Appendix “H”

Aquatic Resources TM 39011

Aquatic Resources Delineation Report
Highland Grove V Development Project
Unincorporated Riverside County, California

Prepared for:
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SECTION 1: INTRODUCTION

At the request of Adkan Engineers, FirstCarbon Solutions (FCS) completed a delineation of aquatic resources and proposes a jurisdictional determination for the approximate 36.56-acre Highland Grove V Development Project site and off-site improvement area, collectively referred to as the Study Area, as depicted on Exhibit 1 and Exhibit 2. The purpose of this report is to support jurisdictional determinations by the United States Army Corps of Engineers (USACE) and the Regional Water Quality Control Board (RWQCB); to support California Department of Fish and Wildlife (CDFW) evaluation pursuant to Fish and Game Code Sections 1602, *et seq*. (Streambed Alteration Program); to support jurisdictional determinations pursuant to Multiple Species Habitat Conservation Plan (MSHCP) Section 6.1.2 Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools; and to support the project applicant's planning and permitting efforts for a proposed development project.

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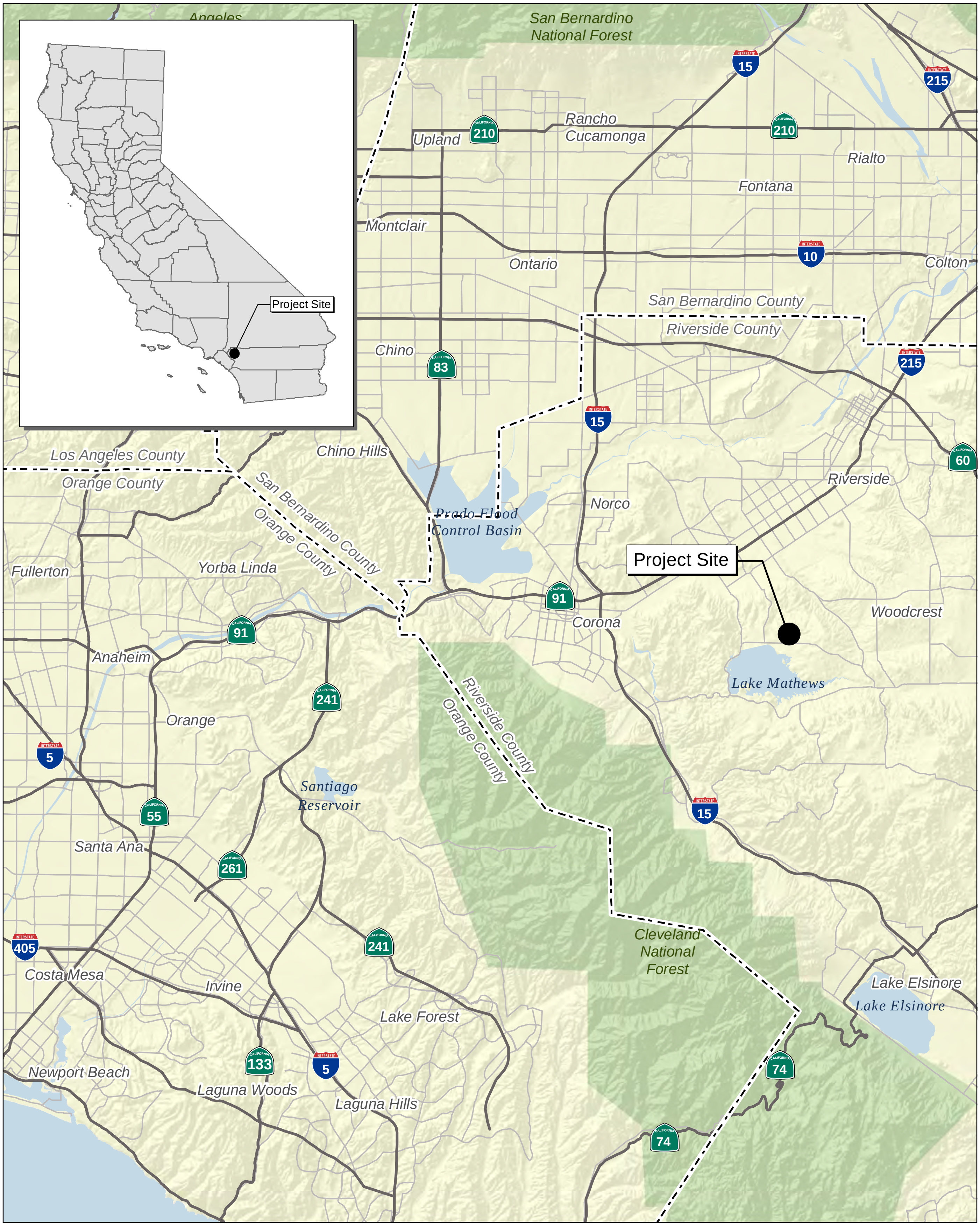

Source: Census 2000 Data, The California Spatial Information Library (CaSIL).

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Exhibit 1
Regional Location Map

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Source: ESRI Aerial Imagery. adkan Engineers, June 2024.

Exhibit 2
Local Vicinity Map

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SECTION 2: ENVIRONMENTAL SETTING

2.1 - Location

The approximately 36.56-acre Study Area is located in Unincorporated Riverside County, southeast of the census-designated El Sobrante and south of the Citrus Heights neighborhood in the City of Riverside. Local access to the site is provided via Cambria Court in the adjacent Citrus Heights neighborhood. The Study Area is centered around 33.862417° latitude and -117.421563° longitude. The location of the Study Area within the Riverside region is shown on Exhibit 1, and the Study Area boundaries on a recent high-resolution aerial image are shown on Exhibit 2.

2.2 - Vegetation and Land Cover Types

The Study Area is surrounded by undeveloped lands to the north and west and agricultural operations to the east and south. The Study Area is vacant and undeveloped and has been used for citrus and hay production. Undeveloped lands directly north and west of and adjacent to the project site have been previously used for agricultural production. The Study Area and adjacent undeveloped areas functioned as a citrus operation until the early 2000s. Evidence of operational site disturbance includes compacted soils, erosional areas, debris piles, and various dirt roads.

The vegetation of the Study Area is dominantly non-native annual grassland with ruderal/disturbed areas throughout the Study Area. The drainage feature that flows along the southern boundary of the Study Area supports sparse riparian and wetland vegetation.

Vegetation of the Study Area is predominantly wild oats and annual brome grassland, mulefat thickets, and riparian woodland found within the drainages. The mulefat thickets community is dominated by mulefat (*Baccharis salicifolia*), blue elderberry (*Sambucus nigra* ssp. *caerulea*), arroyo willow (*Salix lasiolepis*), and red willow *(Salix laevigata*). Common forb species include red brome (*Bromus rubens*), ripgut brome (*Bromus diandrus*), foxtail barley (*Hordeum murinum*), black nightshade (*Solanum nigrum*), common fiddleneck (*Amsinckia intermedia*), white horehound (*Marrubium vulgare*), black mustard (*Brassica nigra*), and Italian thistle (*Carduus pycnocephalus*).

Riparian woodland present in the drainages is predominantly Goodding's black willow (*Salix gooddingii*) and red willow *(Salix laevigata*) trees. Other species in this community include arroyo willow (*Salix lasiolepis*), mulefat, and blue elderberry. Vegetation associated with the drainage channels is described for each feature in more detail below.

2.3 - Topography and Hydrogeomorphology

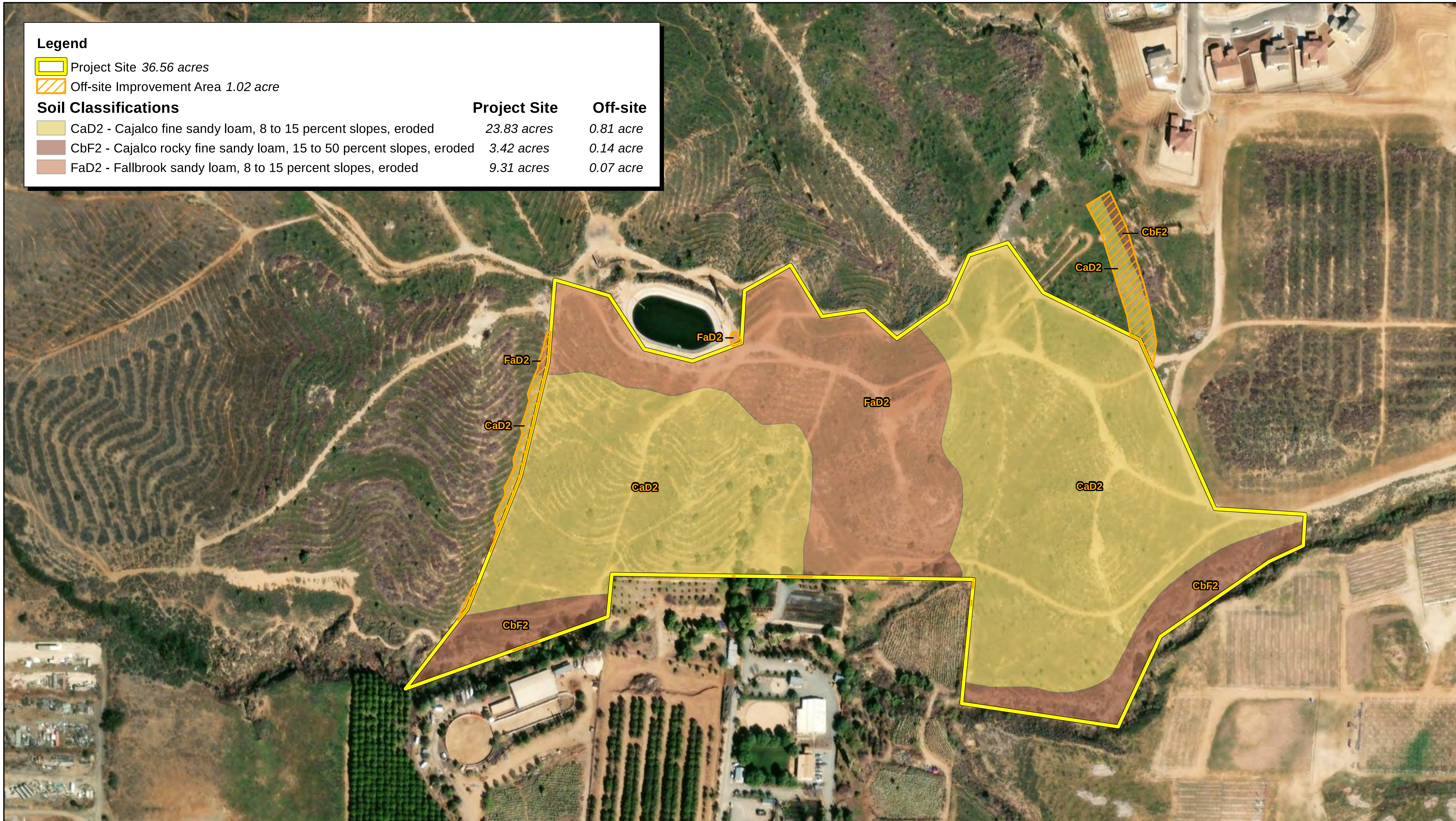
Elevation within the Study Area ranges from approximately 1,400 feet above mean sea level (AMSL) along the northern boundary to 1,360 feet AMSL along the southern boundary. Elevation on the western boundary is 1,350 feet AMSL and elevation along the eastern boundary is 1,430 feet AMSL. One intermittent drainage is located along the southern boundary of the Study Area. This drainage flows in a general east/west direction before exiting the Study Area. This feature conveys flows from the neighboring citrus and agricultural operations in the area. Flows associated with the drainage do not contain a continuous surface connection with a navigable water of the United States. Flows associated with the drainage leave the Study Area and terminate approximately 2.5 miles northwest within a concrete pipe culvert at an agricultural field south of the intersection of Cleveland Avenue and Harrison Street. Subsurface flow continues in the storm drain indefinitely and does not appear to reemerge as surface flow.

2.4 - Soils

The Natural Resources Conservation Service (NRCS) has mapped the following soil types as occurring in the Study Area (Exhibit 3). None of the soil types mapped or observed are classified as hydric soils.[1]

- Cajalco Fine Sandy Loam, 8 to 15 Percent Slopes, Eroded
- Cajalco Rocky Fine Sandy Loam, 15 to 50 Percent Slopes, Eroded
- Fallbrook Sandy Loam, 8 to 15 Percent Slopes, Eroded

[1] United States Department of Agriculture (USDA), Natural Resources Conservation Service. 2023. Web Soil Survey 3.3.2. Website: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed June 12, 2024.



Source: ESRI Aerial Imagery. adkan Engineers, June 2024. USDA Soils Data Mart, Riverside County.

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Feet

Exhibit 3
Soils Map

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SECTION 3: REGULATORY SETTING

3.1 - Federal

3.1.1 - Clean Water Act

Section 404

The agencies are in receipt of the U.S. Supreme Court's May 25, 2023, decision in the case of *Sackett v. Environmental Protection Agency*. In light of this decision, the agencies will interpret the phrase "waters of the United States" consistent with the Supreme Court's decision in the *Sackett* case. In *Sackett*, the Supreme Court adopted the Rapanos plurality's test for adjacent wetlands: only those wetlands with a continuous surface connection to other regulated waters, such that the two are indistinguishable.

USACE administers Section 404 of the federal Clean Water Act (CWA), which regulates the discharge of dredge and fill material into waters of the United States. The term "waters of the United States" is defined in accordance with the USACE regulations at 33 Code of Federal Regulations Part 328.3(a) as:

1. Waters which are:
    a. 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;
    b. The territorial seas; or
    c. Interstate waters;
2. Impoundments of waters otherwise defined as waters of the United States under this definition, other than impoundments of waters identified under paragraph (a)(5) of this section;
3. Tributaries of waters identified in paragraphs (a)(1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water;
4. Wetlands adjacent to the following waters:
    a. Waters identified in paragraph (a)(1) of this section; or
    b. Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3) of this section and with a continuous surface connection to those waters;
5. Intrastate lakes and ponds not identified in paragraphs (a)(1) through (4) of this section that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (a)(1) or (a)(3) of this section.

The following are not "waters of the United States":

1. Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the Clean Water Act;

2. Prior converted cropland designated by the Secretary of Agriculture. The exclusion would cease upon a change of use, which means that the area is no longer available for the production of agricultural commodities. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with the United States Environmental Protection Agency (EPA);
3. Ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water;
4. Artificially irrigated areas that would revert to dry land if the irrigation ceased;
5. Artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;
6. Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons;
7. Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States; and
8. Swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow.

Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area’s status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with the EPA and/or USACE.

“Wetland” refers to areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and seasonal wetlands. Wetlands are considered jurisdictional if they fall under one of the categories of waters of the United States defined above. The USACE jurisdiction typically extends up to the ordinary high water mark (OHWM).

In general, a USACE permit must be obtained before placing fill in wetlands or other waters of the United States. The type of permit depends on the impacted acreage, the purpose of the proposed fill, and other factors.

Section 401

Section 401 of the CWA states that “any applicant for a federal permit for activities that involve a discharge to waters of the State, shall provide the federal permitting agency a certification from the State in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the federal Clean Water Act.” Therefore, before the USACE will issue a

Section 404 permit, applicants must apply for and receive a Section 401 Water Quality Certification from the RWQCB.

3.2 - State

3.2.1 - California Porter-Cologne Water Quality Control Act

The RWQCB regulates actions that would involve "discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the State" (Water Code § 13260(a)), pursuant to provisions of the Porter-Cologne Water Quality Act. "Waters of the State" are defined as "any surface water or groundwater, including saline waters, within the boundaries of the State" (Water Code § 13050(e)).

In 2019, the California State Water Resources Control Board (State Water Board) published the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures) to guide wetland waters of the State determinations and the permitting process.[2] The State Board Wetland Definition and Procedures define an area as wetland as follows: An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

The following wetlands are waters of the State:

1. Natural wetlands;
2. Wetlands created by modification of a surface water of the State;
3. Artificial wetlands that meet any of the following criteria:
    a. Approved by an agency as compensatory mitigation for impacts to other waters of the State, except where the approving agency explicitly identifies the mitigation as being of limited duration;
    b. Specifically identified in a water quality control plan as a wetland or other water of the State;
    c. Resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape; or
    d. Greater than or equal to one acre in size, unless the artificial wetland was constructed, and is currently used and maintained, primarily for one or more of the following purposes (i.e., the following artificial wetlands are not waters of the State unless they also satisfy the criteria set forth in 2, 3a, or 3b):
        i. Industrial or municipal wastewater treatment or disposal,
        ii. Settling of sediment,

[2] California State Water Resources Control Board (State Water Board). 2024. State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. Website: https://www.waterboards.ca.gov/water_issues/programs/cwa401/wrapp.html. Accessed June 12, 2024.

iii. Detention, retention, infiltration, or treatment of stormwater runoff and other pollutants or runoff subject to regulation under a municipal, construction, or industrial stormwater permitting program,
iv. Treatment of surface waters,
v. Agricultural crop irrigation or stock watering,
vi. Fire suppression,
vii. Industrial processing or cooling,
viii. Active surface mining–even if the site is managed for interim wetlands functions and values,
ix. Log storage,
x. Treatment, storage, or distribution of recycled water, or
xi. Maximizing groundwater recharge (this does not include wetlands that have incidental groundwater recharge benefits), or
xii. Fields flooded for rice growing.

3.2.2 - California Fish and Game Code

Sections 1600–1617 of the California Fish and Game Code require that a Notification of Lake or Streambed Alteration be submitted to the CDFW for “any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake.” CDFW defines a stream including creeks and rivers as “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life.” CDFW's definition of “lake” includes “natural lakes or manmade reservoirs.” The CDFW reviews the proposed actions in the Notification and, if necessary, prepares a Lake or Streambed Agreement that includes measures to protect fish and wildlife resources.

SECTION 4: METHODS

FCS Senior Biologist Joseph Vu delineated jurisdictional resources in the Study Area on July 9, 2024, as described in the following section.

4.1 - Wetlands

The presence/absence of wetlands was determined based on the requirements of the Corps of Engineers Wetlands Delineation Manual and revised procedures in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region.[3,4] These procedures include standards that define wetlands, including specific saturation and/or ponding regimes, and evaluate hydrophytic vegetation, hydric soils, and wetland hydrology. Wetland indicator status of vegetation follows the 2022 National Wetland Plant List for the Arid West Region.[5]

4.2 - Drainage Channels and Tributaries

Drainage channels were characterized through presence/absence of bed, bank, and OHWM; hydrology; and hydrological connectivity. The OHWM is determined and characterized using definitions and guidance of A Field Guide to the Identification of the OHWM in the Arid West Region of the Western United States.[6] A discussion of what constitutes a potentially jurisdictional "tributary" pursuant to *Sackett v. EPA* and which features, such as ditches or ephemeral drainages, may be excluded from the definition of waters of the United States is provided in Section 5, below.

Culverted drainage sections, where applicable, were examined for evidence of concentrated flow, including presence of water stains, mineral or sediment deposits, and biofilm.

4.2.1 - Definitions of Hydrological Regimes

An ephemeral stream is defined as a watercourse that carries only surface runoff and flows during and immediately after periods of precipitation. An intermittent stream is defined as a watercourse that is temporally intermittent or seasonal and that flows during the wet season, continues to flow after the period of precipitation, and ceases surface flow during at least part of the dry season. A perennial stream is a watercourse that flows throughout the year. Riparian vegetation is defined as vegetation associated with a watercourse and relying on the higher level of water provided by the watercourse. Riparian vegetation can include trees, shrubs, and/or herbaceous plants.

4.3 - Additional Background Information Review

Additional relevant information about the Study Area was reviewed, including current and historical aerial imagery, the Watershed Assessment, Tracking and Environmental Results System (WATERS),

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3 Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1.
4 United States Army Corps of Engineers (USACE). 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-08-28.
5 The National Wetland Plant List–Arid West Version 3. 2022. United States Army Corps of Engineers.
6 Lichvar, R.W. and S.M. McColley. 2008. A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States.

the EPA's National Hydrography Data Set Plus (NHDPlus Version 2), the United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI),[7] and the NRCS Web Soil Survey and the Antecedent Precipitation Tool (APT).[8,9,10] The APT is an automation tool that the USACE developed to facilitate the comparison of antecedent or recent precipitation conditions for a given location to the range of normal precipitation conditions that occurred during the preceding 30 years. To determine what constitutes a "typical year," USACE developed the APT. In addition to providing a standardized methodology to evaluate normal precipitation conditions ("precipitation normalcy"), the APT can assess the presence of drought conditions and the approximate dates of the wet and dry seasons for a given location.

7 United States Fish and Wildlife Service (USFWS). National Wetland Inventory. Website: https://www.fws.gov/wetlands/data/mapper.html. Accessed June 12, 2024

8 United States Environmental Protection Agency (EPA). Watershed Assessment, Tracking and Environmental Results System (WATERS) Website: https://www.epa.gov/waterdata/waters-watershed-assessment-tracking-environmental-results-system. Accessed June 12, 2024.

9 United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2020. Web Soil Survey 3.3.2. Website: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed June 12, 2024.

10 United States Army Corps of Engineers (USACE). 2024. Antecedent Precipitation Tool (APT) – v2.0. Website: https://github.com/erdc/Antecedent-Precipitation-Tool/releases/tag/v2.0.0. Accessed June 12, 2024.

SECTION 5: RESULTS

The following section describes the results of both the background research and analysis and the results of the protocol-level delineation field work. Representative photographs of current site conditions are included in Appendix A.

5.1 - Climatic Conditions

Results of the USACE APT analysis (Appendix B) indicate that conditions during the delineation survey were normal conditions for the 3-month period prior the delineation. The last rain event prior to the delineation occurred on May 5, 2024, with an accumulated precipitation volume of 0.12-inch for the month, based on data of the nearest publicly available weather station located in Riverside.

5.2 - Aquatic Resources

Aquatic resources occurring within the Study Area boundary are described in more detail below.

5.2.1 - Open Drainage Channel

Drainage A

The Study Area includes one drainage feature, designated herein as Drainage A. Drainage A is an incised drainage that convey intermittent flows in a westward direction prior to exiting the site at the western boundary of the Study Area. Flows that enter the Study Area originate from agricultural runoff from the surrounding orchards and seeps within the drainage. The active channels have loam and sandy substrate and vegetation including riparian species, such as mulefat Facultative [FAC]), Gooding's black willow (*Salix goodingii*, Facultative Wetland [FACW]), and arroyo willow (FACW); and obligate wetland species, such as southern cattail (*Typha domingensis*, OBL) and watercress (*Nasturtium officinale*, Obligate Wetland [OBL]). Other species found in Drainage A include Mexican fan palm (*Washingtonia robusta*, FACW), castor bean (*Ricinus communis*, Facultative Upland [FACU]), blue elderberry (FACU), California buckwheat (*Eriogonum fasciculatum*, Upland [UPL]), black mustard (UPL), perennial pepperweed (*Lepidium latifolium*, FAC), and several non-native grasses. Drainage A has an OHWM of approximately 8-feet wide and includes OHWM indicators/evidence such as break in bank slopes, destruction of terrestrial vegetation, vegetation wracking, sediment sorting and deposition, and presence of bed and bank. Photos of Drainage A is included is Appendix A – Site Photographs. A soils map is included as Exhibit 3.

5.3 - United States Fish and Wildlife Service National Wetland Inventory

The USFWS NWI did depict one wetland in the Study Area.[11] Per the NWI, determinations are only made based on high altitude imagery, and according to the NWI Data Limitations information, "a margin of error is inherent in the use of imagery; thus, detailed on the ground inspection of any particular site may result in revision of the wetland boundaries or classification established through

[11] United States Fish and Wildlife Service (USFWS). National Wetland Inventory (NWI). Website: https://www.fws.gov/wetlands/data/mapper.html. Accessed June 12, 2024.

image analysis." Additionally, the USFWS clarifies that NWI mapping is not adequate to be used to establish regulatory boundaries or jurisdiction.

FCS established three wetland sample points within the NWI-mapped wetland that showed evidence of hydrophytic vegetation, such as Gooding's black willow, arroyo willow, southern cattail, and watercress. Wetland data sheets are attached as Appendix C. The presence of wetland indicators may be influenced by recent weather, as conditions in the 3 months prior to the delineation survey were much wetter than normal, as demonstrated by the USACE APT analysis (see Section 5.1 and Appendix B).

5.4 - Proposed Jurisdictional Determination

5.4.1 - Proposed United States Army Corps of Engineers Jurisdiction

As of the preparation of this report, the final "Revised Definition of Waters of the United States" rule was published in the Federal Register on January 18, 2023, and became effective March 20, 2023. On May 25, 2023, the U.S. Supreme Court issued a decision in the case of *Sackett v. Environmental Protection Agency*. This decision determined that areas of federal jurisdiction under Section 404 of the CWA must have a "continuous surface connection" with navigable waters of the United States or relatively permanent tributaries to navigable waters. This report proposes preliminary conclusions regarding the jurisdictional status of non-wetland waters, based on the *Sackett* decision.

On August 29, 2023, the USACE and the EPA issued a release noting that a revised definition of waters of the United States would be issued in conformance with *Sackett*. On September 8, 2023, the USACE and EPA issued the final rule updating the definition of waters of the United States in conformance with *Sackett* in the Federal Register. The final rule is not currently operative in certain states and for certain parties due to litigation. California is excluded from this litigation and is currently operating under the guidance issued in the Federal Register on September 8, 2023.

5.4.2 - Features Proposed to be Exempt from United States Army Corps of Engineers Jurisdiction

Per the guidance outlined above, flows associated with Drainage A do not contain a continuous surface connection with a navigable water of the United States. As noted in Section 2.3 above, flows associated with Drainage A leave the Study Area and terminate approximately 2.5 miles northwest within a concrete pipe culvert at an agricultural field south of the intersection of Cleveland Avenue and Harrison Street. Subsurface flow continues in the storm drain indefinitely and does not appear to reemerge as surface flow. Therefore, Drainage A does not contain a continuous surface connection to a navigable water of the United States and would likely not be classified as waters of the United States under the jurisdiction of the USACE. Note that a final jurisdictional determination can only be made by the USACE following verification.

5.4.3 - Proposed Regional Water Quality Control Board Jurisdiction

Waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the State" (Water Code § 13050(e)) and are under the jurisdiction of the RWQCB. Since Drainage A is not subject to USACE jurisdiction pursuant to Section 404 of the CWA, this feature is also not subject to RWQCB pursuant to Section 401 of the CWA. However, since Drainage A conveys surface flow with the potential to support beneficial uses and includes State wetlands, they are considered to be waters of the State that would be regulated by the Regional Board pursuant to the Porter-Cologne Act and would require a Waste Discharge Requirement for impacts to Drainage A.

RWQCB jurisdiction is shown in Exhibit 4. Dimensions of all RWQCB jurisdiction occurring within and adjacent to the Study Area boundary are presented in Table 1.

Table 1: Proposed Regional Water Quality Control Board Jurisdiction Within and Adjacent to the Study Area

Type	Regional Board Non-Wetland Waters (acres)	Regional Board Jurisdictional Wetlands (acres)	Total Regional Board Jurisdiction (acres)	Length (linear feet)
Drainage A	0.35	0.26	0.61	1,914
Total	**0.35**	**0.26**	**0.61**	1,914

5.4.4 - California Department of Fish and Wildlife Streambed Alteration Program Considerations

Drainage A exhibited defined stream flow indictors as evidenced by changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, and incised channel bank. Because of the presence of drainage beds and banks and the presence of riparian and wetland habitat, it is expected that the CDFW will assert regulatory oversight over potential impacts on Drainage A pursuant to California Fish and Game Code Section 1602, *et seq*. (Streambed Alteration Program) and would require a Notification of Streambed Alteration and subsequent Streambed Alteration Agreement for any work that could adversely affect the Drainage A and associated riparian/wetland vegetation.

CDFW jurisdiction is shown in Exhibit 5. Dimensions of all CDFW jurisdiction occurring within and adjacent to the Study Area boundary are presented in Table 2.

Table 2: Proposed California Department of Fish and Wildlife Jurisdiction Within and Adjacent to the Study Area

Type	CDFW Non-Riparian Stream (acres)	CDFW Riparian Stream (acres)	Total CDFW Jurisdiction (acres)	Length (linear feet)
Drainage A	1.41	0.26	1.67	1,914
Total	**1.41**	**0.26**	**1.67**	**1,914**

5.4.5 - Proposed Western Riverside Multiple Species Habitat Conservation Plan Jurisdiction

The MSHCP defines Riparian areas as "lands which contain Habitat dominated by trees, shrubs, persistent emergent mosses and lichens, which occur close to or which depend upon soils moisture from a nearby fresh water source. In the absence of riparian habitat, the MSHCP defines Riverine areas as areas with fresh water flow during all or a portion of the year." The MSHCP 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 wetland indictors of hydrology and/or vegetation during the drier portion of the growing season."

MSHCP Riparian/Riverine areas within and adjacent to the Study Area is shown in Exhibit 6 are comprised entirely of Drainage A and are identical to that of CDFW jurisdiction. No vernal pools were observed during field surveys. Dimensions of all MSHCP jurisdiction occurring within and adjacent the Study Area boundary are presented in Table 3.

Table 3: Proposed MSHCP Jurisdiction Within and Adjacent to the Study Area

Type	MSHCP Riparian (acres)	MSHCP Riverine (acres)	Total MSHCP Jurisdiction (acres)	Length (linear feet)
Drainage A	1.41	0.26	1.67	1,914
Total	**1.41**	**0.26**	**1.67**	**1,914**

Source: ESRI Aerial Imagery. adkan Engineers, June 2024.

200 100 0 200
Feet

Exhibit 4
RWQCB Jurisdictional Map

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CITY OF RIVERSIDE
HIGHLAND GROVE V
AQUATIC RESOURCES DELINEATION REPORT

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Source: ESRI Aerial Imagery. adkan Engineers, June 2024.

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Exhibit 5
CDFW Jurisdictional Map

CITY OF RIVERSIDE
HIGHLAND GROVE V
AQUATIC RESOURCES DELINEATION REPORT

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Source: ESRI Aerial Imagery. adkan Engineers, June 2024.

FCS An ADEC Innovation

200 100 0 200 Feet

Exhibit 6
MSHCP Jurisdictional Map

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CITY OF RIVERSIDE
HIGHLAND GROVE V
AQUATIC RESOURCES DELINEATION REPORT

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SECTION 6: CONCLUSION

The Study Area contains one drainage (Drainage A) and includes approximately 0.61 acres of potential waters of the State (including 0.26 acres of State wetlands) regulated by the RWQCB under Section 13260 of the California Water Code; approximately 1.67 acres and 1,914 linear feet of aquatic features regulated pursuant to the CDFW Streambed Alteration Program; and 1.41 acre of Riparian habitat and 0.26 acre of Riverine features as defined under the MSHCP.

The Study Area does not contain potential water of the United States regulated by the USACE under Section 404 of the Clean Water Act.

The findings and conclusions presented in this report, including the location and extent of waters subject to regulatory jurisdiction, represent the professional opinion of FCS. These findings and conclusions should be considered preliminary until confirmed by the USACE, RWQCB, and CDFW.

Appendix A: Site Photographs

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Photograph 1: Representative photograph of Drainage A, looking south towards wetland/riparian habitat.

Photograph 2: Representative photograph of Drainage A and the OHWM in the drainage. Note the flowing water.

Photograph 3: Representative photograph of downstream portion of Drainage A, looking southeast.

Photograph 4: Representative photograph of upstream portion of Drainage A, looking south.

Appendix B: Antecedent Precipitation Tool Analysis

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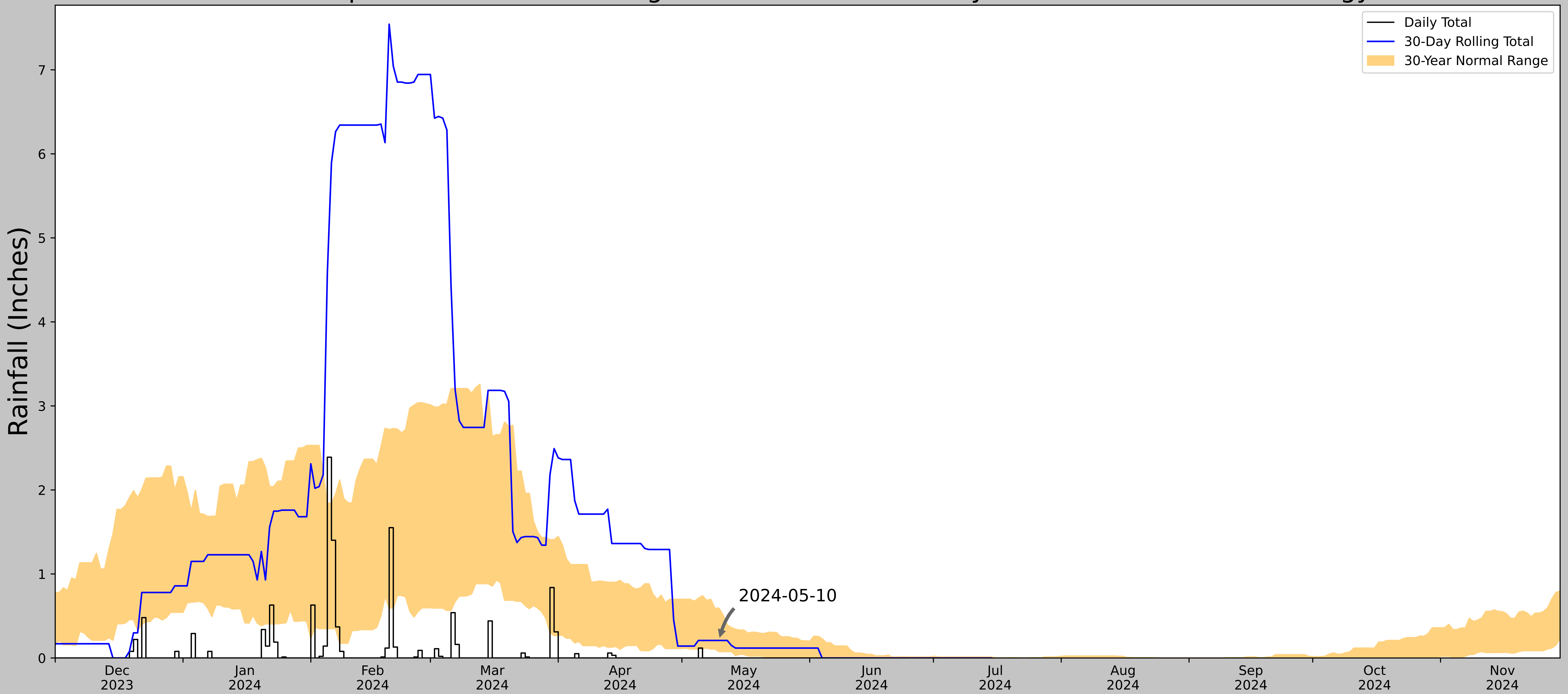
Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	33.862417, -117.421563
Observation Date	2024-07-09
Elevation (ft)	1411.314
Drought Index (PDSI)	Moderate wetness (2024-06)
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-07-09	0.0	0.011811	0.0	Normal	2	3	6
2024-06-09	0.0	0.142913	0.0	Normal	2	2	4
2024-05-10	0.075984	0.59252	0.208661	Normal	2	1	2
Result							Normal Conditions - 12

US Army Corps of Engineers

ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
RIVERSIDE MUNI AP	33.9528, -117.4353	845.144	6.294	566.17	6.396	8844	90
RIVERSIDE 3.8 NW	33.9793, -117.4541	840.879	2.124	4.265	0.965	7	0
RIVERSIDE FIRE STN 3	33.9511, -117.3881	839.895	2.708	5.249	1.233	2449	0
RIVERSIDE CITRUS EXP	33.9669, -117.3614	985.892	4.346	140.748	2.567	52	0

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Appendix C:
Arid West Wetland Data Forms

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Highland Grove 5 Development Prject City/County: Unincorporated Riverside Co Sampling Date: July 9, 2024

Applicant/Owner: Adkan Engineers State: CA Sampling Point: 1

Investigator(s): Joseph Vu Section, Township, Range: Unsectioned, T3S, R5W

Landform (hillslope, terrace, etc.): Channel bed Local relief (concave, convex, none): ______ Slope (%): 0-2

Subregion (LRR): C Lat: 33.862018 Long: -117.417635 Datum: NAD 83

Soil Map Unit Name: Cajalco rocky fine sandy loam, 15 to 50 percent slopes, eroded (CbF2) NWI classification: riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No ___
Hydric Soil Present?	Yes ✓	No ___
Wetland Hydrology Present?	Yes ✓	No ___

Is the Sampled Area within a Wetland? Yes ✓ No ___

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1. Salix goodingii	35	Y	FACW
2.			
3.			
4.			
= Total Cover	35		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 5')			
1. Nasturtium officinale	15	Y	OBL
2. Urtica Dioca	5	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
= Total Cover	20		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
= Total Cover			

% Bare Ground in Herb Stratum ___ % Cover of Biotic Crust ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	35	x 2 =	70
FAC species	5	x 3 =	
FACU species		x 4 =	15
UPL species		x 5 =	
Column Totals:	55 (A)		100 (B)

Prevalence Index = B/A = 1.82

Hydrophytic Vegetation Indicators:

- ✓ Dominance Test is >50%
- ✓ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks:

SOIL

Sampling Point: 1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-14	see comment							

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✓ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ✓ No ______

Remarks:

Smell of hydrogen sulfide was detected at the soil pit/sampling point.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ✓ Water Marks (B1) (**Riverine**)
- ✓ Sediment Deposits (B2) (**Riverine**)
- ✓ Drift Deposits (B3) (**Riverine**)
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ______ Depth (inches): 8

Water Table Present? Yes ______ No ______ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No ______ Depth (inches): ______

Wetland Hydrology Present? Yes ✓ No ______

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

Remarks:

Surface water was present during the delineation.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Highland Grove 5 Development Prject City/County: Unincorporated Riverside Co Sampling Date: July 9, 2024

Applicant/Owner: Adkan Engineers State: CA Sampling Point: 2

Investigator(s): Joseph Vu Section, Township, Range: Unsectioned, T3S, R5W

Landform (hillslope, terrace, etc.): Channel bed Local relief (concave, convex, none): ______ Slope (%): 0-5

Subregion (LRR): C Lat: 33.860961 Long: -117.425340 Datum: NAD 83

Soil Map Unit Name: Cajalco rocky fine sandy loam, 15 to 50 percent slopes, eroded (CbF2) NWI classification: riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

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

	Yes	No
Hydrophytic Vegetation Present?	✓	
Hydric Soil Present?	✓	
Wetland Hydrology Present?	✓	
Is the Sampled Area within a Wetland?	✓	

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1. Salix goodingii	60	Y	FACW
2. Washingtonia robusta	10	N	FACW
3.			
4.			
	70 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. Typha domingensis	50	Y	OBL
2.			
3.			
4.			
5.			
	50 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Nasturtium officinale	10	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	10 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ______ % Cover of Biotic Crust ______

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	60	x 1 = 60
FACW species	70	x 2 = 140
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	130 (A)	200 (B)

Prevalence Index = B/A = 1.42

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks:

SOIL

Sampling Point: 2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	see comment							

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✓ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: ______

Depth (inches): ______

Hydric Soil Present? Yes ✓ **No** ______

Remarks:

Smell of hydrogen sulfide was detected at the soil pit/sampling point.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ✓ Water Marks (B1) (**Riverine**)
- ✓ Sediment Deposits (B2) (**Riverine**)
- ✓ Drift Deposits (B3) (**Riverine**)
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ______ Depth (inches): 12

Water Table Present? Yes ______ No ______ Depth (inches): ______

Saturation Present? (includes capillary fringe) Yes ______ No ______ Depth (inches): ______

Wetland Hydrology Present? Yes ✓ **No** ______

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

Remarks:

Surface water was present during the delineation.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Highland Grove 5 Development Prject City/County: Unincorporated Riverside Co Sampling Date: July 9, 2024

Applicant/Owner: Adkan Engineers State: CA Sampling Point: 3

Investigator(s): Joseph Vu Section, Township, Range: Unsectioned, T3S, R5W

Landform (hillslope, terrace, etc.): Channel bed Local relief (concave, convex, none): ____ Slope (%): 0-2

Subregion (LRR): C Lat: 33.861288 Long: -117.424068 Datum: NAD 83

Soil Map Unit Name: Cajalco rocky fine sandy loam, 15 to 50 percent slopes, eroded (CbF2) NWI classification: riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

	Yes	No
Hydrophytic Vegetation Present?		✓
Hydric Soil Present?		✓
Wetland Hydrology Present?	✓	

Is the Sampled Area within a Wetland? Yes ____ No ✓

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1. Ulmus parvifolia	30	Y	UPL
2. Salix goodingii	15	Y	FACW
3.			
4.			
	45 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. Baccharis salicifolia	20	Y	FAC
2.			
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Urtica Dioca	5	Y	FAC
2. Marrubium vulgare	5	y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	10 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species	15	x 2 = 30
FAC species	25	x 3 = 75
FACU species	5	x 4 = 20
UPL species	30	x 5 = 150
Column Totals:	75 (A)	(B)

Prevalence Index = B/A = 3.67

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: 3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/1	100		0				sandy loam

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: ____________

Depth (inches): ____________

Hydric Soil Present? Yes ______ No ✓

Remarks:

No redox indicators in the soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ✓ Water Marks (B1) (**Riverine**)
- ✓ Sediment Deposits (B2) (**Riverine**)
- ✓ Drift Deposits (B3) (**Riverine**)
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓	No ______	Depth (inches): 14
Water Table Present?	Yes ______	No ______	Depth (inches): ______
Saturation Present? (includes capillary fringe)	Yes ______	No ______	Depth (inches): ______

Wetland Hydrology Present? Yes ✓ No ______

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

Remarks:

Surface water was present during the delineation.