

4.9 JURISDICTIONAL WETLANDS

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4.9 JURISDICTIONAL WETLANDS RESOURCES

This section evaluates potential impacts of the Seasonal Storage Project (SSP) to wetlands and other waters of the U.S. that are regulated by Section 404 of the Federal Clean Water Act, Section 10 of the Federal Rivers and Harbors Act, Sections 1600-1606 of the California Fish and Game Code, and the State Porter-Cologne Act.

IMPACTS EVALUATED IN OTHER SECTIONS

The following subjects are related to the Jurisdictional Wetlands Resources Section, but are evaluated in other sections of this document:

- Surface Water Quality. Impacts to surface water quality caused by implementation of project alternatives are discussed in Section 4.6, Surface Water Quality.
- Effects on Streams. Streambed erosion and flooding are discussed in Section 4.4, Surface Water Hydrology.
- Effects on Vegetation and Animals. Impacts to vegetation and animals, including fish and aquatic life, are discussed in Section 4.8, Biological Resources.

SETTING

A brief discussion of the affected environment, with a focus on primary watersheds and nature of jurisdictional waters, follows. Refer to Figures 4.8-1 and 4.8-2 in the Biological Resources section that show the location of wetlands on the vegetation communities mapping. Table 4.9-2 provides quantitative data on the areal and linear extent of individual jurisdictional features that could be affected.

Types of Potential Jurisdictional Waters

Wetlands and other waters perform a variety of physical and biological functions, which may be altered directly or indirectly by project components. Where fills of jurisdictional waters are required by components, qualitative understanding of the functions and values of the filled acreage is an important consideration in analyzing impacts and developing mitigation. Analysis of functions and values of impacted features is therefore an important component of a successful mitigation strategy. Such analyses are included in the mitigation measures recommended later in this section.

Sonoma County is rich in wetland resources. Several large watersheds are located within the study area. Numerous small, intermittent, and perennial creeks and streams serve as tributaries to larger riverine systems that flow to the Pacific Ocean. Freshwater springs and seeps occur along hillsides and support perennial wetland systems. Isolated wetlands, fed by winter rains, occur in shallow depressions on valley floors and terraces.

For the purpose of this document, jurisdictional waters are broadly classified into three categories:

- *Watercourses* – All natural rivers and streams, including those that have been channelized. This classification does not include artificial canals that serve solely to convey irrigation water or agricultural drainage.
- *Waterbodies* – Unvegetated seasonal or persistent bodies of water. This category includes bodies of water as large as lakes and reservoirs and as small as agricultural ponds. These features are generally large and deep enough that wetland plant communities cannot establish.
- *Wetlands* – Wet areas dominated by wetland plant communities. This category includes seasonal wetlands, vernal pools, and seeps. Wetlands generally include springs supplied by a persistent, localized source of groundwater

More specific wetland plant community types associated with these jurisdictional waters are described below. These types are based on a vegetation classification system that incorporates systems developed by Holland (1986) and Shuford and Timossi (1989). The classification system was developed to accurately represent the wetland resources of the region.

Watercourses

Drainages

Drainages are channels or low spots in the landscape, which collect runoff and groundwater discharge and convey surface water for a few days to a few months every year. Most of the low-order, high gradient streams within the project area, which are mapped as blue lines on United States Geological Survey (USGS) topographic quadrangles, fall within this definition of drainages. Drainages normally range from as narrow as one foot to approximately 10 feet wide and may or may not be vegetated. Most drainages occur as well-defined sandy or gravelly flat-bottomed channels largely devoid of vegetation. Many of these are potential jurisdictional waters of the U.S., but not wetlands, because they would not normally support vegetation. A wetland must, by definition, be capable of supporting hydrophytic (water-loving) vegetation. Other drainages support discontinuous clumps of vegetation around areas of prolonged ponding or saturation similar to that found in freshwater seep wetlands.

Excavated Drainages

Realigned historic drainages that capture sufficient precipitation or runoff to maintain the characteristics of a water of the U.S. also fall under Section 404 jurisdiction. Typical wetland vegetation in an excavated drainage is similar to that found along natural drainages, in non-wooded riparian areas, and in freshwater marshes.

Mixed Riparian Woodland

Mixed riparian woodlands are associated with perennial or intermittent streams and contain broad-leaved, closed-canopy deciduous trees and an extensive understory of shade-tolerant shrubs. Many woody riparian areas do not meet the mandatory wetland hydrology criterion, particularly where degradation of the channel has lowered the groundwater level. These areas do not meet federal or state wetland criteria and are not subject to Clean Water Act jurisdiction.

Non-wooded Riparian Wetlands

These are well-defined channels, generally wider than 10 feet that once supported riparian shrubs and trees. The riparian cover has since been eliminated by grazing or other disturbance. Non-wooded riparian wetlands are most often vegetated with a scattering of annual herbaceous species, much like those that are found in annual grassland wetlands.

Willow Riparian Wetlands

Willow riparian wetlands are commonly composed of dense thickets of red willow (*Salix laevigata*) and arroyo willow (*Salix lasiolepis*), with little or no understory. Willow riparian wetlands generally occur within and immediately along stream courses and in other locations where groundwater is at or near the ground surface. Willow riparian wetland communities commonly occur on recently deposited alluvial soils within streambeds, on banks, and in seasonally flooded areas.

Waterbodies

Natural open-water lakes and ponds are rare in the study area. Most ponds and lakes in Sonoma County have been artificially created by impounding overland runoff and surface water flows in natural drainages. Water from these artificial waterbodies is often used for stock watering and agricultural irrigation. Most stockponds are included as potential jurisdictional waters of the U.S., because the vast majority impound natural drainages or have been excavated in areas that were formerly wetlands. The quality of open-water aquatic habitat provided by stockponds and other waterbodies varies considerably. Unvegetated open-water waterbodies are considered non-wetland waters.

Wastewater ponds meet the physical requirements of jurisdictional waterbodies. However, wastewater ponds that are actively used for wastewater treatment to meet the requirements of the Clean Water Act are not considered waters of the U.S. (33 CFR Part 328).

Wetlands

Seasonal Wetlands

Seasonal wetlands typically include a mixture of herbaceous obligate and facultative wetland plants. Wetland plant species are classified as either:

- Obligate (plants that almost always occur in wetlands);
- Facultative wetland (plants that occur in wetlands 67-99 percent of the time);
- Facultative (plants that have a 33-66 percent chance of occurring in wetlands or uplands);
- Facultative upland (plants that occur in wetlands 1-33 percent of the time); or
- Upland (plants that almost never occur in wetlands) (Reed 1988).

Seasonal wetlands dominated by facultative plants, with some associated obligate and facultative wetland plants, are the most common wetland type present in the study area. Another common wetland type is seasonally moist grasslands, which primarily occur on valley floors, in basins, on elevated stream terraces, and on lower alluvial fans.

Cultivated Wetlands

Cultivated wetlands include areas currently in agricultural production that are subject to periodic inundation or saturation, or have exhibited jurisdictional wetland characteristics in the past. Crop types classified as “cropland” include oat hay. Continuously cropped areas that exhibited wetland characteristics in the past, but were modified prior to 1985 in ways that alter wetland hydrology, may be considered prior-converted croplands. Prior-converted croplands are not subject to Section 404 jurisdiction unless and until they are converted to a non-agricultural use. Cropped areas that are not hydrologically altered and continue to experience inundation in most years are considered farmed wetlands using the National Food Security Act Manual. Farmed wetlands are regulated as normal wetlands under the Clean Water Act.

Freshwater Marsh

This wetland type contains vegetation adapted to perennially wet conditions. Freshwater marsh wetlands are found in association with perennial streams, rivers, and around the margins of otherwise open-water farm ponds.

Vernal Pools

Vernal pools occur in depressions in grasslands and other habitats that are underlain with an impervious or very slowly permeable soil layer. These depressions fill with water in the winter and slowly dry in the spring and summer. Vernal pools are

classified according to the substrate on which they occur. These substrates include terrace soils, volcanic mudflows, and clay hardpan.

The vegetation of vernal pools is generally characterized by springtime dominance of native annual plants, often providing striking wildflower displays. As water in the vernal pools recedes during the spring, vernal pool annual plants begin to germinate and grow. Rings of species adapted to different physical conditions flower in succession.

Seeps and Springs

Freshwater seep wetlands form where groundwater reaches or intersects the ground surface, creating a moist area. Freshwater seeps are typically inundated or saturated longer than annual grassland wetlands and much longer than normal grasslands.

Springs have the same origin as seeps, but flow with more volume and persistence. A typical spring will generate a substantial flow of free water through most or all of the year. Springs are dominated by freshwater marsh or seasonal wetland vegetation.

Regional Waters and Wetlands

Watersheds

The Santa Rosa Plain drains westward to the Laguna de Santa Rosa (Laguna), which continues north from the Santa Rosa Plain to join with the Russian River. The southern portion of the Santa Rosa Plain is drained more or less directly by the headwaters of the Laguna, and the northernmost portion of the Santa Rosa Plain drains directly to the Russian River. The central portions of the Santa Rosa Plain are drained by a series of moderately sized tributaries of the Laguna, the largest being Santa Rosa Creek and Mark West Creek. Most of the tributary creeks draining the Santa Rosa Plain originate in the Sonoma Mountains to the east. Many of these tributaries are now perennial, receiving urban runoff from artificial irrigation.

Jurisdictional Wetlands and Other Waters

The Laguna is subject to annual flooding and is bounded by freshwater marshes, seasonal wetlands, cultivated wetlands, other developed wetlands, impoundments, and large swaths of mixed riparian woodland cover. Although the Laguna supports outstanding natural values, it has also been severely impacted by human activities. The Laguna's tributary creeks have been highly disturbed by agriculture, and the watersheds in and around Santa Rosa are mostly filled-in or channelized. Riparian cover persists in remnants on the more urbanized eastern portion of the Santa Rosa Plain, but becomes more continuous as the creeks approach the Laguna on the western fringe of the Santa Rosa Plain.

Seasonal wetlands and vernal pools are common on the poorly drained and/or hardpan soils that dominate the Santa Rosa Plain. Many of these wetlands are highly disturbed through long-term exposure to heavy grazing pressure, irrigated hay

production, and other agricultural uses. Despite losses to development and agricultural disturbance, clusters of low-to high quality vernal pools are still scattered throughout the Santa Rosa Plain. Many special-status animal and plant species typical of vernal pool habitats are on federal and state lists, including California linderiella (*Linderiella occidentalis*), California tiger salamander (*Ambystoma californiense*), dwarf downingia (*Downingia pusilla*), Sonoma sunshine, Sebastopol meadowfoam, many-flowered navarretia, and Burke's goldfields.

Project Sites

Kelly Farm Sites

The proposed Kelly Farm 1 (KF1) and Kelly Farm 2 (KF2) sites are on relatively flat terrain at an elevation of approximately 80 feet. The landscape has a shallow gradient sloping to the west and drains into the Laguna via sheet flow and unnamed drainage swales. One swale is immediately north of KF1 and immediately south of KF2. A second swale along the northwest edge of KF2 is tributary to the first. The land is owned by the City of Santa Rosa (City) and is used primarily for seasonal storage of recycled water and irrigated hay production. The Kelly Farm sites are on former vernal pool land and the remnant signatures of vernal pool swale complexes are still vaguely discernable. Seasonal wetlands are present on the sites, but all wetland features dry out by summer. The seasonal wetlands are vegetated primarily with non-native grasses and forbs.

Brown Farm Sites

The proposed Brown Farm 1 (BF1) and Brown Farm 2 (BF2) sites are on relatively flat terrain at an elevation of approximately 80 feet. The landscape has a shallow gradient sloping to the west. Most of the Brown Farm site drains west into the Laguna via sheet flow, the locally-named, intermittent Gravenstein Creek, located north of BF1 and BF2, and small un-named drainages to the south of the site. The land is owned by the City and is used primarily for seasonal storage of recycled water and irrigated hay production. The Brown Farm sites are on former vernal pool land, and the remnant signatures of vernal pool swale complexes are still vaguely discernable. Seasonal wetlands are present on the sites, but all wetland features dry out by summer. The seasonal wetlands are vegetated primarily with non-native grasses and forbs.

Alpha Farm Site

The proposed Alpha Farm (AF) site is on relatively flat terrain at an elevation of approximately 80 feet. The landscape has a shallow gradient sloping to the west and drains into the Laguna via sheet flow and two creeks. An unnamed, intermittent creek runs through the northern portion of the AF site, draining into the Laguna. The unnamed creek is a low-gradient drainage with patches of adjacent herbaceous wetlands.

An emergency spillway from the AF storage pond would extend to the south and daylight into Roseland Creek. This intermittent to perennial creek has a sparse canopy of willow woody riparian cover. Roseland Creek flows into the Laguna.

The land is owned by the City and is used for irrigated hay production. In addition, two existing ponds on the site are actively used for recycled water storage to meet the requirements of the Clean Water Act and are therefore not waters of the U.S. (33 CFR Part 328).

The Alpha Farm site is on former vernal pool land, and the remnant signatures of vernal pool swale complexes are still vaguely discernable. Seasonal wetlands are present on the site, but all wetland features dry out by summer. The seasonal wetlands are vegetated primarily with non-native grasses and forbs. Seasonal wetlands supporting native vernal pool vegetation were found between the existing recycled water storage ponds and Roseland Creek. These two seasonal wetlands do not appear to be hydrated by irrigation water.

Regulatory Framework

The following subsection presents the federal regulatory program relevant to the project alternatives, followed by a subsection addressing state regulatory issues.

The term “wetlands” is included in “waters.” That is, wetlands are a type of water. Wetlands, however, are sometimes treated separately because in certain regulatory contexts they have significance separate from other waters. The term “other waters” is used to describe jurisdictional features that are not wetlands.

Federal Regulatory Context

Activities affecting “waters of the U.S.” are regulated by Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899. This regulatory authority is administered by the U.S. Army Corps of Engineers (Corps). Waters of the U.S. include territorial seas, all waters that have been or could be used in connection with any interstate commerce (including recreation), navigable waters, adjacent wetlands and tributaries, and other intrastate or isolated waters whose degradation or destruction could affect interstate or foreign commerce. The Corps’ Section 404 authority is delegated from the U.S. Environmental Protection Agency (EPA).

Federal Jurisdiction

The Clean Water Act regulates discharges of dredged or fill material into waters of the U.S., which are broadly defined to include all waters whose alteration could or does influence interstate commerce. These waters, as defined in 33 CFR 328.3, include the following that apply to the project alternatives:

- All waters currently used, used in the past, or susceptible to use in interstate or foreign commerce, including all waters subject to tidal influence;

- All other waters, such as intrastate lakes, rivers, streams, mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or ponds, whose use or degradation could affect interstate or foreign commerce (this includes waters with the potential to be used for recreation, commercial shell-fishing, or industry);
- All impoundments of U.S. waters;
- All tributaries of U.S. waters (including both perennial and intermittent streams); and
- Wetlands adjacent to U.S. waters.

Waters of the U.S. extend "landward to the ordinary high water mark in non-tidal systems, adjacent to the high tide line in tidal systems, and to the landward extent of wetlands that may lie upslope of the ordinary high water mark or high tide line" (33 CFR 328.4). Floodplains are not waters of the U.S., unless they fall into one of the groups listed above.

Navigable Waters of the U.S.

Navigable waters of the U.S. include "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" (33 CFR 329.4). The landward side of navigable waters is defined by the ordinary high water mark in non-tidal areas and by the mean high water mark in tidal areas. Section 10 (River and Harbors Act) permits are required for activities that might affect interstate commerce in navigable waters, and may apply to segments of the Russian River.

Other watercourses, such as Santa Rosa Creek, may be considered navigable; however, the Corps must ultimately make such determinations. The navigability of jurisdictional waters is not addressed in this Environmental Impact Report (EIR) because navigable waters are a complete subset of jurisdictional waters, and are afforded no additional status or protection under state or federal regulation.

Isolated Waters

Isolated waters are waters that are neither tributary nor adjacent to navigable waters. Per the Clean Water Act definition of waters of the U.S. (as presented above), isolated waters are only considered to be waters of the U.S. when their alteration would affect interstate or foreign commerce.

Until recently, the Corps followed a practice of asserting Clean Water Act jurisdiction over most isolated waters. This practice was based on the "Migratory Bird Rule" (51 Fed. Reg. 41217, 1986), which established that migratory birds could be considered a form of commerce. The Corps interpreted this rule as giving them discretion to designate isolated waters that were used, or could potentially be used, by migratory birds as waters of the U.S.

On January 9, 2001, the Supreme Court held in *Solid Waste Agency of Northern Cook County v. U. S. Army Corps of Engineers* (531 U.S. 159, 2001) (“SWANCC decision”) that the Corps had exceeded its regulatory authority in asserting jurisdiction over isolated waters based on the Migratory Bird Rule. [Note that state jurisdiction over isolated waters (please see State and Other Regulatory Requirements, below) remains in effect and is unaffected by the SWANCC decision.]

Special Aquatic Sites

Special consideration is given by the Corps to discharges affecting “special aquatic sites.” “Special aquatic sites” are defined as “geographic areas, large or small, possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values.” These areas are generally recognized as “significantly influencing or positively contributing to the general overall environmental health or vitality of the entire ecosystem or region” [40 CFR 230.3 (q-1)]. Sanctuaries and refuges, wetlands, mudflats, vegetated shallows, and riffle and pool complexes are all considered to be special aquatic sites (40 CFR 230.40-.45).

Special aquatic sites within the study area include riffle and pool complexes are found in the larger streams in the study area. The Corps has the discretion to designate other jurisdictional waters in the study area as special aquatic sites as well.

Regulatory Guidance on the Rapanos Decision

A recent memorandum provides guidance from the EPA and the Corps on implementing the Supreme Court’s “Rapanos” decision (EPA and Corps 2007). The memorandum provides the following explanations. The agencies (i.e., EPA and Corps) will continue to assert jurisdiction over traditional navigable waters, wetlands adjacent to traditional navigable waters, non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months), and wetlands that directly abut such tributaries.

The agencies will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a traditional navigable water: non-navigable tributaries that are not relatively permanent, wetlands adjacent to non-navigable tributaries that are not relatively permanent, and wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary.

The agencies generally will not assert jurisdiction over the following features: swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow) and ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

The agencies will apply the significant nexus standard to assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters. Significant nexus includes consideration of hydrologic and ecologic factors.

Federal Wetland Definitions and Jurisdictions

The Corps and the EPA define wetlands as:

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

An area must meet specific criteria for hydrophytic vegetation, hydric soils, and wetland hydrology as defined in the Corps’ 1987 Wetland Delineation Manual (Environmental Laboratory 1987), referred to herein as the 1987 Manual to be classified as a jurisdictional wetland. In December 2006, the Corps issued the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Corps 2006), referred to herein as the Arid West Supplement. The latter applies to the IRWP area and is designed to be used in conjunction with the 1987 Manual. If there is an inconsistency between the two documents, the Arid West Supplement supersedes the 1987 Manual.

Sites Classified as Difficult Situations

Sites which do not exhibit indicators of all three mandatory criteria year-round or for which one of the criteria may be missing are classified as “difficult situations” by the Corps’ Arid West Supplement. Areas supporting seasonal wetlands, a common wetland type throughout the study area, are classified as “difficult situations” because hydrophytic vegetation and wetland hydrology may not be present year-round. The Corps has developed special identification procedures for wetland determinations of “difficult situations.”

Human-Induced Wetlands

Human-induced wetlands are another class of wetlands with special identification criteria outlined in the 1987 Manual. A human-induced wetland is “an area that has developed at least some characteristics of naturally occurring wetlands due to either intentional or incidental human activities. Examples of human-induced wetlands include wetlands resulting from irrigation, wetlands resulting from filling of former deepwater habitats, dredged material disposal areas, and portions of stock ponds and wetlands resulting from stream channel realignment” (Environmental Laboratory 1987). Many types of wetlands created or maintained by human activities fall under Corps jurisdiction. However, in general, human-induced wetlands created on dry

land and maintained solely by direct application of pumped or actively diverted water are excluded from Corps jurisdiction.

Wetlands on Agricultural Land

Although regulatory authority under Section 404 rests with the Corps, the responsibility for determination of jurisdictional status on agricultural land is shared with the Natural Resources Conservation Service (NRCS) throughout the U.S., with the exception of the nine counties of the San Francisco Bay Area, including Sonoma County.

In a Memorandum of Agreement signed in January 1994 by the Corps and the NRCS (Memorandum of Agreement 1994), the Corps allocated responsibility for making joint wetlands determinations and delineations on agricultural lands to the NRCS "whether or not the person who owns, manages, or operates the land is a participant in USDA programs." Implementation of the Memorandum of Agreement in the nine counties of the San Francisco Bay Area including Marin and Sonoma has not yet occurred. In these counties, the Corps retains wetland delineation responsibility for agricultural lands for Section 404 purposes.

The following information is provided regarding the NRCS program, because the Corps may consider these issues in their actions. The NRCS National Food Security Act Manual, 3rd Edition (NRCS 1994) provides guidance for classifying wetlands on agricultural land and identifies permissible activities under the various classifications. These classifications have little significance under the Clean Water Act with the exception of the "prior-converted cropland" classification. The National Food Security Act Manual provides the following definition of "prior-converted cropland":

"Wetlands that were drained, dredged, filled, or otherwise manipulated, including the removal of woody vegetation, before December 23, 1985, for the purpose [of making] the production of an agricultural commodity possible, and an agricultural commodity was planted or produced at least once prior to December 23, 1985."

Prior-converted croplands, as defined by the NRCS, are excluded from Corps jurisdiction while active cultivation continues and the conditions necessary to support a prevalence of hydrophytic vegetation (specifically, sustained inundation) are absent.

"Waters of the U.S. do not include prior converted cropland. Notwithstanding the determination of an area's status as prior-converted cropland by any other federal agency, for the purpose of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with the EPA (40 CFR Part 232.2)."

Areas of abandoned prior-converted cropland, where wetland conditions return, are regarded as jurisdictional wetlands. Prior-converted cropland areas that are converted, or are intended for conversion, to non-agricultural uses are no longer subject to National Food Security Act Manual classification. These areas are subject to standard Clean Water Act delineation and regulation.

Section 404 Permit Program

Project proponents wishing to engage in most activities affecting waters of the U.S., such as dredging or filling, are required to obtain a Section 404 permit from the Corps. Regulated activities that potentially apply to the project alternatives are:

- Placement of dams or dikes in navigable waters (33 CFR 321);
- Other excavation, dredging or disposal activities in navigable waters (33 CFR 322);
- Activities that alter the course, condition, capacity, etc. of navigable waters (33 CFR 322);
- Discharges of dredged or fill material into the waters of the U.S. (33 CFR 322); and
- Excavation in waters of the U.S. (33 CFR 323.2(d); 58 FR 45008-45038).

Individual and Nationwide Permits

The Corps has the authority under Section 404 to issue two types of permits for discharges of dredged or fill material into jurisdictional waters: general and individual permits.

Individual permits are issued directly by the Corps for specific projects or to specific applicants. Individual permits are subject to public review and require that the applicant perform an alternatives analyses to demonstrate that the proposed impacts to Clean Water Act jurisdiction are necessary and in the public interest. Issuance of individual permits by the Corps is based on their determination that the impacts to waters of the U.S. authorized by the permit serve the greater public interest.

General permits authorize all activities that are of the type specified by the permit. Such general permits are subject to the regional limitations of the permit, limitations on the nature and extent (volume or area) of fill material and must comply with all general and specific conditions, including requirements for notification of the Corps and other authorities.

Nationwide permits are a category of general permits that have been issued for certain specified activities that have been determined individually and collectively to have minimal impacts. However, it is recognized that some actions that are of the types specified by nationwide permits may have more than minimal effects. Therefore, the district engineer has the discretion to require an individual permit for any action subject to Section 404, or to add special conditions to authorizations issued under existing general or nationwide permits, as necessary to satisfy legal requirements or otherwise protect the public interest. If the conditions are met, the specified activities can take place without the need for an individual permit.

Programmatic Biological Opinion for the Santa Rosa Plain

The Santa Rosa Plain within the study area is subject to special Corps regulations. According to the Corps in its own documents and in documents it has adopted (USFWS 2007, Corps 2002, CH2M Hill 1998, USFWS 1998), during the past 40 years the Santa Rosa Plain has been transformed from an area which was a rural residential, agricultural area with large expanses of open space to a more urbanized and intensely agricultural area with less open space. This change in land use has resulted in a substantial loss of seasonal wetland habitat, especially vernal pools. This loss of seasonal wetlands has become so severe that several plant species, which are adapted to live in vernal pools in the Santa Rosa Plain, have been listed as federally protected endangered species by the U.S. Fish and Wildlife Service (USFWS). These endangered plant species are Sonoma sunshine (*Blennosperma bakeri*), Burke's goldfields (*Lasthenia burkei*), Sebastopol meadowfoam (*Limnanthes vinculans*), and many-flowered navarretia (*Navarretia leucocephala* ssp. *plieantha*).

Because of the historic loss of seasonal wetlands on the Santa Rosa Plain, the Corps decided to limit the use of nationwide permits on the Santa Rosa Plain to increase the protection of these valuable natural resources (Corps 2002). The Corps requires notification to discharge in seasonal wetlands (including vernal pools) even for proposed losses of 0.10 acres or less to qualify for most nationwide permits (Regional Conditions for Nationwide Permits, March 12, 2007). The notification must include a complete Habitat Quality Evaluation performed according to the most recent version of the *Training Manual to Evaluate Habitat Quality of Vernal Pool Ecosystem Sites in the Santa Rosa Plain* (CH2MHill 1998).

The Corps also entered into formal consultation with the USFWS, regarding the four formally listed vernal pool plants in the Santa Rosa Plain. The resultant Programmatic Biological Opinion (USFWS 1998 and 2007) outlines a comprehensive conservation program to address effects to the listed species resulting from 404 permit issuance for fill of seasonal wetlands throughout the Santa Rosa Plain.

State and Other Regulatory Requirements

Although this Jurisdictional Wetlands section discusses waters of the U.S. primarily from the perspective of the Corps' regulatory authority, there are also state regulations that influence activities in wetlands and other waters. The following section provides a brief overview of additional state involving wetlands and other waters. State agencies with permitting or review authority over jurisdictional waters include the California Department of Fish and Game (CDFG), State Water Resources Control Board (SWRCB), State Lands Commission, and the California Coastal Commission.

Fish and Game Code

The California Fish and Game Code asserts jurisdiction over state watercourses and waterbodies with defined bed and banks. A Streambed Alteration Agreement, issued

by the CDFG, is required by Section 1602 of the California Fish and Game Code for alterations to state rivers, streams, or lakes. The upward limit of state jurisdiction is generally the top of bank, which often extends further outward than does Clean Water Act jurisdiction. In addition, CDFG often asserts jurisdiction over adjacent riparian areas. Riparian areas are generally defined as areas that are dominated by stream or lake-associated plant cover, and that provide some functional value to the adjacent waterbody (Bill Cox, CDFG, personal communication 2002).

Streambed Alteration Agreements stipulate measures that must be taken to mitigate for the impact of construction activities in potentially affected waterways. Restrictions may be placed on the timing, duration, and extent of activities to minimize the potential disturbance to fish and wildlife resources.

Land Lease Permit

A Land Lease permit would be required if project activities were to occur within lands under the jurisdiction of the State Lands Commission. The State Lands Commission has jurisdiction over navigable waterways and school lands (former federal lands which were granted to the state school system). Typical activities regulated by the State Lands Commission include placement of fill or structures in navigable waterways or Section 16 or Section 36 lands (California Resources Code, Section 6000 *et seq.*).

Water Quality Certification and Waste Discharge Requirements

Section 401 of the Clean Water Act requires the appropriate SWRCB to certify that water quality would not be adversely affected by the proposed fill activity to be permitted under Section 404. The North Coast Regional Water Quality Control Board (NCRWQCB) (Region 1) has jurisdiction over the study area. The Corps may not issue a Section 404 permit without a 401 certification or a waiver of certification that the discharge complies with state water quality standards.

The Regional Water Quality Control Boards also administer the state Porter-Cologne Act, which limits discharge of waste into waters of the state. Authorization from the appropriate board is necessary prior to filling or discharging pollutants into state waters. The definition of state waters pursuant to this act is more inclusive than the CDFG's jurisdiction under the Fish and Game Code, with the primary difference being that waters of the state include wetlands.

GOALS, OBJECTIVES AND POLICIES

A summary of the city and county policies regarding wetlands is presented in Table 4.8-1 in Section 4.8, Biological Resources.

EVALUATION CRITERIA WITH SIGNIFICANCE THRESHOLDS

The California Environmental Quality Act (CEQA) Guidelines state that effects on the environment that conflict with adopted environmental plans or goals are normally regarded as significant. A “no net loss of wetland acreage or value” policy is established within both the state and federal executive branches. For the purposes of this document, any unmitigated fill or other destruction of wetlands or other waters subject to state or federal jurisdiction is considered significant. These criteria are expressed in tabular form in Table 4.9-1. Ditching, draining, or other activities which could alter the characteristic physical, chemical, biological or public interest values (as defined by 40 CFR 230 Subparts C-F) associated with wetlands and other waters of the U.S. are considered impacts under Corps and state authority and are evaluated in other appropriate sections.

TABLE 4.9-1

Evaluation Criteria with Significance Thresholds – Jurisdictional Wetlands

Evaluation Criteria	As Measured by	Significance Thresholds	Sources of Criteria
1. Will the SSP fill jurisdictional wetlands or other waters of the U.S.?	Acreage of fill or dredge of jurisdictional wetlands and/or linear miles of fill or dredge of other jurisdictional waters.	a) Greater than 0 acre of jurisdictional wetlands and other waters of the U.S. b) Greater than 0 linear miles of watercourses	Clean Water Act, 40 CFR 230 Section 404(b)(1). Rivers and Harbors Act, Section 10. CEQA Guidelines Appendix G, Checklist Item VII(c)
2. Will the SSP alter the bed and banks, adjacent riparian habitat, or other state waters?	Acreage or linear miles of alteration of state waters.	a) Greater than 0 acre of state waters or adjacent riparian habitat b) Greater than 0 linear miles of state watercourses	Sections 1600 <i>et seq.</i> of the California Fish and Game Code. California Porter-Cologne Act. CEQA Guidelines Appendix G, Checklist Item VII(c).

METHODOLOGY

These methods for estimating impacts to jurisdictional wetlands and other waters outlined below apply only to the analysis prepared for this EIR. A full protocol-level delineation would be done prior to construction of the selected alternative.

Field Survey

Estimates of the nature and extent of jurisdictional waters within project areas were developed using direct field data in combination with Geographic Information Systems (GIS) database analysis and map interpretation and the best professional judgment of wetlands experts who have conducted extensive fieldwork in the region.

Field surveys were conducted at all project sites by a team composed of a soil scientist and a botanist in the period April 12 through May 23, 2007. A 100 percent pedestrian survey was conducted at the project sites. Sample sites were established as needed to determine the upland boundaries of wetland areas using the methods outlined in the Corps' 1987 Manual and as amended by the 2006 Arid West Supplement. Extensive field notes were recorded, but standard data forms were not completed. Locations of jurisdictional features were delineated with a Global Positioning System (GPS).

Impact Analysis

Areal and Linear Impacts

Impacts to wetlands are in terms of area (i.e., acreage). Impacts to watercourses are in both linear (i.e., miles) and areal (i.e., acres) terms. Impacts to waterbodies such as lakes and ponds are measured in area. However, no jurisdictional lakes or ponds were identified in the project areas that would be impacted. Some watercourses such as streams may have wetland characteristics, if hydrophytic vegetation is growing in them. In addition, watercourses may have adjacent wetlands, which are jurisdictional. For the purposes of reporting impacts in this analysis, two metrics are used: 1) areal impacts in acres, which include both wetlands and watercourses, and 2) linear impact in miles, which includes only watercourses.

Temporary and Permanent Impacts

Temporary impacts occur at facilities where original hydrologic conditions and approximate original contours would be reconstructed successfully. For example, a pipeline may be trenched through a streambed. But if after the pipeline has been installed, the affected reach of the streambed is returned to its approximate original condition and the functions and values of the streambed have been restored, the impact would be considered temporary.

Permanent fill, on the other hand, that alters the bed and banks of a streambed or changes its functions and values, would be considered a permanent impact. For example, fill in a wetland would be a permanent impact.

Impacts caused by linear facilities are assumed to be temporary in this analysis, where mitigation is included to restore impacted areas to their approximate original conditions. All pipelines, for example, would be underground. All electrical transmission lines would be underground except at the AF site where the transmission line would be on above-ground power poles. Permanent impacts of transmission

lines resulting from installation of poles or towers are captured under the other permanent impacts included in the analysis.

Federal and State Impacts

Impacts for federal and state jurisdictions are reported separately, because the methods for delineating jurisdictional features are not the same for the two jurisdictions. The landward limit of the federal jurisdiction under Section 404 on watercourses is the ordinary high water mark. The landward limit of state jurisdiction under Section 1600 *et seq.* is the top of bank. Ordinarily the top of bank is the same as or more inclusive than the ordinary high water mark. In addition, the CDFG in interpreting the state law may claim jurisdiction over adjacent riparian areas. For the purposes of this analysis, areal extent of state jurisdiction is reported including adjacent riparian areas.

The state Section 1600 *et seq.* authority defines jurisdictional features as those exhibiting a diagnosable bed and bank. The CDFG normally claims jurisdiction over features that have defined beds and banks such as streams and lakes, but not seasonal wetlands. The state Porter-Cologne Act, however, has a more inclusive definition of state waters and does normally encompass seasonal wetlands even if a diagnosable bed and bank is not present. The NCRWQCB under its Section 401 authority normally regulates such seasonal wetlands. In addition, the Corps under its Section 404 authority does not claim jurisdiction over isolated wetlands (see above), while the NCRWQCB under its Porter-Cologne Act authority does.

For the purposes of this analysis, areal extent of state jurisdiction is reported including seasonal wetlands and including seasonal wetlands that may be considered isolated under the federal definition. That is, the areal extent of wetlands (as opposed to non-wetland waters) under state jurisdiction is determined using the federal criteria, because these criteria are more precisely defined, and because it is a general practice of the NCRWQCB to adopt delineations using these criteria. However, there may be wetlands that meet the federal criteria (i.e., hydric soils, hydrophytic vegetation, and wetland hydrology) but are isolated. Such wetlands would not be included under the federal jurisdiction of the Corps under its Section 404 authority, but would still be included under the state jurisdiction of the NCRWQCB under its Section 401 authority. In addition, the areal extent of state jurisdiction, for the purposes of this analysis, includes the area along water courses above the ordinary high water mark to the top of bank and, in the case where there is an adjacent riparian corridor, to the edge of the riparian corridor. The federal jurisdiction does not extend above the ordinary high water mark.

The linear extent of federal and state watercourses is determined by the same methods and is reported as the same in this analysis.

IMPACTS AND RECOMMENDED MITIGATION MEASURES

TABLE 4.9-2
Jurisdictional Wetlands Impacts

Evaluation Criteria	Significance Threshold	Impact	Type of Impact ¹	Level of Significance ²
9.1 and 9.2. Will the SSP fill or alter wetlands or other waters of the U.S. or of the State of California?				
KF1 <i>Storage component</i>	a) Greater than 0 acres of jurisdictional wetlands and other waters.	a. 0.78 acres	C	⊙
		1.06 acres	P	⊙
	b) Greater than 0 linear miles of watercourses.	b. 0 miles	C	==
		0 miles	P	==
<i>Pump Station component</i>	a) Greater than 0 acres of jurisdictional wetlands and other waters.	a. < 0.01 acres	C	⊙
		0 acres	P	==
	b) Greater than 0 linear miles of watercourses.	b. 0 miles	C	==
		0 miles	P	==
KF2 <i>Storage component</i>	a) Greater than 0 acres of jurisdictional wetlands and other waters.	a. 0.94 acres	C	⊙
		1.16 acres	P	⊙
	b) Greater than 0 linear miles of watercourses.	b. 0 miles	C	⊙
		0.17 miles	P	⊙
<i>Pump Station component</i>	a) Greater than 0 acres of jurisdictional wetlands and other waters.	a. < 0.01 acres	C	⊙
		0 acres	P	==
	b) Greater than 0 linear miles of watercourses.	b. 0.04 miles	C	⊙
		0 miles	P	==
BF1 <i>Storage component</i>	a) Greater than 0 acres of jurisdictional wetlands and other waters.	a. 0.60 acres	C	⊙
		0.52 acres	P	⊙
	b) Greater than 0 linear miles of watercourses.	b. 0 miles	C	==
		0 miles	P	==

TABLE 4.9-2
Jurisdictional Wetlands Impacts

Evaluation Criteria	Significance Threshold	Impact	Type of Impact¹	Level of Significance²
<i>Pump Station component</i>	a) Greater than 0 acres of jurisdictional wetlands and other waters.	a. 0 acres	C	==
		0 acres	P	==
	b) Greater than 0 linear miles of watercourses.	b. 0 miles	C	==
		0 miles	P	==
BF2 <i>Storage component</i>	a) Greater than 0 acres of jurisdictional wetlands and other waters.	a. 0.19 acres	C	⊙
		0.49 acres	P	⊙
	b) Greater than 0 linear miles of watercourses.	b. 0 miles	C	==
		0 miles	P	==
<i>Pump Station component</i>	a) Greater than 0 acres of jurisdictional wetlands and other waters.	a. 0 acres	C	==
		0 acres	P	==
	b) Greater than 0 linear miles of watercourses.	b. 0 miles	C	==
		0 miles	P	==
AF <i>Storage component</i>	a) Greater than 0 acres of jurisdictional wetlands and other waters.	a. 0.79 acres	C	⊙
		1.04 acres	P	⊙
	b) Greater than 0 linear miles of watercourses.	b. 0.07 miles	C	⊙
		0.28 miles	P	⊙
<i>Pump Station component</i>	a) Greater than 0 acres of jurisdictional wetlands and other waters.	a. 0 acres	C	==
		0 acres	P	==
	b) Greater than 0 linear miles of watercourses.	b. 0 miles	C	==
		0 miles	P	==

Notes: 1. Type of Impact:

T: Temporary, at time of construction

O&M: Operation and Maintenance

P: Permanent

2. Level of Significance:

● Significant impact before and after mitigation

⊙ Significant impact before mitigation; less than significant impact after mitigation

○ Less than significant impact; no mitigation proposed

== No impact

Impacts 9.1 and 9.2: Will the SSP fill or alter wetlands or other waters of the U.S. or of the State of California?

Analysis: *Storage component - Significant: KF1, KF2, BF1, BF2, and AF*

The KF1 Storage component could result in temporary impacts (0.78 acre U.S. and state) and permanent impacts (1.06 acres U.S. and state) to jurisdictional wetlands. The wetlands would be impacted by the storage pond and the spillway structure.

The Storage component at the KF2 site could result in temporary impacts (0.94 acre U.S. and state) and permanent impacts (1.16 acres and 0.17 mile, both U.S. and state) to jurisdictional wetlands and a jurisdictional stream. The wetlands would be impacted by the storage pond, the pond spillway, and access roads. The stream would be impacted by the storage pond and access roads.

The Storage component at the BF1 site could result in temporary impacts (0.60 acre U.S. and state) and permanent impacts (0.52 acre U.S. and state) to jurisdictional wetlands. The wetlands would be impacted by the storage pond and access roads.

The Storage component at the BF2 site could result in temporary impacts (0.19 acre U.S. and state) and permanent impacts (0.49 acre U.S. and state) to jurisdictional wetlands. The wetlands would be impacted by the storage pond and access roads.

The Storage component at the AF site could result in temporary impacts (0.31 acre and 0.07 mile U.S., 0.79 acre and 0.07 mile state) and permanent impacts (1.04 acres and 0.28 mile U.S., 1.05 acres and 0.28 mile state) to jurisdictional wetlands and a jurisdictional stream, Roseland Creek, and an unnamed intermittent stream. The wetlands and the intermittent stream would be impacted by the storage pond and the spillway structure. About 20 linear feet (0.004 mile) of Roseland Creek are potentially impacted by the spillway structure and are included in the impacts reported above.

Many of the wetlands on the sites are influenced by agricultural irrigation during the summer months, but appear to have sufficient wetland characteristics from natural rainy season hydrology to meet jurisdictional requirements.

Pump Station component – No Impact: BF1, BF2, and AF

The Pump Station component at the BF1, BF2, and AF sites would result in no impacts to waters of the U.S. or waters of the state.

Pump Station component – Significant: KF1 and KF2

Trenching for installation of the below-ground power line at the KF1 site would result in temporary impacts to less than .01 acre (U.S. and state) of jurisdictional wetlands. Trenching for installation of the below-ground power

line at the KF2 site would result in temporary impacts to less than .01 acre and 0.04 mile (U.S and state) of jurisdictional wetlands and a jurisdictional stream.

Mitigation: *Pump Station component: BF1, BF2, and AF*

No mitigation is needed.

Storage component: KF1, KF2, BF1, BF2, and AF

Pump Station component: KF1 and KF2

3.3.15 Avoid Fill of Jurisdictional Waters and Wetlands

After

Mitigation: *Storage component – Less than Significant: KF1, KF2, BF1, BF2, and AF*

Pump Station component – Less than Significant: KF1 and KF2

Under Mitigation Measure 3.3.15, impacts would be avoided whenever feasible. Unavoidable permanent impacts would be compensated with the restoration or creation of new wetlands and waters such that there would be no net loss of functions and values. Permanent impacts would be mitigated on-site or off-site, depending on site characteristics and the outcome of agency negotiations. Temporary impacts would be returned to approximate original conditions and compensation would be created for temporal loss¹. Sufficient land is available on each site to create wetlands for mitigation if the City chooses to do so rather than purchase wetlands mitigation credits.

At Alpha Farm, the Storage component would permanently impound 0.28 mile of existing ephemeral streambed. A detailed mitigation plan would be prepared to recreate the channel of this stream along the periphery of the storage pond such that there would be no net quantitative loss of jurisdictional area or length and no net loss of functions and values.

No Project Alternative

Impacts 9.1 and 9.2: Will the No Project Alternative fill or alter wetlands or other waters of the U.S. or of the State of California?

Analysis: *No Impact*

The No Project Alternative involves no new construction or changes in operations. Therefore, there would be no impacts to wetlands or waters.

Mitigation: Not applicable.

CUMULATIVE IMPACTS

Jurisdictions throughout the IRWP study area have adopted General Plans that allow development that potentially could affect wetlands, and all proposed development projects on

¹ Temporal loss relates to the time lost between the impact event and the recovery of the site.

the cumulative project lists (see Appendix C) that would affect currently undeveloped land have the potential to affect wetlands. However, both the policies of the various jurisdictions and the regulatory requirements regarding wetland preservation would ensure that these impacts are mitigated to a great extent.

Impacts: **9.1C and 9.2C. Will the SSP plus cumulative projects fill or alter wetlands or other waters of the U.S. or of the State of California?**

Analysis: *Less than Significant*

Approximately 90 percent of the known wetlands of California have been lost since 1900. Due to the serious nature of wetland losses, any wetlands loss is considered a significant impact for the Project. There is a potential for significant wetlands losses associated with all of the project alternatives except the No Project alternative. However, impacts to wetlands associated with the SSP would be fully mitigated through implementation of Mitigation Measure 3.3.15 Avoid Fill of Jurisdictional Waters and Wetlands. Therefore, the SSP would not have a considerable contribution to cumulative impacts.

Mitigation: No further mitigation is needed.

SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

TABLE 4.9-3

Summary of Significant Impacts and Mitigation Measures – Jurisdictional Wetlands

Impact	Level of Significance	Mitigation Measure
KF1		
9.1 The Storage component may fill or alter wetlands or other waters of the U.S., or of the State of California.	⊙	3.3.15 Avoid Fill of Jurisdictional Waters and Wetlands
9.1 The Pump Station component may fill or alter wetlands or other waters of the U.S. or of the State of California.	⊙	3.3.15 Avoid Fill of Jurisdictional Waters and Wetlands
9.2 The Storage component may alter the bed and banks or adjacent riparian habitat of a State stream, lake, or other wetland.	⊙	3.3.15 Avoid Fill of Jurisdictional Waters and Wetlands
9.2 The Pump Station component may alter the bed and banks or adjacent riparian habitat of a State stream, lake, or other wetland.	⊙	3.3.15 Avoid Fill of Jurisdictional Waters and Wetlands
KF2		
9.1 The Storage component may fill or alter wetlands or other waters of the U.S. or of the State of California.	⊙	3.3.15 Avoid Fill of Jurisdictional Waters and Wetlands
9.1 The Pump Station component may fill or alter wetlands or other waters of the U.S. or of the State of California.	⊙	3.3.15 Avoid Fill of Jurisdictional Waters and Wetlands
9.2 The Storage component may alter the bed and banks or adjacent riparian habitat of a State stream, lake, or other wetland.	⊙	3.3.15 Avoid Fill of Jurisdictional Waters and Wetlands
9.2 The Pump Station component may alter the bed and banks or adjacent riparian habitat of a State stream, lake, or other wetland.	⊙	3.3.15 Avoid Fill of Jurisdictional Waters and Wetlands
BF1		
9.1 The Storage component may fill or alter wetlands or other waters of the U.S., or of the State	⊙	3.3.15 Avoid Fill of Jurisdictional Waters and Wetlands

TABLE 4.9-3
Summary of Significant Impacts and Mitigation Measures – Jurisdictional Wetlands

Impact	Level of Significance	Mitigation Measure
of California.		
9.2 The Storage component may alter the bed and banks or adjacent riparian habitat of a State stream, lake, or other wetland.	⊙	3.3.15 Avoid Fill of Jurisdictional Waters and Wetlands
BF2		
9.1 The Storage component may fill or alter wetlands or other waters of the U.S., or of the State of California.	⊙	3.3.15 Avoid Fill of Jurisdictional Waters and Wetlands
9.2 The Storage component may alter the bed and banks or adjacent riparian habitat of a State stream, lake, or other wetland.	⊙	3.3.15 Avoid Fill of Jurisdictional Waters and Wetlands
AF		
9.1 The Storage component may fill or alter wetlands or other waters of the U.S., or of the State of California.	⊙	3.3.15 Avoid Fill of Jurisdictional Waters and Wetlands
9.2 The Storage component may alter the bed and banks or adjacent riparian habitat of a State stream, lake, or other wetland.	⊙	3.3.15 Avoid Fill of Jurisdictional Waters and Wetlands

Notes: Level of Significance:
 ●: Significant impact before and after mitigation
 ⊙: Significant impact before mitigation; less than significant impact after mitigation
 ==: No impact

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