DRAFT

UKIAH RIVERSIDE PARK REGENERATION PROJECT

Aquatic Resources Delineation Report

Prepared for
City of Ukiah

July 2019

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CHAPTER 1
Introduction

This report has been prepared to document the results and conclusions of an aquatic resources delineation field survey conducted for the Ukiah Riverside Park Regeneration Project (Project). The Project is located in the City of Ukiah near the Russian River (**Figure 1**). The study area comprises phase 2 of Riverside Park. Phase 1 was constructed in approximately 2011. The study area was once the location of a City wastewater treatment facility, but has not been used for that purpose in decades. On behalf of Melton Design Group and the City of Ukiah, Environmental Science Associates (ESA) investigated the extent of aquatic resources in the study area that potentially meet the criteria for waters of the U.S.

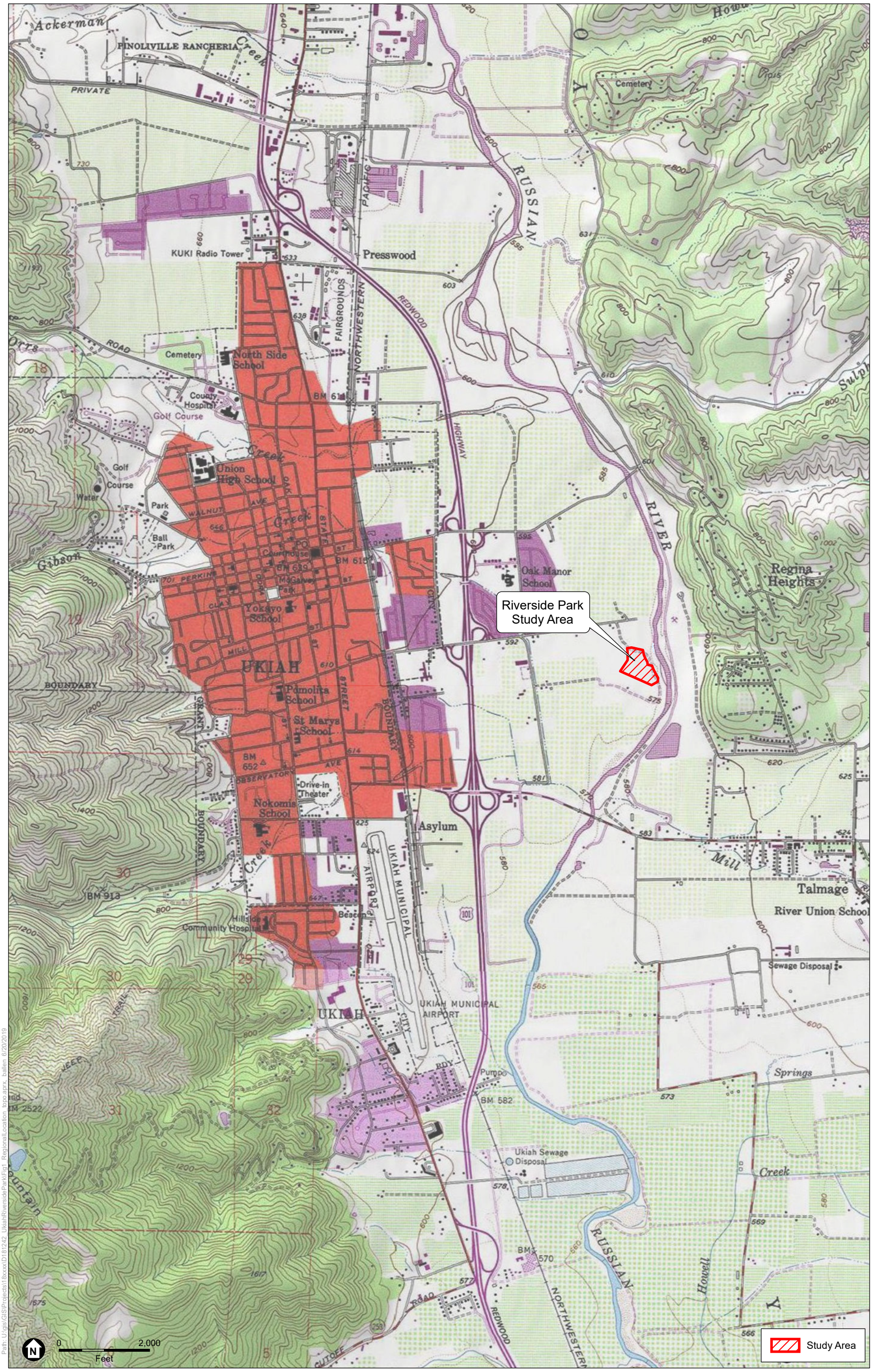
This report documents the boundaries of the aquatic features within the study area using field data and the best professional judgment of ESA investigators. All conclusions presented should be considered preliminary and subject to change pending review and verification by the U.S. Army Corps of Engineers (USACE).

1.1 Purpose

The purpose of this investigation is to describe and delineate all potential wetlands and other waters of the U.S. within the study area that may be subject to Section 404 of the Clean Water Act. Information from this report may be used in preparing permit applications for future actions proposed in the study area.

1.2 Location

The approximately 8.6-acre study area is located at 1151 East Gobbi Street in the City of Ukiah, in Mendocino County. The study area is near phase 1 of Riverside Park, baseball fields, and a BMX track. The study area is on an unsectioned portion of the Ukiah, California U.S. Geological Survey (USGS) 7.5-minute series quadrangle corresponding to Township 15 north, Range 12 west of the Rancho Yokaya land grant. The approximate centroid of the study area is 39º 08′ 36.94″ North, 123º 10′ 58.17″ West. Topography is flat except spoils piles and excavations related to the old wastewater treatment plant. Elevation ranges from approximately 570–587 feet. The study area is in the floodplain of the Russian River (FEMA, 2019). An aerial photograph map of the study area is provided in **Figure 2**.



SOURCE: USGS, 1978; ESA, 2019.

Ukiah Riverside Park Regeneration Project

Figure 1
Regional Location

Path: U:\gis\GIS\Projects\18xxxx\D181242_UkiahRiversidePark\Fig2_WD_StudyArea.aprx, ballen 6/17/2019

SOURCE: DigitalGlobe,Oct. 2017; ESA, 2019.

Ukiah Riverside Park Regeneration Project

Figure 2
Study Area

1.3 Responsible Parties

The owner is:

City of Ukiah
Department of Community Services
300 Seminary Avenue
Ukiah, CA 95482-5400

The point of contact for this report is:

Mr. Chuck Hughes, Senior Biologist/Botanist
Environmental Science Associates
2600 Capitol Avenue, Suite 200
Sacramento, CA 95816
(916) 564-4500
chughes@esassoc.com

1.4 Directions to Site

Directions to the site from San Francisco:

- Take Highway 101 north about 110 miles.
- Take the Gobbi Street exit (exit 548b).
- Travel east on Gobbi Street for about 0.7 mile.
- Ukiah Riverside Park is at the gate at the east end of Gobbi Street.

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CHAPTER 2
Methods

2.1 Pre-field Review

Prior to conducting fieldwork, the following background tasks were performed:

- Review of current and historic Ukiah, California U.S. Geologic Survey (USGS) topographic maps (USGS, 2019);
- Review of current and historic aerial photography (Google, Inc., 2019);
- Review of the online soil survey (NRCS, 2019a) for information about soils and geomorphology;
- Review of the National Hydric Soils List (NRCS, 2019b) to determine if any soil mapping unit components are considered hydric;
- Review of the National Wetlands Inventory (U.S Fish and Wildlife Service [USFWS], 2019);
- Review of the San Francisco USACE District Navigable Waterways (USACE, 1971); and
- Review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) (FEMA, 2019).

2.2 Field Survey Methods

The fieldwork was conducted by ESA biologists Chuck Hughes and Elizabeth Hill on May 22, 2019. The delineation used the "Routine Determination Method" as described in the *1987 Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987), hereafter called the "1987 Manual." The 1987 Manual was used in conjunction with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (USACE, 2008), hereafter called the "Arid West Supplement." For areas where the 1987 Manual and the Arid West Supplement differ, the Arid West Supplement was followed. In addition, the *Guide to Ordinary High Water Mark (OHWM) delineation for non-perennial streams in the western mountains, valleys, and coast region of the United States* (USACE, 2014) was used to identify the lateral limits of streams.

The Arid West Supplement is applicable for use at the site because the study area experiences hot, dry summers typical of a Mediterranean climate, and the surrounding landscape in the bottom of the valley is dominated by oaks (USACE, 2008). The study area is very near the boundary between the Arid West Region (LRR C) and the Western Mountains, Valleys, and Coast Region

(LRR A). The Arid West Supplement was used for this delineation based on landscape, site conditions, vegetation, and climate. The Western Mountains, Valleys, and Coast Region OHWM guide was used for delineating the boundaries of other waters because that guide is more applicable than the Arid West OHWM Guide in the region of the study area.

Three positive parameters must normally be present for an area to be considered a wetland: 1) a dominance of wetland vegetation, 2) presence of hydric soils, and 3) presence of wetland hydrology. ESA assessed presence or absence of positive indicators for wetland vegetation, soils, and hydrology per the 1987 Manual and Arid West Supplement. Data points were recorded on Arid West wetland determination data forms (**Appendix A)**.

At each data point, a visual assessment of the plant cover by species was made. Dominant species were assessed using the "50/20" rule per the Arid West Supplement. Plants were identified to species using *The Jepson Manual: Vascular Plants of California, second edition* (Baldwin et al., 2012). The *Arid West 2016 Regional Wetland Plant List* (Lichvar et al., 2016) was used to determine the wetland indicator status of all plants. Soils at each data point were characterized by color, texture, organic matter accumulation, and the presence or absence of hydric soil indicators. Color was described using the *Munsell Soil Color Book* (Munsell Color, 2015). Presence of wetland hydrology was determined at each data point by presence of one or more of the primary and/or secondary indicators, per the Arid West Supplement.

For "other waters of the U.S." to be considered jurisdictional, these features must exhibit a defined bed and bank and an OHWM.

2.3 Mapping and Acreage Calculations

All features, including data points, wetland boundaries, and OHWMs were recorded using a Global Positioning System (GPS) unit (Trimble GeoXT) with real-time differential correction and an instrument-rated mapping accuracy of +/- 1 meter. Boundaries of wetlands were demarcated in the field using GPS by walking the margin of the wetland and taking points at set intervals.

In the office, data from data points and wetland/waters boundaries were downloaded from the GPS unit and mapped using GIS software on an overlay of both topography and geo-referenced aerial photography. GPS-determined wetland/waters boundaries and data points were visually confirmed. Acreage of wetland and waters polygons, and the length of linear features were determined using ArcGIS.

2.4 Limitations

No problems or limitations were encountered.

CHAPTER 3
Regulatory Setting

3.1 2015 Clean Water Rule

In 2015, the USACE and the Environmental Protection Agency (EPA) issued the Clean Water Rule detailing the process for determining Clean Water Act (CWA) jurisdiction over waters of the U.S. The rule is currently in effect in California and 21 other states. The 2015 Clean Water Rule includes a detailed process for determining which areas may be subject to jurisdiction under the CWA, and defines features that are and are not waters of the U.S. Some features may need a significant nexus test to determine if they are a waters of the U.S.

The significant nexus test includes consideration of hydrologic and ecologic factors. The significant nexus test would take into account physical indicators of flow (evidence of an ordinary high water mark [OHWM]), if a hydrologic connection to a Traditional Navigable Water (TNW) exists, and if the aquatic functions of the water body have a significant effect (more than speculative or insubstantial) on the chemical, physical, and biological integrity of a TNW. A significant nexus test includes similarly situated waters in the region. The USACE and EPA will apply the significant nexus standard to assess the flow characteristics and functions of a potential WOTUS to determine if it significantly affects the chemical, physical, and biological integrity of the downstream TNW.

2015 Clean Water Rule Summary

The term "waters of the U.S." is defined at 33 CFR (Code of Federal Regulations) 328.3(a) as:

(1) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(2) All interstate waters, including interstate wetlands;

(3) The territorial seas;

(4) All impoundments of waters otherwise identified as waters of the United States under this section;

(5) All tributaries, as defined in paragraph (c)(3) of this section, of waters identified in paragraphs (a)(1) through (3) of this section;

(6) All waters adjacent to a water identified in paragraphs (a)(1) through (5) of this section, including wetlands, ponds, lakes, oxbows, impoundments, and similar waters;

(7) All waters in paragraphs (a)(7)(i) through (v) of this section where they are determined, on a case-specific basis, to have a significant nexus to a water identified in paragraphs (a)(1) through (3) of this section. The waters identified in each of paragraphs (a)(7)(i) through (v) of this section are similarly situated and shall be combined, for purposes of a significant nexus analysis, in the watershed that drains to the nearest water identified in paragraphs (a)(1) through (3) of this section. Waters identified in this paragraph shall not be combined with waters identified in paragraph (a)(6) of this section when performing a significant nexus analysis. If waters identified in this paragraph are also an adjacent water under paragraph (a)(6), they are an adjacent water and no case-specific significant nexus analysis is required.

   (i) *Prairie potholes.* Prairie potholes are a complex of glacially formed wetlands, usually occurring in depressions that lack permanent natural outlets, located in the upper Midwest.

   (ii) *Carolina bays and Delmarva bays.* Carolina bays and Delmarva bays are ponded, depressional wetlands that occur along the Atlantic coastal plain.

(iii) *Pocosins.* Pocosins are evergreen shrub and tree dominated wetlands found predominantly along the Central Atlantic coastal plain.

(iv) *Western vernal pools.* Western vernal pools are seasonal wetlands located in parts of California and associated with topographic depression, soils with poor drainage, mild, wet winters and hot, dry summers.

(v) *Texas coastal prairie wetlands.* Texas coastal prairie wetlands are freshwater wetlands that occur as a mosaic of depressions, ridges, intermound flats, and mima mound wetlands located along the Texas Gulf Coast.

(8) All waters located within the 100-year floodplain of a water identified in paragraphs (a)(1) through (3) of this section and all waters located within 4,000 feet of the high tide line or ordinary high water mark of a water identified in paragraphs (a)(1) through (5) of this section where they are determined on a case-specific basis to have a significant nexus to a water identified in paragraphs (a)(1) through (3) of this section. For waters determined to have a significant nexus, the entire water is a water of the United States if a portion is located within the 100-year floodplain of a water identified in paragraphs (a)(1) through (3) of this section or within 4,000 feet of the high tide line or ordinary high water mark. Waters identified in this paragraph shall not be combined with waters identified in paragraph (a)(6) of this section when performing a significant nexus analysis. If waters identified in this paragraph are also an adjacent water under paragraph (a)(6), they are an adjacent water and no case-specific significant nexus analysis is required.

33 CFR 328.3(b) says:

The following are not ‘‘waters of the United States’’ even where they otherwise meet the terms of paragraphs (a)(4) through (8) of this section.

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

(2) 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 Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

(3) The following ditches:

(i) Ditches with ephemeral flow that are not a relocated tributary or excavated in a tributary.

(ii) Ditches with intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands.

(iii) Ditches that do not flow, either directly or through another water, into a water identified in paragraphs (a)(1) through (3) of this section.

(4) The following features:

(i) Artificially irrigated areas that would revert to dry land should application of water to that area cease;

(ii) Artificial, constructed lakes and ponds created in dry land such as farm and stock watering ponds, irrigation ponds, settling basins, fields flooded for rice growing, log cleaning ponds, or cooling ponds;

(iii) Artificial reflecting pools or swimming pools created in dry land;

(iv) Small ornamental waters created in dry land;

(v) Water-filled depressions created in dry land incidental to mining or construction activity, including pits excavated for obtaining fill, sand, or gravel that fill with water;

(vi) Erosional features, including gullies, rills, and other ephemeral features that do not meet the definition of tributary, non-wetland swales, and lawfully constructed grassed waterways; and

(vii) Puddles.

(5) Groundwater, including groundwater drained through subsurface drainage systems.

(6) Stormwater control features constructed to convey, treat, or store stormwater that are created in dry land.

(7) Wastewater recycling structures constructed in dry land; detention and retention basins built for wastewater recycling; groundwater recharge basins; percolation ponds built for wastewater recycling; and water distributary structures built for wastewater recycling.

The following terms are defined in 33 CFR 328.3(c):

(1) *Adjacent.* The term *adjacent* means bordering, contiguous, or neighboring a water identified in paragraphs (a)(1) through (5) of this section, including waters separated by constructed dikes or barriers, natural river berms, beach dunes, and the like. For purposes of adjacency, an open water such as a pond or lake includes any wetlands within or abutting its ordinary high water mark. Adjacency is not limited to waters located laterally to a water identified in paragraphs (a)(1) through (5) of this section. Adjacent waters also include all waters that connect

segments of a water identified in paragraphs (a)(1) through (5) or are located at the head of a water identified in paragraphs (a)(1) through (5) of this section and are bordering, contiguous, or neighboring such water. Waters being used for established normal farming, ranching, and silviculture activities (33 U.S.C. 1344(f)) are not adjacent.

(2) *Neighboring.* The term *neighboring* means:

(i) All waters located within 100 feet of the ordinary high water mark of a water identified in paragraphs (a)(1) through (5) of this section. The entire water is neighboring if a portion is located within 100 feet of the ordinary high water mark;

(ii) All waters located within the 100-year floodplain of a water identified in paragraphs (a)(1) through (5) of this section and not more than 1,500 feet from the ordinary high water mark of such water. The entire water is neighboring if a portion is located within 1,500 feet of the ordinary high water mark and within the 100-year floodplain;

(iii) All waters located within 1,500 feet of the high tide line of a water identified in paragraphs (a)(1) or (a)(3) of this section, and all waters within 1,500 feet of the ordinary high water mark of the Great Lakes. The entire water is neighboring if a portion is located within 1,500 feet of the high tide line or within 1,500 feet of the ordinary high water mark of the Great Lakes.

(3) *Tributary* and *tributaries.* The terms *tributary* and *tributaries* each mean a water that contributes flow, either directly or through another water (including an impoundment identified in paragraph (a)(4) of this section), to a water identified in paragraphs (a)(1) through (3) of this section that is characterized by the presence of the physical indicators of a bed and banks and an ordinary high water mark. These physical indicators demonstrate there is volume, frequency, and duration of flow sufficient to create a bed and banks and an ordinary high water mark, and thus to qualify as a tributary. A tributary can be a natural, man-altered, or man-made water and includes waters such as rivers, streams, canals, and ditches not excluded under paragraph (b) of this section. A water that otherwise qualifies as a tributary under this definition does not lose its status as a tributary if, for any length, there are one or more constructed breaks (such as bridges, culverts, pipes, or dams), or one or more natural breaks (such as wetlands along the run of a stream, debris piles, boulder fields, or a stream that flows underground) so long as a bed and banks and an ordinary high water mark can be identified upstream of the break. A water that otherwise qualifies as a tributary under this definition does not lose its status as a tributary if it contributes flow through a water of the United States that does not meet the definition of tributary or through a non-jurisdictional water to a water identified in paragraphs (a)(1) through (3) of this section.

(4) *Wetlands.* The term *wetlands* means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

(5) *Significant nexus.* The term *significant nexus* means that a water, including wetlands, either alone or in combination with other similarly situated waters in the region, significantly affects the chemical, physical, or biological integrity of a water identified in paragraphs (a)(1) through (3) of this section. The term ''in the region'' means the watershed that drains to the nearest water identified in paragraphs (a)(1) through (3) of this section. For an effect to be significant, it must be more than speculative or insubstantial. Waters are similarly situated when they function alike and are sufficiently close to function together in affecting downstream waters. For purposes of determining whether or not a water has a significant nexus, the water's effect on downstream paragraph (a)(1) through (3) waters shall be assessed by evaluating the aquatic functions identified in paragraphs (c)(5)(i) through (ix) of this section. A water has a significant nexus when any single function or combination of functions performed by the water, alone or together with similarly situated waters in the region, contributes significantly to the chemical, physical, or biological integrity of the nearest water identified in paragraphs (a)(1) through (3) of this section. Functions relevant to the significant nexus evaluation are the following:

(i) Sediment trapping,

(ii) Nutrient recycling,

(iii) Pollutant trapping, transformation, filtering, and transport,

(iv) Retention and attenuation of flood waters,

(v) Runoff storage,

(vi) Contribution of flow,

(vii) Export of organic matter,

(viii) Export of food resources, and

(ix) Provision of life cycle dependent aquatic habitat (such as foraging, feeding, nesting, breeding, spawning, or use as a nursery area) for species located in a water identified in paragraphs (a)(1) through (3) of this section.

(6) *Ordinary high water mark.* The term *ordinary high water mark* means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank,

shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

(7) *High tide line.* The term *high tide line* means the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

The limits of jurisdiction are identified in 33 CFR 328.4 as:

(a) *Territorial Seas*. The limit of jurisdiction in the territorial seas is measured from the baseline in a seaward direction a distance of three nautical miles. (See 33 CFR 329.12)

(b) *Tidal Waters of the United States*. The landward limits of jurisdiction in tidal waters:
   (1) Extends to the high tide line, or
   (2) When adjacent non-tidal waters of the United States are present, the jurisdiction extends to the limits identified in paragraph (c) of this section.

(c) *Non-Tidal Waters of the United States*. The limits of jurisdiction in non-tidal waters:
   (1) In the absence of adjacent wetlands, the jurisdiction extends to the ordinary high water mark, or
   (2) When adjacent wetlands are present, the jurisdiction extends beyond the ordinary high water mark to the limit of the adjacent wetlands.
   (3) When the water of the United States consists only of wetlands the jurisdiction extends to the limit of the wetland.

3.2 Traditional Navigable Water

Navigable waters of the United States are defined in 33 CFR § 329.4 as "…those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the waterbody, and is not extinguished by later actions or events which impede or destroy navigable capacity."

Traditional navigable waters include all of the "navigable waters of the United States" as defined in 33 CFR § Part 329.4 as well as by numerous decision of the federal courts; those water bodies the USACE has determined are a navigable water of the U.S. pursuant to 33. CFR § 329.14; plus all other waters that are navigable-in-fact. The definition of "navigable-in-fact" comes from a long line of court cases originating with Daniel Ball, 77 U.S. 557 (1870).

3.3 Ephemeral, Intermittent, and Perennial Streams

An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow. An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow. A perennial stream has flowing water year-round during a typical year (82 Federal Register 1860).

CHAPTER 4
Setting

4.1 Study Area

The study area is in a valley of the Russian River, in the inner North Coast Range. The Russian River is approximately 150 feet east of the study area. There is a corridor of riparian vegetation along the river outside the study area. The study area is located on a flood terrace of the river. Most of the terrace is used for agriculture, primarily vineyards and pear orchards. The natural vegetation is valley oak woodland.

The study area is at the site of the former City wastewater treatment facility. The former treatment facility is no longer present and was likely removed between 1958 and 1975 (USGS, 2019). Other portions of the former treatment facility are now used for baseball fields, a BMX track, and phase 1 of Ukiah Riverside Park. The study area has experienced substantial ground disturbance in the past as a result of the former treatment facility. Topography is mostly level except for artificial excavations and spoils piles.

The climate in the region consists of cool, wet winters and hot, dry summers. The mean annual precipitation in Ukiah is 37.35 inches and mean annual temperatures range from an average maximum temperature of 73.5 degrees Fahrenheit to an average minimum temperature of 43.6 degrees Fahrenheit (Western Regional Climate Center, 2019; NWSFO, 2019). Precipitation from July 1, 2018 through May 22, 2019 totaled 43.67 inches, which is 119% of the average annual rainfall for that period (NWSFO, 2019). Ukiah received over three inches of precipitation in the week preceding the field work (NWSFO, 2019).

4.2 Soils

The soil map (**Figure 3**) indicates two soil map units in the study area (NRCS, 2019a). A brief description of each primary soil within each map unit is provided below. All colors refer to moist soil. Both soil map units are listed as hydric where the necessary landform occurs (flood-plains; NRCS, 2019b).

Russian loam, 0–2% slopes. Russian soils formed in alluvium from sedimentary rocks and occur on flood plains and low stream terraces. They are well-drained, with moderate permeability and slow runoff, with occasional flooding. A typical profile of Russian loam has:

0–38 inches	Very dark grayish brown (10YR 3/2) neutral loam.
38–65 inches	Very dark grayish brown (10YR 3/2) neutral very fine sandy loam.

SOURCE: DigitalGlobe, Oct. 2017; SSURGO, 2018; ESA, 2019.

Ukiah Riverside Park Regeneration Project

Figure 3
Soils

Xerofluvents, 0–2% slopes. These soils are on flood plains along rivers or streams or on alluvial fans with a Mediterranean (xeric) moisture regime. Flooding may occur in winter. The vegetation on xerofluvents is commonly mixed forest or grass and shrubs (NRCS 1999).

4.3 Hydrology

The entire study area is in the watershed of the upper Russian River (HUC 1801011004). As discussed previously, the study area is located within the floodplain of the river, and the river is approximately 150 feet east of the study area. There are no traditional navigable waters in or near the study area. The lowest reach of the Russian River is considered a traditional navigable water from Vacation Beach approximately 13.6 miles downstream to the mouth of the river (USACE, 1971). The study area experiences flooding from the nearby Russian River during times of high water.

4.4 Vegetation

Plant communities are assemblages of plant species that occur together in the same area, and are defined by species composition and relative abundance. The entire study area has experienced substantial soil disturbance in the past and vegetation is mostly dominated by nonnative ruderal species. The northern end of the study area contains old spoils piles of asphalt that are covered largely with nonnative invasive Himalayan blackberry (*Rubus armeniacus*) with some native shrubs including coyote brush (*Baccharis pilularis*) and blue elderberry (*Sambucus nigra* ssp. *caerulea*). The southern end of the study area is dominated by nonnative annual grasses including wild oat (*Avena fatua*), rye grass (*Festuca perennis*), and bromes (*Bromus* spp.). Vegetation in seasonal wetlands is described in Chapter 5.1. A list of plant species recorded at data points is in **Appendix B**. Representative photographs of the study area are in **Appendix C**.

CHAPTER 5
Results

5.1 Aquatic Resources

The aquatic resources delineation identified 0.178 acre of aquatic resources within the study area, consisting of two seasonal wetlands. Aquatic resources were classified using the *Classification of Wetlands and Deepwater Habitats of the United States* ("Cowardin Classification") (FGDC, 2013). Details of the wetlands are provided in **Table 1** and described below. **Figure 4** shows the location and extent of the wetlands. The Aquatic Resources Spreadsheet is in **Appendix D**.

TABLE 1
AQUATIC RESOURCES

Map ID	Wetland Type – Cowardin Classification	Total Acres
Wetlands		
SW-1	Seasonal Wetland – Palustrine, Emergent, Seasonally Flooded (PEMC)	0.140
SW-2	Seasonal Wetland – Palustrine, Emergent, Seasonally Flooded (PEMC)	0.038
	Wetland Total:	**0.178**
	Grand Total:	**0.178**

SOURCE: ESA 2019

5.1.1 Wetlands

Seasonal Wetland 1

Seasonal wetland (SW) 1 is in the bottom of an artificially excavated pit (Appendix C, Photo 2). During the time of the survey, SW-1 had hydrophytic vegetation dominated by rye grass (*Festuca perennis*; FAC) and dock (*Rumex* sp.; at least FACW). A few willows (*Salix* sp.) and cottonwoods (*Populus fremontii* ssp. *fremontii*) grow along the margin of SW-1. Soils were clearly disturbed from previous activities in the study area. Nevertheless, a horizon at six inches met the redox dark surface indicator. The soil was saturated one inch below the surface at data point 1, and a few other areas within SW-1 had surface water ponded to a depth of up to a few inches.

SOURCE: DigitalGlobe, Oct. 2017; ESA, 2019.

Delineation conducted by Chuck Hughes and Elizabeth Hill (ESA).
Map prepared by Brad Allen (ESA) on Jun 17, 2019

Ukiah Riverside Park Regeneration Project

Figure 4
Aquatic Resources

There are two sources of hydrology for SW-1. The first is surface water runoff from uplands that collects in the bottom of the pit. The second is from flood events of the Russian River. When the water surface elevation of the river reaches approximately 589 feet, water will flow through an eroded gully, away from the river, and into the pit. The bottom of the pit is approximately 574 feet in elevation. The sides of the gully are eroding into an old dirt road (Appendix C, photo 5), and sediment consisting of gravel and sand is splayed into the bottom of the pit. There is no splay of sediment on the river-side of the gully. There is no clear, natural line on the side of the gully indicating an ordinary high water mark. Water will only flow through the gully during flood events. In years in which the river reaches a sufficient flood elevation, SW-1 may be inundated to a depth and for a duration much longer than in other years where upland precipitation runoff is the sole source of hydrology. The base flood elevation (1% chance of being equaled or exceeded in a given year) is approximately 593.5 feet (**Appendix E**).

Seasonal Wetland 2

SW-2 is in the bottom of an artificially excavated ditch (Appendix C, photo 7). The ditch begins at a culvert outfall that discharges stormwater during rainfall events. The ditch outfalls into the Russian River, although the ditch loses a distinctive bottom and banks near the River. There is no indication from historic topographic maps that the ditch is a relocated tributary (USGS, 2019). The bottom of the ditch is not uniformly sloped. The western end of the ditch does not fully drain and may retain water up to several inches deep. During the survey, SW-2 had hydrophytic vegetation and soils similar to SW-1. Hydrology indicators were fine sediments on the bottom few inches of plant stems and the FAC-neutral test.

5.2 Clean Water Rule Analysis

Table 2 summarizes the application of the clean water rule to the aquatic resources in the study area.

5.2.1 Seasonal Wetland 1

The pit containing SW-1 was dug for the purpose of gravel extraction. While the pit is located at the former wastewater treatment facility that once operated in the study area, it was dug as a source of gravel. The City of Ukiah noted in a 1999 memorandum (**Appendix F**) that a longtime City Employee indicated the pit “was a naturally occurring gravel deposit that the City excavated.”

33 CFR 328.3(b)(4)(v) excludes pits excavated in dry land for obtaining gravel that fill with water as waters of the U.S. Such features are not waters of the U.S., even where they include wetlands that would otherwise meet the terms of paragraphs (a)(4) through (a)(8). The pit was dug in the floodplain of the Russian River, but the area surrounding the pit is uplands. The pit was dug in dry land, for the purpose of gravel extraction, and hence is not a waters of the U.S.

5.2.2 Seasonal Wetland 2

SW-2 is in the bottom of an excavated ditch. The ditch is not a relocated tributary or excavated in a tributary. There are no tributaries shown in the study area on any of the USGS (2019) topographic maps, including the oldest one reviewed from 1957. The ditch flows ephemerally during precipitation events. The ditch receives flow from the outfall of a City stormwater culvert and conveys stormwater from the culvert outfall to the Russian River.

33 CFR 328.3(b)(3)(i) excludes as waters of the U.S. ditches with ephemeral flow that are not a relocated tributary or excavated in a tributary. The ditch meets this definition. 33 CFR 328.3(b)(6) excludes as waters of the U.S. stormwater control features constructed to convey stormwater that are created in dry land. The ditch also meets this definition. The ditch was dug in the floodplain of the Russian River, but the area surrounding the ditch is uplands. Features that meet the definition of sections (b)(3) and (b)(6) are not waters of the U.S., even where they include wetlands that would otherwise meet the terms of paragraphs (a)(4) through (a)(8).

TABLE 2
APPLICATION OF THE 2015 CLEAN WATER RULE TO AQUATIC RESOURCES

Map ID	33 CFR 328.3 Waters Type	Waters of the U.S. (ac)	Excluded by Rule (ac)	Rationale
Wetlands				
SW-1	(b)(4)(v) – Water-filled Depression	--	0.140	SW-1 is in the bottom of a pit excavated in dry land for gravel.
SW-2	(b)(3)(i) – Ephemeral Ditch, (b)(6) – Stormwater Control Feature	--	0.038	SW-2 is in the bottom of a ditch excavated in dry land, with ephemeral flow, that conveys stormwater.
	Wetlands Subtotal:	**--**	**0.178**	
	Total:	**--**	**0.178**	

5.3 Conclusions

A total of 0.178 acre of seasonal wetlands occurs in the study area. The seasonal wetlands are excluded by rule as waters of the U.S.

This report documents the wetland boundary delineation and best professional judgment of ESA investigators. All conclusions presented should be considered preliminary and subject to change pending official review and preliminary jurisdictional determination in writing by the USACE.

CHAPTER 6
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Appendix A
Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Ukiah Riverside Park Regeneration City/County: Ukiah/Mendocino Sampling Date: 22 May 2019
Applicant/Owner: City of Ukiah State: CA Sampling Point: **1**
Investigator(s): Chuck Hughes and Elizabeth Hill Section, Township, Range: See Report
Landform (hillslope, terrace, etc.): Excavated basin Local relief (concave, convex, none): concave-concave Slope (%): 1
Subregion (LRR): C Lat: See Report Long: Datum:
Soil Map Unit Name: Xerofluvents 0-2% slopes NWI classification: None
Are climatic/hydrologic conditions on the site typical for this time of the 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 ☐	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☒	No ☐	within a Wetland?	Yes ☒	No ☐

Remarks:

VEGETATION

Tree Stratum: ((Plot size:_____)	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1.			
2.			
3.			
4.			
Total Cover:			

Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:			

Herb Stratum: (Plot size:____6 ft. radius_____)			
1. Festuca perennis	35	D	FAC
2. Rumex sp. (at least FACW)	30	D	FACW
3. Epilobium ciliatum	5		FACW
4. Eleocharis macrostachya	1		OBL
5.			
6.			
7.			
8.			
Total Cover:	71		

Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 40 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL Species:		x 1 =
FACW Species		x 2 =
FAC Species		x 3 =
FACU Species		x 4 =
UPL Species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

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

[1]Indicators of Hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL

Sampling Point: **1**

Profile Description: (Describe 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
0-2	10YR 4/2	99	10YR 5/8	1	C	M	Clay loam	
2-6	10YR 2/2	100					Loam	
6-12	10YR 3/2	85	10YR 3/6	15	C	M	Clay 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: Stratification from repeated inundation events evident. Two pits dug within 2 feet of each other to get clear soil data. Very dark second horizon appears variable in depth.

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 (2or 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-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): 2
Saturation Present? (includes capillary fringe)	Yes ☒	No ☐	Depth (inches): 1

Wetland Hydrology Present? **Yes** ☒ **No** ☐

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Ukiah Riverside Park Regeneration City/County: Ukiah/Mendocino Sampling Date: 22 May 2019
Applicant/Owner: City of Ukiah State: CA Sampling Point: **2**
Investigator(s): Chuck Hughes and Elizabeth Hill Section, Township, Range: See Report
Landform (hillslope, terrace, etc.): Excavated basin side-slope Local relief (concave, convex, none): Convex-linear Slope (%): 100
Subregion (LRR): C Lat: See Report Long: Datum:
Soil Map Unit Name: Xerofluvents 0-2% slopes NWI classification: None
Are climatic/hydrologic conditions on the site typical for this time of the 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 ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: ((Plot size:_____)	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1.			
2.			
3.			
4.			
Total Cover:			

Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:			

Herb Stratum: (Plot size:___6 ft radius_____)			
1. Raphanus sp.	40	D	UPL
2. Festuca perennis	30	D	FAC
3. Sonchus asper ssp. asper	3		FAC
4. Rumex sp. (at least FACW)	1		FACW
5.			
6.			
7.			
8.			
Total Cover:	74		

Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 25 % Cover of Biotic Crust 0

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:	x 1 =
FACW Species	x 2 =
FAC Species	x 3 =
FACU Species	x 4 =
UPL Species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

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

[1]Indicators of Hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL

Sampling Point: **2**

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

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/3	100					Loam	Much gravel

[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 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 (2or 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-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:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Ukiah Riverside Park Regeneration City/County: Ukiah/Mendocino Sampling Date: 22 May 2019
Applicant/Owner: City of Ukiah State: CA Sampling Point: **3**
Investigator(s): Chuck Hughes and Elizabeth Hill Section, Township, Range: See Report
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave-concave Slope (%): ≈0
Subregion (LRR): C Lat: See Report Long: Datum:
Soil Map Unit Name: Xerofluvents 0-2% slopes NWI classification: None
Are climatic/hydrologic conditions on the site typical for this time of the 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 ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: ((Plot size:_____)	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1.			
2.			
3.			
4.			
Total Cover:			

Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:			

Herb Stratum: (Plot size:___3 ft radius_____)			
1. Festuca perennis	30	D	FAC
2. Epilobium ciliatum	3		FACW
3. Festuca bromoides	25	D	FACU
4. Geranium dissectum	5		UPL
5. Bromus hordeaceus	15		FACU
6. Hirschfeldia incana	2		UPL
7.			
8.			
Total Cover:	80		

Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust 0

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:		x 1 =
FACW Species		x 2 =
FAC Species		x 3 =
FACU Species		x 4 =
UPL Species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

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

[1]Indicators of Hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL

Sampling Point: **3**

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

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/3	100					Loam	Much cobble & old refuse (screws) mixed in

[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 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 (2or 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-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? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ☐ **No** ☒

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Ukiah Riverside Park Regeneration City/County: Ukiah/Mendocino Sampling Date: 22 May 2019
Applicant/Owner: City of Ukiah State: CA Sampling Point: **4**
Investigator(s): Chuck Hughes and Elizabeth Hill Section, Township, Range: See Report
Landform (hillslope, terrace, etc.): Excavated Ditch Local relief (concave, convex, none): Linear-concave Slope (%): 1
Subregion (LRR): C Lat: See Report Long: Datum:
Soil Map Unit Name: Xerofluvents 0-2% slopes NWI classification: None
Are climatic/hydrologic conditions on the site typical for this time of the 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 ☐	Is the Sampled Area
Wetland Hydrology Present?	Yes ☒	No ☐	within a Wetland? Yes ☒ No ☐

Remarks: Entire ditch bottom is not even. This datapoint is taken in a portion that ponds water to a few inches for extended times due to uneven bottom surface.

VEGETATION

Tree Stratum: ((Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			

Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:			

Herb Stratum: (Plot size:___3 ft x 6 ft_____)			
1. Festuca perennis	50	D	FAC
2. Rumex conglomeratus	40	D	FACW
3. Geranium dissectum	1		UPL
4. Persicaria sp. (at least FACW)	1		FACW
5. Galium aparine	1		FACU
6.			
7.			
8.			
Total Cover:	93		

Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL Species:	x 1 =
FACW Species	x 2 =
FAC Species	x 3 =
FACU Species	x 4 =
UPL Species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

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

[1]Indicators of Hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: Plot is in bottom of ditch only.

SOIL

Sampling Point: **4**

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

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	100					Loam	
6-10	10YR 3/2	45	10YR 3/6	15	C	M	Clay loam	
	10YR 4/3	40						
10-14	10YR 3/2	100					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:

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 (2or 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-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? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ☒ **No** ☐

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

Remarks: Fines deposited several inches high on plant stems indicating ponding.

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Ukiah Riverside Park Regeneration City/County: Ukiah/Mendocino Sampling Date: 22 May 2019
Applicant/Owner: City of Ukiah State: CA Sampling Point: **5**
Investigator(s): Chuck Hughes and Elizabeth Hill Section, Township, Range: See Report
Landform (hillslope, terrace, etc.): Excavated ditch Local relief (concave, convex, none): linear-concave Slope (%): 2
Subregion (LRR): C Lat: See Report Long: Datum:
Soil Map Unit Name: Xerofluvents 0-2% slopes NWI classification: None
Are climatic/hydrologic conditions on the site typical for this time of the 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 ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks: Entire ditch bottom is not even. This datapoint taken in a location where ditch drains well.

VEGETATION

Tree Stratum: ((Plot size:_____)	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1.			
2.			
3.			
4.			
Total Cover:			

Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:			

Herb Stratum: (Plot size:____3 ft x 6 ft._____)			
1. Festuca perennis	75	D	FAC
2. Bromus hordeaceus	25	D	FACU
3. Rumex conglomeratus	1		FACW
4. Elymus triticoides	3		FAC
5.			
6.			
7.			
8.			
Total Cover:	104		

Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust 0

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:		x 1 =
FACW Species		x 2 =
FAC Species		x 3 =
FACU Species		x 4 =
UPL Species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

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

[1]Indicators of Hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks: Plot is in bottom of ditch only.

SOIL

Sampling Point: **5**

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

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/2	100					Clay 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:

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 (2or 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-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:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Ukiah Riverside Park Regeneration City/County: Ukiah/Mendocino Sampling Date: 22 May 2019
Applicant/Owner: City of Ukiah State: CA Sampling Point: **6**
Investigator(s): Chuck Hughes and Elizabeth Hill Section, Township, Range: See Report
Landform (hillslope, terrace, etc.): Excavated Ditch Local relief (concave, convex, none): linear-concave Slope (%): ≈0
Subregion (LRR): C Lat: See Report Long: Datum:
Soil Map Unit Name: Xerofluvents 0-2% slopes NWI classification: None
Are climatic/hydrologic conditions on the site typical for this time of the 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 ☒	Is the Sampled Area
Wetland Hydrology Present?	Yes ☒	No ☐	within a Wetland? Yes ☐ No ☒

Remarks: Entire ditch bottom is not even. This datapoint taken in a location where ditch appears to drain well. This datapoint also in lower section of ditch subject to more likely inundation from Russian River.

VEGETATION

Tree Stratum: ((Plot size:_____)	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1.			
2.			
3.			
4.			
Total Cover:			

Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:			

Herb Stratum: (Plot size:_____3 ft x 6 ft_____)			
1. Festuca perennis	35	D	FAC
2. Rumex conglomeratus	25	D	FACW
3. Geranium dissectum	1		UPL
4.			
5.			
6.			
7.			
8.			
Total Cover:	61		

Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 40 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL Species:		x 1 =
FACW Species		x 2 =
FAC Species		x 3 =
FACU Species		x 4 =
UPL Species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

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

[1]Indicators of Hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: Plot in bottom of ditch only.

SOIL

Sampling Point: **6**

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

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/3	100					Clay 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:

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 (2or 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-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? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ☒ **No** ☐

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

Remarks: Fines deposited several inches high on plant stems indicating ponding.

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Ukiah Riverside Park Regeneration City/County: Ukiah/Mendocino Sampling Date: 22 May 2019
Applicant/Owner: City of Ukiah State: CA Sampling Point: **7**
Investigator(s): Chuck Hughes and Elizabeth Hill Section, Township, Range: See Report
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): convex-none Slope (%): 2
Subregion (LRR): C Lat: See Report Long: Datum:
Soil Map Unit Name: Xerofluvents 0-2% slopes NWI classification: None
Are climatic/hydrologic conditions on the site typical for this time of the 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 ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: ((Plot size:_____)	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1.			
2.			
3.			
4.			
Total Cover:			

Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:			

Herb Stratum: (Plot size:____3 ft radius_____)			
1. Avena fatua	25	D	UPL
2. Hirschfeldia incana	7		UPL
3. Centaurea solstitialis	30	D	UPL
4. Bromus diandrus	7		UPL
5. Hypericum perforatum	8		FACU
6. Bromus hordeaceus	10		FACU
7. Trifolium hirtum	5		UPL
8.			
Total Cover:	92		

Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 15 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL Species:		x 1 =
FACW Species		x 2 =
FAC Species		x 3 =
FACU Species		x 4 =
UPL Species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

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

[1]Indicators of Hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL

Sampling Point: **7**

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

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/3	100					Loam	Gravelly
>8							Gravel	

[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 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 (2or 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-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:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Ukiah Riverside Park Regeneration City/County: Ukiah/Mendocino Sampling Date: 22 May 2019
Applicant/Owner: City of Ukiah State: CA Sampling Point: **8**
Investigator(s): Chuck Hughes and Elizabeth Hill Section, Township, Range: See Report
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): ≈0
Subregion (LRR): C Lat: See Report Long: Datum:
Soil Map Unit Name: Xerofluvents 0-2% slopes NWI classification: None
Are climatic/hydrologic conditions on the site typical for this time of the 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 ☒	Is the Sampled Area
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland? Yes ☐ No ☒

Remarks:

VEGETATION

Tree Stratum: ((Plot size:_____)	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1.			
2.			
3.			
4.			
Total Cover:			

Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:			

Herb Stratum: (Plot size:____6 ft radius_____)			
1. Avena fatua	60	D	UPL
2. Centaurea solstitialis	20		UPL
3. Vicia villosa	20		UPL
4. Eschscholzia californica	5		UPL
5. Bromus hordeaceus	15		FACU
6.			
7.			
8.			
Total Cover:	120		

Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL Species:	x 1 =
FACW Species	x 2 =
FAC Species	x 3 =
FACU Species	x 4 =
UPL Species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

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

[1]Indicators of Hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL

Sampling Point: **8**

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

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

[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 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 (2or 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-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:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Ukiah Riverside Park Regeneration City/County: Ukiah/Mendocino Sampling Date: 22 May 2019
Applicant/Owner: City of Ukiah State: CA Sampling Point: **9**
Investigator(s): Chuck Hughes and Elizabeth Hill Section, Township, Range: See Report
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Noine Slope (%): ≈0
Subregion (LRR): C Lat: See Report Long: Datum:
Soil Map Unit Name: Xerofluvents 0-2% slopes NWI classification: None
Are climatic/hydrologic conditions on the site typical for this time of the 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 ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: ((Plot size:_____)	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1.			
2.			
3.			
4.			
Total Cover:			

Sapling/Shrub Stratum: (Plot size:___6 ft radius_)			
1. Baccharis pilularis	35	D	UPL
2.			
3.			
4.			
5.			
Total Cover:	35		

Herb Stratum: (Plot size:___ 6 ft radius _____)			
1. Plantago lanceolata	30	D	FAC
2. Bromus hordeaceus	15		FACU
3. Bromus madritensis	10		UPL
4. Centaurea solstitialis	30	D	UPL
5. Bromus diandrus	5		UPL
6.			
7.			
8.			
Total Cover:	90		

Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 15 % Cover of Biotic Crust 0

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:	x 1 =
FACW Species	x 2 =
FAC Species	x 3 =
FACU Species	x 4 =
UPL Species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

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

[1]Indicators of Hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL

Sampling Point: **9**

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

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

[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: Old electric wire dug up.

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 (2or 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-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:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Ukiah Riverside Park Regeneration City/County: Ukiah/Mendocino Sampling Date: 22 May 2019
Applicant/Owner: City of Ukiah State: CA Sampling Point: **10**
Investigator(s): Chuck Hughes and Elizabeth Hill Section, Township, Range: See Report
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 1
Subregion (LRR): C Lat: See Report Long: Datum:
Soil Map Unit Name: Xerofluvents 0-2% slopes NWI classification: None
Are climatic/hydrologic conditions on the site typical for this time of the 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 ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: ((Plot size:_____)	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1.			
2.			
3.			
4.			
Total Cover:			

Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:			

Herb Stratum: (Plot size:_____ 6 ft radius_____)			
1. Bromus hordeaceus	30	D	FACU
2. Centaurea solstitialis	10		UPL
3. Bromus diandrus	12		UPL
4. Festuca bromoides	15	D	FACU
5. Hordeum marinum ssp. gussoneanum	10		FAC
6. Festuca perennis	15	D	FAC
7.			
8.			
Total Cover:	92		

Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust 0

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:		x 1 =
FACW Species		x 2 =
FAC Species		x 3 =
FACU Species		x 4 =
UPL Species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

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

[1]Indicators of Hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL

Sampling Point: **10**

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

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

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 (2or 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-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:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Ukiah Riverside Park Regeneration City/County: Ukiah/Mendocino Sampling Date: 22 May 2019
Applicant/Owner: City of Ukiah State: CA Sampling Point: **11**
Investigator(s): Chuck Hughes and Elizabeth Hill Section, Township, Range: See Report
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave-convex Slope (%): ≈0
Subregion (LRR): C Lat: See Report Long: Datum:
Soil Map Unit Name: Xerofluvents 0-2% slopes NWI classification: None
Are climatic/hydrologic conditions on the site typical for this time of the 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 ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: ((Plot size:_____)	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1.			
2.			
3.			
4.			
Total Cover:			

Sapling/Shrub Stratum: (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
Total Cover:			

Herb Stratum: (Plot size:____3 ft radius_____)			
1. Aegilops sp.	60	D	UPL
2. Artemisia douglasiana	5		FAC
3. Vicia villosa	30	D	UPL
4. Bromus diandrus	5		UPL
5. Geranium dissectum	2		UPL
6. Bromus hordeaceus	4		FACU
7.			
8.			
Total Cover:	106		

Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL Species:		x 1 =
FACW Species		x 2 =
FAC Species		x 3 =
FACU Species		x 4 =
UPL Species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A =

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

[1]Indicators of Hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL

Sampling Point: **11**

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

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

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 (2or 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-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:

WETLAND DETERMINATION DATA FORM – Arid West Region
Routine Wetland Determination
(September 2008 V2.0 COE Arid West Wetlands Delineation Manual)

Project/Site: Ukiah Riverside Park Regeneration City/County: Ukiah/Mendocino Sampling Date: 22 May 2019
Applicant/Owner: City of Ukiah State: CA Sampling Point: **12**
Investigator(s): Chuck Hughes and Elizabeth Hill Section, Township, Range: See Report
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): ≈0
Subregion (LRR): C Lat: See Report Long: Datum:
Soil Map Unit Name: Russian loam 0-2% slopes NWI classification: None
Are climatic/hydrologic conditions on the site typical for this time of the 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 ☒	Is the Sampled Area		
Wetland Hydrology Present?	Yes ☐	No ☒	within a Wetland?	Yes ☐	No ☒

Remarks:

VEGETATION

Tree Stratum: ((Plot size:_____)	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1.			
2.			
3.			
4.			
Total Cover:			

Sapling/Shrub Stratum: (Plot size:___6 ft radius__)			
1. Rubus armeniacus	30	D	FAC
2. Baccharis pilularis	20	D	UPL
3.			
4.			
5.			
Total Cover:	50		

Herb Stratum: (Plot size:_6 ft radius_____)			
1. Conium maculatum	45	D	FACW
2. Festuca bromoides	35	D	FACU
3. Hirschfeldia incana	10		UPL
4. Plantago lanceolata	5		FAC
5.			
6.			
7.			
8.			
Total Cover:	95		

Woody Vine Stratum: (Plot size:_____)			
1.			
2.			
Total Cover:			

% Bare Ground in Herb Stratum 15 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL Species:	x 1 =
FACW Species	x 2 =
FAC Species	x 3 =
FACU Species	x 4 =
UPL Species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

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

[1]Indicators of Hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL

Sampling Point: **12**

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

Depth	Matrix		Redox Features					
Inches	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/6	100					Sandy loam	Very gravelly
>8							Gravel	

[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: Datapoint is in an area of old spoils piles consisting of asphalt and concrete.

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 (2or 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-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? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? **Yes** ☐ **No** ☒

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

Remarks:

Appendix B
Plants Recorded at Data Points

PLANTS RECORDED AT DATA POINTS

Scientific Name	Common Name	Wetland Indicator Status
Apiaceae		
Conium maculatum	Poison hemlock	FACW
Asteraceae		
Artemisia douglasiana	Mugwort	FAC
Baccharis pilularis	Coyote brush	UPL
Centaurea solstitialis	Yellow star-thistle	UPL
Sonchus asper subsp. *asper*	Prickly sow thistle	FACU
Brassicaceae		
Hirschfeldia incana	Summer mustard	UPL
Raphanus sp.	Radish	UPL
Cyperaceae		
Eleocharis macrostachya	Common spikerush	OBL
Fabaceae		
Trifolium hirtum	Rose clover	UPL
Vicia villosa	Hairy vetch	UPL
Geraniaceae		
Geranium dissectum	Cut leaved geranium	UPL
Hypericaceae		
Hypericum perforatum	Klamath weed	FACU
Onograceae		
Epilobium ciliatum	Willowherb	FACW
Papaveraceae		
Eschscholzia californica	California poppy	NL
Plantaginaceae		
Plantago lanceolata	English plantain	FAC
Poaceae		
Aegilops sp.	Goat grass	UPL
Avena fatua	Wild oat	UPL
Bromus diandrus	Ripgut grass	UPL
Bromus hordeaceus	Soft chess	FACU
Bromus madritensis	Foxtail chess	UPL
Elymus triticoides	Beardless wild-rye	FAC
Festuca bromoides	Brome fescue	FACU
Festuca perennis	Rye grass	FAC
Hordeum marinum subsp. *gussoneanum*	Mediterranean barley	FAC
Polygonaceae		
Persicaria sp.	Smartweed	At least FACW
Rumex conglomeratus	Dock	FACW

PLANTS RECORDED AT DATA POINTS

Scientific Name	Common Name	Wetland Indicator Status
Rosaceae		
Rubus armeniacus	Himalayan blackberry	FAC
Rubiaceae		
Galium aparine	Goose grass	FACU

SOURCE: ESA, 2019

Appendix C
Photographs

Photograph 1
View west along a dirt road near the center of the study area.

Photograph 2
View west of the pit with seasonal wetland 1 in the bottom.

Photograph 3
View west of SW-1 in the bottom of the pit. The shovel is at data point 1.

Photograph 4
View west in the gully. The shovel is at data point 3.

Photograph 5
View east of the gully. The Russian River is in the trees in the background. When the river floods, high water flows away from the river, through this gully, and into the pit containing SW-1. At this spot the occasional flood water is eroding into the dirt road.

Photograph 6
View north of data point 10 at the shovel.

Photograph 7
View east along the ditch of SW-2. The shovel is at data point 4.

Photograph 8
View east along the ditch. The shovel is at data point 5. At this point the bottom of the ditch is an upland.

Photograph 9
View south. The shovel is at data point 9.

Photograph 10
View south. The shovel is at data point 11.

Photograph 11

View east. The shovel is at data point 12. This part of the study area consists mostly of old spoils piles, largely asphalt and concrete, covered with Himalayan blackberry.

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Appendix D
Aquatic Resources Spreadsheet

Waters_Name	State	Cowardin_Code	HGM_Code	Meas_Type	Amount	Units	Waters_Type	Latitude	Longitude
Seasonal Wetland 1	CALIFORNIA	PEM		Area	0.14	ACRE	EXCLDB4V	39.14377300	-123.18271300
Seasonal Wetland 2	CALIFORNIA	PEM		Area	0.038	ACRE	EXCLDB3I	39.14305500	-123.18315700

Appendix E

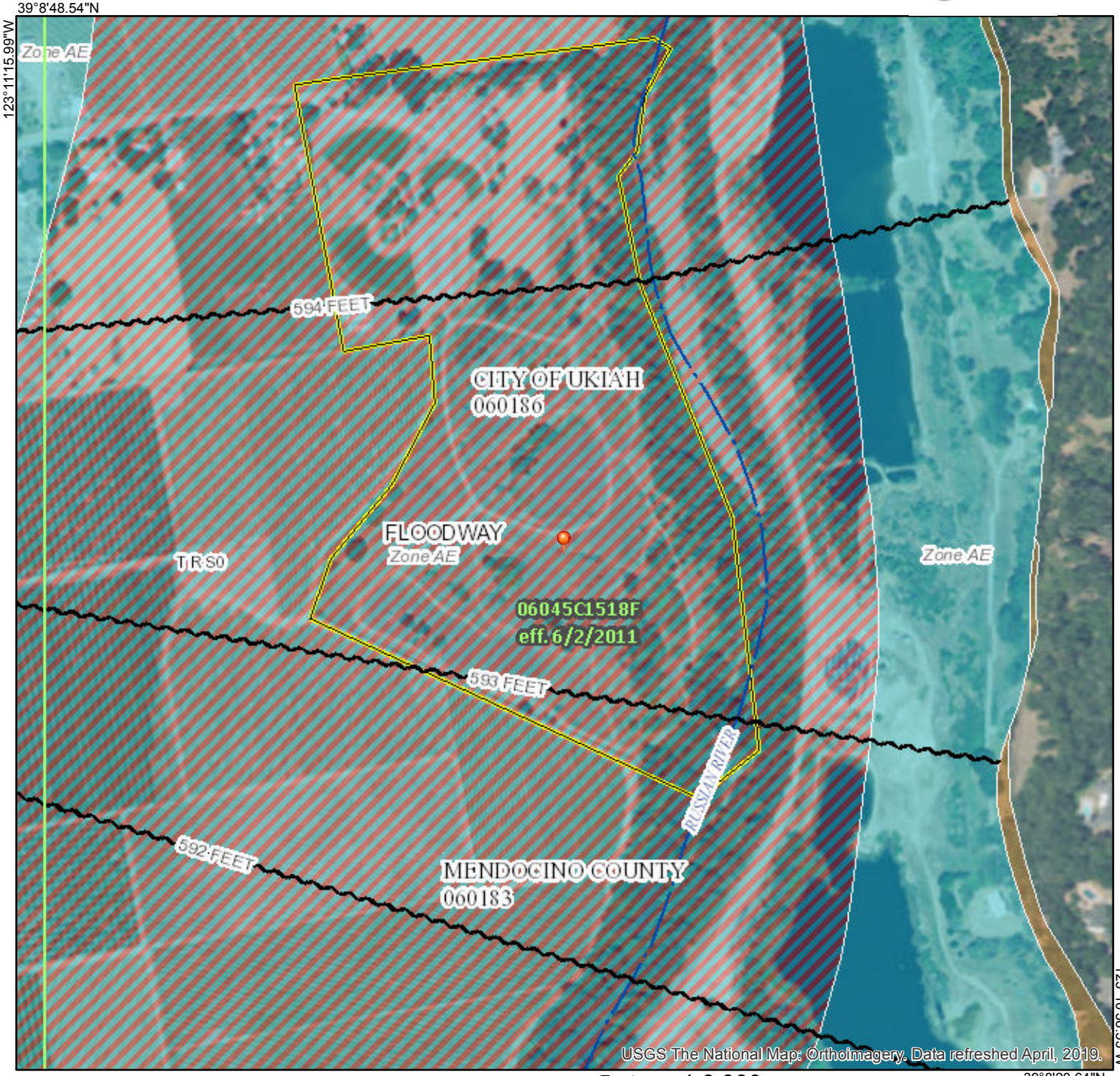
FEMA Flood Insurance Rate Map

National Flood Hazard Layer FIRMette

FEMA

39°8'48.54"N

123°11'15.99"W



123°10'38.53"W

39°8'20.64"N

Feet 1:6,000

0 250 500 1,000 1,500 2,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS

- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- B 20.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- 8 Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS

- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/17/2019 at 5:21:07 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Appendix F
City of Ukiah 1999 Memorandum

F A X TRANSMITTAL

CITY OF UKIAH

TO: KEITH GURNEE **FAX #:** (805) 543 - 4609

FROM: Charley Stump, Senior Planner **FAX #:** (707) 463-6204

DATE: MARCH 29, 1999

PAGES: COVER + 1

MESSAGE:

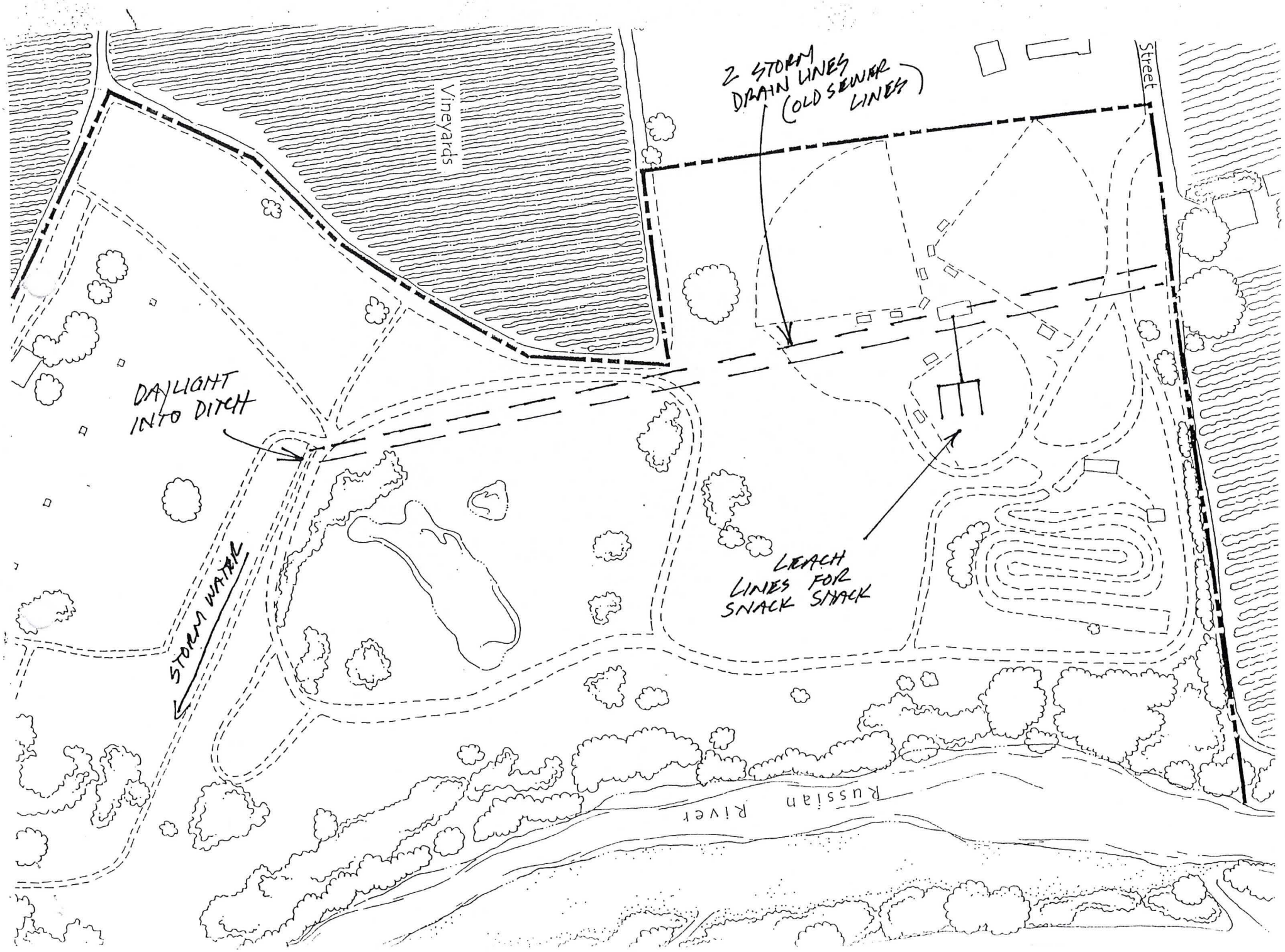
Attached, please find a diagram showing important storm drain lines through the Gobbi Street Riverside Park property. These were old sewer lines that were converted to storm drains when the sewer treatment plant was decommissioned. They daylight into the existing east-west ditch south of the pit. Turns out the "pit" was never one of the treatment plant ponds. It was a naturally occurring gravel deposit that the City excavated.

Please contact Mr. George Borecky, Water/Sewer Operations Superintendent for the City to discuss the true locations of the old ponds, and any other information you need about the infrastructure of the old sewer treatment plant. George grew up in Ukiah, and has worked for the City for over 30-years. A great guy with great knowledge (707) 467-2812.

If the workshop is still on for the 14th, please get me the reduced sketch of the property to send with the public announcement.

Thanks, C.

City of Ukiah
Civic Center
300 Seminary Drive
Ukiah, CA 95482
(707) 463-6200


Vineyards
2 STORM DRAIN LINES (OLD SEWER LINES)
Street
DAYLIGHT INTO DITCH
STORM WATER
LEACH LINES FOR SNACK SHACK
Russian River