. The Santa Margarita River flows for approximately 31 miles before reaching the Pacific Ocean.

The proposed storm drain will generally allow low flows to continue down the natural watercourse and high flows will be contained within the storm drain.

2.3 Vegetation

The study area is dominated by non-native grassland and developed dirt and asphalt roadways. Vegetation nomenclature follows The Jepson Manual, Vascular Plants of California, 2nd Edition (Baldwin, 2012). When The Jepson Manual does not list a common name, common name nomenclature follows the United States Department of Agriculture, Natural Resources Conservation Service (USDA) Plants Database (USDA, 2014a).

2.4 Soils

The USDA online Web Soil Survey (based on the 1971 *Soil Survey of Western Riverside Area, California*) (Soil Survey Staff, 2014) was consulted to determine the soil types mapped as occurring within the study area. Soils within the study area occur on alluvial fans and

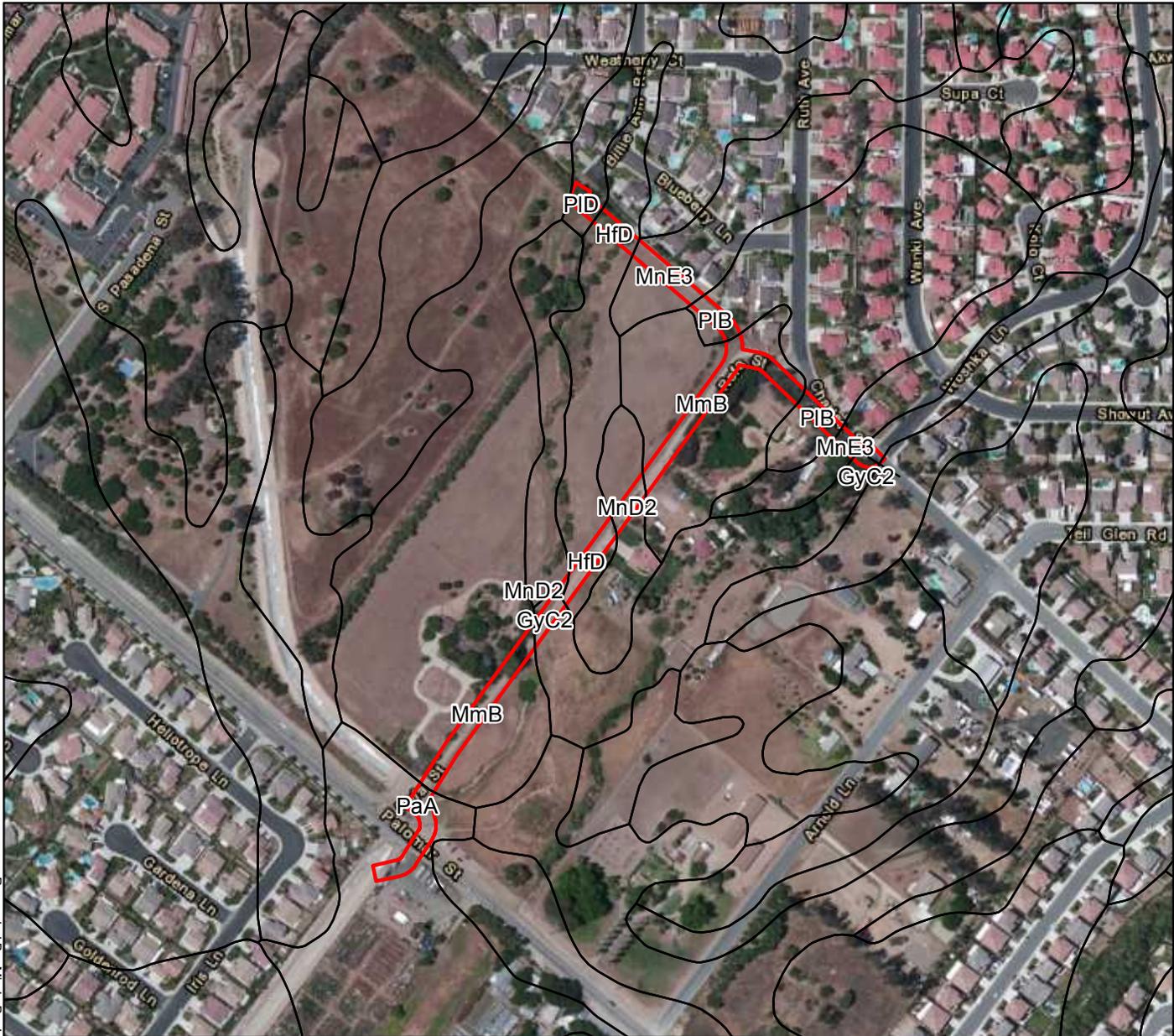
terraces. These well drained to moderately well drained soils developed in alluvium derived from granite. The study area crosses eight different soil types (Figure 3) including:

- Greenfield sandy loam, eroded (GyC2) – This well drained soil occurs on terraces and alluvial fans with 2 to 8 percent slopes. It is composed of sandy loam on the surface and the parent material is composed of alluvium derived from granite.
- Hanford sandy loam (HfD) – This well drained soil occurs on alluvial fans with 2 to 15 percent slopes. It is composed of sandy loam on the surface and the parent material is composed of alluvium derived from granite.
- Monserate sandy loam (MmB) – This well drained soil occurs on alluvial fans with 0 to 5 percent slopes. It is composed of sandy loam on the surface and the parent material is composed of alluvium derived from granite.
- Monserate sandy loam, shallow, eroded (MnD2) – This well drained soil occurs on alluvial fans with 5 to 15 percent slopes. It is composed of sandy loam and the parent material is composed of alluvium derived from granite.
- Monserate sandy loam, shallow, severely eroded (MnE3) – This well drained soil occurs on alluvial fans with 15 to 25 percent slopes. It is composed of sandy loam and the parent material is composed of alluvium derived from granite.
- Pachappa fine sandy loam (PaA) – This well drained soil occurs on alluvial fans with 0 to 2 percent slopes. It is composed of fine sandy loam and the parent material is composed of alluvium derived from granite.
- Placentia fine sandy loam (PIB) – This moderately well drained soil occurs on alluvial fans and terraces with 0 to 5 percent slopes. It is composed of fine sandy loam and the parent material is composed of alluvium derived from granite.
- Placentia fine sandy loam (PID) – This moderately well drained soil occurs on alluvial fans and terraces with 5 to 15 percent slopes. It is composed of fine sandy loam and the parent material is composed of alluvium derived from granite.

The following soil types on the site occur on the National List of Hydric Soils: Hanford sandy loam (HfD), Placentia fine sandy loam (PIB), and Placentia fine sandy loam (PID) (USDA, 2014b).

2.5 National Wetlands Inventory

The United States Fish and Wildlife Service (USFWS) is the principal Federal agency that provides information to the public on the extent and status of the Nation's wetlands. The USFWS has developed a series of maps, known as the National Wetlands Inventory (NWI) to show wetlands and deepwater habitat. This geospatial information is used by Federal, State, and local agencies, academic institutions, and private industry for management, research, policy development, education, and planning activities. The NWI program was neither designed nor intended to produce legal or regulatory products; therefore, wetlands identified by the NWI program are not the same as wetlands defined by the USACE.



Legend



Study Boundary

GyC2: Greenfield sandy loam, 2-8% slopes, eroded

HfD: Hanford sandy loam, 2-15% slopes

MmB: Monserate sandy loam, 0-5% slopes

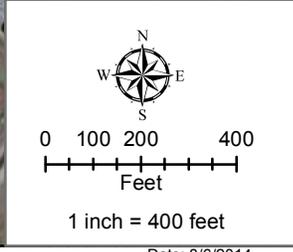
MnD2: Monserate sandy loam, shallow, 5-15% slopes, eroded

MnE3: Monserate sandy loam, shallow, 15-25% slopes, severely eroded

PaA: Pachappa fine sandy loam, 0-2% slopes

PIB: Placentia fine sandy loam, 0-5% slopes

PID: Placentia fine sandy loam, 5-15% slopes



Prepared By: Mindy Boehm, AMEC Source: NRCS soils.mart ca 679

S:\active projects\Wildomar Line C 1455400608\maps

Date: 8/6/2014



Soils Map
Wildomar Line C Project

FIGURE

3

Jurisdictional Delineation Report
Lateral C-1 Storm Drain Project
City of Wildomar, Riverside County, California
AMEC Project No. 1455400608
August 2014

This page intentionally left blank

The NWI Mapper (USFWS, 2014) was accessed online to review mapped wetlands within the project study area. No NWI wetlands were identified. The nearest NWI wetland is located approximately ½ mile southeast of the southern extent of the study area. It is classified as a palustrine, emergent, temporarily flooded wetland. Upon review of aerial photography, it does not appear this feature still exists.

Jurisdictional Delineation Report
Lateral C-1 Storm Drain Project
City of Wildomar, Riverside County, California
AMEC Project No. 1455400608
August 2014

This page intentionally left blank

3.0 REGULATORY FRAMEWORK

3.1 U.S. Army Corps of Engineers

The USACE regulates the discharge of dredged or fill material in waters of the United States (WUS) pursuant to Section 404 of the CWA.

3.1.1 Waters of the U.S.

CWA regulations (33 CFR 328.3(a)) define WUS as follows:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. 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 interstate or foreign commerce including any such waters: (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (iii) Which are used or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as WUS under the definition;
5. Tributaries of WUS;
6. The territorial seas;
7. Wetlands adjacent to WUS (other than waters that are themselves wetlands).

The USACE delineates non-wetland waters in the Arid West Region by identifying the ordinary high water mark (OHWM) in ephemeral and intermittent channels (USACE, 2008a). The OHWM is defined in 33 CFR 328.3(e) as:

“...that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses 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.”

Identification of OHWM involves assessments of stream geomorphology and vegetation response to the dominant stream discharge. Determining whether any non-wetland water is a jurisdictional WUS involves further assessment in accordance with the regulations, case law, and clarifying guidance as discussed below.

3.1.2 Wetlands and Other Special Aquatic Sites

Wetlands are defined at 33 CFR 328.3(b) as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.”

Special aquatic sites are geographic areas, large or small, possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values. These areas are generally recognized as significantly influencing or positively contributing to the general overall environmental health or vitality of the entire ecosystem of a region. Special aquatic sites include sanctuaries and refuges, wetlands, mud flats, vegetated shallows, coral reefs, and riffle and pool complexes. They are defined in 40 CFR 230 Subpart E.

3.1.3 Supreme Court Decisions

3.1.3.1 Solid Waste Agency of Northern Cook County

On January 9, 2001, the Supreme Court of the United States issued a decision on Solid Waste Agency of Northern Cook County v. USACE, et al. (SWANCC) with respect to whether the USACE could assert jurisdiction over isolated waters. The ruling stated that the USACE does not have jurisdiction over “non-navigable, isolated, intrastate” waters.

3.1.3.2 Rapanos/Carabell

In the Supreme Court cases of Rapanos v. United States and Carabell v. United States (herein referred to as Rapanos), the court attempted to clarify the extent of USACE jurisdiction under the CWA. The nine Supreme Court justices issued five separate opinions (one plurality opinion, two concurring opinions, and two dissenting opinions) with no single opinion commanding a majority of the Court. In light of the Rapanos decision, the USACE will assert jurisdiction over a traditional navigable waterway (TNW), wetlands adjacent to TNWs, non-navigable tributaries of TNWs that are a relatively permanent waterway (RPW) where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months) and wetlands that directly abut such tributaries. The USACE will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a “significant nexus” with a TNW: non-navigable tributaries that are not RPWs, wetlands adjacent to non-navigable tributaries that are not RPWs, and wetlands adjacent to but that do not directly abut a non-navigable RPW.

A significant nexus determination includes an assessment of flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary. This assessment is to indicate whether they significantly affect the chemical, physical and biological integrity of downstream TNWs. Analysis of potentially jurisdictional

streams includes consideration of hydrologic and ecologic factors. The consideration of hydrological factors includes volume, duration, and frequency of flow, proximity to traditional navigable waters, size of watershed, average annual rainfall, and average annual winter snow pack. The consideration of ecological factors also includes the ability for tributaries to carry pollutants and flood waters to a TNW, the ability of a tributary to provide aquatic habitat that supports a TNW, the ability of wetlands to trap and filter pollutants or store flood waters, and maintenance of water quality.

3.2 Regional Water Quality Control Board

The RWQCB regulates activities pursuant to Section 401(a)(1) of the CWA. Section 401 of the CWA specifies that certification from the State is required for any applicant requesting a federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities that may result in any discharge into navigable waters. Through the Porter Cologne Water Quality Control Act, the RWQCB asserts jurisdiction over Waters of the State of California (WSC) which is generally the same as WUS, but may also include isolated waterbodies. The Porter Cologne Act defines WSC as “surface water or ground water, including saline waters, within the boundaries of the state”.

3.3 California Department of Fish and Wildlife

The State of California regulates water resources under Section 1600-1616 of the California Fish and Game Code. Section 1602 states:

“An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake (CDFW, 2014).”

In general, under 1602 of the Fish and Game Code, CDFW jurisdiction extends to the maximum extent or expression of a stream on the landscape (CDFW, 2010). It has been the practice of CDFW to define a stream as “a body of water that flows perennially or episodically and that is defined by the area in a channel which water currently flows, or has flowed over a given course during the historic hydrologic course regime, and where the width of its course can reasonably be identified by physical or biological indicators” (Brady and Vyverberg, 2013). Thus, a channel is not defined by a specific flow event, nor by the path of surface water as this path might vary seasonally. Rather, it is CDFW’s practice to define the channel based on the topography or elevations of land that confine the water to a definite course when the waters of a creek rise to their highest point.

3.4 Western Riverside County MSHCP

Section 6.1.2, Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools, of the Western Riverside County MSHCP defines riparian/riverine areas as “lands

which contain habitat dominated by trees, shrubs, persistent emergents, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year”.

Section 6.1.2 of the Western Riverside County MSHCP further defines vernal pools as “seasonal wetlands that occur in depression areas that have wetlands indicators of all three parameters (soils, vegetation and hydrology) during the wetter portion of the growing season but normally lack wetlands indicators of hydrology and/or vegetation during the drier portion of the growing season. Obligate hydrophytes and facultative wetlands plant species are normally dominant during the wetter portion of the growing season, while upland species (annuals) may be dominant during the drier portion of the growing season. The determination that an area exhibits vernal pool characteristics and the definition of the watershed supporting vernal pool hydrology must be made on a case-by-case basis. Such determinations should consider the length of the time the area exhibits upland and wetland characteristics and the manner in which the area fits into the overall ecological system as a wetland. Evidence concerning the persistence of an area’s wetness can be obtained from its history, vegetation, soils, and drainage characteristics, uses to which it has been subjected, and weather and hydrologic records”.

Areas meeting the definition of riparian/riverine or vernal pools which are artificially created are not included in these definitions, with the exception of wetlands created for the purposes of providing wetlands habitat or resulting from human actions to create open waters or from the alteration of natural stream courses.

Preparation of a Determination of Biologically Equivalent or Superior Preservation (DBESP) report is required under the Western Riverside County MSHCP for projects that involve impacts to riparian/riverine resources and/or vernal pools. The purpose of the DBESP report is to ensure replacement of any lost functions and values of habitat as it relates to covered species.

4.0 METHODS

Prior to conducting delineation fieldwork, the following literature and materials were reviewed:

- Aerial photographs of the project site at a scale of 1:4800 with 5-foot elevation contours to determine the potential locations of USACE, RWQCB, and CDFW jurisdictional waters or wetlands;
- USGS topographic map (Figure 2) to determine the presence of any “blue line” drainages or other mapped water features;
- USFWS NWI maps to identify areas mapped as wetland features; and
- USDA soil mapping data (Figure 3).

Field surveys of the study area were conducted by AMEC biologist Scot Chandler on 25 July 2014. Surveys consisted of walking the entire study area and identifying potentially jurisdictional water features. Visual observations of vegetation types and changes in hydrology were used to locate areas for evaluation. Weather conditions during delineation fieldwork were conducive for surveying with generally clear skies.

USACE regulated WUS, including wetlands, and RWQCB WSC were delineated according to the methods outlined in and A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (USACE, 2008a). The extent of WUS was determined based on indicators of an OHWM. The OHWM width was measured at points wherever clear changes in width occurred.

Federally regulated wetlands were identified based on the Wetlands Delineation Manual (USACE, 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE, 2008b). Additional data was recorded to determine if an area fulfilled the wetland criteria parameters. Three criteria must be fulfilled in order to classify an area as a wetland under the jurisdiction of the USACE: 1) a predominance of hydrophytic vegetation, 2) the presence of hydric soils, and 3) the presence of wetland hydrology. Details of these criteria are described below:

- **Hydrophytic Vegetation.** The hydrophytic vegetation criterion is satisfied at a location if greater than 50% of all the dominant species present within the vegetation unit have a wetland indicator status of obligate (OBL), facultative wetland (FACW), or facultative (FAC) (USACE, 2008b). An OBL indicator status refers to plants that almost always occur in wetlands. A FACW indicator status refers to plants that usually occur in wetlands, but may occur in non-wetlands. A FAC indicator status refers to plants that occur in wetlands and non-wetlands. Other wetland indicator statuses include facultative upland (FACU) which refers to plants that usually occur in non-wetlands, but may occur in wetlands, upland (UPL) for species that almost never occur in wetlands, and NL for plants that are not listed on the National Wetland Plant

List. The wetland indicator status used for this report follows the 2013 National Wetland Plant List (Arid West Region) (Lichvar, 2013).

- **Hydric Soils.** The hydric soil criterion is satisfied at a location if soils in the area can be inferred or observed to have a high groundwater table, if there is evidence of prolonged soil saturation, or if there are any indicators suggesting a long-term reducing environment in the upper part of the soil profile. Reducing conditions are most easily assessed using soil color. Soil colors were evaluated using the Munsell Soil Color Charts (Gretag/Macbeth, 2000).
- **Wetland Hydrology.** The wetland hydrology criterion is satisfied at a location based upon conclusions inferred from field observations that indicate an area has a high probability of being inundated or saturated (flooded, ponded, or tidally influenced) long enough during the growing season to develop anaerobic conditions in the surface soil environment, especially the root zone (USACE, 1987 and 2008b).

Areas meeting all three parameters would be designated as USACE wetlands. There were no wetlands identified in the study area during this investigation based on the absence of hydric soil indicators and/or wetland hydrology.

Evaluation of CDFW jurisdiction followed guidance in the Fish and Game Code and A Review of Stream Processes and Forms in Dryland Watersheds (CDFW, 2010). Specifically, CDFW jurisdiction was delineated by measuring the elevations of land that confine a stream to a definite course when its waters rise to their highest level and to the extent of associated riparian vegetation.

Riparian/riverine areas jurisdictional under the MSHCP were mapped similar to CDFW jurisdiction except where there was riparian vegetation not associated with a watercourse.

To determine jurisdictional boundaries, the surveyor walked the length of the drainage within the project area and recorded the centerline with a Trimble GeoXH global positioning system. The width of the drainage was determined by the OHWM and bankfull width measurements at locations where transitions were apparent. Other data recorded included bank height and morphology, substrate type, and all vegetation within the streambed and riparian vegetation adjacent to the streambed. Upon completion of fieldwork, all data collected in the field were incorporated into a Geographic Information System (GIS) along with basemap data. The GIS was then used to quantify the extent of jurisdictional waters.

Upstream and downstream connectivity of waterways was reviewed in the field and on aerial photographs and topographic maps to determine jurisdictional status according to the CWA, SWANCC, and Rapanos. Ephemeral washes with a physical connection to the Pacific Ocean were determined to be potential WUS as well as WSC and CDFW streambeds.

5.0 RESULTS

The study area contains two jurisdictional drainages identified as Drainage A and B. The Jurisdictional Delineation Map (Figure 4) identifies all on-site jurisdictional areas and includes photo point locations and the direction the photo was taken.

The USACE, in combination with the Environmental Protection Agency (EPA), when necessary, reserves the ultimate authority in making the final jurisdictional determination of WUS and the RWQCB reserves the ultimate authority in making the final jurisdictional determination of WSC. Additionally, CDFW and the County of Riverside have ultimate discretion in the determination of their jurisdiction.

5.1 Drainage A

Drainage A is shown on Figure 4 and in Appendix A, Photos 1 through 3. Drainage A begins at a storm drain outlet at the south end of Billie Ann Road. The storm drain outlets onto a concrete flow spreading structure that is densely vegetated with broad-leaved cattail (*Typha latifolia*, OBL). The broad-leaved cattails appear to be growing in a thin layer of decaying vegetation. A wetland sampling point was recorded in the spreading structure (Sampling Point 1) and was determined to not exhibit wetland characteristics due to a lack of hydric soils. After the spreading structure, the drainage enters a corrugated metal pipe and flows southwest before outletting into the incised portion of Drainage A. Drainage A then continues south outside of the study area for 1,050 feet before traversing the study area again where it crosses under Refa Street in a 3-foot reinforced concrete pipe. The vegetation on the northwest side of Refa Street is ornamental trees associated with the adjacent residence. Drainage A then continues off-site for 500 feet before entering the study area again at the south end of Refa Street where it flows through rip-rap and into a box culvert that conveys it beneath Palomar Avenue. The rip-rap area directly upstream of the culvert is sparsely vegetated with tocalote (*Centaurea melitensis*, NL) and shortpod mustard (*Hirschfeldia incana*, NL), both non-native species. The soils within Drainage A ranged from clay loam in the upstream portion to coarse sand with gravel in the downstream section.

5.2 Drainage B

Drainage B is shown on Figure 4 and in Appendix A, Photo 5. Drainage B enters the study area through a concrete storm drain outlet structure on the south side of Charles Street. Directly downstream of the outlet structure, there are Goodding's black willow (*Salix gooddingii*, FACW) and Mexican fan palm (*Washingtonia robusta*, FACW).

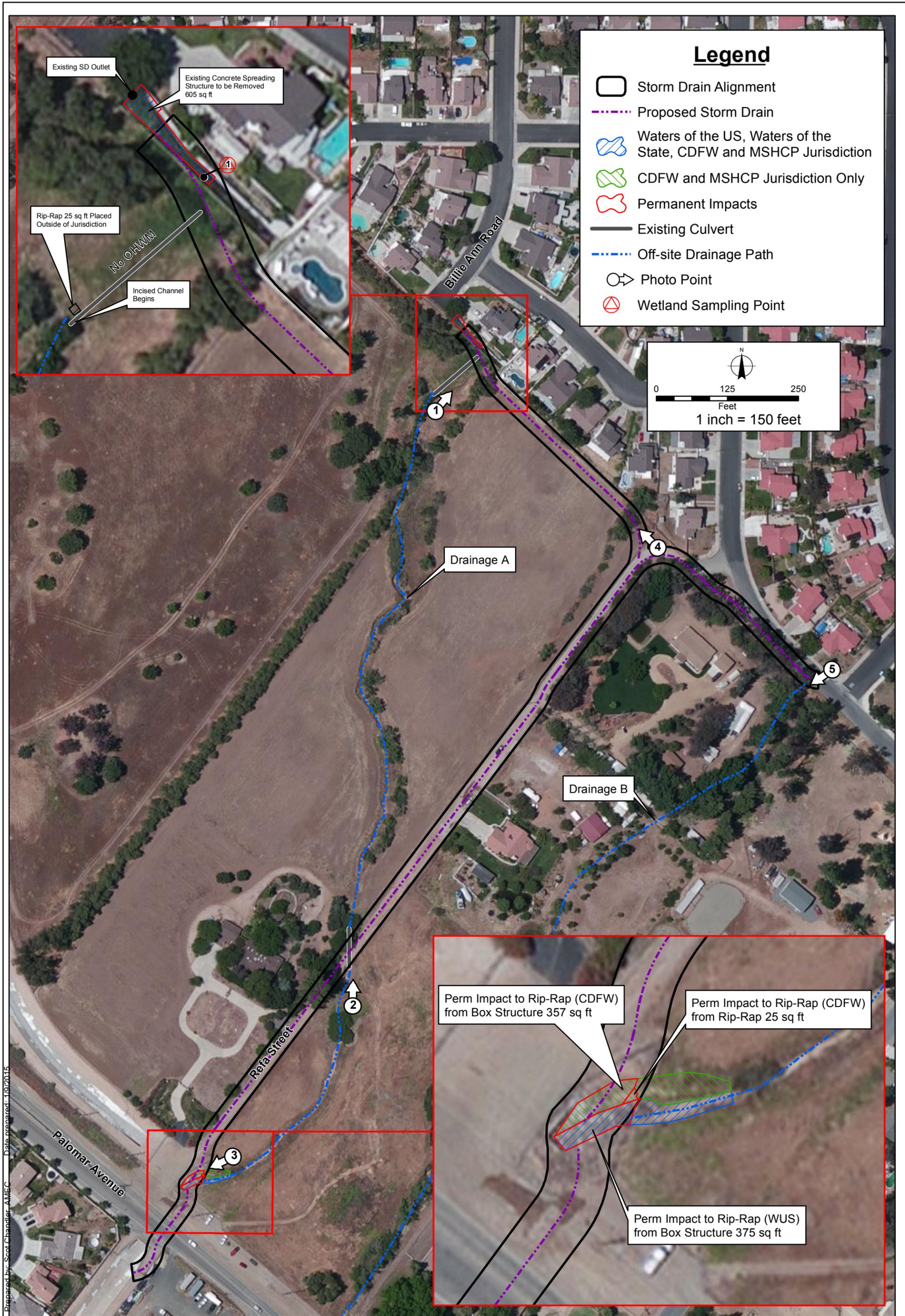
5.3 Jurisdictional Determination

Drainage A is an ephemeral stream that likely flows for less than 3 months per year, and would therefore be classified as a non-RPW by the USACE. Drainage A flows into an RPW, Murrieta Creek ¼ mile downstream of the study area; another RPW, the Santa Margarita

River, 12 miles downstream of the study area; and a TNW, the Pacific Ocean, approximately 43 river miles downstream of the study area.

Drainage A has a surface water connection to a TNW, and therefore would be considered a jurisdictional WUS based on SWANCC. Due to the proximity of Drainage A to Murrieta Creek and the Santa Margarita River, it is likely that the USACE would consider it to have a “significant nexus” with a TNW, and be considered a jurisdictional WUS based on Rapanos.

The USACE is ultimately responsible for jurisdictional determinations, and this report has been prepared to provide the necessary information to assist the USACE with that determination. An Approved Jurisdictional Determination could be requested of the USACE to provide an analysis to determine if Drainage A has a “significant nexus” to the Pacific Ocean, and is therefore a jurisdictional WUS. Otherwise the project proponent can request a Preliminary Jurisdictional Determination in which the USACE assumes jurisdiction over Drainage A, and process permits accordingly.



Legend

- Storm Drain Alignment
- Proposed Storm Drain
- Waters of the US, Waters of the State, CDFW and MSHCP Jurisdiction
- CDFW and MSHCP Jurisdiction Only
- Permanent Impacts
- Existing Culvert
- Off-site Drainage Path
- Photo Point
- Wetland Sampling Point

0 125 250
Feet
1 inch = 150 feet

Prepared by: Scot Chandler, AMEC Date prepared: 1/9/2015

This page intentionally left blank

6.0 IMPACTS TO JURISDICTIONAL AREAS

The proposed development plan was overlaid on the jurisdictional delineation boundary using GIS to determine the extent of impacts to jurisdictional areas. Albert A. Webb Associates engineered the project and provided AMEC with the development plan. Table 1 portrays the area of impact to each agencies jurisdiction in addition to the length of impacted watercourse. Generally, the project will cause temporary impacts to a 30-foot wide area centered on the proposed storm drain and permanent impacts will be caused by rip-rap and concrete transition structures. All permanent impacts resulting from the project will impact existing concrete and rip-rap. There will be no impacts to undisturbed streambed.

The existing storm drain outlets at the north end of Drainages A and B will connect directly to the proposed storm drain. High flows will be conveyed through the proposed storm drain and low flows will be conveyed through the existing watercourses. The new storm drain at the north end of Drainage A will connect directly to the existing storm drain outlet and the concrete spreading structure will be removed causing permanent impacts in that area. The new storm drain outlet and associated rip-rap will be placed outside of jurisdiction and connected to Drainage A. Where Drainage A crosses beneath Refa Street, the existing culvert will be removed and then replaced in the same location after the storm drain is installed. At the downstream end of Drainage A, a concrete transition structure will be placed in the rip-rap portion of streambed directly upstream of the existing culvert causing permanent impacts to existing rip-rap.

The new storm drain at the north end of Drainage B will connect within the existing concrete outlet structure and will not cause any impacts to the streambed downstream of the outlet structure.

Table 1
Summary of Impacts to Jurisdictional Areas

Jurisdictional Area	Permanent Impacts to WUS and WSC (acres)	Permanent Impacts to CDFW and MSHCP Jurisdiction (acres)	Impact Length (feet)
Drainage A	0.02	0.03	110
Drainage B	0	0	0
Total	0.02	0.03	110

MSHCP – Western Riverside County Multiple Species Habitat Conservation Plan

WUS – Waters of the United States

WSC – Waters of the State

CDFW – California Department of Fish and Wildlife

6.1 Mitigation

All impacts to jurisdictional areas will impact existing rip-rap and concrete. Due to the low resource value of concrete and rip-rap, no mitigation is proposed.

6.2 Permitting Requirements

The proposed project requires temporary and permanent impacts to jurisdictional areas and therefore, authorizations from the USACE, RWQCB, CDFW, and County of Riverside may be required as described below.

6.2.1 U.S. Army Corps of Engineers

The two most common types of permits issued by USACE under Section 404 of the CWA to authorize the discharge of dredged or fill material into WUS are: a nation-wide permit (NWP) or an individual permit (IP).

NWPs are general permits for specific categories of activities that result in minimal impacts to aquatic resources.

NWP 43 can be used for stormwater management facilities. This NWP authorizes the construction of new stormwater management facilities including stormwater detention and retention basins, water control structures, outfall structures, emergency spillways, and low impact development integrated management features such as vegetated filter strips and grassed swales. The discharge must not cause the loss of greater than ½ acre WUS, including the loss of no more than 300 linear feet of streambed, unless for intermittent and ephemeral streambeds the district engineer waives the 300 linear feet limit by making a written determination concluding that the discharge will result in minimal adverse effects. The permittee must submit a pre-construction notification to the USACE district engineer prior to commencing the activity. The proposed project would likely qualify under NWP 43.

For project impacts that do not meet the provisions of an existing NWP, the USACE would require an IP. An IP requires detailed analysis and compliance with the USACE formal review process. This process includes preparation of an alternatives analysis as required by EPA Section 404(b)(1) Guidelines and the National Environmental Policy Act (NEPA), and requires compliance with NEPA's environmental review process. This process provides opportunities for public notice and comment.

The USACE must comply with the federal Endangered Species Act and Section 106 of the National Historic Preservation Act when issuing a NWP or IP.

6.2.2 Regional Water Quality Control Board

The project area is within the jurisdiction of the San Diego RWQCB (Region 9). Under Section 401 of the CWA, the RWQCB must certify that the discharge of dredged or fill material into WUS does not violate state water quality standards.

The RWQCB also regulates impacts to WSC under the Porter Cologne Water Quality Control Act through issuance of a Construction General Permit, State General Waste Discharge

Order, or Waste Discharge Requirements, depending upon the level of impact and the properties of the waterway.

In addition to the formal application materials and fee (based on area of impact), a copy of the appropriate California Environmental Quality Act (CEQA) documentation must be included with the application.

6.2.3 California Department of Fish and Wildlife

A 1602 Streambed Alteration Agreement is required for all activities that alter streams and lakes and their associated riparian habitat. In addition to the formal application materials and fee (based on cost of the project), a copy of the appropriate CEQA documentation must be included with the application.

6.2.4 Western Riverside County MSHCP

Preparation of a DBESP report is required under the MSHCP for projects that involve impacts to riparian/riverine resources and/or vernal pools. The purpose of the DBESP report is to ensure replacement of any lost functions and values of habitat as it relates to covered species.

This page intentionally left blank

7.0 REFERENCES

- Baldwin. 2012. The Jepson Manual, Vascular Plants of California, 2nd Edition. University of California Press. Berkeley, California.
- Brady, Roland H. III, Kris Vyverberg. 2013. Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants. California Energy Commission. Publication Number: CEC-500-2014-013.
- CDFW (California Department of Fish and Wildlife). 2014. Fish and Game Code of California. <http://www.leginfo.ca.gov/calaw.html>.
- CDFW. 2010. A Review of Stream Processes and Forms in Dryland Watersheds. Prepared by Kris Vyverberg, Conservation Engineering. 32 p.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior.
- Gretag/Macbeth. 2000. Munsell color. New Windsor, NY.
- Lichvar, R.W. 2013. The National Wetland Plant List: 2013 wetland ratings. Phytoneuron 2013-49: 1-241.
- Soil Survey Staff. 2014. Natural Resources Conservation Service, United States Department of Agriculture. Soil Survey Geographic (SSURGO) Database for Western Riverside Area. Available online at <http://soildatamart.nrcs.usda.gov>. Accessed 08 August 2014.
- U.S. Army Corps of Engineers (USACE). 1987. Wetlands Delineation Manual, Technical Report Y-8. U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi. 100 pp. + append.
- USACE. 2008a. A Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States. A Delineation Manual. Lichvar and McColley. August.
- USACE. 2008b. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region. September.
- United States Department of Agriculture, Natural Resources Conservation Service (USDA). 2014a. The PLANTS Database. (<http://plants.usda.gov>, 04 August 2014). National Plant Data Team, Greensboro, NC 27401-4901 USA.
- USDA. 2014b. List of Hydric Soils. Available online at: http://www.nrcs.usda.gov/wps/PA_NRCSCconsumption/download?cid=stelprdb1248596&ext=xlsx
- U.S. Fish and Wildlife Service. 2014. National Wetlands Inventory Mapper. Accessed from: <http://www.fws.gov/wetlands/Data/Mapper.html>.

Jurisdictional Delineation Report
Lateral C-1 Storm Drain Project
City of Wildomar, Riverside County, California
AMEC Project No. 1455400608
August 2014

Western Regional Climate Center. 2014. Desert Research Institute. Available online at:
<http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?caidyl+sca>. Accessed 04 August 2014.

Jurisdictional Delineation Report
Lateral C-1 Storm Drain Project
City of Wildomar, Riverside County, California
AMEC Project No. 1455400608
August 2014

APPENDIX A

SITE PHOTOGRAPHS

Jurisdictional Delineation Report
Lateral C-1 Storm Drain Project
City of Wildomar, Riverside County, California
AMEC Project No. 1455400608
August 2014

This page intentionally left blank



Photo 1 – View of the upstream end of Drainage A showing the cattail area where the existing storm drain outlets and the area of saltgrass before it forms an incised channel.



Photo 2 – View of where the proposed storm drain will cross beneath an existing culvert. Rip-rap will be placed at the culvert outlet.



Photo 3 – View of the downstream end of Drainage A where a concrete transition structure will be placed.



Photo 4 – View of the approximate location where the proposed storm drain will enter Refa Street.



Photo 5 – View of the storm drain outlet structure of Drainage B.

Jurisdictional Delineation Report
Lateral C-1 Storm Drain Project
City of Wildomar, Riverside County, California
AMEC Project No. 1455400608
August 2014

APPENDIX B

WETLAND DETERMINATION DATA FORMS

Jurisdictional Delineation Report
Lateral C-1 Storm Drain Project
City of Wildomar, Riverside County, California
AMEC Project No. 1455400608
August 2014

This page intentionally left blank

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wildomar Line C City/County: Wildomar/Riverside Sampling Date: 7-25-2014
 Applicant/Owner: City of Wildomar State: CA Sampling Point: 1
 Investigator(s): Scott Chandler Section, Township, Range: 35, T6S, R4W
 Landform (hillslope, terrace, etc.): Spreading basin Local relief (concave, convex, none): none Slope (%): <1
 Subregion (LRR): C Lat: 33.60320 Long: -117.26402 Datum: NAD 83
 Soil Map Unit Name: HFD, Hanford Sandy loam NWI classification: none
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation No, Soil Yes, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X
 Are Vegetation No, Soil Yes, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: <u>Sampling point in concrete spreading structure.</u>	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot size: <u>S'</u>)				
1. <u>Typha latifolia</u>	<u>100</u>	<u>Yes</u>	<u>OBL</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>100</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum <u>0</u>	% Cover of Biotic Crust <u>0</u>			
Remarks:				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 100 x 1 = 100
 FACW species _____ x 2 = _____
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals: 100 (A) 100 (B)
 Prevalence Index = B/A = 1

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 _____ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 _____ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: <u>Concrete</u> Depth (inches): <u>0</u>	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
---	---

Remarks: Concrete lined spreading structure. Typha is growing in thin layer of decaying vegetation.

HYDROLOGY

Wetland Hydrology Indicators:		
<u>Primary Indicators (minimum of one required; check all that apply)</u>		<u>Secondary Indicators (2 or more required)</u>
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Surface Water Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology fed by storm drain outlet.