

This section presents the results of a delineation of wetlands and other waters of the United States that occur in the study area of the proposed Program. Potential impacts resulting from elements of the proposed Program are discussed along with mitigation measures. Stream environment zones are discussed in Section 3.5.

3.4.1 Environmental Setting

The study area for the delineation of wetlands and other waters of the U.S. consists of a relatively wide corridor that extends beyond the existing state right-of-way on both sides of US 50 and SR 89. Detailed maps of the study area are included in the *Wetland Delineation Report* for the Program (URS 2007a; also see Appendix A). The boundaries of the study area were defined broadly to provide an inventory of wetland resources along the two highways that could be used to define potential impacts at a broad scale and provide the basis for identifying specific impacts in the future as individual segments or projects are defined.

Wetland areas are defined by the presence of hydric soils, hydrophytic vegetation, and wetland hydrology. A hydric is a soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part. Hydrophytic vegetation is a plant species that grows in permanently or periodically saturated soil. Under normal circumstances, a minimum of one positive wetland indicator from each parameter (vegetation, soil, and hydrology) must be found in order to make a positive wetland determination. When an area contains all three parameters, it is considered a jurisdictional wetland under Section 404 of the Clean Water Act. The following sections describe some of the general characteristics of the study area in terms of the wetland criteria.

3.4.1.1 Soils

US 50 and SR 89 traverse many soil associations within the project segments. The soil units (types) have been defined and mapped by the U.S. Department of Agriculture (USDA) Soil Conservation Service (now the Natural Resources Conservation Service [NRCS]) and Forest Service and are presented in the *Soil Survey of the Tahoe Basin Area, California and Nevada* (USDA 1974). Several of the soil series within the study area are listed as hydric soils in the NRCS's *Hydric Soils of California* (NRCS 1995).

Several hydric soils were identified within the study area including beaches; Elmira loamy coarse sand, wet variant; and marsh. These soils occur at or within the vicinity of the project limits at the Lake Tahoe shoreline east and west of Camp Richardson, and at Grass Lake on SR 89 near Luther Pass. Many soil series contain other soils mapped within their designations (inclusions) that contain a hydric soil component, and they occur at various locations along each of the project segments. The soils with hydric inclusions within the study area include Celio gravelly loamy coarse sand, Elmira gravelly loamy coarse sand, Elmira stony loamy coarse sand, Elmira-Gefo loamy coarse sands, Gefo gravelly loamy coarse sand, gravelly alluvial land, loamy alluvial land, Meeks very stony loamy coarse sand (5 to 15 percent slopes), Meeks very stony loamy coarse sand (30 to 60 percent slopes), and Meeks extremely stony loamy coarse sand (30 to 60 percent slopes).

See the *Wetland Delineation Report* (URS 2007a) for a more detailed description of the soil units in the project area.

3.4.1.2 Hydrology

Surface water bodies along or near US 50 and SR 89 include creeks, lakes, meadow marshes, and wetlands at which water is present seasonally or year-round. Within areas of steep slopes, defined or concise drainages typically pass under the highways in culverts or small bridges, or water may be collected and flow along the right-of-way before discharging to a culvert. Larger wetlands are present in areas of flat terrain such as at South Lake Tahoe, Camp Richardson, and Grass Lake. The climate in the Lake Tahoe Basin typically yields a significant snow accumulation during the winter and early spring, which provides a strong seasonal pattern of runoff to the drainages and ultimately to Lake Tahoe. Although summer and fall seasons can have convective storms that produce rainfall and runoff, the spring snowmelt typically dominates the inflow to the basin. See Section 3.2 for a more detailed discussion of hydrology of the study area.

3.4.1.3 Vegetation

Five wetland habitat types were identified in the study area based on their vegetation mix: aspen, lodgepole pine, montane riparian, perennial grassland, and wet meadow. Wetlands identified in the project area were classified as pure stands of one of these wetland types, a small portion were categorized as a mix of the habitat types, and any wetlands that did not fit these categories were identified in the broader characterization of either herbaceous or forested wetlands. See the *Wetland Delineation Report* (URS 2007a) for a more detailed description of the habitat types in the project area.

3.4.1.4 Study Methodology

Potential jurisdictional wetlands and waters of the United States in the study area were delineated in Fall 2005 and Fall 2006 using the routine on-site method described in the USACE *Wetlands Delineation Manual* (Environmental Laboratory 1987). The *National List of Plant Species that Occur in Wetlands* (Reed 1998) was used to determine the wetland indicator status of plants identified in the study area. Soil data provided in the *Soil Survey of the Tahoe Basin Area, California and Nevada* (USDA 1974) were compared to soil observations made in the field. The methods require an assessment of the presence of hydric soils, hydrophytic vegetation, and wetland hydrology. Other waters of the United States, consisting of nonwetland drainages and water bodies, were also identified.

3.4.1.5 Field Investigation Results

Jurisdictional Wetlands

A total of 19.683 hectares (ha) (48.65 acres) of potential jurisdictional wetlands were identified within the study area. Five wetland habitat types were identified, including aspen, lodgepole pine, montane riparian, perennial grassland, and wet meadow (Mayer and Laudenslayer 1988). All potential jurisdictional wetlands were assigned a habitat type in the field. Some wetlands were designated as two habitat types if they were located at the ecotone between two habitat types. The remaining identified wetland areas were categorized as either herbaceous or forested wetlands.

Other Waters of the United States

Other waters of the U.S. were characterized as one of the following types according to their origin and amount of water present: ephemeral/man-made drainage, ephemeral (natural) waterway, or perennial/intermittent waterway.

A total of 213 other waters of the U.S. (4.185 ha [10.56 acres]) were found within the study area. There were 31 ephemeral or man-made drainages (0.367 ha [0.71 acres]), 72 ephemeral waterways (0.753 ha [1.98 acres]), and 110 perennial/intermittent waterways (3.065 ha [7.87 acres]). Many of these waters of the U.S. crossed US 50 and SR 89, so the total number of polygons of waters of the U.S. is much larger.

3.4.2 Regulatory Setting

3.4.2.1 *Federal*

Wetlands and other water resources, such as rivers, streams, and natural basins, are a subset of “waters of the United States” and receive protection under Section 404 of the CWA. The USACE has primary federal responsibility for administering regulations that concern waters and wetlands. In this regard, the USACE acts under two statutory authorities, the Rivers and Harbors Act (Sections 9 and 10), which governs specified activities in “navigable waters,” and the CWA (Section 404), which governs specified activities in “waters of the United States,” including wetlands. The USACE and the U.S. Environmental Protection Agency (USEPA) define wetlands as “areas that are saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support a prevalence of vegetation typically adapted for the life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.” “Waters of the United States” as defined in Code of Federal Regulations (33 CFR 328.3[a]; 40 CFR 230.3[s]) include:

- (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) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mud flats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural basins, the use, degradation, or destruction of which could affect interstate or foreign commerce including any such waters which are or could be used by interstate or foreign travelers for recreational or other purposes; or from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or which are used or could be used for industrial purposes by industries in interstate commerce;
- (4) All impoundments of waters otherwise defined as waters of the United States under the definition;
- (5) Tributaries of waters identified in paragraphs (1) through (4);
- (6) Territorial seas; and
- (7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1) through (6).

The term “other waters of the United States” is used to characterize water bodies such as intermittent streams that do not meet the full criteria for wetlands designation.

3.4.2.2 State

California Department of Fish and Game Section 1602

Areas within the jurisdiction of California Fish and Game Code Sections 1600–1616 include all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state, including their beds and banks. Several streams were observed within the study area, and consultation with state resource agencies would be necessary in accordance with legal requirements set forth under Sections 1600–1616. A Section 1602 Lake and Streambed Alteration Agreement would be required for all work conducted within the jurisdiction.

CEQA Significance Criteria

The following is a potentially applicable CEQA significance criterion for the Program.

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

3.4.2.3 Regional

The TRPA encourages wetland restoration. A total of 155.05 acres of SEZs were restored from 1996 to 2000 within the Lake Tahoe Basin. TRPA Code of Ordinances provisions can allow public works projects to occur in wetlands, but complete and additional mitigation is required.

TRPA Thresholds

Although no specific TRPA thresholds exist for wetlands, the TRPA Code of Ordinances protects wetland resources in the region. The following Threshold for Vegetation is applicable:

- V-1 – Common vegetation: Increase plant and structural diversity of forest communities through appropriate management practices as measured by diversity indices of species richness, relative abundance and pattern.

This threshold includes a nondegradation standard for native deciduous trees, wetlands, and meadows. It also calls for the preservation of the richness and abundance of wetland and riparian-associated species. Similarly, uncommon plant species are protected by Vegetation Thresholds.

3.4.3 Impacts

3.4.3.1 CEQA Considerations

Impacts by basin and jurisdictional area are detailed in the *Wetland Delineation Report* (URS 2007a). The following sections discuss potential permanent and direct impacts by resource type, assuming construction of the full area of all proposed basins. Table 3.4-1 summarizes the area of Jurisdictional waters of the U.S., including wetlands, and potential impacts.

As discussed previously, the USACE has jurisdiction over wetlands and other waters of the U.S. and the CDFG has jurisdiction over lakes, streams, and rivers in the state, including their beds and banks.

**Table 3.4-1
Wetlands and Other Waters of the U.S. in the Study Area
and Potential Impacts (hectares [acres])**

| | | Wetlands | Other Waters of the U.S. |
|------------------------------------|-------------------------|---------------------|--------------------------|
| Resources in the Study Area | | 19.683 (48.65) | 4.185 (10.56) |
| Impacts | Build Proposed Basins | 2.424 (5.98) | 0.236 (0.58) |
| | Upgrade Existing Basins | 1.503 (3.71) | 0.014 (0.04) |
| | Pave Pullout Areas | 0.019 (0.07) | 0.009 (0.06) |
| Total Impacts | | 4.044 (9.75) | 0.259 (0.68) |

Jurisdictional Wetland Impacts

This section summarizes impacts to jurisdictional wetlands due to proposed construction of infiltration basins, retrofitting of existing basins, and paving of pullout areas on the sides of US 50 and SR 89 and other activities.

Impacts Due to Proposed and Existing Basins

A total of 2.424 ha (5.98 acres) of jurisdictional wetlands would be impacted by construction of the full area of 18 of the proposed basins in the study area. Retrofitting and/or enlarging of seven existing basins would impact a total of 1.503 ha (3.71 acres) of jurisdictional wetlands.

Impacts Due to Proposed Paving of Pullout Areas

A total of four potential jurisdictional wetlands would be impacted by construction of the proposed pullouts. The total area impacted would amount to approximately 0.019 ha (0.07 acre).

Impacts Due to Other Activities

Direct and indirect impacts to potential jurisdictional waters of the United States could occur from other construction activities, as shown in Table 3.4-2. Direct impacts would include the construction of culvert extensions along small portions of these waters, which would convert natural stream habitats to artificial stream habitats. However, direct and permanent impacts to waters during culvert upgrading/replacement will be minimal. Indirect impacts to waters of the United States during these construction activities may include siltation. More detail on direct, indirect, permanent, and temporary impacts will become available as project details are developed for each segment.

**Table 3.4-2
Potential Impacts to Wetlands from Construction Activities**

| Construction Activity | Potential for Impact If Within/Near Wetland | | | |
|--|---|----------|-----------|-----------|
| | Direct | Indirect | Permanent | Temporary |
| Widen shoulders to 1.2 meters minimum with asphalt-concrete (AC) dike to convey storm runoff | X | X | X | X |
| Construct retaining walls where required to facilitate shoulder widening | X | | X | X |
| Rehabilitate existing and install new drainage systems | X | X | X | X |
| Install traction sand traps | X | X | X | X |
| Provide rock slope protection | X | | X | X |
| Flatten and protect erodible slopes for erosion control | X | X | | X |
| Revegetate bare or erodible areas | | | | X |
| Allow sheet flow off roadway where longitudinal basins are proposed, and spreading of runoff water where feasible in SEZ areas | | X | | |
| Pave all driveway connections within state right-of-way | | | | X |

Impacts to Other Waters of the United States

Impacts Due to Proposed and Existing Basins

Culvert replacement and upgrades would permanently impact waters. Any waters that traverse shoulders proposed for widening would be impacted permanently, unless these areas are avoided. Although no areas have been specified for shoulder widening, losses to waters of the United States could be relatively high if shoulder widening is implemented throughout the study area. Temporary impacts to waters of the United States include loss of water to a portion of the stream used by aquatic species, obstruction of fish passage, and decreased water quality (higher-than-normal concentration of suspended particles in the water column) during construction activities within or adjacent to waters, as well as an increase in the potential for weed growth due to soil disturbance. Other proposed construction activities will cause both direct/indirect and permanent/temporary impacts if they are located within or in close proximity of existing waters of the United States. However, most waters of the United States can be avoided when planning other proposed construction activities.

A total of 0.236 ha (0.58 acres) of jurisdictional other waters of the U.S. would be impacted by construction of the full area of 29 of the 165 total proposed basins. Proposed basins would impact 35 other waters of the U.S., including 15 perennial waters, 17 ephemeral waters, and three man-made drainages. A total of 0.014 ha (<0.04 acres) of jurisdictional other waters of the U.S. were found within four existing basins. Proposed retrofitting and/or enlarging of these existing basins might impact some of these jurisdictional waters; however, the exact area of

impact is unknown at this time, because the exact location of modifications to these basins has not been determined.

Impacts Due to Proposed Paving of Pullout Areas

A total of six potential other waters of the U.S. would be impacted by paving of the proposed six pullouts. The total area impacted would amount to approximately <0.009 ha (<0.06 acre).

Impacts Due to Other Activities

Impacts to potential jurisdictional waters of the U.S. in the study area could occur from other Program activities. Table 3.4-3 indicates the type of impacts that could occur. More detail on direct, indirect, permanent, and temporary impacts will become available as project details are developed for each segment.

**Table 3.4-3
Potential Impacts to Other Waters of the United States
from Construction Activities**

| Construction Activity | Impact | | | |
|--|--------|----------|-----------|-----------|
| | Direct | Indirect | Permanent | Temporary |
| Widen shoulders to 1.2 meters minimum with asphalt-concrete (AC) dike to convey storm runoff | X | X | X | X |
| Construct retaining walls where required to facilitate shoulder widening | | X | X | X |
| Rehabilitate existing and install new drainage systems | X | X | X | X |
| Install traction sand traps | | X | X | X |
| Provide rock slope protection | | | X | X |
| Flatten and protect erodible slopes for erosion control | | X | | X |
| Revegetate bare or erodible areas | | | | X |
| Allow sheet flow off roadway where longitudinal basins are proposed, and spreading of runoff water where feasible in SEZ areas | | | | |
| Pave all driveway connections within State right-of-way | X | | X | X |

3.4.3.2 TRPA Considerations

Impacts to SEZ areas due to construction activities are addressed in Section 3.5.3.2.

3.4.3.3 No Project Alternative

The No Project Alternative would consist of not implementing the EIP projects for which Caltrans is the lead agency; therefore, current contributions to lake pollution would continue.

3.4.4 Avoidance, Minimization, and Mitigation

Potential impacts could be avoided and/or minimized through modification of construction specifications and timing of Program implementation. These avoidance and minimization techniques are described below.

3.4.4.1 *Avoidance Measures*

The location and design of project features such as water treatment basins are preliminary, and in some cases the preliminary locations may impact existing wetland areas identified during the studies performed for this EIR. In general, direct impacts would be avoided by either removing the basin from the design of each specific segment of the Program, or redesigning the basin to avoid or minimize impacts. Additional direct and indirect impacts to sensitive biological resources (including wetlands, waters of the United States, SEZ resources, and sensitive habitats for rare plants) throughout the project area will be avoided or minimized by designating these features outside of the construction impact area as environmentally sensitive areas (ESAs) on construction plans and specifications. Information related to the locations of ESAs and their treatment will be shown on contract plans and discussed in the Special Provisions. ESA provisions should include, but are not limited to, the use of temporary high-visibility orange fencing to delineate the proposed limit of work in areas adjacent to sensitive resources, and to delineate and exclude sensitive resources from potential construction impacts. Contractor encroachment into ESAs will be restricted (including the staging/operation of heavy equipment or casting of excavation materials). ESA provisions shall be implemented as a first order of work, and remain in place until all construction activities have been completed.

3.4.4.2 *General Minimization and Mitigation Measures*

Construction Clean-up

All temporary fill and construction debris will be removed from the construction area after completion of construction activities.

Construction Scheduling

Construction will be timed to minimize potential impacts to sensitive biological resources as specified in the mitigation measures for water quality described in Section 3.4.4.4 and for rare plants and wildlife described in Section 3.5.4. Construction work will be minimal during the fall, winter, and spring.

3.4.4.3 *Weed Control Minimization and Mitigation Measures*

Weed-Free Construction Equipment

All construction equipment working in or near Stream Environment Zones (SEZ) areas must be steam cleaned of potential noxious weed sources (such as mud and vegetation) prior to mobilization at the project site (preferably before entry into the Lake Tahoe Basin) and maintained in clean and good working order with maintenance logs made available to TRPA at their request. This should also be performed after entering a potentially infested area and before

moving on to another area, to help ensure that noxious weeds are not introduced into the construction area. The contractor shall employ whatever cleaning methods are necessary to ensure that equipment is free of noxious weeds, typically spraying equipment with a high-pressure water hose. Equipment shall be considered free of soil, seeds, and other such debris when a visual inspection does not disclose such material. Disassembly of equipment components or specialized inspection tools are not required. Equipment-washing stations shall be placed in areas that afford easy containment and monitoring (preferably outside of the Lake Tahoe Basin) and that do not drain into the forest or sensitive (wetlands or other waters of the U.S.) areas.

Equipment Staging in Weed-Free Areas

Equipment should only be staged in weed-free areas. Landings should be placed in forested areas rather than open flats to help prevent the establishment of noxious invaders such as yellow star thistle, which use open, sunny areas.

Weed-Free Erosion Control Treatments

To further minimize the risk of introducing additional non-native species into the area, only locally TRPA-approved plant species will be used in any erosion control or revegetation seed mix or stock. No dry-farmed straw will be used, and certified weed-free straw shall be required where erosion control straw is to be used. In addition, any hydroseed mulch used for revegetation activities must also be certified weed-free.

3.4.4.4 Minimization and Mitigation Measures for Water Quality Impacts

Minimize Disturbance to Creek Channel and Adjacent Areas

Disruption of the streambed and adjacent riparian corridor will be minimized. All stream and riparian habitat areas outside of the construction impact areas will be designated as ESAs, as detailed in Section 3.4.4.1.

Disturbed areas within the construction limits, including temporary or permanent access routes, will be graded to minimize surface erosion and siltation into streambeds. Any access routes will be removed after each construction season, and the streambed and bank will be re-contoured back to the general angle of repose that existed preconstruction. Streambanks and adjacent areas that are disturbed by construction activities will be stabilized to avoid increased erosion during subsequent storms and runoff. Bare areas will be covered with mulch and revegetated to preconstruction conditions. Construction site BMPs will be used to prevent contamination of the streambank and watercourse from construction material and debris, as detailed in the next measure.

Containment Measures/Construction Site BMPs

Measures will be employed to prevent any construction material or debris from entering surface waters or their channels. BMPs for erosion control will be implemented and in place prior to, during, and after construction to ensure that no silt or sediment enters surface waters.

Caltrans' Standard Specifications require the Contractor to submit a Water Pollution Control Plan. This plan must meet the standards and objectives to minimize water pollution impacts set forth in Section 7-1.01G of Caltrans' Standard Specifications. The Water Pollution Control Plan

must also be in compliance with the goals and restrictions identified in the Lahontan Regional Water Quality Control Board's (Lahontan RWQCB's) Basin Plan. Any additional measures included in the RWQCB Section 401 certification, CDFG Section 1602 Agreement, CWA Section 404 permit, or TRPA permit will be complied with as required by law. Typical standards/objectives, at times referred to as BMPs, may include the following.

- Where working areas encroach on live or dry streams, lakes, or wetlands, physical barriers approved by the TRPA and Lahontan RWQCB adequate to prevent the flow or discharge of sediment into these systems shall be constructed and maintained between working areas and streams, lakes, and wetlands. During construction of the barriers, discharge of sediment into streams shall be held to a minimum. Discharge will be contained through the use of measures approved by the TRPA and Lahontan RWQCB that will keep sediment from entering protected waters.
- Oily or greasy substances originating from the Contractor's operations shall not be allowed to enter or be placed where they will later enter a live or dry stream, pond, or wetland.
- Asphalt concrete shall not be allowed to enter a live or dry stream, pond, or wetland.

Dewatering Activities

Depending on seasonal flows, dewatering of the streambed or culvert course and/or a temporary stream diversion may be necessary where culvert rehabilitation or replacement is proposed. Any intakes that may be required for water pumps associated with wetting, irrigation, or dewatering of sites shall be screened to CDFG specifications to avoid the intake of fish. If dewatering of the site is deemed necessary, a temporary sediment-settling basin will be constructed downstream of the activity. All discharge waters associated with the dewatering activities will be pumped into the constructed basin before being allowed to re-enter drainages.

Restore Riparian and Stream Habitat Disturbed by Construction

Prior to vegetation removal, the area will be surveyed by a qualified biologist for a complete accounting of species and their quantities present within the construction limits. Upon completion of construction activities, streambanks will be permanently stabilized and the riparian areas will be replanted with appropriate native species. Tree and shrub species that will be used for the riparian restoration will include species such as aspen, willow, alder, and cottonwood. Stream channels will be regraded to preconstruction conditions. In addition, all temporary disturbance areas will be hydroseeded with the appropriate mix of native herbaceous and grass species unique to the specific Lake Tahoe vegetation type disturbed.

A restoration and monitoring plan will be prepared by the Caltrans Landscape Architecture Branch and will be submitted for approval by the appropriate agencies prior to Program permitting. The restoration plan will outline and detail all planting and erosion control activities and all associated proposed monitoring activities (including length and timing of monitoring, success criteria, remedial actions, and documentation).

Water Quality Fees or Excess Coverage Mitigation

Any new land coverage in the Lake Tahoe Basin is subject to TRPA regulation and may be assessed a water quality mitigation fee or may be required to perform Excess Coverage

Mitigation. Excess land coverage is defined as existing coverage beyond the total maximum allowable base coverage, the transferred coverage, and the coverage previously mitigated under this Program. The Excess Coverage Mitigation program offers five options to mitigate excess land coverage:

- Reduce coverage on-site.
- Reduce coverage off-site.
- Coverage mitigation fee used to retire land coverage within the same hydrologic zone.
- Parcel consolidation or parcel line adjustment.
- Projects within community plans (see TRPA Code Section 20-5).

The project segments may be subject to this mitigation requirement.

Erosion Control

Temporary erosion control devices will be installed on slopes where erosion or sedimentation could degrade sensitive biological resources.

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