New Ukiah Courthouse
Ukiah, California

Delineation of Wetlands and Other Waters

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1. Introduction

The Superior Court of California, County of Mendocino - New Ukiah Courthouse project proposes a new 7-courtroom courthouse of 82,000 square feet to replace the existing Mendocino County Courthouse. It includes secured parking for judicial officers and approximately 160 surface parking spaces for jurors and the public. The project area is located in Ukiah, Mendocino County, California (APN 002-232-14, -15, and 002-282-20, -21; Figures 1 to 3).

1.1 Project Area Description

The 5.72-acre project area is bounded by East Perkins Street, Leslie Street, Clay Street, and inactive railroad tracks. Gibson Creek flows through the northeastern portion of the project area. This site was utilized as the former Ukiah rail yard and was previously owned by the North Coast Railroad Authority (NCRA). The site is no longer an active rail yard, and is primarily vacant, except for a historic train depot adjacent to the project area (Figures 1 to 3).

The climate in the region is Mediterranean, with most rain falling in the winter and spring. Cool temperatures are common in the winter and hot temperatures are common in the summer. Climate conditions in the project area include a 30-year average of approximately 35 inches of annual precipitation with an average minimum daily temperature of 45ºF and an average maximum daily temperature of 74ºF (Deters 2022).

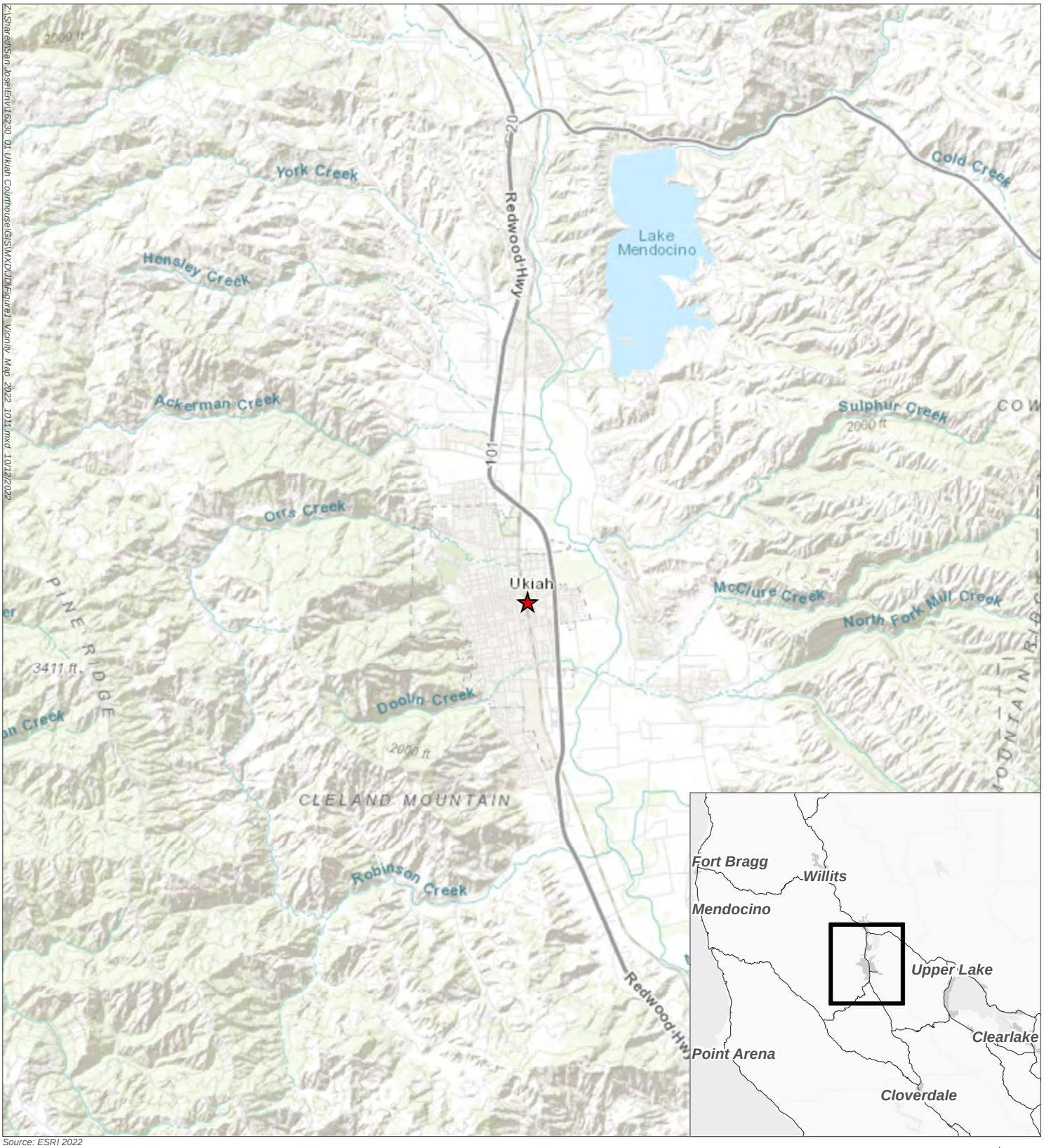
The site is underlain by one soil type, 210-Urban land, as mapped by the Natural Resources Conservation Service (NRCS; NRCS 2022a; Figure 4). This soil type is found on terraces and alluvial plains in Ukiah and Little Lake valleys and is mostly composed of areas covered by concrete, asphalt, buildings, or other impervious surfaces. It also includes areas that have been altered by grading and cutting and filling. Drainage, permeability, surface runoff, and available water capacity are variable and depend on topographic position. This soil map unit is listed as hydric in Mendocino County on the National Hydric Soils List (NRCS 2022b) when found in depressions and flood plains. A detailed description of this soil type can be found in Appendix A.

The U.S. Fish and Wildlife Service's National Wetlands Inventory (NWI) map of the project area is depicted in Figure 5. The NWI identified Gibson Creek in the project area as a seasonally flooded, intermittent riverine system (R4SBC; NWI 2022). NWI maps are based on interpretation of aerial photography, limited verification of mapped units, and/or classification of wetland types using the classification system developed by Cowardin et al. (1979). These data are available for general reference purposes and do not necessarily correspond to the presence or absence of jurisdictional waters.

1.2 Purpose of Delineation

Eleven seasonally ponded depressions were identified in a biological study report prepared for the project area in 2011 (ENPLAN 2011). To determine if these seasonally ponded depressions

are potential waters of the U.S. and/or state, a formal technical delineation was completed in accordance with the U.S. Army Corps of Engineers (USACE) methodology. The USACE methodology includes collection of technical data on soils, vegetation, and hydrology, which are used to identify wetlands and other waters. The USACE methodology is accepted by both federal and state regulatory agencies.



★ Project Location

Figure 1 Vicinity Map

New Ukiah Courthouse Delineation of Wetlands and Waters

Figure 2 Project Area Map

New Ukiah Courthouse Delineation of Wetlands and Waters

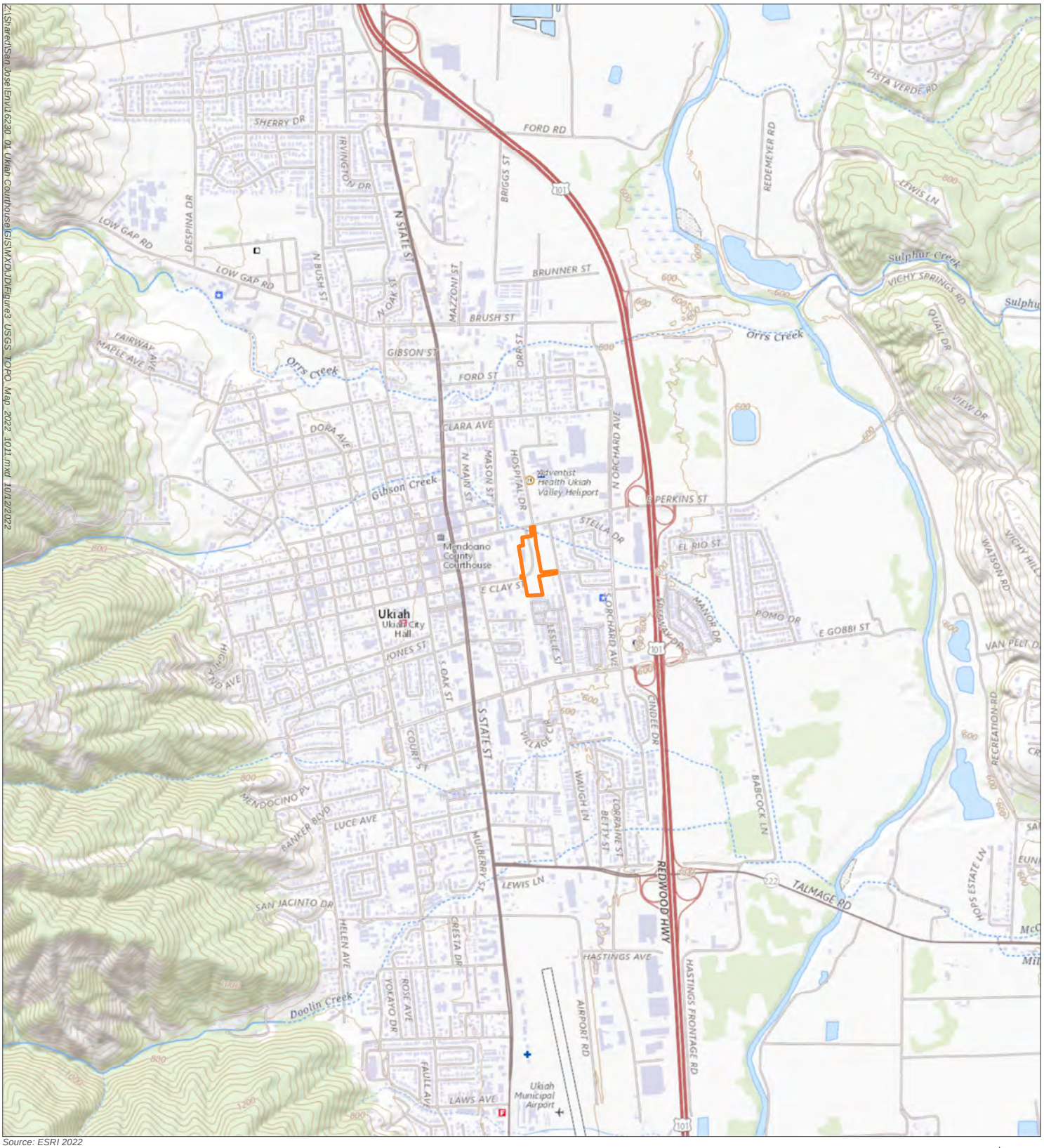
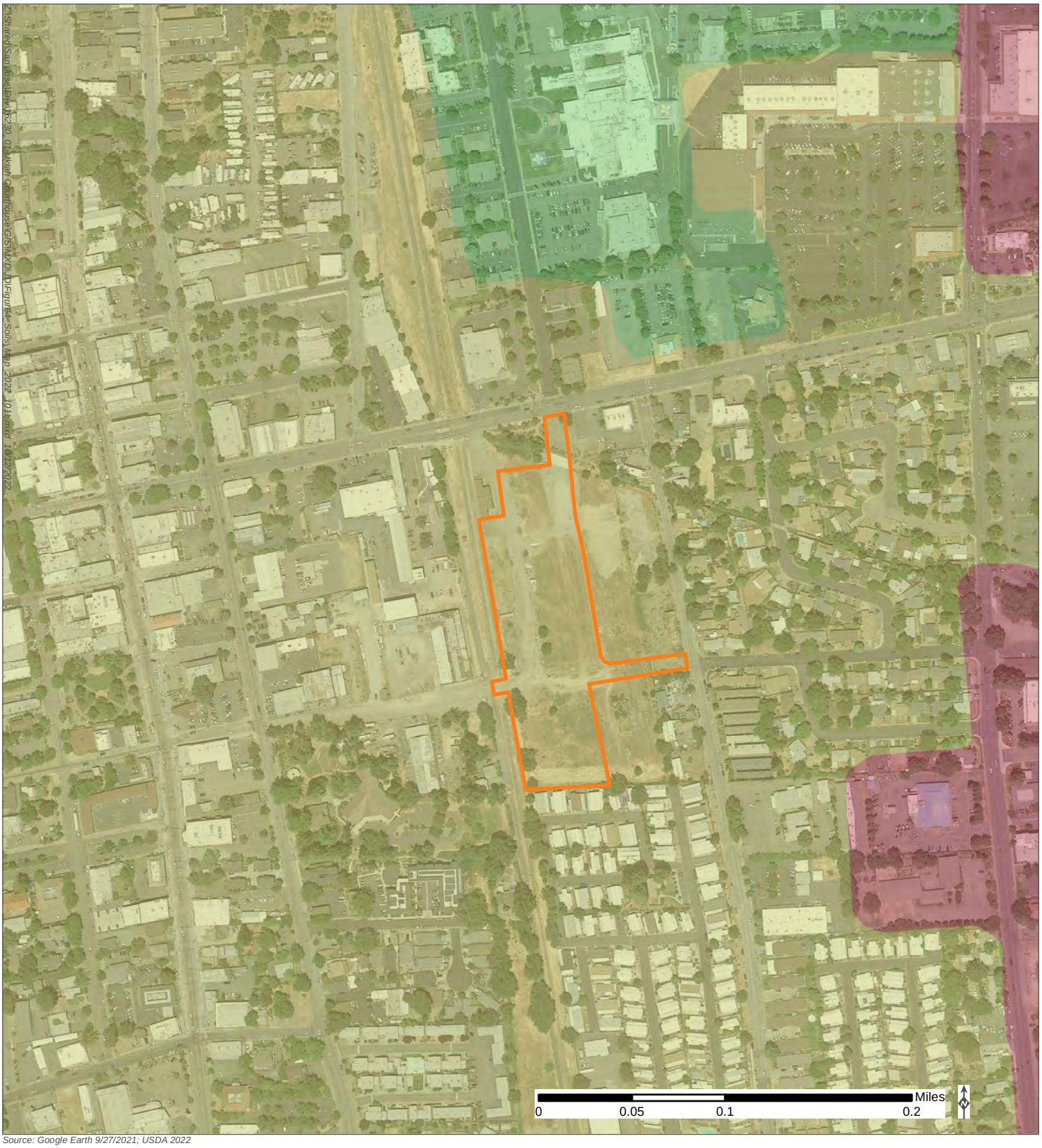


Figure 3 USGS Topo Map

New Ukiah Courthouse Delineation of Wetlands and Waters



Source: Google Earth 9/27/2021; USDA 2022

NRCS Soils

- Project Boundary
- Cole loam, drained, 0 to 2 percent slopes, MLRA 14
- Feliz loam, 0 to 2 percent slopes
- Urban Land

Figure 4 Soil Map

New Ukiah Courthouse Delineation of Wetlands and Waters

Source: ESRI 2022; NWI 2022

Wetland Type

- Freshwater Forested/Shrub Wetland
- Riverine
- Project Boundary

Figure 5 National Wetlands Inventory Map

New Ukiah Courthouse Delineation of Wetlands and Waters

2. Survey Methods

Before the delineation survey was conducted, topographic maps and aerial photos of the project area were obtained and reviewed from several sources, such as the U.S. Geological Survey (USGS; Figure 3), NRCS (Figure 4), NWI (Figure 5), and Google Earth software (Google Inc. 2022).

On September 16, 2022, MIG Senior Biologist David Gallagher, M.S. performed a technical delineation of wetlands and other waters in the project area, in accordance with the *Corps of Engineers 1987 Wetlands Delineation Manual* (Corps Manual; Environmental Laboratory 1987). Additionally, the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West (Version 2.0)* (Regional Supplement) (USACE 2008a) and *A Field Guide to the Identification of the Ordinary High-Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b) were followed to document site conditions relative to hydrophytic vegetation, hydric soils, and wetland hydrology. Mr. Gallagher performed preliminary mapping of the extent and distribution of wetlands and other waters of the U.S. that may be subject to regulation under Section 404 of the Clean Water Act (CWA); and waters of the state that may be subject to regulation under the Porter Cologne Water Quality Control Act, which is administered by the Regional Water Quality Control Board (RWQCB). Mr. Gallagher also surveyed for aquatic and riparian habitat that may be subject to regulation under Sections 1600-1607 of the California Fish and Game Code, which is administered by California Department of Fish and Wildlife (CDFW).

2.1 Identification of Jurisdictional Waters

The vegetation, soils, and hydrology in the project area were mapped according to the Routine Determination Method outlined in the Corps Manual (Environmental Laboratory 1987), using updated data forms, vegetation sampling methods, and hydric soil and hydrology indicators developed for the Regional Supplement (USACE 2008a). This three-parameter approach to identifying wetlands is based on the presence of a prevalence or dominance of hydrophytic vegetation, hydric soils, and wetland hydrology.

In addition to applying these survey methods, Mr. Gallagher compiled this report in accordance with guidance provided in *Updated Map and Drawing Standards for the South Pacific Division Regulatory Program* (USACE 2016a) and *Information Requested for Verification of Corps Jurisdiction* (USACE 2016b). These documents list the information that must be submitted as part of a request for a jurisdictional determination, including:

- Vicinity map (Figure 1)
- Project area map (Figure 2)
- USGS topo map (Figure 3)
- Soils map (Figure 4)
- National Wetlands Inventory map (Figure 5)
- Vegetation communities map (Figure 6)

- Delineation map (Figure 7)
- Current soil survey report (Appendix A)
- Plant species observed (Appendix B)
- Arid West Wetland Determination Data Forms (Appendix C)
- Written rationale for sample point choice (Section 3.2)
- Color photos (Appendix D)

During the survey, the project area was examined for topographic features, drainages, alterations to hydrology or vegetation, and recent significant disturbance. A determination was then made as to whether normal environmental conditions were present at the time of the field survey. In the field, the techniques used to identify wetlands included observing the vegetation growing near the soil sample points and characterizing the current surface and subsurface hydrologic features present near the sample points through both observation of indicators and direct observation of hydrology. Features meeting wetland vegetation, soil, and hydrology criteria were then mapped in the field. Geospatial data were collected using a tablet with an Arrow 100 sub-meter GPS receiver and a geo-spatial mobile-device application.

2.2 Identification of Section 404 Jurisdictional Wetlands

Where wetland field characteristics were present, Mr. Gallagher examined vegetation, soils, and hydrology using the Routine Determination Method outlined in the Corps Manual (Environmental Laboratory 1987) and the updated data forms, vegetation sampling methods, and hydric soil and hydrology indicators developed for the Regional Supplement (USACE 2008a).

Hydrophytic Vegetation. Plants that can grow in soils that are saturated or inundated for long periods of time, which contain little or no oxygen when wetted, are considered adapted to those soils and are called hydrophytic. There are different levels of adaptation, as summarized in Table 2. Some plants can only grow in soils saturated with water (and depleted of oxygen), some are mostly found in this condition, and some are found equally in wet soils and in dry soils. Plants observed at each of the sample study areas were identified to species, where possible, using *The Jepson Manual, Vascular Plans of California, Second Edition* (Baldwin et al. 2012). The wetland indicator status of each species was obtained from the *Arid West 2020 Regional Wetland Plant List* (USACE 2020). Wetland indicator species are designated according to their frequency of occurrence in wetlands. For instance, a species with a presumed frequency of occurrence of 67 to 99 percent in wetlands is designated a facultative wetland indicator species. The wetland indicator groups, indicator symbol, and the frequency of occurrence of species, provided as a percentage, within wetlands are shown in Table 1.

Table 1. Wetland Indicator Status Categories for Vascular Plants

Indicator Category	Symbol	Frequency (Percent) of Occurrence in Wetlands[1]
Obligate	OBL	>99 (Almost always is a hydrophyte, rarely in uplands)
Facultative wetland	FACW	67 – 99 (Usually a hydrophyte but occasionally found in uplands)
Facultative	FAC	34 – 66 (Commonly occurs as either a hydrophyte or non-hydrophyte)
Facultative upland	FACU	1 – 33 (Occasionally is a hydrophyte, but usually occurs in uplands)
Upland[2]	UPL	<1% (Rarely is a hydrophyte, almost always in uplands)
Not included[2]	NI	Considered to be an upland species

Obligate and facultative wetland indicator species are hydrophytes that occur "in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present" (Environmental Laboratory 1987). Facultative indicator species may be considered wetland indicators when found growing in hydric soils that experience periodic saturation. Plant species that are not on the regional list of wetland indicator species are considered upland species. A complete list of the vascular plants observed in the project area including their current indicator statuses, is provided in Appendix B.

Hydric Soils. Up to 8 inches of the soil profile were examined for hydric soil indicators. The National Technical Committee for Hydric Soils (NTCHS) defines a hydric soil as one formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper 12 inches of soil (NRCS 2010). Hydric soils include soils developed under sufficiently wet conditions to support the growth and regeneration of hydrophytic vegetation. In general, evidence of a hydric soil includes characteristics such as organic soils (histosols), reducing soil conditions, gleyed soils, soils with bright mottles and/or low matrix chroma, soils listed as hydric by the U.S. Department of Agriculture (USDA) on the National Hydric Soils List (NRCS 2022b), and iron and manganese concretions. Reducing soil conditions can also include circumstances where there is evidence of frequent ponding for long or very long duration. A long duration is defined as a period of inundation for a single event that ranges from 7 days to a month and very long is greater than one month (Environmental Laboratory 1987).

Munsell Soil Notations (Munsell 2009) were recorded for the soil matrix of each soil sample. The Munsell color system is based on three color properties: hue, value, and chroma. A brief description of each component of the system is described below, in the order they are used in describing soil color (i.e., hue/value/chroma):

1. **Hue.** The Munsell Soil Color Chart is divided into five principal hues: yellow (Y), green (G), purple (P), blue (B), and red (R), along with intermediate hues such as yellow-red

[1] Based on information contained in the Corps Manual.
[2] Plant species that are not listed in the *Arid West 2020 Regional Wetland Plant List* (USACE 2020) are considered UPL species

(YR) and green-yellow (GY). Example of commonly encountered hue numbers include 2.5YR, 10YR, and 5Y.

2. **Value.** *Value* refers to lightness, ranging from white to grey to black. Common numerical values for value in the Munsell Soil Color Chart range from 2 for saturated soils to 8 for faded or light colors. Hydric soils often show low-value colors when soils have accumulated sufficient organic material to indicate development under wetland conditions but can show high-value colors when iron depletion has occurred, removing color value from the soil matrix. Value numbers are commonly reported as 8/, 2.5/, and 6/.
3. **Chroma.** *Chroma* describes the purity of the color, from "true" or "pure" colors to "pastel" or "washed out" colors. Chromas commonly range from 1 to 8 but can be higher for gleys. Soil matrix chroma values that are 1 or less, or 2 or less when mottling is present, are typical of soils that have developed under anaerobic conditions. Chroma numbers are listed, for example, as /1, /5, and /8.

The NRCS Web Soil Survey (NRCS 2022a) was consulted to determine which soil types have been mapped in project area Figure 4). Detailed descriptions of these soil types are provided in Appendix A.

Wetland Hydrology. Wetland hydrology is defined as an area that is inundated either permanently or periodically at mean water depths less than 6.6 feet, or where the soil is saturated at the surface at some time during the growing season of the prevalent vegetation. The period of inundation or soil saturation varies according to the hydrologic/soil moisture regime and occurs in both tidal and non-tidal situations.

Wetland hydrology encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Wetland hydrology indicators provide evidence that the study area has a continuing wetland hydrologic regime. Primary indicators might include visual observation of surface water (A1), high water table (A2), soil saturation (B1), water-stained leaves (B9), and hydrogen sulfide odor (C1). Secondary indicators might include riverine drift deposits (B3), drainage patterns (B10), and passing score for the FAC-neutral test (D5). Each of the sample points was examined for positive field indicators (primary and secondary) of wetland hydrology, following the guidance provided in the Regional Supplement.

2.3 Identification of Section 404 Jurisdictional Other Waters

"Other waters" includes lakes, slough channels, seasonal ponds, tributary waters, non-wetland linear drainages, and salt ponds. Such areas are identified by the (seasonal or perennial) presence of standing or running water and generally lack hydrophytic vegetation. In non-tidal or muted tidal waters USACE jurisdiction extends to the ordinary high water mark (OHWM) which is defined in 33 CFR Part 328.3 as "the line on the shore established by the fluctuations of water and indicated by physical characteristics, such as a clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation or the presence of litter and debris."

2.4 Identification of Waters of the State

The Porter-Cologne Water Quality Control Act (PWQCA) broadly defines waters of the state as "any surface water or groundwater, including saline waters, within the boundaries of the state." Because PWQCA applies to any water, whereas the CWA applies only to certain waters, California's jurisdictional reach overlaps and may exceed the boundaries of waters of the U.S. For example, Water Quality Order No. 2004-0004-DWQ states that "shallow" waters of the state include headwaters, wetlands, and riparian areas. Where forested habitat occurs, the outer canopy of any riparian trees rooted within top of bank (TOB) may be considered jurisdictional as these trees can provide allochthonous[3] input to the channel below.

2.5 Identification of CDFW Jurisdiction

Ephemeral and intermittent streams, rivers, creeks, dry washes, sloughs, blue line streams on USGS maps, and watercourses with subsurface flows fall under CDFW jurisdiction. Canals, aqueducts, irrigation ditches, and other means of water conveyance may also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife. A stream is defined in Title 14, California Code of Regulations §1.72, as "a body of water that follows at least periodically or intermittently through a bed or channel having banks and that supports fish and other aquatic life. Jurisdiction does not include tidal areas such as tidal sloughs unless there is freshwater input. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." Using this definition, CDFW extends its jurisdiction to encompass riparian habitats that function as a part of a watercourse. California Fish and Game Code §2786 defines riparian habitat as "lands which contain habitat which grows close to, and which depends upon soil moisture from a nearby freshwater source."

The lateral extent of a stream and associated riparian habitat that would fall under the jurisdiction of CDFW can be measured in several ways, depending on the situation and the type of fish or wildlife at risk. At a minimum, CDFW would claim jurisdiction over a stream's bed and bank. Where riparian habitat is present, the outer edge of riparian vegetation is generally used as the line of demarcation between riparian and upland habitats.

[3] Allochthonous is a term used describe nutrients and carbon that come from outside the aquatic system.

3. Survey Results and Discussion

A total of four sample points (SP1 to SP4) were examined to identify jurisdictional features (Appendix C; Figure 7). In the project area, waters of the U.S./state, regulated by the USACE and RWQCB, or CDFW jurisdictional habitats were not identified. The results of the September 2022 delineation are described below and summarized in Table 2.

The project area is located within the Inner North Coast Ranges District (NCoRI), which is part of the North Coast Ranges Subregion (NCoR), both of which are contained within the larger California Floristic Province (Baldwin et al. 2012). Where applicable, vegetation communities were mapped using CDFW's Vegetation Classification and Mapping Program's (VegCAMP) currently accepted list of vegetation alliances and associations (CDFW 2022). One land cover type was identified in the project area: Urban land. Immediately adjacent to the project area, two natural vegetation communities/habitats were identified: (1) Intermittent creek (Gibson Creek) and (2) *Arroyo Willow Thickets Alliance* (Figure 6; Appendix D, Photos 1 to 3).

Table 2. Summary of Potentially Jurisdictional Waters and Habitats within the Project Area

Potentially Jurisdictional Waters	Acres
USACE Jurisdictional Total	**0**
RWQCB and CDFW Jurisdiction Total	**0**

3.1 Precipitation Data

The survey took place during the dry season. Total estimated precipitation at the project area from March 2022 to August 2022 was approximately 4.2 inches, which was approximately 44% of 30-year average (1991-2020) for the same period but is considered *normal* to *wetter than normal* conditions (Deters 2022). The region was experiencing a *moderate* to *extreme drought* as estimated by the Palmer Drought Severity Index (PDSI) in the 6 months prior to the delineation. However, the *normal* to *wetter than normal* conditions were considered when assessing the biotic habitats present in the project area. The boundaries of waters remained clear owing to the presence of hydrology indicators and hydrophytic vegetation.

3.2 Rationale for Sample Point Choice

SP1 was selected to examine a swale adjacent to the railroad tracks with upland and hydrophytic vegetation (Figure 7; Appendix C; Appendix D, Photo 4). Vegetation present included slender oat (*Avena barbata*; UPL), yellow star thistle (*Centaurea solstitialis*, UPL), salt grass (*Festuca perennis*, FAC), and wild carrot (*Daucus carota*, UPL). No Hydric soil indictors were observed. Secondary Hydrological indicators observed included drainage patterns.

SP2 was selected to examine a seasonally ponded depression previously identified in a biological study report prepared for the project area in 2011 (ENPLAN 2011) (Figure 7; Appendix C). Vegetation present included yellow star thistle (UPL) and English plantain (*Plantago lanceolata*, FAC). No Hydric soil indictors were observed. Secondary hydrological indicators observed included drainage patterns.

SP3 was selected to examine a seasonally ponded depression previously identified in a biological study report prepared for the project area in 2011 (ENPLAN 2011; Figure 7; Appendix C). Vegetation present included yellow star thistle (UPL), English plantain (FAC), Italian ryegrass (*Festuca perennis*, FAC), pennyroyal (*Mentha pulgium*, OBL), and prostrate knotweed (*Polygonum aviculare*, FAC). No Hydric soil indictors were observed. Secondary hydrological indicators observed included drainage patterns.

SP4 was selected to examine a depression near a seasonally ponded depression previously identified in a biological study report prepared for the project area in 2011 (ENPLAN 2011) (Figure 7; Appendix C). Vegetation present included Italian ryegrass (FAC), yellow star thistle (UPL), curly dock (*Rumex crispus,* FAC), Harding grass (*Phalaris aquatica*, FACU), and English plantain (FAC). No Hydric soil indictors were observed. Secondary hydrological indicators observed included drainage patterns.

3.3 Project Area Conditions and Observations

- This preliminary delineation assumes that normal circumstances prevailed at the time of the September 2022 delineation, and the results are based upon the conditions present. The survey was performed using the "Routine Method of Determination" using three parameters, as outlined in the Regional Supplement.
- The project area was mapped as urban land since most of the site is composed of impervious surfaces, including roads, and building foundations. Even though there are areas of dense vegetation, natural or semi-natural vegetation communities are absent from the project area. The dominant species observed was yellow star thistle, which is classified as highly invasive by the California Invasive Plant Council (Cal-IPC). Non-native grasses, including slender oat and foxtail barley (*Hordeum murinum*) are present but not with sufficient cover to classify the vegetated areas of the project area as a grassland.
- The project area is characterized by depressions and swale topography within urban land. Some of these swales and depressions may pond during and after precipitation events due their low topographic positions, as documented in the biological study report prepared for the project area in 2011 (ENPLAN 2011). Also, no hydrological connectivity, beyond possible sheet flow, was observed between the depressions/swales and Gibson Creek (Appendix D, Photos 5 and 6).
- Due to the long history (at least 65 years based on aerial imagery) of industrial uses of the site (UCSB 2022), the swales and depressions were likely created from repeated grading of the site for railroad tracks, access roads, buildings (both construction and demolition), and for storage areas (Appendix D, Photos 3 to 6).
- Even though most of the vegetation observed at the sample points was dominated by upland vegetation (except SP4), these areas were still evaluated to be potential seasonal wetlands. This is because after seasonal wetlands dry out, non-hydrophytic upland species can become dominant. However, due to the lack of hydric soils at each of the sample points, these areas were not classified as seasonal wetlands. The lack of

hydric soils indicates these areas do not remain inundated for sufficiently long periods. Furthermore, evidence of inundation or saturation were not observed in aerial imagery of the sampled area (Google Inc 2022; UCSB 2022).

- Except for one obligate (OBL) wetland indicator species (pennyroyal) and one facultative (FAC) wetland indicator species (saltgrass), all the other wetland indicator species observed at the sample points are unreliable wetland indicators, including curly dock (FAC), English plantain (FAC), Italian rye grass (FAC), prostrate knotweed (FAC). These species are adapted to grow as a hydrophyte or non-hydrophyte depending on environmental conditions and all are classified as invasive plants by Cal-IPC. They are generally tolerant of a wide range of moisture conditions including habitats with hydric, mesic (damp or moist soils that are not hydric), or even mildly xeric (dry) soils. Both saltgrass and pennyroyal will grow in seasonally mesic areas, including swales and depressions that collect water, and do not necessarily indicate the presence of a wetland when hydric soils are not present.

3.4 Photo Points

Photo point labels, coordinates, and rationale for the photos are include in Table 3. Photos are included in Appendix D.

Table 3. Coordinates and Rationale for Photo Points

Label	Latitude	Longitude	Rationale
Photo 1	39.150462°	-123.203842°	*Arroyo Willow Thickets*
Photo 2	39.150230°	-123.202888°	Gibson Creek
Photo 3	39.149340°	-123.203706°	Urban land cover
Photo 4	39.148132°	-123.203616°	Swale topography
Photo 5	39.148514°	-123.202686°	Depression
Photo 6	39.149402°	-123.203150°	Upland

3.5 Identification of Section 404 Potentially Jurisdictional Waters

There are no Section 404 other waters in the project area (Figure 7).

3.6 Identification of Section 404 Potentially Jurisdictional Wetlands

There are no Section 404 wetlands within the project area (Figure 7).

3.7 Identification of Potentially Jurisdictional Waters of the State

There are no waters of the state with the project area (Figure 7). However, Gibson Creek, which is an intermittent stream with defined bed and bank topography, along with associated riparian habitat up to and beyond the TOB is immediately adjacent to the project area (Figure 7).

In the field, TOB was identified as the first distinct break in the bank slope above the active flood plain of the stream. The active floodplain is the area (e.g., bank or terrace) adjacent to and receiving frequent over-bank flow from the low-flow channel. The limits of the active flood plain

were determined by evidence of scour along the stream banks, break in slope, a textural change in substrate (e.g., from cobble to a finer-grained matrix), and an increase in vegetative cover and maturity above the active flood plain. The current practice of the RWQCB is to claim all areas up to the top of bank, but it may also claim riparian habitat that extends beyond the top of bank.

3.8 Identification of CDFW Potentially Jurisdictional Habitats

There are no CDFW jurisdictional habitats with the project area (Figure 7). However, Gibson Creek, which is an intermittent stream with defined bed and bank topography along with associated riparian habitat, as defined by CDFW, is immediately adjacent to the project area (Figure 7). Riparian habitat was mapped by the dripline of trees at the outer extent of riparian vegetation. Streambed features were mapped by the TOB (which can extend beyond the OHWM that is used to measure the extent of waters of the U.S.).

Source: Google Earth 6/2/2021

Project Boundary
Arroyo Willow Thickets
Urban Lands
Top of Bank

Figure 6 Vegetation Communities Map

New Ukiah Courthouse Delineation of Wetlands and Waters

Source: Google Earth 6/2/2021

- Project Boundary
- Arroyo Willow Thickets
- Urban Lands
- Top of Bank
- Photo Point
- SP- Wetland Sample Point

Figure 7 Preliminary Identification of Waters of the U.S./State

New Ukiah Courthouse Delineation of Wetlands and Waters

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Appendix A: Soil Survey Report

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Mendocino County, Eastern Part and Southwestern Part of Trinity County, California

Ukiah Courthouse

September 14, 2022

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:1,990 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Mendocino County, Eastern Part and Southwestern Part of Trinity County, California
Survey Area Data: Version 16, Sep 6, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 7, 2022—May 31, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
210	Urban land	13.4	100.0%
Totals for Area of Interest		**13.4**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Mendocino County, Eastern Part and Southwestern Part of Trinity County, California

210—Urban land

Map Unit Setting

National map unit symbol: hgt1
Elevation: 500 to 1,400 feet
Mean annual precipitation: 35 to 55 inches
Mean annual air temperature: 54 to 57 degrees F
Frost-free period: 150 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Minor Components

Unnamed

Percent of map unit: 2 percent
Landform: Depressions
Hydric soil rating: Yes

Xerofluvents

Percent of map unit: 2 percent
Landform: Flood plains
Hydric soil rating: Yes

Cole

Percent of map unit: 1 percent
Hydric soil rating: No

Pinnobie

Percent of map unit: 1 percent
Hydric soil rating: No

Pinole

Percent of map unit: 1 percent
Hydric soil rating: No

Talmage

Percent of map unit: 1 percent
Hydric soil rating: No

Yokayo

Percent of map unit: 1 percent
Hydric soil rating: No

Feliz

Percent of map unit: 1 percent
Hydric soil rating: No

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Appendix B: Plant Species Observed

Common Name	Scientific Name	Wetland Indicator Status[1]
Annual fireweed	*Epilobium brachycarpum*	FAC
American bird's foot trefoil	*Acmispon americanus*	UPL
Arroyo willow	*Salix lasiolepis*	FACW
Black mustard	*Brassica nigra*	NI
California poppy	*Eschscholzia californica*	NI
California wild grape	*Vitis californica*	FACU
Coast live oak	*Quercus agrifolia*	NI
Curly dock	*Rumix crispus*	FAC
English plantain	*Plantago lanceolata*	FAC
Field bindweed	*Convolvulus arvensis*	NI
Foxtail barley	*Hordeum murinum*	FACU
Fremont cottonwood	*Populus fremontii*	NI
Harding grass	*Phalaris aquatica*	FACU
Himalayan blackberry	*Rubus armeniacus*	FAC
Italian rye grass	*Festuca (Lolium) perennis*	FAC
Northern California black walnut	*Juglans hindsii*	FAC
Pennyroyal	*Mentha pulegium*	OBL
Puncture vine	*Tribulus terrestris*	NI
Ripgut brome	*Bromus diandrus*	NI
Rose clover	*Trifolium hirtum*	NI
Saltgrass	*Distichlis spicata*	FAC
Prickly lettuce	*Lactuca serriola*	FACU
Prostrate knotweed	*Polygonum aviculare*	FAC
Slender oat	*Avena barbata*	NI
Purple sand spurry	*Spergularia rubra*	FAC
Smilo grass	*Stipa miliacea*	NI
Soft brome	*Bromus hordeaceus*	FACU
Stinkwort	*Dittrichia graveolens*	NI
Sweet fennel	*Foeniculum vulgare*	NI
Tree of heaven	*Ailanthus altissima*	FACU
Valley oak	*Quercus lobata*	FACU
Vetch	*Vicia* sp.	Unknown
Wild carrot	*Daucus carota*	UPL
Yellow star thistle	*Centaurea solstitialis*	NI

[1]NI – Not included in the *Arid West 2020 Regional Wetland Plant List* (USACE 2020)

Appendix C: Arid West Data Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: New Ukiah Courthouse City/County: Ukiah/Mendocino County Sampling Date: 2022-09-15

Applicant/Owner: Judicial Council of California State: California Sampling Point: SP1

Investigator(s): DWG Section, Township, Range:

Landform (hillslope, terrace, etc.): Upland, Swale Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): C 15 Lat: 39.1482874 Long: -123.2035411 Datum: WGS 84

Soil Map Unit Name: 210 Urban land NWI classification:

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

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

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

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

Remarks:

Edge of mowed area and undisturbed vegetation

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5 ft r)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Avena barbata	15	✔	UPL
2. Centaurea solstitalis	15	✔	UPL
3. Distichlis spicata	10	✔	FAC
4. Daucus carota	5		UPL
5.			
6.			
7.			
8.			
	45% = Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 55.0 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	35	x 5 =	175
Column Totals:	45 (A)		205 (B)

Prevalence Index = B/A = 4.6

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: SP1

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 - 8	10YR 3/2	100						Urban fill. Mostly rocky substrate. No texture obtainable
-								
-								
-								
-								
-								
-								
-								

[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:

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 Vis ble 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): _____

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:

Swale

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: New Ukiah Courthouse City/County: Ukiah/Mendocino County Sampling Date: 2022-09-15

Applicant/Owner: Judicial Council of California State: California Sampling Point: SP2

Investigator(s): DWG Section, Township, Range:

Landform (hillslope, terrace, etc.): Upland, Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): C 15 Lat: 39.1500784 Long: -123.2034316 Datum: WGS 84

Soil Map Unit Name: 210-Urban land NWI classification:

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5 ft r)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Centaurea solstitialis	30	✔	UPL
2. Plantago lanceolata	10	✔	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	40% = Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 60.0 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	30	x 5 =	150
Column Totals:	40 (A)		180 (B)

Prevalence Index = B/A = 4.5

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: SP2

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 - 6	10YR 4/3	100					Sandy Loam	Urban fill. Very rocky with sand and silt
-								
-								
-								
-								
-								
-								
-								

[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:

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 Vis ble 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): _____

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:

Depression

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: New Ukiah Courthouse City/County: Ukiah/Mendocino County Sampling Date: 2022-09-15

Applicant/Owner: Judicial Council of California State: California Sampling Point: SP3

Investigator(s): DWG Section, Township, Range:

Landform (hillslope, terrace, etc.): Upland, Depression Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): C 15 Lat: 39.1498487 Long: -123.2032785 Datum: WGS 84

Soil Map Unit Name: 210-Urban land NWI classification:

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

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

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5 ft r)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Centaurea solstitialis	10	✔	UPL
2. Plantago lanceolata	10	✔	FAC
3. Lolium perenne	5		FAC
4. Mentha pulegium	5		OBL
5. Polygonum aviculare	5		FAC
6.			
7.			
8.			
	35% = Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 65.0 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	10	x 5 =	50
Column Totals:	35 (A)		115 (B)

Prevalence Index = B/A = 3.3

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: SP3

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 - 8	10YR 4/3	100					Sandy Loam	Urban fill. Lots of small to medium pebbles
-								
-								
-								
-								
-								
-								
-								

[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:

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 Vis ble 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): _____

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:

Depression

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: New Ukiah Courthouse City/County: Ukiah/Mendocino County Sampling Date: 2022-09-15

Applicant/Owner: Judicial Council of California State: California Sampling Point: SP4

Investigator(s): DWG Section, Township, Range:

Landform (hillslope, terrace, etc.): Upland, Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): C 15 Lat: 39.1492073 Long: -123.2032352 Datum: WGS 84

Soil Map Unit Name: 210-Urban land NWI classification:

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

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

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5 ft r)			
1. Lolium perenne	30	✔	FAC
2. Centaurea solsistalis	10	✔	UPL
3. Rumex crispus	10	✔	FAC
4. Phalaris aquatica	5		FACU
5. Plantago lanceolata	5		FAC
	60%	= Total Cover	
Herb Stratum (Plot size: 5 ft r)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size: 30 ft r)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 40.0 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	45	x 3 =	135
FACU species	5	x 4 =	20
UPL species	10	x 5 =	50
Column Totals:	60 (A)		205 (B)

Prevalence Index = B/A = 3.4

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: SP4

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 - 8	10YR 3/2	100					Sandy Loam	Urban land. Very gritty with small pebbles
-								
-								
-								
-								
-								
-								
-								

[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:

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 Vis ble 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): _____

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:

Depression

SP1

SP2

SP3

SP4

Appendix D: Photographs

Photo 1. Arroyo Willow Thickets along Gibson creek just outside of the project area.

Photo 2. Existing Bridge across Gibson Creek. The project area includes the bridge crossing.

Photo 3. Urban land cover. The project area is characterized by fill material, impervious surfaces, and ruderal vegetation.

Photo 4. Swale topography adjacent to the abandoned railroad tracks. The sparse green vegetation visible in the dried grass is saltgrass, which is a facultative (FAC) wetland indicator species.

Photo 5. A depression with prostrate knotweed (low growing red/green vegetation), which is a facultative (FAC) wetland indicator species.

Photo 6. Swale topography, which characterizes the project area. The swales and depressions in the project area may collect water after precipitation events.