3.6 Biological Resources

3.6.1 Approach to Analysis

This section describes the existing biological resources in and near WTTIP project sites and evaluates project-related impacts on those resources. Information used in the preparation of this section was obtained from the following resources:

- Reconnaissance-level surveys
- Records from the California Natural Diversity Database (CDFG, 2005)
- Biological literature of the region (EBMUD, 1994; CDFG, 2003; Hickman, 1993; Zeiner et al., 1990; Stebbins, 1985)
- Special-status species information from the U.S. Fish and Wildlife Service (USFWS, 2005a)
- Occurrence records on file at the University of California Berkeley Museum of Vertebrate Zoology (UCBMVZ, 2005)
- Vegetation and wildlife species occurrence information from EBMUD biologists (EBMUD, 2005; Skahill, 2005; Hartwell, 2005a, 2005b, 2005c; Lake, 2003; Loughman, 2002; Beeman, 2001; Swaim, 2000; Dunne, 1994)

Vegetation types and wildlife habitats were characterized on the basis of both records and field observations. ESA conducted surveys of project sites on October 12, 13, and 20 and November 3 and 8, 2005 to gather information on plant communities, wildlife habitats, and habitat use on and surrounding each site. All areas evaluated at a project-level were inspected for biological and wetland resources during the field visits. A general tree assessment was completed to estimate the number of protected trees that would be affected in accordance with each city's or county's tree ordinance.

3.6.2 Setting

Regional Setting

The WTTIP project sites are located in the Oakland-Berkeley Hills and in the western Contra Costa County cities of Orinda, Moraga, Lafayette, and Walnut Creek in the San Francisco Bay Area. The Bay Area region supports a Mediterranean climate and a broad range of habitats, including mosaics of oak and mixed evergreen forests, native and non-native grasslands, chaparral, upland scrubs, marsh and wetland communities, and riparian scrubs and forests. The majority of proposed projects are located within areas of residential development. However, the Highland Reservoir and Pipelines and northern portion of the Moraga Road Pipeline alignment traverse the Lafayette Reservoir Recreation Area open space. The San Pablo Pipeline alignment is located in the San Pablo Recreation Area. In addition, the Fay Hill Reservoir is surrounded by a large expanse of undeveloped grassland.

San Pablo, Lafayette, Lauterwasser, and Las Trampas Creeks serve as the primary drainage system in the WTTIP project area.[1] Lauterwasser Creek flows southwest into San Pablo Creek, which flows through the San Pablo Reservoir and on to San Pablo Bay. Lafayette Creek flows eastward to Las Trampas Creek. Las Trampas Creek joins with San Ramon Creek and becomes Walnut Creek, which flows north to Suisun Bay. Though these drainages are culverted at road and highway crossings and have underground reaches through developed urban areas, many portions of these drainages support native riparian and wetland vegetation and riffle structure within the streambed.

WTTIP Project Sites

Plant Communities and Associated Wildlife Habitats

The WTTIP project area supports 13 plant communities consisting of riparian and upland woodlands, shrublands, grasslands, and developed areas. The plant communities and associated wildlife habitats present at each project site are listed in Table 3.6-1 and described below. Sensitive plant communities, defined as communities of high priority by the California Department of Fish and Game (CDFG), are indicated below and in Table 3.6-1.

The plant community classification presented herein is based on field observations and the CDFG *List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database* (CDFG, 2003). Plant communities generally correlate with wildlife habitat types. Wildlife habitats were typically classified and evaluated using the CDFG's *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer, 1988).

Upland Woodlands

Mixed Oak Woodland and Valley Oak–Coast Live Oak Woodland. Mixed oak woodland consists of a dense to sparse cover of multi-stemmed coast live oak (*Quercus agrifolia*) and valley oak (*Quercus lobata*) trees, with a partial understory of shrubs and grasses similar to the non-native grassland in upland areas. Occasionally, other native and non-native species may be found, such as black oak (*Quercus kelloggii*), blue gum eucalyptus (*Euculyptus globulus*), madrone (*Arbutus menziesii*), and California bay (*Umbellularia californica*). Valley oak and coast live oak can occur as the sole dominant species or may intermix to form a valley oak–coast live oak woodland community. The understory of both types of woodland can include poison-oak, coyote brush (*Baccharis pilularis*), as well as herbaceous species such as vetch (*Vicia* sp.) and mustards (*Brassica* spp.). Mixed oak woodland occurs at the Orinda WTP, Leland Isolation Pipeline and Bypass Valves (near Danville Pumping Plant), and Withers Pumping Plant sites, and along the proposed Orinda-Lafayette Aqueduct, Glen Pipeline, Highland Pipeline, Lafayette Reclaimed Water Pipeline, Moraga Road Pipeline, and Tice Pumping Plant and Pipeline alignments. Valley oak–coast live oak woodland occurs at the Happy Valley Pumping Plant and Highland Reservoir sites, and along the proposed Moraga Road Pipeline alignment. Valley oak–coast live oak woodland is a sensitive community, which is defined as a community of high priority by CDFG.

[1] The project area consists of the WTTIP project sites and the surrounding habitat.

TABLE 3.6-1
PLANT COMMUNITIES AND WILDLIFE HABITATS WITHIN THE WTTIP PROJECT SITES

Project Site	Plant Communities and Wildlife Habitats Present
Projects Analyzed at a Project Level	
Lafayette WTP	Mixed Riparian Woodland Eucalyptus Woodland Coyote Brush Scrub Non-native Grassland Developed and Ornamental Landscaping
Orinda WTP	Mixed Riparian Woodland Mixed Oak Woodland Non-native Grassland Developed and Ornamental Landscaping
Walnut Creek WTP	Mixed Riparian Woodland Non-native Grassland Developed and Ornamental Landscaping
Sobrante WTP	Mixed Riparian Woodland Non-native Grassland Developed and Ornamental Landscaping
Upper San Leandro WTP	Developed and Ornamental Landscaping
Orinda-Lafayette Aqueduct	Mixed Riparian Woodland Mixed Oak Woodland Non-native Pine Woodland Coyote Brush Scrub Non-native Grassland Developed and Ornamental Landscaping
Ardith Reservoir	Non-native Pine Woodland Eucalyptus Woodland Developed and Ornamental Landscaping
Donald Pumping Plant	Eucalyptus Woodland Developed and Ornamental Landscaping
Fay Hill Pumping Plant and Pipeline Improvements	Non-native Pine Woodland (pipeline only) Developed and Ornamental Landscaping
Fay Hill Reservoir	Non-native Pine Woodland Non-native Grassland
Glen Pipeline Improvements	Mixed Riparian Woodland Mixed Oak Woodland Developed and Ornamental Landscaping
Happy Valley Pumping Plant and Pipeline	Mixed Riparian Woodland *Valley Oak–Coast Live Oak Woodland (pumping plant only) Non-native Annual Grassland Developed and Ornamental Landscaping (pipeline only)
Highland Reservoir and Pipelines	Mixed Riparian Woodland (pipeline only) Mixed Oak Woodland (pipelines, access roads only) *Valley Oak–Coast Live Oak Woodland (reservoir only) Non-native Pine Woodland (pipelines, access roads only) Coyote Brush Scrub Non-native Annual Grassland *Mixed Perennial Grassland *Cattail Wetland (pipeline only)

TABLE 3.6-1 (Continued)
PLANT COMMUNITIES AND WILDLIFE HABITATS WITHIN THE WTTIP PROJECT SITES

Project Site	Plant Communities and Wildlife Habitats Present
Projects Analyzed at a Project Level	
Lafayette Reclaimed Water Pipeline	Mixed Riparian Woodland Mixed Oak Woodland Non-native Pine Woodland Coyote Brush Scrub Non-native Annual Grassland *Mixed Perennial Grassland
Leland Isolation Pipeline and Bypass Valves	Developed and Ornamental Landscaping Mixed Oak Woodland (near Danville Pumping Plant) Non-native Grassland (near Danville Pumping Plant)
Moraga Reservoir	Developed and Ornamental Landscaping
Moraga Road Pipeline	Mixed Riparian Woodland *Arroyo Willow Riparian Woodland Mixed Oak Woodland *Valley Oak–Coast Live Oak Woodland Non-native Pine Woodland Coyote Brush Scrub Non-native Grassland *Creeping Ryegrass Grassland *Mixed Perennial Grassland *Cattail Wetland Orchard Developed and Ornamental Landscaping
Sunnyside Pumping Plant	Non-native Grassland Non-native Pine Woodland Developed and Ornamental Landscaping
Tice Pumping Plant and Pipeline	Mixed Riparian Woodland (pipeline only) Mixed Oak Woodland Non-native Grassland Developed and Ornamental Landscaping
Withers Pumping Plant	Mixed Oak Woodland Non-native Pine Woodland Non-native Grassland Developed and Ornamental Landscaping

NOTE: An asterisk (*) indicates a sensitive community, which is defined by the CDFG as a high priority community.

SOURCE: ESA

Oak woodland provides food and shelter for a variety of bird species, including insect eaters such as chestnut-backed chickadee (*Poecile rufescens*), white-breasted nuthatch (*Sitta carolinensis*), and warbling vireo (*Vireo gilvus*). Other species attracted to this habitat include song sparrow (*Melospiza melodia*), California quail (*Callipepla californica*), and California towhee (*Pipilo crissalis*), which glean insects from the foliage on the ground. Western scrub jay (*Aphelocoma californica*), Nuttall's woodpecker (*Picoides nuttallii*), and squirrels (*Sciurus* sp.) are dependent on the acorns during the winter. Raptors such as Cooper's hawk (*Accipiter cooperii)* and sharp-shinned hawk (*Accipiter striatus)* are known to nest in oak woodlands. Cavities within oak trees provide nesting sites for western screech owl (*Otus kennicottii*), western bluebird (*Sialia*

mexicana), and ash-throated flycatcher (*Myiarchus cinerascens*), and roosting sites for bats. In addition, downed branches provide cover for various reptiles, amphibians, and small mammals. Oak woodland within the Lafayette Reservoir Recreation Area near the proposed alignments for the Highland Inlet/Outlet pipeline, Lafayette Reclaimed Water Pipeline, and Moraga Road Pipeline alignments is also known to support wild turkeys (*Meleagris gallopavo*) and feral pigs (*Sus scrofa*).

Eucalyptus Woodland. This community consists of a dense to sparse cover of blue gum eucalyptus (*Eucalyptus globulus*) trees. Red iron bark eucalyptus (*Eucalyptus sideroxylon*) is an occasional species observed in eucalyptus woodland. The understory is typically sparse or absent due to the alleopathic chemicals and high volumes of forest debris, such as bark, limbs, and branches, produced by the tree. Eucalyptus woodland occurs at the Lafayette WTP, Ardith Reservoir, and Donald Pumping Plant sites.

Eucalyptus stands provide nesting and roosting habitat for various common bird species, such as American crow (*Corvus brachyrhynchos*) and common raven (*Corvus corax*), as well as for red-tailed hawk (*Buteo jamaicensis*) and other raptors. Dark-eyed junco (*Junco hyemalis*), ruby-crowned kinglet (*Regulus calendula*), and brown creeper (*Certhia Americana*) may also use these areas. Eucalyptus groves near San Pablo Reservoir and Lafayette Reservoir are known to support wintering bald eagles (*Haliaeetus leucocephalus*) (EBMUD, 1994, 2005; Skahill, 2005). Common reptiles such as gopher snake (*Pituophis melanoleucus*) and northern alligator lizard (*Elgaria coerulea*) may also inhabit the understory of these stands.

Non-native Pine Woodland. Non-native pine woodland occurs in upland areas and can consist of several species of pine trees, including Monterey pine (*Pinus radiata*), jeffrey pine (*Pinus jeffreyi*), ponderosa pine (*Pinus ponderosa*), and Coulter pine (*Pinus coulteri*). Each of these trees can occur as the sole dominant species at a site or be intermixed with other species. The understory in this community is composed of non-native grassland or mulch. Non-native pine species have naturalized in undeveloped areas, such as along the Highland and Moraga Road Pipeline alignments. Non-native pine occurs along most roadways and at most reservoirs and pumping plants in the WTTIP project area. Non-native pine woodland is present at the Ardith Reservoir, Fay Hill Reservoir, Highland Reservoir, Sunnyside Pumping Plant, and Withers Pumping Plant sites, and along the proposed Orinda-Lafayette Aqueduct, Fay Hill Pipeline, Highland Pipeline, Lafayette Reclaimed Water Pipeline, and Moraga Road Pipeline alignments.

Non-native, large trees in non-native pine woodland can support nesting and roosting habitat for raptors such as Cooper's hawk, red-tailed hawk, and golden eagle (*Aquila chrysaetos*). Other wildlife species associated with this habitat type include black-tailed deer (*Odocoileus hemionus)*, Nuttall's woodpecker, chestnut-back chickadee, red-breasted nuthatch (*Sitta canadensis*), pygmy nuthatch (*Sitta pygmaea*), white-breasted nuthatch, common raven, and Stellar's jay (*Cyanocitta stelleri*).

Riparian Woodlands

Mixed Riparian Woodland. Mixed riparian woodland consists of dense to sparse cover of primarily arroyo willow (*Salix lasiolepis*), valley oak (*Quercus lobata*), and coast live oak (*Quercus agrifolia*). Associate overstory species in this community include Oregon ash (*Fraxinus latifolia*) and California buckeye (*Aesculus californica*). The understory in this riparian community is primarily composed of poison-oak (*Toxicodendron diversilobum*), mugwort (*Artemisia douglasiana*), Himalayan blackberry (*Rubus discolor*), and stinging nettle (*Urtica* sp.). This community type is also known as central coast riparian woodland or forest. Mixed riparian woodland occurs along streams at the Lafayette WTP, Orinda WTP, Walnut Creek WTP, Sobrante WTP, Happy Valley Pumping Plant and Pipeline, and along the Orinda-Lafayette Aqueduct, Glen Pipeline, Highland Pipeline, Lafayette Reclaimed Water Pipeline, Moraga Road Pipeline, and Tice Pipeline alignments.

Arroyo Willow Riparian Woodland. Arroyo willow riparian woodland is composed of a dense thicket of shrubs. This community consists of willows (*Salix* spp.), primarily with an understory of poison-oak (*Toxicodendron diversilobum*), mugwort (*Artemisia douglasiana*), and stinging nettle (*Urtica* sp.). Arroyo willow riparian occurs along the proposed Moraga Road Pipeline alignment at the intermittent drainage that flows to Lafayette Creek. Arroyo willow riparian woodland is a sensitive community, which is defined as a community of high priority by the CDFG.

Riparian areas provide nesting habitat and diverse insects that are attractive to many bird species. Foliage, bark, and ground substrates provide a variety of foraging areas. Birds that forage for insects in riparian habitats include Bewick's wren (*Thryomanes bewickii*), chestnut-backed chickadee, northern flicker (*Colaptes auratus*), dark-eyed junco, and black phoebe (*Sayornis nigricans*). Riparian forests provide important nesting and roosting habitat for great horned owl (*Bubo virginianus*), Cooper's hawk, sharp-shinned hawk, white-tailed kite (*Elanus leucurus*), and other raptors. Amphibians and mammals such as western toad (*Bufo boreas*), Pacific chorus frog (*Hyla regilla*), western harvest mouse (*Reithrodontomys megalotis*), deer mouse (*Peromyscus maniculatus*), raccoon (*Procyon lotor*), coyote (*Canis latrans*), and black-tailed deer may also use riparian habitat in the WTTIP project area.

Shrubland

Coyote Brush Scrub. This shrub-dominated community primarily occupies undeveloped natural areas. It consists of a dense to moderately open shrub canopy with a sparse herbaceous understory. Coyote brush scrub grows on steep, rocky slopes and intersperses with mixed oak woodland on deeper soils or moister sites. The dominant shrub in this community is coyote brush (*Baccharis pilularis*). Coyote brush can occur as the sole species or in association with other species, including poison oak, California coffeeberry (*Rhamnus californica*), sticky monkey flower (*Mimulus aurantiacus*), and bracken fern (*Pteridium aquilinum*). Coyote brush scrub occurs at the Lafayette WTP and Highland Reservoir, and along the proposed Orinda-Lafayette Aqueduct, Lafayette Reclaimed Water Pipeline, and Moraga Road Pipeline alignments.

Coyote brush scrub (also referred to as coastal scrub) habitat, often interspersed with other habitats, provides foraging and nesting habitat for species that are attracted to edges of plant communities. Bird species that use the scrub canopy for catching insects include bushtit (*Psaltriparus minimus*) and wrentit (*Chamaea fasciata*). Flowering scrub vegetation (e.g., *Ceanothus* sp.) attracts nectar drinkers such as Anna's hummingbird (*Calypte anna*). Mammals, including striped skunk (*Mephitis mephitis*), may use this habitat for protection and foraging grounds. Reptiles and small mammals that are expected to occur within scrub habitats include western fence lizard (*Sceloporus occidentalis*), brush rabbit (*Sylvilagus bachmani*), Botta's pocket gopher (*Thomomys bottae*), and deer mouse. Small mammals attract predators such as coyote and gray fox (*Urocyon cinereoargenteus*).

Grasslands

Creeping Ryegrass Grassland. Creeping ryegrass grassland is a remnant native grassland in moist areas. Creeping ryegrass (*Leymus triticoides*) mainly occurs as the sole species adjacent to mixed perennial grassland or non-native grassland. Creeping ryegrass grassland occurs along the undeveloped portion of the proposed Moraga Road Pipeline alignment. Creeping ryegrass grassland is a sensitive community, which is defined as a community of high priority by the CDFG.

Mixed Perennial Grassland. Mixed perennial grassland is composed of several native bunchgrasses, including blue wildrye (*Elymus glaucus*), purple needlegrass (*Nassella pulchra*), and California brome (*Bromus carinatus*). Associated herbaceous species can include California poppy (*Eschscholzia californica*), checkerbloom (*Sidalcea malvaeflora*), and soap root (*Chlorogalum pomeridianum*). Mixed perennial grassland occurs at the proposed Highland Reservoir as well as along undeveloped portions of the Highland Pipeline, Lafayette Reclaimed Water Pipeline, and Moraga Road Pipeline alignments. Mixed perennial grassland is a sensitive community, which is defined as a community of high priority by the CDFG.

Non-native Grassland. Non-native grassland is composed of a dense to sparse cover of non-native annual grasses often associated with numerous annual and perennial herbaceous herbs. Species in this community usually germinate in the late winter, grow actively during the winter and early spring, then produce numerous seeds that remain dormant during the summer and early fall. Species in this community include numerous common non-native annual grasses, including vulpia (*Vulpia myuros*), wild oat (*Avena barbata*), and bromes (*Bromus hordaceus, B. diandrus,* and *B. madritensis*). Associated herbs include a mix of native and non-native species, including black mustard (*Brassica nigra*), California poppy (*Eschscholzia californica*), California buttercup (*Ranunculus californica*), clovers (*Orthocarpus* and *Trifolium* spp.), filaree (*Erodium botrys, E. cicutarium*), and bluedick (*Dichelostemma capitatum* ssp. *capitatum*). Invasive non-native species can also be found in this community, including yellow star-thistle (*Centaurea solstitialis*), Italian thistle (*Carduus pycnocephalus*), and milk thistle (*Silybum marianum*). Non-native grassland occurs at the Lafayette WTP, Orinda WTP, Walnut Creek WTP, Sobrante WTP, Fay Hill Reservoir, Happy Valley Pumping Plant and Pipeline, Highland Reservoir and Pipelines, Leland Isolation Pipeline and Bypass Valves (near Danville Pumping Plant), Sunnyside Pumping Plant,

Tice Pumping Plant and Pipeline, and Withers Pumping Plant sites, and along the proposed Orinda-Lafayette Aqueduct, Lafayette Reclaimed Water Pipeline, and Moraga Road Pipeline alignments.

Grasslands can provide refuge for reptiles and amphibians such as western fence lizard, northern alligator lizard, and Pacific slender salamander (*Batrachoseps attenuatus*), and birds including mourning dove (*Zenaida macroura*) and western meadowlark (*Sturnella neglecta*). Grasslands can also be important foraging grounds for aerial and ground-foraging insect eaters such as *Myotis* bat species and pallid bat (*Antrozous pallidus*). Mammals such as Botta's pocket gopher, California ground squirrel (*Spermophilus beecheyi*), black-tailed jackrabbit (*Lepus californicus*), and coyote may forage within annual grasslands in the WTTIP project area. Small rodents attract raptors (birds of prey), including red-tailed hawk, American kestrel (*Falco sparvarius*), and white-tailed kite. Grasslands with ground squirrel burrows of sufficient size have the potential to support burrowing owl (*Athene cunicularia*), a California species of special concern.

Cattail Wetland

The dominant species within cattail wetland is cattail (*Typha latifolia*). Other species observed include tall flatsedge (*Cyperus eragrostis*), sedge (*Carex* sp.), rush (*Juncus* sp.), and rabbitsfoot grass (*Polypogon monospeliensi*s). Cattail wetland occurs along the proposed Moraga Road Pipeline alignment at Laguna Creek and at the intermittent drainage that flows to Lafayette Creek, as well as along the Highland overflow pipeline alignment at the edge of the existing Lafayette Reservoir. Cattail wetland is a sensitive community, which is defined as a community of high priority by the CDFG.

Wildlife that depend on free (open) water and visit marshes regularly include coyotes, foxes, raccoons, rodents, most rabbit species, and many species of birds. A number of species require standing or flowing water for breeding, including amphibians such as western toad, Pacific tree frog, western pond turtle (*Clemmys marmorata*), and the federal threatened and California species of special concern, California red-legged frog (*Rana aurora draytonii*), as well as western aquatic garter snake (*Thamnophis couchii*), red-winged blackbird (*Agelaius phoeniceus*), and marsh wren (*Cistothorus palustris*). Freshwater marsh vegetation along streams and lakes can also provide some nesting and seasonal foraging opportunities and cover for waterbird species such as mallards (*Anas platyrhynchos*), green-winged teals (*Anas crecca*), great blue herons (*Ardea herodius*), and great egrets (*Casmerodius albus*).

Developed Areas

Orchard. An orchard intermixed with non-native grassland is present along the proposed Moraga Road Pipeline alignment. Orchards may provide occasional habitat for transient mammals, reptiles, and amphibians and also have value to birds, including wintering sapsuckers. Small mammals, such as rabbits and rodents, forage on the leaves and grasses and, in turn, may attract small predators such as hawks or feral cats.

Developed and Ornamental Landscaping. This community type is designated for areas occupied by buildings, roads, parking lots, and other developed facilities, as well as adjacent landscaped or heavily disturbed areas. Vegetation in these areas (other than landscaping plants) consists mostly of

non-native species such as bottlebrush (*Callistemon rigidus*), and cultivated native species such as Monterey pine, coast redwood (*Sequoia sempervirens*), coast live oak, and lemonadeberry (*Rhus integrifolia*). Urban and developed areas tend to be landscaped with non-native ornamental plant species, thus displacing native plants. Developed and ornamental landscaping occurs at most of the WTPs and proposed pumping plant sites and along the proposed pipeline alignments, except at the Happy Valley Pumping Plant and Highland Reservoir sites.

Residential developments and other areas with ornamental landscaping can provide some habitat for wildlife species adapted to human habitation, such as striped skunk, Virginia opossum (*Didelphis virginiana*), raccoon, European starling (*Sturnus vulgaris*), American robin (*Turdus migratorius*), and mourning dove. In addition, larger trees may provide roosting and nesting habitat for raptors and other birds.

Wetlands and Streams

Wetlands

Wetlands and associated wildlife species are described above under Cattail Wetlands. Cattail wetland typically qualifies as a wetland, as defined by the U.S. Army Corps of Engineer's (Corps), if associated with navigable streams. As such, cattail wetland is protected under Section 404 of the Clean Water Act and is subject to the Corps' jurisdiction. Cattail wetland occurs along the proposed Highland overflow pipeline/Lafayette Reclaimed Water Pipeline at the edge of the existing Lafayette Reservoir and along the Moraga Road Pipeline alignment at the intermittent drainage that flows to Lafayette Creek.

Streams

Major perennial streams on the WTTIP project sites include Lafayette Creek, Las Trampas Creek, Lauterwasser Creek, and San Pablo Creek. Many of the WTTIP project sites contain perennial and/or seasonal streams (see Table 3.6-2 for stream locations) that drain to the San Pablo Bay or Suisun Bay. The Lafayette WTP, Orinda WTP, and Sobrante WTP sites contain perennial and/or seasonal streams. In addition to these facilities, proposed pipeline alignments cross or parallel streams, including the Orinda-Lafayette Pipeline, Glen Pipeline, Happy Valley Pipeline, Highland Pipeline, Lafayette Reclaimed Water Pipeline, Leland Isolation Pipeline and Bypass Valves (Danville Pumping Plant), Moraga Road Pipeline, and Tice Pipeline. The Withers Pumping Plant and Happy Valley Pumping Plant sites also contain streams. Project activities at the Walnut Creek WTP would not occur in the portion of the site that supports a stream. The riparian corridors along most of the streams are dense and consist of mixed riparian woodland vegetation (see Table 3.6-2 for a list of streams associated with each project site).

Project-area streams are potentially subject to Corps and Regional Water Quality Control Board (RWQCB) jurisdiction under Sections 404 and 401 of the Clean Water Act, respectively, and CDFG jurisdiction under Sections 1600–1616 of the California Fish and Game Code. Riparian corridors associated with these streams are also protected under Sections 1600–1616 of the California Fish and Game Code.

TABLE 3.6-2
STREAMS AND WETLANDS AT THE WTTIP PROJECT SITES

Project Sites	Maps B, C, and D	Stream/Wetland Type
Lafayette WTP	B2 C-LWTP-1 C-LWTP-2 C-OLA-5	▪ Lafayette Creek – perennial ▪ Intermittent stream that crosses Mt. Diablo Boulevard to Lafayette Creek
Orinda WTP	B1 C-OWTP-1 C-OWTP-2	▪ San Pablo Creek – perennial ▪ 2 seasonal streams to San Pablo Creek
Walnut Creek WTP	C-WCWTP-1	▪ Seasonal tributary to Grayson Creek
Sobrante WTP	B4 C-SOBWTP-1	▪ San Pablo Creek – perennial
Orinda-Lafayette Aqueduct	B1 C-OLA-1 C-OLA-3 C-OLA-4 C-OLA-5	▪ Hidden Valley Creek (underground tributary to Lafayette Creek) ▪ Lafayette Creek – perennial ▪ Intermittent stream that crosses Mt. Diablo Boulevard to Lafayette Creek ▪ 3 seasonal drainages towards Highway 24 ▪ 2 seasonal streams to San Pablo Creek near Orinda Sports Field ▪ San Pablo Creek – perennial ▪ Lauterwasser Creek – perennial
Glen Pipeline Improvements	B2 C-GLENPL-3	▪ Concrete-lined intermittent stream; tributary to Happy Valley Creek
Happy Valley Pumping Plant and Pipeline	B1 C-HVPP-1 C-HVPP-2 C-HVPP-3	▪ Lauterwasser Creek – perennial ▪ 3 tributaries to Lauterwasser Creek
Highland Reservoir and Pipelines	B2 C-HIGHRES-1	▪ Lafayette Creek – perennial ▪ Lafayette Reservoir ▪ Cattail wetland
Lafayette Reclaimed Water Pipeline	C-HIGHRES-1	▪ Lafayette Creek – perennial
Leland Isolation Pipeline and Bypass Valves (Danville Pumping Plant)	C-LELPL-2	▪ San Ramon Creek ▪ Seasonal drainage to San Ramon Creek
Moraga Road Pipeline	B2 C-MORPL-1 C-MORPL-2 C-MORPL-3 C-MORPL-4 C-MORPL-5 C-MORPL-6 C-MORPL-7	▪ Cattail wetland ▪ 2 intermittent tributaries to Lafayette Creek near Highland Reservoir ▪ 2 seasonal streams in Lafayette Reservoir Recreation Area ▪ 1 intermittent tributary to Las Trampas Creek crossing Moraga Road ▪ Laguna Creek – seasonal ▪ 1 seasonal drainage (potential storm drain) parallel to Moraga Road
Tice Pumping Plant and Pipeline	B3 C-TICEPP-1	▪ Las Trampas Creek – perennial
Withers Pumping Plant	D-WITHPP-1	▪ Seasonal drainage in 12-inch corrugated-metal pipe to Grayson Creek

Wildlife Movement Corridors

Wildlife movement corridors link areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or by areas of human disturbance or urban development. Topography and other environmental conditions in combination with urbanization have fragmented or separated large open space areas. The fragmentation of natural habitat creates isolated "islands" of vegetation that may not provide sufficient area to accommodate sustainable populations and can adversely affect genetic and species diversity. Movement corridors mitigate the effects of this fragmentation by allowing animals to move between remaining habitats, which in turn allows depleted populations to be replenished and promotes genetic exchange with separate populations. Within the WTTIP project area, streams and drainages such as San Pablo Creek, Lauterwasser Creek, Lafayette Creek, and Las Trampas Creek serve as primary corridors for wildlife moving through residential areas and other developed habitats. In addition, undeveloped open space habitat within the Lafayette Reservoir Recreation Area and San Pablo Recreation Area provides contiguous habitat for resident and migratory wildlife.

Special-Status Species

Several species known to occur in the project vicinity are protected pursuant to federal and/or state endangered species laws, or have been designated as species of concern by the U.S. Fish and Wildlife Service (USFWS) or species of special concern by the CDFG. In addition, Section 15380(b) of the CEQA Guidelines provides a definition of rare, endangered, or threatened species that are not included in any listing.[2] Species recognized under these terms are collectively referred to as "special-status species." For purposes of this EIR, special-status species include:

- Plant and wildlife species listed as rare, threatened, or endangered under the federal or state endangered species acts
- Species that are candidates for listing under either federal or state law
- Species formerly designated by the USFWS as species of concern[3] or by the CDFG as species of special concern
- Species protected by the federal Migratory Bird Treaty Act (16 United States Code [USC] Sections 703–711)
- Bald and golden eagles protected by the federal Bald Eagle Protection Act (16 USC 668)
- Species such as candidate and California Native Plant Society (CNPS) List 1 and 2 species that may be considered rare or endangered pursuant to the criteria in Section 15380(b) of the CEQA Guidelines

[2] For example, vascular plants listed as rare or endangered or as List 1 or 2 by the CNPS are considered to meet Section 15380(b) requirements.

[3] Federal Species of Concern is an informal term not defined in the federal Endangered Species Act. The Sacramento Fish and Wildlife Office no longer uses this designation and recently stopped maintaining Species of Concern lists. However, the October 10, 2005 USFWS species list for this project included Federal Species of Concern (USFWS, 2005a). Thus, these species are considered in this EIR.

Table E-1 in Appendix E lists special-status plant species and special-status wildlife species reported to occur in the WTTIP project area based on data in the sources listed above: California Natural Diversity Database (CDFG, 2005), CNPS Electronic Inventory (CNPS, 2005), special-status species information from the USFWS (USFWS, 2005a), biological literature of the region, existing EBMUD biological resource data, and information from EBMUD biologists. Special-status plants and animals are evaluated for this EIR based on a plausible likelihood of habitat loss or construction-related disturbance.

Of the 21 special-status plants presented in Table E-1, the following species have a moderate potential to occur and are considered in the impact analysis: bent-flowered fiddleneck, big-scale balsamroot, Mt. Diablo fairy-lantern, Franciscan thistle, western leatherwood, Diablo rock-rose, Kellog's horkelia, Northern California black walnut, and Oregon meconella. These species are not protected under the federal or state endangered species acts, but are considered former federal species of concern and/or are listed by the CNPS.

Of the 61 special-status wildlife species presented in Table E-1, the following species are considered in the impact analysis: central California coast steelhead (*Oncorhynchus tshawytscha)*, California red-legged frog, foothill yellow-legged frog (*Rana boylii)*, Alameda whipsnake (*Mastcophis lateralis euryxanthus)*, western pond turtle, bald eagle, Cooper's hawk, sharp-shinned hawk, Bell's sage sparrow (*Amphispiza belli belli)*, golden eagle, burrowing owl, oak titmouse (*Baeolophus inornatus)*, northern harrier (*Circus cyaneus)*, yellow warbler (*Dendroica petechia)*, white-tailed kite, Pacific-slope flycatcher (*Empidonax difficilis)*, California horned lark (*Eremophila alpestris actia)*, merlin (*Falco columbarius)*, yellow-breasted chat (*Icteria virens)*, loggerhead shrike (*Lanius ludovicianus)*, osprey (*Pandion haliaetus)*, rufous hummingbird (*Selasphorus rufus)*, Allen's hummingbird (*Selasphorus sasin)*, Bewick's wren, California thrasher (*Toxostoma redivivum)*, mountain lion (*Felis concolor)*, San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens)*, and six species of bats.

Special-Status Plants

Habitat for bent-flowered fiddleneck (*Amsinckia lunaris*), big-scale balsamroot (*Balsamorhiza macrolepis* var. *macrolepis*), Mt. Diablo fairy-lantern (*Calochortus pulchellus*), Franciscan thistle (*Cirsium andrewsii*), Diablo rock-rose (*Helianthella castanea*), Kellog's horkelia (*Horkelia cuneata ssp. sericea*), and Oregon meconella (*Meconella oregana*) occurs along the undeveloped portion of the Moraga Road Pipeline alignment within coyote brush scrub, grassland, and/or openings in mixed oak woodland. Habitat for Northern California black walnut and western leatherwood occurs within riparian corridors along most streams identified in Table 3.6-2 at the following project sites: Lafayette WTP, Orinda WTP, Sobrante WTP, Orinda-Lafayette Aqueduct, Glen Pipeline Improvements, Happy Valley Pumping Plant and Pipeline, Highland Reservoir and Pipelines, Lafayette Reclaimed Water Pipeline, Moraga Road Pipeline, and Tice Pumping Plant and Pipeline. No suitable habitat for riparian special-status species is present at the Withers Pumping Plant site or at the three drainages that flow toward Highway 24 and across the Orinda-Lafayette Aqueduct alignment along El Nido Ranch Road.

Central California Coast Steelhead

Aquatic habitat within WTTIP project area drainages, such as San Pablo Creek, Lafayette Creek, Lauterwasser Creek, and Las Trampas Creek, has the potential to support common fish species such as California roach (*Lavinia symmetricus*), Sacramento sucker (*Catostomus occidentalis*), and threespine stickleback (*Gasterosteus aculeatus*). Potential habitat for central California coast steelhead, a federal threatened species and California species of special concern, is located within San Pablo Creek, downstream of the San Pablo Reservoir and adjacent to the Sobrante WTP. However, a 6-foot passage barrier lacking jump pools on San Pablo Creek (near Grant Road below Interstate 80) effectively prevents steelhead migration during flows released from San Pablo Reservoir that measure from 0 to 150 cubic feet per second. Nonlisted hatchery-released rainbow trout occur within San Pablo Reservoir and may move upstream into San Pablo Creek adjacent to the Orinda WTP, and potentially into Lauterwasser Creek near the Happy Valley Pumping Plant and Pipeline project site. Anadromous *Oncorhynchus mykiss* (steelhead) are not expected to occur within Lafayette Creek, Las Trampas Creek, or other WTTIP project area drainages due to the presence of downstream drop structures and other barriers to migration (Hartwell, 2005a).

Critical Habitat

Critical habitat for central California coast steelhead was designated by the National Marine Fisheries Service (NMFS) in September 2005 and became effective on January 2, 2006 (NMFS, 2005). However, project site drainages are not included in this critical habitat designation.

California Red-Legged Frog

Known occurrence locations of California red-legged frog, a federal threatened species and California species of special concern, within the WTTIP project area include ponds east of Moraga Road within Laguna Creek along the Moraga Road Pipeline alignment (CDFG, 2005) and Dutra Creek, a tributary to San Pablo Creek, approximately one mile northwest of the Orinda WTP (Dunne, 1994). Protocol surveys of Lafayette Creek in the WTTIP project area did not identify California red-legged frogs or suitable habitat for this species (Beeman, 2001). This reach of the creek is shallow, lacks substantial emergent vegetation, and is shaded by dense riparian vegetation. Though California red-legged frogs are known to occur in Dutra Creek, a tributary to San Pablo Creek downstream from the project site, San Pablo Creek adjacent to the Orinda WTP is very swift and has variable water levels due to urban runoff and water release from the WTP. California red-legged frogs are not likely to occur in this drainage or in the two small intermittent tributaries to San Pablo Creek that flow through oak woodland between the Orinda Sports Field (ballfields) and the Orinda WTP. Potential habitat for California red-legged frog is located within Lauterwasser Creek and its tributaries in the Happy Valley Pumping Plant and Pipeline project area, within Las Trampas Creek along the Tice Valley Pipeline alignment, within Laguna Creek and other drainages that cross the Moraga Road Pipeline alignment, within San Pablo Creek adjacent to the Sobrante WTP, in the New Leland Pressure Zone Reservoir and Pipeline area, in the St. Mary's Road/Rohrer Road Pipeline area, and in the San Pablo Pipeline project area.

Critical Habitat

Critical habitat for California red-legged frog was proposed by the USFWS in November 2005 (USFWS, 2005c). However, the project sites are not located within this critical habitat designation.

Foothill Yellow-Legged Frog

Foothill yellow-legged frogs historically occurred in Lafayette Creek and San Pablo Creek. However, this former federal species of concern and California species of special concern is currently presumed extirpated within EBMUD watershed lands (EBMUD, 1994). Las Trampas Creek along the Tice Pipeline alignment, Lauterwasser Creek and its tributaries in the Happy Valley Pumping Plant and Pipeline project area, San Pablo Creek near the Sobrante WTP, and potentially the St. Mary's Road/Rohrer Road Pipeline area support perennial water, rocky substrate, and partial riparian shading, thus providing potential habitat for this species.

Alameda Whipsnake

Alameda whipsnake is a federal and state threatened species that occurs within coastal scrub, woodland, and grassland habitat in the East Bay area. Home ranges are typically centered on areas of scrub habitats with open to partially open canopy, on slopes that face south, southeast, east, and southwest. Rock outcrops are important for protection from predators and as habitat for prey species. Much of the coastal scrub in the WTTIP project area is limited in size and/or surrounded by various types of development. In the southeastern portion of the Lafayette Reservoir Recreation Area, the terrain surrounding the Moraga Road Pipeline alignment supports an area of relatively level, dense coyote brush that lacks rock outcrops. This habitat would be considered marginal for Alameda whipsnake. Other portions of the Lafayette Reservoir Recreation Area provide coastal scrub habitat that is potentially suitable for this species. However, protocol trapping surveys within these areas did not identify this species (Swaim, 2000). In addition, it is the professional opinion of Alameda whipsnake expert Karen Swaim that this species is unlikely to be found within the Lafayette Reservoir watershed due to heavy residential development surrounding the reservoir and high recreational use in this area (Swaim, 2000). The San Pablo Pipeline area and St. Mary's Road/Rohrer Road Pipeline area provide suitable habitat for this species.

Critical Habitat

The Orinda WTP is adjacent to Unit 1 of recently proposed critical habitat for Alameda whipsnake (USFWS, 2005b). However, scrub habitat within the project site is restricted to a very small patch of disturbed coyote brush scrub and ruderal vegetation between the ballfields and adjacent oak woodland outside of the project disturbance area. This area does not support any of the primary habitat elements for this species and would not be considered habitat for Alameda whipsnake. The San Pablo Pipeline area and the St. Mary's Road/Rohrer Road Pipeline areas are located within or adjacent to Units 1 and 2 of proposed critical habitat for Alameda whipsnake (USFWS, 2005b). These project sites provide potential habitat for this species.

Western Pond Turtle

Western pond turtles, a former federal species of concern and California species of special concern, are known to occur in the Lafayette Reservoir (Skahill, 2005). A survey of Lafayette Creek between Bentley School and the Lafayette WTP did not identify this species (Beeman, 2001). Potential habitat is located in Lafayette Creek near the Lafayette WTP, Lafayette Reclaimed Water Pipeline and Orinda-Lafayette Aqueduct alignments, in Lauterwasser Creek in the Happy Valley Pumping Plant and Pipeline project area, in Las Trampas Creek along the Tice Valley Pipeline alignment, in Laguna Creek along the Moraga Road Pipeline alignment, within San Pablo Creek adjacent to the Sobrante WTP, within Lafayette Reservoir at the terminus of Highland Pipeline, and in the New Leland Pressure Zone Reservoir and Pipeline, St. Mary's Road/Rohrer Road Pipeline and San Pablo Pipeline project areas. As discussed above, San Pablo Creek adjacent to the Orinda WTP is very swift and has variable water levels, which likely make this habitat unsuitable for western pond turtles.

Special-Status Birds

Trees and shrubs in woodland, riparian and scrub habitats, grassland, orchard, and developed and ornamental landscaped areas on and surrounding project sites may provide nesting habitat for birds such as Cooper's hawk, sharp-shinned hawk, red-tailed hawk, red-shouldered hawk (*Buteo lineatus*), white-tailed kite, osprey, northern harrier, golden eagle, burrowing owl and other raptors, as well as Bell's sage sparrow, oak titmouse, yellow warbler, Pacific-slope flycatcher, California horned lark, yellow-breasted chat, loggerhead shrike, Allen's hummingbird, Bewick's wren, and California thrasher. In addition, bald eagle, merlin, and other raptors are known to winter within portions of Lafayette Reservoir outside the project site and near the San Pablo Reservoir and may occasionally roost near the WTTIP project area. Rufous hummingbird may also utilize project site habitats in the nonbreeding season. The above-mentioned species are protected as former federal species of concern, California species of special concern, and/or by the California Fish and Game Code. Bald eagles are protected under the Federal Endangered Species Act as a threatened species and by the Bald Eagle Protection Act.

Special-Status Mammals

Woodland and riparian habitats in the WTTIP project area may also support roosting special-status bats such as pallid bat. Pacific western big-eared bat (*Corynorhinus townsendii townsendii*), fringed myotis (*Myotis thysanodes*), long-eared myotis (*Myotis evotis*), long-legged myotis (*Myotis volans*), and Yuma myotis (*Myotis yumanensis*). These species are former federal species of concern and/or California species of special concern. The San Francisco dusky-footed woodrat, also a former federal species of concern and California species of special concern, is locally abundant (Hartwell, 2005b) within oak woodland and riparian habitats. Woodrat nests were observed along the Moraga Road Pipeline alignment and near the Orinda WTP and Happy Valley Pumping Plant and Pipeline project area. In addition, woodland and scrubland habitats suitable for mountain lions, a state fully protected species, and other migratory wildlife occur within the Lafayette Reservoir Recreation Area along the Lafayette Reclaimed Water Pipeline, Highland Reservoir and Pipelines, and Moraga Road Pipeline alignments and within the San Pablo Recreation Area along the San Pablo Pipeline alignment.

Regulatory Framework

Special-Status Species

Special-status species potentially occurring within or adjacent to the WTTIP project area are discussed above. This section describes the federal and state regulations, policies, and codes that afford certain species this status.

Federal Endangered Species Act

Under the Federal Endangered Species Act (FESA), the Secretary of the Interior and the Secretary of Commerce jointly have the authority to list a species as threatened or endangered (16 USC 1533[c]). Pursuant to the requirements of FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed threatened or endangered species may be present in the project area and determine whether the proposed project will have a potentially significant impact on such species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC 1536[3], [4]). Project-related impacts to these species or their habitats would be considered significant in this EIR.

The USFWS also publishes a list of candidate species. Species on this list receive special attention from federal agencies during environmental review, although they are not protected otherwise under FESA. The candidate species are taxa for which the USFWS has sufficient biological information to support a proposal to list as endangered or threatened. Project impacts to such species would be considered significant in this EIR.

California Endangered Species Act

Under the California Endangered Species Act (CESA), the CDFG has the responsibility for maintaining a list of threatened species and endangered species (California Fish and Game Code Section 2070). The CDFG also maintains a list of candidate species, which are species that the CDFG has formally noticed as under review for addition to the threatened or endangered species lists. The CDFG also maintains lists of species of special concern that serve as watch lists. Pursuant to the requirements of CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the project area and determine whether the proposed project will have a potentially significant impact on such species. In addition, the CDFG encourages informal consultation on any proposed project that may affect a candidate species. Project-related impacts to species on the CESA endangered list and threatened list would be considered significant in this EIR. Impacts to species of concern would be considered significant under certain circumstances, discussed below.

CEQA Guidelines Section 15380

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet

certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals. This section was included in the Guidelines primarily to deal with a situation in which a project may have a significant effect on a species that has not yet been listed by either the USFWS or CDFG. Thus, CEQA provides the ability to protect a species from potential project impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

CEQA also calls for the protection of other locally or regionally significant resources, including natural communities. Although natural communities do not at present have legal protection, CEQA calls for an assessment of whether any such resources would be affected, and requires a finding of significance if there would be substantial losses. Natural communities listed in the California Natural Diversity Database as "high priority for inventory" are considered by CDFG to be significant resources and fall under the CEQA Guidelines for addressing impacts. Local planning documents such as General Plans often identify these resources as well.

Other Statutes, Codes, and Policies Affording Limited Species Protection

Migratory Bird Treaty Act / California Fish and Game Code. The federal Migratory Bird Treaty Act (16 USC, Section 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. Birds of prey are protected in California under the Fish and Game Code (Section 3503.5, 1992). Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFG. Any loss of fertile eggs, nesting raptors, or any activities resulting in nest abandonment would constitute a significant impact. Non-raptor native birds receive similar protection under California Fish and Game Code Section 3503. Project impacts to these species would not be considered significant unless the species are known to, or have a high potential to, nest in the WTTIP project area or rely on it for primary foraging.

Plants. The legal framework and authority for the state's program to conserve plants are woven from various legislative sources, including CESA, the California Native Plant Protection Act (Fish and Game Code Sections 1900–1913), the CEQA Guidelines, and the Natural Communities Conservation Planning Act.

The Native Plant Protection Act of 1977 (Fish and Game Code Sections 1900 et seq.) gives the CDFG authority to designate state endangered, threatened, and rare plants and provides specific protection measures for identified populations. Sensitive plant and wildlife species that are not currently listed but would qualify for listing are afforded protection under CEQA. CEQA Guidelines Section 15065 ("Mandatory Findings of Significance") requires that a reduction in

numbers of a rare or endangered species be considered a significant effect. CEQA Guidelines Section 15380 ("Rare or Endangered Species") provides for the assessment of unlisted species as rare or endangered under CEQA if the species can be shown to meet the criteria for listing.

The CNPS maintains a list of special-status plant species based on collected scientific information. Designation of these species by the CNPS has no legal status or protection under federal or state endangered species legislation. CNPS designations are defined as follows: List 1A (plants presumed extinct); List 1B (plants rare, threatened, or endangered in California and elsewhere); List 2 (plants rare, threatened, or endangered in California, but more numerous elsewhere); List 3 (plants about which more information is needed – a review list); and List 4 (plants of limited distribution – a watch list). In general, plants appearing on CNPS List 1A, 1B, or 2 meet the criteria of Section 15380 of the CEQA Guidelines; thus, substantial adverse effects to these species would be considered significant in this EIR.

Wetlands

U.S. Army Corps of Engineers

Wetlands and other waters (e.g., rivers, streams, and natural ponds) are a subset of "waters of the U.S."[4] and receive protection under Section 404 of the Clean Water Act. The Corps has primary federal responsibility for administering regulations that concern waters of the U.S. In this regard, the Corps acts under two statutory authorities: the Rivers and Harbors Act (Sections 9 and 10), which governs specified activities in "navigable waters,"[5] and the Clean Water Act (Section 404), which governs specified activities in waters of the U.S., including wetlands. The U.S. Environmental Protection Agency (U.S. EPA) has the ultimate authority for designating dredge and fill material disposal sites and can veto the Corp's issuance of a permit to fill jurisdictional waters of the U.S. The Corps requires a permit if a project proposes placement of structures within navigable waters and/or alteration of waters of the U.S.[6]

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4 The term "waters of the U.S.," as defined in Code of Federal Regulations (33 CFR 328.3[a]; 40 CFR 230.3[s]), includes: (1) all waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that 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 ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce, including any such waters that 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 U.S. under the definition; (5) tributaries of waters identified in numbers (1) through (4); (6) territorial seas; and (7) wetlands adjacent to waters (other than waters that are themselves wetlands) identified in numbers (1) through (6).

5 Navigable waters are defined as those waters that are subject to the ebb and flow of the tide or that are presently used, have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

6 Based on a Supreme Court ruling concerning the Clean Water Act jurisdiction over isolated waters (January 9, 2001), nonnavigable, isolated, intrastate waters, based solely on the use of such waters by migratory birds, are no longer defined as waters of the U.S. Jurisdiction over nonnavigable, isolated, intrastate waters may be possible if their use, degradation, or destruction could affect other waters of the U.S., or interstate or foreign commerce. Jurisdiction over such other waters is analyzed on a case-by-case basis. Impoundments of waters, tributaries of waters, and wetlands adjacent to waters is also analyzed on a case-by-case basis.

Regional Water Quality Control Board

The RWQCB regulates waters of the state under the Porter-Cologne Water Quality Control Act. Under Section 401 of the Clean Water Act, the RWQCB has review authority of Section 404 permits. The RWQCB has a policy of no-net-loss of wetlands and typically requires mitigation for impacts to wetlands before it will issue a water quality certification. Dredging, filling, or excavation of isolated waters constitutes a discharge of waste to waters of the state, and prospective dischargers are required to submit a report of waste discharge to the RWQCB and comply with other requirements of the Porter-Cologne Water Quality Control Act.

California Department of Fish and Game

Under Sections 1600–1616 of the California Fish and Game Code, the CDFG regulates activities that substantially divert, obstruct the natural flow of, or substantially change rivers, streams, and lakes. The jurisdictional limits of the CDFG are defined in Section 1602 of the California Fish and Game Code as the bed, channel, or bank of any river, stream, or lake. The CDFG regulates activities that would result in the deposit or disposal of debris, waste, or other materials into any river, stream, or lake and requires a Streambed Alteration Agreement for such activities. Impacts to the jurisdictional area of the CDFG would be considered significant in this EIR.

Local Plans and Policies

Appendix D lists policies related to the preservation and protection of biological resources from the General Plans for Contra Costa County, Lafayette, Orinda, Moraga, Walnut Creek, and Oakland. Section 3.2 discusses project consistency with plans and policies.

Oak Woodlands Conservation Act

California Senate Bill 1334, the Oak Woodlands Conservation Act, became law on January 1, 2005 and was added to the CEQA statutes as Section 21083.4. This new law, applicable to counties but not to cities or other public agencies, protects oak woodlands that are not protected under the State Forest Practice Act. This statute requires that a county determine whether or not a project would result in a significant impact on oak woodlands; if the project would result in a significant impact on oak woodlands, the county must implement one or more of the following mitigation measures:

- Conserve oak woodlands through the use of conservation easements
- Plant an appropriate number of trees, including maintenance of plantings and replacement of failed plantings
- Contribute funds to the Oak Woodlands Conservation Fund for the purpose of purchasing oak woodlands conservation easements
- Implement other mitigation measures developed by the county

Contra Costa County has not developed any additional measures, except as defined in the County Code (“Tree Protection and Preservation”, Title 8, Chapters 816-4, 816-6).

Tree Ordinances

Pursuant to California Government Code Section 53091, EBMUD, as a local agency and utility district serving a broad regional area, is not subject to building and land use zoning ordinances (such as tree ordinances) for projects involving facilities for the production, generation, storage or transmission of water. It is, however, the practice of EBMUD to work with host jurisdictions and neighboring communities during project planning and to conform to local environmental protection policies to the extent possible. The tree ordinances of cities and counties within the WTTIP project area are described below.

City of Lafayette

The Lafayette General Plan contains goals and policies for the preservation of the community's biological resources, including its trees. The policies of the City of Lafayette are to:

- Protect existing woodlands and their associated vegetation, protect native trees, preserve riparian habitat, encourage the planting of native species, and avoid cutting of mature trees
- Protect existing trees and require the replacement of trees that have been destroyed or removed
- Require compensation when a protected tree is destroyed or removed in a manner that is not in compliance with the tree ordinance

A protected tree is defined in the City of Lafayette Municipal Code (Title 6, Part 4, Chapters 6-17) as a tree on public or private property meeting one or more of the following standards:

- Located on a developed property, that has a trunk diameter of 12 inches or more at standard height, and that is one of the following species: coast live oak (*Quercus agrifolia*), canyon oak (*Quercus chrysolepis*), blue oak (*Quercus douglasii*), white oak (*Quercus garryana*), black oak (*Quercus kelloggii*), valley oak (*Quercus lobata*), interior live oak (*Quercus wislizenii*), California bay (*Umbellularia californica*), California buckeye (*Aesculus californica*), or madrone (*Arbutus menziesii*)
- Of any size or species and designated to be protected and preserved as part of an approved development application
- Is a native riparian tree with a trunk diameter of 6 inches or more or has a multi-trunk with a diameter of 4 inches or more and that is one of the following species: bigleaf maple (*Acer macrophyllum*), boxelder (*A. negundo*), California buckeye, white alder (*Alnus rhombifolia*), black walnut (*Juglans hindsii*), cottonwood (*Populus fremontii*), red willow (*Salix laevigata*), arroyo willow (*S. lasiolepis*), coast live oak, valley oak, or California bay
- Of any species with a diameter of 6 inches or more and located on an undeveloped property
- Is a replacement tree planted as restitution for a violation of the tree ordinance
- Is a native tree of any size or species within a restricted ridgeline area

Town of Moraga

The Town of Moraga considers native tree species to be particularly valuable. The Town of Moraga Municipal Code (Title 12, Chapter 12.12) protects trees with a single trunk diameter of 5 inches or more measured 3 feet above the natural grade or, if having multiple trunks, a total perimeter of 40 inches or more measured 3 feet above the natural grade. Protected trees include: (1) general trees (a tree other than a native tree, an orchard tree, or tree of historic significance); (2) native trees indigenous to the area, including California bay, oak, redwood (*Sequoia sempervirens*), toyon (*Heteromeles arbutifolia*), and knobcone pine (*Pinus attenuata*); (3) orchard trees (fruit or nut trees planted for commercial agricultural purposes); and (4) trees of historic significance (having historic value related to the heritage of the town and designated by action of the Town Council).

City of Oakland

Title 12, Chapter 12.36 of the City of Oakland Municipal code identifies protected trees, including coast live oaks measuring 4 inches in diameter at standard height; any other tree measuring 9 inches at standard height or greater, except eucalyptus and Monterey pine trees; and an area of more than five Monterey pine trees per acre, measuring at least 9 inches in diameter at breast height. The removal of five or fewer Monterey pines per acre is not regulated by the ordinance.

City of Orinda

The City of Orinda designates and protects heritage trees, and identifies them on a map as well as with an approved permanent marker. The City of Orinda Municipal Code (Title 17, Chapters 17.21 and 17.24) protects the following types of trees:

- A tree located on an assessor's parcel, upon which there is an existing structure, which is of the following species and has a trunk diameter equal to or greater than 12 inches at 4.5 feet above its existing grade: valley oak, coast live oak, black oak, white oak, canyon oak, blue oak, and interior live oak.

- A tree of any size designated to be protected and preserved on an approved development plan or as a condition of approval of a tentative map, a tentative parcel map, or other development approval or land use entitlement or permit issued by the City.

- A native riparian tree with a trunk diameter of 4 inches at 4.5 feet above its existing grade or a multi-trunk native riparian tree with a cross-sectional area of all trunks equal to a cross-sectional area of a single stem of 4 inches at 4.5 feet above its existing grade. "Riparian tree" is a tree within 30 feet of the edge of a creek bank, or a tree beyond 30 feet but in such proximity to a creek bank that it requires or tolerates soil moisture levels in excess of that available in adjacent uplands.

- A tree with a trunk diameter equal to or greater than 6 inches at 4.5 feet above its existing grade on a vacant or undeveloped assessor's parcel.

City of Walnut Creek

The City of Walnut Creek defines protected trees with a circumference of 28 inches or more at standard height as: (1) oak, madrone, buckeye, black walnut, or locust tree; (2) a rare example of a species native to Walnut Creek; or (3) an exceptional specimen in regard to size, age, health, location, or visual prominence.

Contra Costa County

Contra Costa County protects two types of trees, as defined below:

- *Heritage trees* are classified as trees with a circumference of 72 inches or more, equal to a diameter at breast height of 22.9 inches. Heritage trees also include any tree or grove of trees worthy of protection due to historical or ecological interest or significance, any tree specifically designated by the Board of Supervisors, trees that are dependent on each other for health or survival, or any tree considered an outstanding specimen (Contra Costa County Ordinance, Chapter 816-4).

- *Protected trees* include (1) on all properties within unincorporated areas of the county:

    (a) indigenous trees, including oaks, pines, buckeye, black walnut, willows, redwood, maple, elderberry, toyon, alder, cottonwood, and madrone that have a circumference of 20 inches or more—equal to a diameter at breast height of 6.5 inches and are located adjacent to or are a part of a riparian, foothill woodland, or oak savanna area or are part of a stand of four or more trees; (b) any tree designated for preservation on an approved tract map, development or site plan, or required to be retained as a condition of approval; (c) any tree required to be planted as a replacement for an unlawfully removed tree

    (2) on any developed property within any commercial, professional office, or industrial district, on any undeveloped property within any district, in any designated open space or recreation area, or any area designated as visually significant:

    (a) any tree with a diameter at breast height of 6.5 inches or greater; (b) any multi-stemmed tree having an aggregate circumference of 40 inches or more; or (c) any significant grouping of trees

3.6.3 Impacts and Mitigation Measures

Significance Criteria

For the purposes of this EIR and consistent with Appendix G of the CEQA Guidelines, a WTTIP project is considered to have a significant impact if it would result in:

- Substantial adverse effects to any species identified as a threatened, endangered, candidate, sensitive, or special-status species in local or regional plans, policies, regulations or by lists of species of concern from the CDFG, USFWS, or as defined by Section 15380 of the CEQA Guidelines;

- Substantial adverse effects to habitat (including habitats for rare and endangered species, as defined by Fish and Game Code 903) or other sensitive natural community identified in local or regional plans, policies, regulations, or by lists compiled by the CDFG or USFWS;
- Substantial adverse effects to federally protected wetlands (including but not limited to marshes and riparian areas), as defined by Section 404 of the Clean Water Act, or riparian and marsh areas under the jurisdiction of the CDFG, as defined by Fish and Game Codes 1601–1603;
- Substantial interference with movement of any native resident or migratory fish or wildlife species or with established migration or dispersal corridors;
- Removal or damage to trees considered protected; or
- Conflicts with any applicable habitat conservation plan.

As discussed above, it is the practice of the District to work with host jurisdictions and neighboring communities during project planning and to conform to local environmental protection policies to the extent possible. For the purpose of this EIR, tree ordinance policies that define protected trees, including heritage trees, are used herein as guidelines for determining significance criteria.

There are no approved habitat conservation plans in the project vicinity. Therefore, no further discussion of this topic is provided.

The proposed project would not result in significant impacts to common plant and wildlife species, in part because these species are, by definition, commonly occurring. Notwithstanding this significance determination, potential losses to common wildlife and plants could result from implementation of the WTTIP. Direct impacts to common plant species and communities, such as nonnative grassland and coyote brush scrub, include temporary habitat loss and fragmentation and mortality of plant species. Direct impacts to common wildlife species include both mortality of resident species, temporary habitat loss and degradation, and possibly reduced value for local wildlife movement during and immediately after construction activities. Though project sites would continue to facilitate wildlife movement through the WTTIP project area, construction of facilities and pipelines would result in some temporary displacement of wildlife. In addition, common wildlife populations could be temporarily reduced slightly due to habitat modification and mortality of individuals. Habitat for common aquatic species could be temporarily affected through construction activities within Lafayette Creek and adjacent to San Pablo Creek, Las Trampas Creek, and Lauterwasser Creek. However, implementation of best management practices, including sedimentation and erosion control, water quality protection measures, and revegetation of disturbed area, would avoid or minimize significant impacts to aquatic habitat and species in downstream habitats.

Impacts and Mitigation Measures

Project-Level Elements

Table 3.6-3 indicates biological resource impacts by project facility.

Map C-HIGHRES-1 shows the Highland Reservoir and Pipelines project and the Lafayette Reclaimed Water Pipeline project. With the exception of the Lafayette Creek crossing, the Lafayette Reclaimed Water Pipeline would be constructed concurrently with and would be co-located with other pipeline projects (the Bryant and Leland Pipelines or the Orinda-Lafayette Aqueduct, as well as with the Highland Reservoir inlet/outlet and overflow pipelines). Therefore, the Lafayette Reclaimed Water Pipeline impacts included throughout this section are for the Lafayette Creek crossing and discharge of reclaimed water to Lafayette Reservoir only. Impacts resulting from installation of the remaining portions of the Lafayette Reclaimed Water Pipeline are included within the Lafayette WTP Alternative 1, Orinda-Lafayette Aqueduct, and Highland pipeline discussions.

Impact 3.6-1: Loss of or damage to protected trees.

Table 3.6-4 indicates the estimated number of trees that would be removed or potentially damaged at each WTTIP project site as well as the estimated number of protected trees. Refer to the Tree Ordinances section on page 3.6-20 for a definition of a protected tree for each city or county. Table 3.6-4 also references maps (see the C Maps (aerial photographs) following Chapter 2) that identify the locations of tree removal or potential damage.

Proposed facilities at the Walnut Creek WTP (Alternative 1 or 2) and at the Lafayette WTP (Alternative 2) would not affect any trees, since there are no trees present in the areas proposed for development at these sites. Proposed facilities at the remaining WTTIP project sites would result in impacts on protected and nonprotected trees, as identified in Table 3.6-4 and generally described below.[7]

Construction activities at most WTTIP project sites would result in removal of or damage to the root zone of protected trees that are adjacent to or within the construction zone. Numerous multi-stemmed, large-diameter native and non-native trees overhang proposed facility sites and pipeline alignments and likely have supporting root structures beneath the roads or proposed facilities. Many of these trees meet the criteria for protected trees in the pertinent tree ordinances described above. Trees that occur within, or immediately adjacent to, construction zones could be damaged by excavation, grading, and soil compaction; extensive damage could result in mortality. The closer the construction activity is to the trunk of a tree, the greater the damage. Each root that is damaged reduces the tree's capacity to supply water and nutrients to the leaves.

[7] The nearest location of sudden oak death infestation is in Orinda approximately 1.5 miles north of Orinda Village (UCB, 2005). No sudden oak death infestation is known to occur at any of the WTTIP project sites.

TABLE 3.6-3
SUMMARY OF POTENTIAL PROJECT-LEVEL BIOLOGICAL RESOURCES IMPACTS

Facility	Impact 3.6-1 Loss of or Damage to Protected Trees	Impact 3.6-2 Degradation to Streams, Wetlands, and Riparian Habitats	Impact 3.6-3 Loss of or Damage to Special-Status Plants	Impact 3.6-4 Disturbance to Special-Status Birds	Impact 3.6-5 Disturbance to Special-Status Bats	Impact 3.6-6 Disturbance to San Francisco Dusky-Footed Woodrat	Impact 3.6-7 Degradation of Special-Status Aquatic Species Habitat	Impact 3.6-8 Disruption to Wildlife Corridors
Lafayette WTP								
Alternative 1	SM	SM	SM	SM	SM	SM	SM	LTS
Alternative 2	–	–	–	SM	SM	–	–	–
Orinda WTP								
Alternative 1	LTS	–	–	SM	–	–	–	–
Alternative 2	SM	SM	–	SM	SM	SM	SM	LTS
Walnut Creek WTP								
Alternative 1 or 2	–	SM	–	SM	SM	–	–	–
Sobrante WTP								
Alternative 1 or 2	SM	SM	–	SM	SM	LTS	SM	LTS
Upper San Leandro WTP								
Alternative 1 or 2	SM	–	–	SM	–	–	–	–
Orinda-Lafayette Aqueduct								
Alternative 2 only	SM	SM	–	SM	SM	SM	SM	LTS
Ardith Reservoir and Donald Pumping Plant	LTS	–	–	SM	–	–	–	–
Fay Hill Pumping Plant and Pipeline Improvements	LTS	–	–	SM	–	–	–	–
Fay Hill Reservoir	SM	–	–	SM	SM	–	–	LTS
Glen Pipeline Improvements	SM	SM	SM	SM	SM	SM	SM	LTS
Happy Valley Pumping Plant and Pipeline	SM	SM	SM	SM	SM	SM	SM	LTS
Highland Reservoir and Pipelines	SU	SM	SM	SM	SM	SM	SM	LTS
Lafayette Reclaimed Water Pipeline	SM	SM	SM	SM	SM	SM	SM	LTS
Leland Isolation Pipeline and Bypass Valves	SM	SM	–	SM	SM	–	–	–
Moraga Reservoir	SM	–	–	SM	–	–	–	–
Moraga Road Pipeline	SM	SM	SM	SM	SM	SM	SM	LTS
Sunnyside Pumping Plant	SM	–	–	SM	SM	–	–	LTS
Tice Pumping Plant and Pipeline	SM	SM	SM	SM	SM	LTS	SM	LTS
Withers Pumping Plant	SM	LTS	–	SM	–	–	–	–

SM = Significant Impact, Can Be Mitigated
SU = Significant Impact, Unavoidable
LTS = Less-Than-Significant Impact
– = No Impact

Note: With the exception of the Lafayette Creek crossing shown in Map C-HIGHRES-1, the Lafayette Reclaimed Water Pipeline would be constructed concurrently with and would be co-located with the Bryant and Leland Pipelines or the Orinda-Lafayette Aqueduct (depending on whether Alternative 1 or Alternative 2 is selected), as well as with the Highland Reservoir pipeline. Therefore, the Lafayette Reclaimed Water Pipeline impacts included in this table and throughout this section are for the Lafayette Creek crossing and discharge of reclaimed water to Lafayette Reservoir only. Impacts resulting from installation of the remaining portions of the Lafayette Reclaimed Water Pipeline are included within the Lafayette WTP Alternative 1, Orinda-Lafayette Aqueduct, and Highland Pipeline discussions.

TABLE 3.6-4
TREE IMPACTS AT THE WTTIP PROJECT SITES[a]

Project Sites	City or County	Map	Approximate Number of Trees to be Removed	Approximate Number of Trees Potentially Damaged	Approximate Number of Protected Trees to be Removed	Approximate Number of Protected Trees Potentially Damaged
Lafayette WTP	Lafayette					
Alternative 1		C-LWTP-1	40–45 eucalyptus, ornamental, oak, pine, riparian	7–10 oak, riparian	15–25 oak with 12-inch dbh or greater and riparian with 4-inch dbh or greater	7–12 riparian with 4-inch dbh or greater
Alternative 2		C-LWTP-2	None	None	None	None
Orinda WTP	Orinda					
Alternative 1		C-OWTP-4	None	3–5 ornamental, oak (backwash water recycle system)	None	None
Alternative 2		C-OWTP-4	45–55 oak, fir (substation, pumping plant, clearwell)	3–5 ornamental, oak (backwash water recycle system)	5–6 oak with 12-inch dbh or greater (substation, pumping plant, clearwell)	None
Walnut Creek WTP Alternative 1 or 2	Walnut Creek	None	None (no trees present at proposed areas)	None (no trees present at proposed areas)	None (no trees present at proposed areas)	None (no trees present at proposed areas)
Sobrante WTP Alternative 1 or 2	Contra Costa	C-SOBWTP-1	10–15 oak, pine, and ornamental shrubs, (equalization basins and pipeline)	35–40 pine, eucalyptus, oak (equalization basins, pipeline)	9 oak with 6.5-inch dbh or greater (equalization basins and pipeline)	2 oak with 6.5-inch dbh or greater (equalization basins)
Upper San Leandro WTP Alternative 1 or 2	Oakland	C-USLWTP-1	15–25 ornamental redwood, 2 oak (tank and pumping plant)	None	7–12 redwood with 12 inch dbh or greater, 2 oak with 6-inch dbh or greater (tank and pumping plant)	None
Orinda-Lafayette Aqueduct Alternative 2	Lafayette Orinda	D-OLA-1	2 (riparian)	75–95 pine, oak, riparian, cottonwood	2 (riparian)	30–45 oak and pine with 12-inch dbh or greater and riparian with 4-inch dbh or greater

TABLE 3.6-4 (Continued)[a]
TREE IMPACTS AT THE WTTIP PROJECT SITES

Project Sites	City or County	Map	Approximate Number of Trees to be Removed	Approximate Number of Trees Potentially Damaged	Approximate Number of Protected Trees to be Removed	Approximate Number of Protected Trees Potentially Damaged
Ardith Reservoir and Donald Pumping Plant	Orinda	C-ARRES-1	30–35 eucalyptus, pine, and oak (facilities)	5–10 eucalyptus and non-native pine (facilities)	None	None
Fay Hill Pumping Plant and Pipeline Improvements	Moraga	C-FHPP-1	1–2 Monterey pine and redwood (pumping plant)	10 Monterey pine (pipeline)	None	None
Fay Hill Reservoir	Moraga	C-FHPP-1	1–2 Monterey pine	35–45 Monterey pine	1–2 general Monterey pine with 5-inch dbh or greater	35–45 general Monterey pine with 5-inch dbh or greater
Glen Pipeline Improvements	Lafayette	C-GLENPL-3 C-GLENPL-4 C-GLENPL-5	None	25-30 oak, ornamental	None	10-15 oak with 12-inch dbh or greater and riparian with 4-inch dbh or greater
Happy Valley Pumping Plant and Pipeline	Orinda	C-HVPP-2 C-HVPP-3 C-HVPP-4	2 oak (pumping plant)	10 oak/riparian (pumping plant) 50–60 oak, 60–70 riparian trees (pipeline)	2 oak with 12-inch dbh or greater (pumping plant) None (pipeline)	10 oak/riparian with 4-inch dbh or greater (pumping plant) 25–30 oak with 12-inch dbh or greater and 60–70 riparian trees with 4-inch dbh or greater (pipeline)
Highland Reservoir and Pipelines	Lafayette	C-LWTP-4	80–95 oak and pine (pipelines, access roads, and reservoir)	50–65 oak and pine (pipelines and reservoir)	65–75 oak and pine with 12-inch dbh or greater (pipelines and access roads) and 30–35 oak with 18-inch dbh or greater (reservoir)	35–50 oak and pine with 12-inch dbh or greater (pipelines and access roads) and 5–10 oak with 12-inch dbh or greater (reservoir)
Lafayette Reclaimed Water Pipeline[b]	Lafayette	C-LWTP-1 C-LWTP-2	15 oak and riparian	None	8 oak, alder, riparian with 4-inch dbh or greater	None

TABLE 3.6-4 (Continued)[a]
TREE IMPACTS AT THE WTTIP PROJECT SITES

Project Sites	City or County	Map	Approximate Number of Trees to be Removed	Approximate Number of Trees Potentially Damaged	Approximate Number of Protected Trees to be Removed	Approximate Number of Protected Trees Potentially Damaged
Leland Isolation Pipeline and Bypass Valves	Walnut Creek	C-LELPL-1	None at Lacassie Avenue (8 pepper and 3 pittosporum street trees present; work would occur in road) 2–3 oak (Danville Pumping Plant)	None at Lacassie Avenue (8 pepper and 3 pittosporum street trees present; work would occur in road) None (Danville Pumping Plant)	None at Lacassie Avenue (8 pepper and 3 pittosporum street trees present; work would occur in road) 2–3 oak (Danville Pumping Plant)	None at Lacassie Avenue (8 pepper and 3 pittosporum street trees present; work would occur in road) None (Danville Pumping Plant)
Moraga Reservoir	Moraga	C-MORRES-1	4–6 oak, pine	7–10 oak, liquidambar	2–3 oak with 5-inch dbh or greater	4–5 oak with 5-inch dbh or greater
Moraga Road Pipeline	Moraga Lafayette	C-MORPL-1	55–70 oak, pine, riparian (at Lafayette Reservoir Recreation Area)	50–60 oak (at Lafayette Reservoir Recreation Area)	25–40 oak, pine with 12-inch dbh or greater (at Lafayette Reservoir Recreation Area)	25–30 oak with 12-inch dbh or greater (at Lafayette Reservoir Recreation Area)
		C- MORPL-2	35–40 oak (Lafayette Reservoir Recreation Area)	20–25 oak (Lafayette Reservoir Recreation Area)	15–20 oak with 12-inch dbh or greater (Lafayette Reservoir Recreation Area)	10–15 oak with 12-inch dbh or greater (Lafayette Reservoir Recreation Area)
		C-MORPL-3	60–80 oak (Lafayette Reservoir Recreation Area; north of Nemea Court)	20–40 oak (Lafayette Reservoir Recreation Area; north of Nemea Court)	10–15 oak with 12-inch dbh or greater (Lafayette Reservoir Recreation Area; north of Nemea Court)	5–10 oak with 12-inch dbh or greater (Lafayette Reservoir Recreation Area; north of Nemea Court)
		C-MORPL-3 C-MORPL-4	None (south of Nemea Court to Via Granada Road)	90–150 (south of Nemea Court to Via Granada Road)	None (south of Nemea Court to Via Granada Road)	50–60 oak with 12-inch dbh or greater and 40–90 native trees with 5-inch dbh or greater (south of Nemea Court to Via Granada Road)
		C-MORPL-4 C-MORPL-5 C-MORPL-6 C-MORPL-7	None (south of Sky Ranch Road)	None (south of Sky Ranch Road)	None (south of Sky Ranch Road)	None (south of Sky Ranch Road)

TABLE 3.6-4 (Continued)[a]
TREE IMPACTS AT THE WTTIP PROJECT SITES

Project Sites	City or County	Map	Approximate Number of Trees to be Removed	Approximate Number of Trees Potentially Damaged	Approximate Number of Protected Trees to be Removed	Approximate Number of Protected Trees Potentially Damaged
Sunnyside Pumping Plant	Lafayette/ Orinda	C-SUNPP-1	13 redwood and pine	17 redwood and pine	3 pine with 6-inch dbh or greater	2 redwood with 6-inch dbh or greater
Tice Pumping Plant and Pipeline	Contra Costa County	C-TICEPP-2	7–10 oak (pumping plant)	42 oak, 5–10 riparian (pipeline)	7–10 oak with 6.5-inch dbh or greater (pumping plant)	42 oak, 5–10 riparian with 6.5-inch dbh or greater (pipeline)
Withers Pumping Plant	Contra Costa County	C-WITHPP-1	35–40 pine, eucalyptus, oak	None	5–10 oak with 6.5-inch dbh or greater	None

Notes:
dbh = diameter at breast (standard) height
All pines indicated are non-native.
[a] Excludes program-level facilities.
[b] With the exception of the Lafayette Creek crossing shown in Map D-LWTP-1 or Map D-LWTP-2, the Lafayette Reclaimed Water Pipeline would be constructed concurrently with and would be co-located with the Bryant and Leland Pipelines or the Orinda-Lafayette Aqueduct, as well as the Highland Reservoir pipelines. Therefore, the Lafayette Reclaimed Water Pipeline tree impacts included in this table and throughout this section are for the Lafayette Creek crossing only. Impacts resulting from installation of the remaining portions of the Lafayette Reclaimed Water Pipeline are included within the Lafayette WTP Alternative 1, Orinda-Lafayette Aqueduct, and Highland Pipeline discussions.

Most proposed pipeline alignments are in roads or disturbed developed areas. Tree removal is not anticipated along pipeline alignments that follow roads. However, trees with canopies overhanging roads likely have roots extending beneath the roadbed that might be damaged by trenching activities.

The removal of or potential damage to protected trees is considered a significant impact. Implementation of Measures 3.6-1a through 3.6-1e would reduce these impacts to a less-than-significant level at all WTTIP projects sites, with the exception of the proposed Highland Reservoir and Pipelines (see the discussion below and Table 3.6-3 for the level of significance at each project site). Measures applicable to proposed projects are listed in Tables 3.6-5 and 3.6-6.

Lafayette WTP, Orinda WTP, Sobrante WTP, and Upper San Leandro WTP

Under Alternative 1 for facilities at the Lafayette WTP, and under either Alternative 1 or 2 for facilities at the Orinda, Sobrante, and Upper San Leandro WTPs, construction activities would result in removal of or damage to trees that meet the criteria for protection in the applicable tree ordinances. Most trees that would be removed or potentially damaged due to proposed construction at the Orinda, Sobrante, and Upper San Leandro WTPs were planted as ornamental landscape. Some trees that would be removed or potentially damaged at the Sobrante and Lafayette WTPs are native riparian trees or naturally occurring native trees, such as trees in riparian habitat along Lafayette Creek and naturally occurring oak trees along Mt. Diablo Boulevard.

Proposed Pumping Plants and Reservoirs

The following proposed sites have been previously developed: the Ardith Reservoir/Donald Pumping Plant, Fay Hill Pumping Plant and Pipeline Improvements, Fay Hill Reservoir, Moraga Reservoir, and Withers Pumping Plant. Proposed development at these sites would remove and/or potentially damage planted native and non-native trees, of which some are protected (see Table 3.6-4). The proposed sites for the Happy Valley Pumping Plant, Sunnyside Pumping Plant, and Tice Pumping Plant are undeveloped natural areas. The Happy Valley Pumping Plant site supports non-native grassland, as well as a large area of mixed oak woodland in which most trees would be protected. The Sunnyside Pumping Plant supports primarily non-native grassland but a number of planted pine, redwood, pepper tree, and oak also occur there. While most of these trees are not large enough to qualify as protected, a few pine and redwood at this site would be considered protected. The Tice Pumping Plant site primarily supports non-native grassland, but has a few protected trees.

Vegetation along the proposed pipeline alignments and permanent and temporary access roads associated with the Highland Reservoir project consists of planted pines that are not locally native, as well as naturally occurring mixed oak woodland. Many of these trees would be considered protected under the City of Lafayette tree ordinance. Vegetation at the proposed site of the Highland Reservoir consists of non-native grassland, coyote brush, and numerous large-diameter (mostly 30 inches at standard height and greater), multi-stemmed oak trees within mixed oak woodland. Approximately 30 to 35 oak trees are proposed for removal at the reservoir site.

TABLE 3.6-5
SUMMARY OF APPLICABLE MITIGATION MEASURES – IMPACTS 3.6-1, 3.6-2

Facility	Measure 3.6-1a Tree Protection Measures During Construction	Measure 3.6-1b Protected Tree Pruning and Replacement	Measure 3.6-1c Protected Tree Monitoring	Measure 3.6-1d Replacement Tree Monitoring Program	Measure 3.6-1e Protected Tree Avoidance / Minimization Measures	Measure 3.6-2a Wetland and Stream Avoidance / Minimization Measures	Measure 3.6-2b Construction Exclusion Zone (Wetland and Riparian Habitat)	Measure 3.6-2c Complete Wetland Delineation, Acquire and Comply with Applicable Permits / Agreements	Measure 3.6-2d Install Energy Dissipaters	Measure 3.6-2e Special Construction Techniques near Riparian Habitat	Measure 3.6-2f Water Quality Protection Measures
Lafayette WTP											
Alternative 1	✓	✓	✓	✓	–	✓	✓	✓	✓	✓	✓
Alternative 2											
Orinda WTP											
Alternative 1	✓	✓	✓	✓	–	–	–	–	–	–	–
Alternative 2	✓	✓	✓	✓	–	–	✓	✓	✓	✓	✓
Walnut Creek WTP											
Alternatives 1 and 2	–	–	–	–	–	–	✓	✓	–	–	✓
Sobrante WTP											
Alternatives 1and 2	✓	✓	✓	✓	–	–	✓	✓	–	✓	✓
Upper San Leandro WTP											
Alternatives 1 and 2	✓	✓	✓	✓	–	–	–	–	–	–	–
Orinda-Lafayette Aqueduct											
Alternative 2	✓	✓	✓	✓	–	✓	✓	✓	–	✓	✓
Ardith Reservoir and Donald Pumping Plant	✓	✓	✓	✓	–	–	–	–	–	–	–
Fay Hill Pumping Plant and Pipeline Improvements	✓	✓	✓	✓	–	–	–	–	–	–	–
Fay Hill Reservoir	✓	✓	✓	✓	–	–	–	–	–	–	–
Glen Pipeline Improvements	✓	✓	✓	✓	–	✓	✓	✓	–	✓	✓
Happy Valley Pumping Plant and Pipeline	✓	✓	✓	✓	–	✓	✓	✓	–	✓	✓
Highland Reservoir and Pipelines	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Lafayette Reclaimed Water Pipeline	✓	✓	✓	✓	–	✓	✓	✓	–	✓	✓
Leland Isolation Pipeline and Bypass Valves	✓	✓	✓	✓	–	–	✓	✓	✓	✓	✓
Moraga Reservoir	✓	✓	✓	✓	–	–	–	–	–	–	–
Moraga Road Pipeline	✓	✓	✓	✓	✓	✓	✓	✓	–	✓	✓
Sunnyside Pumping Plant	✓	✓	✓	✓	–	–	–	–	–	–	–
Tice Pumping Plant and Pipeline	✓	✓	✓	✓	–	✓	✓	✓	–	✓	✓
Withers Pumping Plant	✓	✓	✓	✓	–	–	–	–	–	–	–

✓ = Applicable Impact
– = No Impact

TABLE 3.6-6
SUMMARY OF APPLICABLE MITIGATION MEASURES – IMPACTS 3.6-3. 3.6-4, 3.6-5, 3.6-6, 3.6-7

Facility	Measure 3.6-3a Special-Status Plant Surveys	Measure 3.6-3b Special-Status Plant Avoidance, Restoration, and Monitoring Measures	Measure 3.6-3c Revegetation of Disturbed Areas	Measure 3.6-4a Nesting Bird Avoidance Measures	Measure 3.6-4b Burrowing Owl Avoidance Measures	Measure 3.6-4c Bald Eagle Avoidance Measures	Measure 3.6-5 Special-Status Bats Avoidance Measures	Measure 3.6-6 San Francisco Dusky-Footed Woodrat Avoidance Measures	Measure 3.6-7a Special-Status Aquatic Species Avoidance Measures	Measure 3.6-7b California Red-Legged Frog Avoidance Measures	Measure 3.6-7c Western Pond Turtle / Foothill Yellow-Legged Frog Avoidance Measures
Lafayette WTP											
Alternative 1	✓	✓	✓	✓	–	–	✓	✓	✓	✓	✓
Alternative 2	–	–	✓	✓	–	–	✓	–	✓	–	–
Orinda WTP											
Alternative 1	–	–	✓	✓	–	–	–	–	–	–	–
Alternative 2	–	–	✓	✓	–	–	✓	✓	✓	–	–
Walnut Creek WTP											
Alternatives 1 and 2	–	–	✓	✓	–	–	✓	–	–	–	–
Sobrante WTP											
Alternatives 1and 2	–	–	✓	✓	–	–	✓	–	✓	✓	✓
Upper San Leandro WTP											
Alternatives 1 and 2	–	–	✓	✓	–	–	–	–	–	–	–
Orinda-Lafayette Aqueduct											
Alternative 2	–	–	✓	✓	–	–	✓	✓	✓	✓	✓
Ardith Reservoir and Donald Pumping Plant	–	–	✓	✓	–	–	–	–	–	–	–
Fay Hill Pumping Plant and Pipeline Improvements	–	–	✓	✓	–	–	–	–	–	–	–
Fay Hill Reservoir	–	–	✓	✓	✓	–	✓	–	–	–	–
Glen Pipeline Improvements	✓	✓	✓	✓	–	–	✓	✓	✓	–	–
Happy Valley Pumping Plant and Pipeline	✓	✓	✓	✓	–	–	✓	✓	✓	✓	✓
Highland Reservoir and Pipelines	✓	✓	✓	✓	–	✓	✓	✓	✓	✓	✓
Lafayette Reclaimed Water Pipeline	✓	✓	✓	✓	–	✓	✓	✓	✓	✓	✓
Leland Isolation Pipeline and Bypass Valves	–	–	✓	✓	–	–	–	–	–	–	–
Moraga Reservoir	–	–	✓	✓	–	–	–	–	–	–	–
Moraga Road Pipeline	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Sunnyside Pumping Plant	–	–	✓	✓	–	–	✓	–	–	–	–
Tice Pumping Plant and Pipeline	✓	✓	✓	✓	–	–	✓	–	✓	✓	✓
Withers Pumping Plant	–	–	✓	✓	–	–	–	–	–	–	–

✓ = Applicable Impact
– = No Impact

All of these trees would be protected by the City of Lafayette's tree ordinance. On the basis of the number of multi-stemmed, large-diameter native oak trees, this analysis concludes that no measures can fully mitigate this loss. Impacts to trees at the proposed reservoir site would be considered significant and unavoidable.

Pipelines

Construction along the proposed pipeline alignments for the Fay Hill Pumping Plant and Pipeline Improvements, Happy Valley Pumping Plant, Tice Pumping Plant, Lafayette Reclaimed Water Pipeline, Moraga Road Pipeline, and Glen Pipeline projects would potentially damage trees that meet the criteria for protection in the applicable tree ordinance. Construction of the new pipeline components of the Orinda Lafayette Aqueduct as well as the Leland Isolation Pipeline and Bypass Valves project near the Danville Pumping Plant may result in removal of protected trees.

Mitigation Measures

Measure 3.6-1a: For each project site (except for the Walnut Creek WTP and the Lafayette WTP under Alternative 2), EBMUD will prepare a map indicating the trees to be removed and retained (preserved). Prior to the start of any clearing, stockpiling, excavation, grading, compaction, paving, change in ground elevation, or construction, retained trees that are adjacent to or within project construction areas will be identified and clearly delineated by protective fencing (e.g., short post and plank walls), which will be installed at the dripline of each tree to hold back fill. The delineation markers will remain in place for the duration of all construction work. Where proposed development or other site work must encroach upon the dripline of a preserved tree, special construction techniques will be required to allow the roots of remaining trees within the project site to breathe and obtain water (examples include, but are not limited to, using hand equipment for trenching and/or allowing only one pass through a tree's dripline). Tree wells or other techniques may be used where advisable by a certified arborist. Excavation adjacent to any trees will be performed in a manner that causes only minimal root damage. The following will not occur within the dripline of any retained tree: parking; storage of vehicles, equipment, machinery, stockpiles of excavated soils, or construction materials; or dumping of oils or chemicals.

Measure 3.6-1b: For each project site (except for the Walnut Creek WTP and the Lafayette WTP under Alternative 2), all pruning of preserved trees will be performed by a certified arborist. No more than 25 percent of a tree's canopy will be removed during the pruning of retained trees. If any protected tree native to the local area, such as valley oak and coast live oak, is removed, the District will replace the tree on a 3:1 basis. All removed non-native protected trees will be replaced at a 1:1 ratio with a non-invasive tree species. Non-native trees removed from a natural environment will be replaced with a native species that occurs locally in the area.

Measure 3.6-1c: For each project site (except for the Walnut Creek WTP and the Lafayette WTP under Alternative 2), the District will guarantee the health of all trees to be preserved within and adjacent to the construction corridor of project-related pipeline and facility sites for three years. The guarantee period for a tree will be five years if the District constructs or installs improvements or performs approved mechanical excavation within the dripline of any tree. The District will replace any tree that is to be retained but that dies as a result of project construction activities during the guarantee period with a tree of the same species.

The replaced trees would be subject to the same monitoring protocols as those protected trees removed due to construction.

Measure 3.6-1d: For each project site (except for the Walnut Creek WTP and the Lafayette WTP under Alternative 2), the District will develop and implement a five-year tree monitoring program. Appropriate performance standards may include, but are not limited to: a 75 percent survival rate of tree plantings and the ability to be self-sustaining at the end of five years.

Measure 3.6-1e: The alignments for the Highland Reservoir pipelines and Moraga Road Pipeline will be refined in the field, to the extent feasible and within hydraulic constraints, to avoid removal of protected trees. Refined alignments will be flagged in the field, then surveyed and mapped in accordance with Measure 3.6-1a. District Biologists will review pipeline alignments, supervise delineation of construction work areas, and monitor initial vegetation removal for construction activities within the Lafayette Reservoir Recreation Area. Where removal of protected trees cannot be avoided, trees will be replaced in accordance with Measure 3.6-1b.

Impact 3.6-2: Degradation to streams, wetlands, and riparian habitats potentially subject to state and federal protection during construction.

No construction activities for project-level improvements would occur at or near (within 100 feet) streams, wetlands, or riparian habitat at the following WTTIP project sites: Upper San Leandro WTP (Alternative 1 or 2), Ardith Reservoir/Donald Pumping Plant, Fay Hill Pumping Plant and Pipeline Improvements, Fay Hill Reservoir, Moraga Reservoir, and Sunnyside Pumping Plant. Therefore, there would be no impacts on features potentially subject to Section 401 and 404 of the Clean Water Act and Sections 1600–1616 of the California Fish and Game Code from construction of these facilities.

Construction activities for the Withers Pumping Plant would involve paving a portion of an underground seasonal drainage that is contained within a corrugated-metal pipe (see Map D-WITHPP-1 following Chapter 2). The drainage flows east toward a storm drain at Reliez Valley Road and on to Grayson Creek. Impacts to this drainage would be minimal or nonexistent, as there is no riparian habitat associated with this drainage. No mitigation is required, unless the flow is redirected. If the flow is redirected, then implementation of Measures 3.6-2a through 3.6-2f, below, would reduce impacts to a less-than-significant level.

At the remaining WTTIP project sites, if grading and excavation occur during the rainy season, some creeks could be temporarily, indirectly affected by soil runoff. These activities, as well as dewatering into creeks during construction (see Section 3.5, Hydrology and Water Quality, for a full discussion of the potential for dewatering at each project site), could increase sediments and construction fluids in creeks, causing turbidity and reduced water quality. These conditions could cause clogged air passages and suffocation for aquatic species as well as the smothering of eggs. Open-trench construction across drainages (streams) and removal or disturbance of riparian habitat would result in significant effects. Trenching activities would expose these water features

to temporary disturbance, such as excavation, soil erosion, and undercutting, which could result in habitat degradation. The loss of riparian vegetation would reduce nutrients, organic matter, and shade and could result in habitat fragmentation. Construction and operation of the Lafayette Reclaimed Water Pipeline could have water quality effects on Lafayette Reservoir through discharges of chloraminated water (see below and Section 3.5, Hydrology and Water Quality, for more information). Affected streams, wetlands, and riparian habitat at the remaining WTTIP project sites are described below.

Impacts to streams, wetlands, and riparian habitat would be significant. Implementation of Measures 3.6-2a through 3.6-2f (as well as erosion control measures described in Section 3.5, Hydrology and Water Quality) would reduce these significant impacts to a less-than-significant level.

Lafayette WTP

Alternative 1

Construction activities at the Lafayette WTP under Alternative 1 would require two crossings of Lafayette Creek, one crossing of a tributary to Lafayette Creek, and the removal of riparian habitat along Mt. Diablo Boulevard (see Map C-LWTP-1). Riparian habitat removal and creek bed and bank disturbance also could occur during construction of the clearwell No. 2 overflow discharge, relocation of the existing trail, and construction of several structures. Open-trench construction activities at the Lafayette WTP for the Leland and Bryant Pipelines and the clearwell overflow discharge pipe would adversely affect less than 0.10 acre of Lafayette Creek and an intermittent drainage that crosses Mt. Diablo Boulevard (based on a construction width of 40 feet). Pipeline construction along Mt. Diablo Boulevard would occur within the road and/or grassland habitat to avoid riparian habitat removal. Construction activities for these pipelines as well as for the chlorine contact basin pipeline and backwash water recycle system facilities would disturb the root zone or require removal of approximately 0.50 acre of riparian vegetation along Lafayette Creek and the intermittent drainage. The loss of riparian vegetation would reduce nutrients, organic matter, and shade and could result in habitat fragmentation. Operation of the overflow discharge for the clearwells would result in erosion and increased sedimentation in Lafayette Creek. Direct impacts to the eastern portion of Lafayette Creek, where the creek crosses Mt. Diablo Boulevard, would be avoided, since pipeline construction activities would be confined to the concrete box above the drainage. However, approximately 0.05 acre of riparian habitat could be damaged during construction at this location.

Alternative 2

No construction activities for project-level improvements would occur at or near (within 100 feet) streams, wetlands, or riparian habitat at the Lafayette WTP under Alternative 2. Therefore, there would be no impacts on features potentially subject to Section 401 and 404 of the Clean Water Act and Sections 1600–1616 of the California Fish and Game Code from construction of this facility.

Orinda WTP

Alternative 1

No construction activities for project-level improvements would occur at or near (within 100 feet) streams, wetlands, or riparian habitat at the Orinda WTP under Alternative 1. Therefore, there would be no impacts on features potentially subject to Section 401 and 404 of the Clean Water Act and Sections 1600–1616 of the California Fish and Game Code from construction of this facility.

Alternative 2

Construction activities at the Orinda WTP under Alternative 2 would result in indirect effects on San Pablo Creek due to construction of the new Los Altos Pumping Plant No. 2 and electrical substations (see Maps C-OWTP-2 and D-OWTP-2). San Pablo Creek is situated downhill of the Orinda WTP. Construction activities would be confined to an area approximately 75 feet uphill of San Pablo Creek. San Pablo Creek could be temporarily affected by dewatering during construction and by soil runoff, particularly if grading and excavation occur in the rainy season. As a result, aquatic species could be adversely affected due to the smothering of eggs, clogged air passages, and suffocation.

Walnut Creek WTP – Alternative 1 or 2

Construction of facilities under Alternative 1 or 2 would result in indirect effects on a tributary to Grayson Creek. Construction activities would be confined to an area approximately 300 feet uphill of this tributary (see Map C-WCWTP-1). Grayson Creek could be temporarily, indirectly affected by soil runoff, particularly if grading and excavation occur in the rainy season.

Sobrante WTP – Alternative 1 or 2

Construction activities on the western side of the WTP would result in indirect effects on San Pablo Creek. San Pablo Creek is situated downhill and to the southwest of the proposed filter-to-waste equalization basin and high rate sedimentation units (see Map C-SOBWTP-1). A fence separates the proposed construction area from the creek; construction activities would be confined within the fence. However, San Pablo Creek could be temporarily, indirectly affected by soil runoff if grading and excavation occur during the rainy season.

Orinda-Lafayette Aqueduct – Alternative 2

The pipeline alignment of the proposed Orinda-Lafayette Aqueduct along El Nido Road would cross three seasonal drainages that flow toward Highway 24 (see Maps C-OLA-3 and C-OLA-4). Trenching activities would expose these features to temporary disturbance, as described above. Construction activities for this pipeline could result in minimal disturbance to the root zone of riparian vegetation along the road. EBMUD would implement jack-and-bore construction methods under Highway 24 to avoid impacts to Hidden Valley Creek. Open-trench construction activities at the Lafayette WTP for the Orinda-Lafayette Aqueduct would adversely affect the intermittent tributary (see Map C-LWTP-2) that crosses Mt. Diablo Boulevard and associated riparian habitat. This water feature would be exposed to temporary disturbance, such as

excavation, soil erosion, and undercutting, during trenching activities. Pipeline construction activities along Mt. Diablo Boulevard would occur within the road and/or grassland habitat to avoid riparian habitat removal. However, this construction could disturb the root zone and damage approximately 0.10 acre of riparian vegetation at the intermittent drainage. Direct impacts to the eastern portion of Lafayette Creek, where the creek crosses under Mt. Diablo Boulevard at the Lafayette WTP, would be avoided because pipeline construction activities would be confined to the concrete box above the drainage. However, approximately 0.05 acre of riparian habitat could be damaged and two trees could be removed during construction.

Construction activities for the tunnel portion of the Orinda-Lafayette Aqueduct would avoid San Pablo Creek and Lauterwasser Creek. The crown of the proposed tunnel would be 50 to 100 feet below these creeks (see Map D-OLA-4). Microtunnel construction for the pipeline from the proposed Los Altos Pumping Plant No. 2 to the tunnel entry shaft would not cause impacts to San Pablo Creek and the two intermittent tributaries to San Pablo Creek. Microtunnel methods would avoid the drainages and upland vegetation (oak woodland, coyote brush, and grassland) that lie between the ballfields and the Orinda WTP.

Glen Pipeline Improvements

Construction activities for the eastern alignment of the Glen Pipeline project would cross a small intermittent drainage tributary to Happy Valley Creek (see Map C-GLENPL-3). Trenching activities would expose these features to temporary disturbance, as described above. Construction activities for this pipeline could result in minimal disturbance to the root zone or removal of riparian vegetation along the road.

Happy Valley Pumping Plant and Pipeline

The proposed site of the Happy Valley Pumping Plant is undeveloped and is situated within a residential area. The northern portion of the site supports three multi-stemmed, large-diameter oak trees, one two-stemmed, smaller-diameter oak tree, and non-native grassland; the southern portion of the site is oak woodland. Lauterwasser Creek parallels the southern boundary of the site. A tributary to Lauterwasser Creek parallels the western and southwestern boundaries of the site. Riparian habitat forms a dense canopy along both creeks. Construction of the proposed Happy Valley Pumping Plant would result in the removal of one valley oak and one coast live oak in the northern portion of the site. In addition, construction activities could result in potential damage to the root zones or canopies of additional oaks and adjacent riparian habitat.

Construction activities for the Happy Valley Pipeline along the road would cross Lauterwasser Creek and three intermittent tributaries to Lauterwasser Creek (see Maps C-HVPP-1, C-HVPP-2, and C-HVPP-3). Trenching activities would expose these features to temporary disturbance, as described above. Construction activities for this pipeline would result in minimal disturbance to the root zone and would require pruning of overhanging riparian vegetation along the road.

Highland Reservoir and Pipelines

Open-trench construction activities for the proposed pipeline alignments for the Highland Reservoir would adversely affect Lafayette Creek south of Mt. Diablo Boulevard (see Map C-HIGHRES-1) and a cattail wetland in Lafayette Reservoir. The proposed Highland Reservoir inlet/outlet Pipeline alignment crosses Lafayette Creek south of Mt. Diablo Boulevard. Construction activities for the pipeline would result in disturbance to the root zone or removal of riparian vegetation along Lafayette Creek. No riparian vegetation along the intermittent drainage would be damaged or removed. In addition, trenching for the overflow pipe would disturb the cattail wetland in Lafayette Reservoir.

The overflow pipeline would be extended into Lafayette Reservoir by floating it on top of the water and then sinking it to the bottom, where it would likely need to be anchored in place. This process would result in the filling of potentially jurisdictional waters and would be considered a significant impact. Trenching, grading, and other activities associated with construction of this pipeline adjacent to Lafayette Reservoir could also result in impacts to jurisdictional areas, including Lafayette Reservoir.

Lafayette Reclaimed Water Pipeline

The Lafayette Reclaimed Water Pipeline would carry water from the existing Lafayette WTP backwash water processing system to Lafayette Reservoir. Most segments of this pipeline would follow the alignments of, and/or be placed in the same trenches as, other proposed pipelines (the Leland/Bryant, Orinda-Lafayette Aqueduct, and Highland Pipeline) along Mt. Diablo Boulevard and through the Lafayette Reservoir Recreation Area to the reservoir. No additional wetlands impacts would result from installation of these portions of the pipeline other than those discussed above under the Highland Reservoir and Pipelines. Impacts resulting from installation of the pipeline segment extending from the WTP to Mt Diablo Boulevard are discussed in this section. The pipeline would be suspended across Lafayette Creek between two concrete abutments. Assuming a 20-foot-wide construction corridor, this process would result in the removal of approximately 0.46 acre of riparian habitat. Should it be necessary to trench across the creek, approximately 0.01 acre of perennial stream would be disturbed. With implementation of Measures 3.6-2a, 3.6-2b, 3.6-2c, 3.6-2e, and 3.6-2f, this potential impact would be reduced to a less-than-significant level.

Operation of the Lafayette Reclaimed Water Pipeline, including discharge of the Lafayette WTP filter backwash treatment system, could result in adverse water quality effects on Lafayette Reservoir through the introduction of chlorine, ammonia, nitrogen, and other materials. This impact is discussed fully in Section 3.5, Hydrology and Water Quality. Given compliance with effluent and receiving water limitations as well as monitoring requirements specified in applicable National Pollutant Discharge Elimination System (NPDES) permits the impacts to aquatic resources in the Reservoir would be less than significant.

Leland Isolation Pipeline and Bypass Valves

Construction activities for the new pipeline component of the Leland Isolation Pipeline and Bypass Valves project near the Danville Pumping Plant would avoid potentially jurisdictional areas. Construction activities for the pipeline in Danville Boulevard would avoid San Ramon Creek. However, pipeline construction activities would occur in the vicinity of a small drainage fed by a culvert under the recreational trail. This drainage flows through the adjacent residential area east of the Danville Pumping Plant and potentially to San Ramon Creek. The project could result in erosion, sedimentation, and other indirect effects to the drainage and potentially San Ramon Creek, particularly if grading and excavation occur in the rainy season.

Moraga Road Pipeline

The Moraga Road Pipeline area within the Lafayette Reservoir Recreation Area supports large valley oaks, coast live oaks, pines, riparian habitats, and coyote brush scrub interspersed with grassland. Along Moraga Road, adjacent habitats include ornamental vegetation associated with residential development as well as some grassland and oak woodland. Construction activities for the proposed Moraga Road Pipeline at the Lafayette Reservoir would cross two intermittent tributaries to Lafayette Creek south of Mt. Diablo Boulevard (see Map C-MORPL-1). The Moraga Road Pipeline would also cross two seasonal drainages near the Lafayette Reservoir Recreation Area (see Maps C-MORPL-2 and C-MORPL-3), one intermittent tributary to Las Trampas Creek near Nemea Court, and Laguna Creek at Buckingham Drive (see Maps C-MORPL-3 and C-MORPL-5). One drainage parallels Moraga Road near Nemea Court (Map C-MORPL-3). Laguna Creek parallels Moraga Road near Campolindo Drive (Map C-MORPL-4) and Devin Drive (Map C-MORPL-7). These drainages parallel Moraga Road within about 50 to 75 feet. Trenching activities would expose these water features to temporary disturbance, as described above. Construction activities for the pipeline would result in disturbance to the root zone or removal of riparian vegetation along these drainages. An intermittent drainage, supporting a cattail wetland, parallels the proposed pipeline alignment at Lafayette Reservoir. Cattail wetland is also present along Laguna Creek and would be avoided by construction activities.

Tice Pumping Plant and Pipeline

The proposed pipeline alignment crosses Las Trampas Creek, a tributary to Walnut Creek (see Map C-TICEPP-1). Open trenching activities would expose this water feature to temporary disturbance, as described above. Construction activities for this pipeline could result in minimal disturbance to the root zone or removal of riparian vegetation along the road.

Mitigation Measures

Measure 3.6-2a: The District will avoid or minimize effects on streams and riparian habitat by confining construction activities to areas above or below the stream crossing, or by using jack-and-bore construction where feasible as determined by EBMUD and where no other sensitive habitat (e.g., stream, riparian habitat, or protected trees) or sensitive receptors would be affected by this construction technique.

Measure 3.6-2b: In coordination with a qualified biologist, the District will, to the extent feasible, establish a minimum 25-foot construction exclusion zone (from the edge of wetland, riparian habitat, or the creek banks, whichever is greater), using protective fencing, where features will be avoided by direct impacts.

Measure 3.6-2c: If impacts to potentially jurisdictional features and associated riparian vegetation cannot be avoided or minimized, then the District will obtain a qualified biologist to complete a wetland delineation in accordance with Corps guidelines and will obtain the appropriate permits/agreements, including a Section 401 water quality certification from the RWQCB, a Section 404 wetland permit from the Corps, and/or a Section 1602 Streambed Alteration Agreement from the CDFG. The District will implement all conditions contained in these permits. The District will recontour and revegetate temporarily disturbed portions of the creek at a ratio of 1:1 (or at a ratio agreed on by the wetland permitting agencies). The District will compensate for permanent wetland and stream impacts onsite at a ratio of 2:1 (or at a ratio agreed on by the wetland permitting agencies) with the same type of feature as the feature affected. If the District determines that onsite restoration is not feasible, the District will compensate for permanent impacts at a 3:1 ratio (or at a ratio agreed on by the permitting agencies). The District will develop and implement a five-year wetland mitigation and monitoring program. Appropriate performance standards may include, but are not limited to: a 75 percent survival rate or plant cover of restoration plantings; absence of non-native, invasive plant species; and a functioning, self-sustaining creek or wetland system at the end of five years.

As warranted following construction, the District will recontour and revegetate temporarily disturbed portions of creeks. Creek banks will be recontoured to a more stable condition if necessary. Revegetation will include a palette of species native to the watershed area. Following removal, woody trees would be replanted at a 1:1 ratio at minimum, or as determined and agreed on by the appropriate wetland permitting agencies. Interim measures to protect the unvegetated creek from erosion may be required. Interim measures may include replanting banks using native or sterile non-native seeds or seedlings following construction within the creek, removing non-native vegetation from stream banks, and employing biotechnical bank stabilization methods, such as willow wattles and biodegradable erosion control mats, where appropriate.

Measure 3.6-2d: Where applicable for overflow discharges into a creek or reservoir, the District will install energy dissipaters, such as riprap, in the creek to minimize erosion and water quality effects.

Measure 3.6-2e: Where construction activities occur adjacent to or within the dripline of riparian habitat, the District will implement special construction techniques to allow the roots of riparian trees to breathe and obtain water (examples include, but are not limited to, using hand equipment for tunnels and trenching, and allowing only one pass through a riparian tree's dripline). Excavation adjacent to or within the dripline of any riparian tree will occur in a manner that causes only minimal root damage.

Measure 3.6-2f: The District will implement the following measures:

- Ensure that work activities at creeks are completed during the low-flow period (between April 1 and October 15), unless otherwise approved by appropriate regulatory agencies (e.g., RWQCB, Corps, CDFG).

- Store equipment and materials away from waterways to the extent feasible as determined by the District. No debris will be deposited within 60 feet of creeks for most WTTIP projects.

- Provide proper and timely maintenance for vehicles and equipment used during construction to reduce the potential for mechanical breakdowns leading to a spill of materials into or around the creeks. Maintenance and fueling will be conducted away from the creek.

- To control erosion, install silt fencing material at the edge of established buffer zones for riparian habitat, or at the edge of the creek where no riparian habitat is present (see Measure 3.6-2b).

- Minimize the removal of riparian and wetland vegetation.

Impact 3.6-3: Loss or damage to special-status plants and sensitive natural communities.

No suitable habitat for special-status plants occurs at the following WTTIP project sites: Orinda WTP (Alternative 1 or 2), Walnut Creek WTP (Alternative 1 or 2), Sobrante WTP (Alternative 1 or 2), Upper San Leandro WTP (Alternative 1 or 2), Orinda-Lafayette Aqueduct, Ardith Reservoir and Donald Pumping Plant, Fay Hill Pumping Plant and Pipeline Improvements, Fay Hill Reservoir, Leland Isolation Pipeline and Bypass Valves, Moraga Reservoir, Sunnyside Pumping Plant, and Withers Pumping Plant. The remaining WTTIP project sites contain potential habitat for special-status plants, as described below.

Lafayette WTP, Glen Pipeline Improvements, Happy Valley Pumping Plant and Pipeline, Highland Reservoir and Pipelines, Lafayette Reclaimed Water Pipeline, Moraga Road Pipeline, and Tice Pumping Plant and Pipeline

Impacts on potential habitat for nonlisted species[8], including bent-flowered fiddleneck (*Amsinckia lunaris*), big-scale balsamroot (*Balsamorhiza macrolepis* var. *macrolepis*), Mt. Diablo fairy-lantern (*Calochortus pulchellus*), Franciscan thistle (*Cirsium andrewsii*), Diablo rock-rose (*Helianthella castanea*), Kellog's horkelia (*Horkelia cuneata* ssp. *sericea*), and Oregon meconella (*Meconella oregana*), would occur along the undeveloped portion of the Moraga Road Pipeline alignment within coyote brush scrub, grassland, and/or openings in mixed oak woodland. Impacts on potential habitat for nonlisted Northern California black walnut and western leatherwood would occur within riparian corridors along streams at the following project sites: Lafayette WTP (Alternative 1), Glen Pipeline Improvements, Happy Valley Pumping Plant and Pipeline, Highland Reservoir and Pipelines, Lafayette Reclaimed Water Pipeline, Moraga Road Pipeline, and Tice Pumping Plant and Pipeline.

Construction activities, such as trenching for pipelines, within habitat for special-status plants could result in direct and indirect disturbance or morality. Potential construction effects include

[8] Nonlisted species are special-status species (as defined in this report) that are not protected under FESA or CESA.

removal of or damage to special-status plants or roots, soil compaction, trampling, and dust, which would eliminate light and reduce gas exchange.

Implementation of Measures 3.6-3a through 3.6-3c (as well as measures in Section 3.9, Air Quality, and implementation of erosion control measures described in Measure 3.6-2f, above, and Section 3.5, Hydrology and Water Quality) would reduce the effects on special-status plants to a less-than-significant level.

Sensitive natural communities occur at the following WTTIP project sites: Highland Reservoir and Pipelines (mixed perennial grassland, valley oak–coast live oak woodland, cattail wetland), Moraga Road Pipeline (mixed perennial grassland, creeping ryegrass grassland, arroyo willow riparian scrub), and Happy Valley Pumping Plant (valley oak-coast live oak woodland). Construction at these sites would result in temporary and permanent impacts to sensitive plant communities. Impacts on cattail wetland and arroyo willow riparian scrub are addressed under Impact 3.6-2 and would be reduced to a less-than-significant level through the implementation of Measures 3.6-2a through 3.6-2f. Impacts on mixed perennial grassland, creeping ryegrass grassland and valley oak–coast live oak woodland would be reduced to less-than-significant levels through the implementation of Measures 3.6-3a through 3.6-3c.

Mitigation Measures

Measure 3.6-3a: The District will require that a presence/absence survey for special-status plant species be conducted within the limits of construction by a qualified botanist during the year prior to construction. Surveys will be conducted using CDFG or USFWS survey guidelines. All surveys will be conducted during the period when the species are identifiable and will be repeated seasonally, as needed, to provide a complete species list. The results of the surveys will be filed as part of the project administrative record; if the presence of any of these species is confirmed, a copy of the survey results will be forwarded to the CDFG and/or USFWS. In the event that special-status species are proven absent, then no additional mitigation is necessary.

In addition, the sensitive plant communities that are located within the project site footprints will be mapped and quantified prior to construction to aid in later avoidance, revegetation, and replacement efforts.

Measure 3.6-3b: In the event that nonlisted special-status plant species or sensitive plant communities are present or assumed present within or immediately adjacent to the limits of construction, the District will avoid these species or sensitive plant communities and establish a visible buffer zone (25 feet at minimum) prior to construction, in coordination with a qualified biologist, or will redesign or relocate the proposed structure and/or staging area. If the District determines that it is not feasible to avoid disturbance or mortality, then special-status plant habitat and/or sensitive plant communities will be restored at a 1:1 ratio. If feasible, special-status plants will be salvaged. A five-year restoration mitigation and monitoring program will be developed and implemented. Appropriate performance standards may include, but are not limited to: a 75 percent survival rate of restoration plantings or plant cover; absence of invasive plant species; and a functioning, self-sustainable plant community at the end of five years.

Measure 3.6-3c: At all WTTIP project sites, the District will revegetate all natural areas temporarily disturbed due to project activities. Areas supporting sensitive plant communities will be restored using locally collected plant materials specific to that community. For all sites, revegetation criteria will include general restoration concepts and methods, including use of locally native plant material, protection and restoration of soil conditions, irrigation, and control of aggressive non-native species. The planting effort will commence in the fall following construction at the project site. Sites disturbed prior to the planting effort will be treated immediately with a (1) seed mixture and mulch using broadcast methods, or (2) hydroseed. The plant palette will include native plants found locally, such as coffeeberry, sticky monkeyflower, miniature lupine, California poppy, purple needlegrass, California brome, and blue wild rye. All revegetated sites will be monitored for five years. Success criteria to be met at the end of five years may include: at least 80 percent survival of plantings, 75 percent vegetative cover by desirable species, and a viable, self-sustaining plant community.

Impact 3.6-4: Disturbance to nesting raptors, other special-status nesting birds, or bald eagle.

Cooper's hawk, sharp-shinned hawk, red-tailed hawk, red-shouldered hawk, white-tailed kite, osprey, northern harrier, golden eagle, burrowing owl (and other raptors), as well as Bell's sage sparrow, oak titmouse, yellow warbler, Pacific-slope flycatcher, California horned lark, yellow-breasted chat, loggerhead shrike, Allen's hummingbird, Bewick's wren, and California thrasher may forage and nest in the vicinity of WTTIP project sites. Rufous hummingbird may occur in the WTTIP project area during the nonbreeding season. In addition, bald eagle, merlin, and other raptors are known to winter at the Lafayette Reservoir outside WTTIP project sites and in portions of San Pablo Reservoir Recreation Area. These species may occasionally roost near the WTTIP project area. The above-mentioned species are protected as former federal species of concern, California species of special concern, and/or under the California Fish and Game Code. Bald eagle is protected under FESA as a threatened species. Other native birds, including nests and eggs, are protected during nesting under the California Fish and Game Code.

Construction activities during the breeding season (including clearing, grading, trimming, and removal of trees, shrubs, and other nesting habitat for pipelines, bore-and-jack pits, and project facilities) could result in direct mortality of special-status birds. Human disturbance and construction noise could cause nest abandonment, death of young, or loss of reproductive potential at active nests located near project activities. Construction activities within or adjacent to suitable grassland habitat for burrowing owls could result in direct mortality, nest destruction, and noise disturbance. Tree removal and other construction activities could result in adverse impacts to wintering bald eagles through direct and indirect disturbance and habitat removal. These impacts would be significant. Implementation of Measures 3.6-4a through 3.6-4c would reduce these impacts to special-status bird species to a less-than-significant level.

At the Lafayette Reservoir, the proposed project would not remove any trees or habitat known to be utilized by bald eagle. Bald eagle use of the WTTIP project area is likely restricted to

occasional roosting and foraging. Construction disturbance to native habitats that potentially support other special-status birds would be temporary and primarily linear. The majority of native habitat disturbed during project construction would occur at the following project sites: Highland Reservoir and Pipelines, Moraga Road Pipeline, pipeline crossings at Lafayette Creek, Orinda WTP, and Orinda-Lafayette Aqueduct. Most riparian habitats would be avoided by performing construction within paved roads above or below drainage culverts. As discussed above in Measures 3.6-1a through 3.6-1d, Measures 3.6-2a through 3.6-2f, and Measure 3.6-3c, riparian habitats, protected trees, and other sensitive areas, such as native grasslands, would be revegetated or replaced upon completion of construction. In addition, these impact areas represent a small portion of the available nesting, foraging, and wintering habitat for special-status birds in the project region. The above-mentioned pipelines are located within and adjacent to the Lafayette Reservoir Recreation Area, which provides 925 acres of contiguous grassland, woodland, and scrub habitat. Water treatment plants and other developed WTTIP project sites, such as Ardith Reservoir and Donald Pumping Plant, support ornamental vegetation that would be removed to accommodate proposed activities. The majority of these sites are located within residential developments with ornamental vegetation that provide similar habitat values for nesting, foraging, and wintering birds. Removal of ornamental vegetation would not substantially reduce the available habitat in the WTTIP project area or affect local populations of special-status birds. With implementation of Measures 3.6-1a through 3.6-1d and Measure 3.6-4c, the proposed project would not result in significant impacts to the nesting, foraging, and wintering habitat of special-status birds or bald eagles.

Lafayette WTP

Oaks, eucalyptus, and other trees and shrubs at the existing Lafayette WTP and riparian habitat in the adjacent Lafayette Creek may provide nesting habitat for Cooper's hawk, sharp-shinned hawk, red-tailed hawk (and other raptors), oak titmouse, Pacific-slope flycatcher, Allen's hummingbird, and other special-status birds protected under the California Fish and Game Code.

Alternative 1

As discussed in Impacts 3.6-1 and 3.6-2, construction of clearwells, the Leland and Bryant Pipelines, and other facilities would require the removal of or construction adjacent to: oaks, eucalyptus, and other trees and shrubs surrounding the Lafayette WTP; riparian habitat along Lafayette Creek; and other habitats that potentially support nesting birds.

Alternative 2

As discussed in Impacts 3.6-1 and 3.6-2, no trees or riparian habitat would be removed under Alternative 2. Impacts to special-status birds due to indirect disturbance in adjacent habitat are discussed above.

Orinda WTP

Oaks, eucalyptus, pines, and other ornamental trees and shrubs surrounding facilities at the Orinda WTP may provide nesting and foraging habitat for special-status birds. In addition, the

well-developed riparian corridor of San Pablo Creek adjacent to the north side of the Orinda WTP and the dense oak woodland between the ballfields and the Orinda WTP provide large trees and a dense understory for nesting raptors and other birds. Special-status bird species that may nest within and surrounding the Orinda WTP site include Cooper's hawk, sharp-shinned hawk, red-tailed hawk (and other raptors), oak titmouse, Pacific-slope flycatcher, Allen's hummingbird, and Bewick's wren.

Alternative 1

Under Alternative 1, new facilities would be constructed primarily within mowed grassland at the Orinda WTP. However, construction activities could result in disturbance to adjacent ornamental vegetation.

Alternative 2

Project facilities under Alternative 2 would be constructed primarily within mowed grassland and developed areas and would result in limited tree and shrub removal. Some oak woodland would be disturbed or removed during construction of the clearwell and substations. Construction would also occur adjacent to the San Pablo Creek riparian corridor, which provides habitat for breeding birds.

Walnut Creek WTP – Alternative 1 or 2

Ornamental vegetation on the Walnut Creek WTP site as well as grassland, riparian habitat, and oak woodland surrounding the site provide nesting habitat for special-status birds such as Cooper's hawk, sharp-shinned hawk (and other raptors), oak titmouse, Pacific-slope flycatcher, loggerhead shrike, and Allen's hummingbird. Project facilities would be constructed within previously disturbed areas that do not support vegetation. Thus, the potential for direct disturbance to special-status bird nesting habitat is very low, and potential impacts would primarily include indirect disturbance.

Sobrante WTP – Alternative 1 or 2

Grassland and ornamental oaks, pines, and other trees and shrubs within the Sobrante WTP provide potential nesting habitat for special-status birds. In addition, the dense riparian corridor of San Pablo Creek adjacent to the settling basins on the western side of the plant provides suitable nesting habitat. Special-status birds potentially nesting within the Sobrante WTP site and/or adjacent riparian habitat include Cooper's hawk, sharp-shinned hawk (and other raptors), oak titmouse, Pacific-slope flycatcher, and Allen's hummingbird. Construction activities would occur within ornamental vegetation on the Sobrante WTP site. Though some ornamental vegetation would be removed to accommodate the proposed project, construction activities would avoid riparian habitat for breeding birds along San Pablo Creek.

Upper San Leandro WTP – Alternative 1 or 2

Ornamental redwoods, pines, and other trees and shrubs within and surrounding the Upper San Leandro WTP site provide potential nesting habitat for special-status birds such as Allen's

hummingbird, Cooper's hawk, sharp-shinned hawk, and other raptors. Activities associated with the construction of proposed facilities would result in the removal of ornamental trees and shrubs.

Orinda-Lafayette Aqueduct – Alternative 2

The Orinda-Lafayette Aqueduct site and vicinity contains pines and other ornamental trees and shrubs, grassland, oak woodland, as well as riparian habitat associated with Lafayette Creek and San Pablo Creek. The dense oak woodland between the ballfields and the Orinda WTP provides large trees and a dense understory for nesting raptors and other birds. Special-status bird species with the potential to nest in and around the project site include Cooper's hawk, sharp-shinned hawk, red-tailed hawk (and other raptors), oak titmouse, Pacific-slope flycatcher, Allen's hummingbird, and Bewick's wren. Removal of and construction adjacent to potential habitat for special-status nesting birds (i.e., grassland, coastal scrub, oak woodland, ornamental, and riparian habitats) would occur during construction of the pipeline along El Nido Ranch Road and Mt. Diablo Boulevard, microtunneling of the pipeline between the ballfields and the Orinda WTP, and other activities near San Pablo Creek, Lafayette Creek, and several small drainages, as discussed in Impacts 3.6-1 and 3.6-2.

Ardith Reservoir and Donald Pumping Plant

Ornamental oaks, pines, eucalyptus, and other trees and shrubs within and surrounding the Ardith Reservoir and Donald Pumping Plant site provide potential nesting habitat for special-status birds such as Cooper's hawk, sharp-shinned hawk (and other raptors), oak titmouse, Pacific-slope flycatcher, and Allen's hummingbird. Activities associated with construction of these facilities would result in the removal of ornamental trees and shrubs.

Fay Hill Pumping Plant and Pipeline Improvements

Monterey pines, redwoods, and other ornamental vegetation adjacent to the Fay Hill Pumping Plant and Pipeline Improvements site have the potential to support nesting raptors, such as Cooper's hawk and sharp-shinned hawk, and other special-status birds. A large expanse of grassland habitat located across Rheem Boulevard provides potential raptor foraging habitat and increases the value of these ornamental trees as nesting and roosting habitat. Red-tailed hawks were observed foraging uphill from this area near the Fay Hill Reservoir. Activities associated with construction of the Fay Hill Pumping Plant and Pipeline Improvements could result in the removal of ornamental trees and shrubs.

Fay Hill Reservoir

The existing Fay Hill Reservoir is located atop an undeveloped hill and surrounded by potential grassland foraging and/or nesting habitat for burrowing owls, northern harriers, and other raptors. Two red-tailed hawks were observed foraging near the reservoir during the site survey. Monterey pines around the reservoir provide potential nesting habitat for raptors such as Cooper's hawk, sharp-shinned hawk, red-tailed hawk, golden eagle, and white-tailed kite. Other special-status birds, such as California horned lark and loggerhead shrike, may also nest and/or forage in the surrounding grasslands. Construction activities associated with the new Fay Hill Reservoir would

result in some removal of Monterey pine and grassland. Following construction, the area would be revegetated (see Measures 3.6-1a through 3.6-1d).

Glen Pipeline Improvements

The Glen Pipeline Improvements site is surrounded primarily by residential development with plantings of oaks, eucalyptus, and other ornamental trees and shrubs. In addition, the pipeline alignment crosses a small drainage supporting riparian habitat at the road culvert. These habitats have the potential to support Cooper's hawk, sharp-shinned hawk (and other raptors), oak titmouse, Pacific-slope flycatcher, Allen's hummingbird, and other special-status nesting birds. Activities associated with construction of the Glen Pipeline could result in the disturbance of ornamental trees and shrubs and the trimming or disturbance of riparian vegetation.

Happy Valley Pumping Plant and Pipeline

Woodland, ornamental, and riparian habitats along the pipeline alignment and pumping plant site may support special-status birds such as Cooper's hawk, sharp-shinned hawk, red-tailed hawk (and other raptors), oak titmouse, Pacific-slope flycatcher, and Allen's hummingbird. Activities associated with construction of the pipeline and pumping plant would result in the removal and disturbance of oaks and ornamental trees and shrubs and the trimming or disturbance of riparian vegetation.

Highland Reservoir and Pipelines

The Highland Reservoir and Pipelines site within the Lafayette Reservoir Recreation Area contains large valley oaks, coast live oaks, and pines interspersed with grassland and some coyote brush, as well as cattail wetland and the Lafayette Creek riparian corridor (see Impact 3.6-1, above). These habitats may support nesting birds such as Cooper's hawk, sharp-shinned hawk, golden eagle, red-tailed hawk, white-tailed kite, osprey (and other raptors), oak titmouse, Bewick's wren, and California thrasher, which are known to occur within the Lafayette Reservoir Recreation Area. The Highland Reservoir and Pipelines project area may also support Pacific-slope flycatcher and Allen's hummingbird. There are no known occurrences of bald eagle in the vicinity of this project site. Bald eagle use of this area is restricted to occasional foraging by wintering bald eagles using other portions of the Lafayette Reservoir.

Activities associated with construction of the Highland Reservoir and Pipelines would result in the removal of native and non-native trees and shrubs, as discussed in Impacts 3.6-1 and 3.6-2. Although the proposed Highland Reservoir inlet/outlet pipeline would cross Lafayette Creek at the culvert, some trimming or disturbance of riparian vegetation would likely occur.

Lafayette Reclaimed Water Pipeline

Riparian habitat along Lafayette Creek may provide nesting habitat for Cooper's hawk, sharp-shinned hawk, red-tailed hawk (and other raptors), oak titmouse, Pacific-slope flycatcher, Allen's hummingbird, and other special-status species protected under the California Fish and Game Code. As discussed in Impacts 3.6-1 and 3.6-2, construction of the Lafayette Reclaimed Water

Pipeline would result in the removal and disturbance of riparian habitat along Lafayette Creek. Potential impacts to special-status birds from construction activities are discussed above.

Operation of the Lafayette Reclaimed Water Pipeline, including discharge of the Lafayette WTP filter backwash treatment system, could result in adverse water quality effects on Lafayette Reservoir through increased water temperature and the introduction of chlorine, ammonia, nitrogen, and other materials. This impact is discussed fully in Section 3.5, Hydrology and Water Quality. Given compliance with effluent and receiving water limitations as well as monitoring requirements specified in applicable NPDES permits, potential impacts to aquatic habitat within Lafayette Reservoir and to bald eagle and other associated special-status species would be less than significant.

Leland Isolation Pipeline and Bypass Valves

The Leland Isolation Pipeline and Bypass Valves area along Lacassie Avenue is surrounded by commercial development. Ornamental street trees provide the only vegetation along the alignment and may be used by mourning dove, rock dove, and other species found in urbanized habitats. Tree removal is not proposed along Lacassie Avenue. Thus, potential impacts to special-status birds would result from indirect construction disturbance, as discussed above. Oaks and other trees along the new pipeline alignment near the Danville Pumping Plant may support special-status birds such as Cooper's hawk, sharp-shinned hawk, red-tailed hawk (and other raptors), oak titmouse, Pacific-slope flycatcher, and Allen's hummingbird.

Moraga Reservoir

Ornamental oaks, pines, and other trees and shrubs within and surrounding the Moraga Reservoir site and surrounding residential development provide potential nesting habitat for special-status birds such as Cooper's hawk, sharp-shinned hawk (and other raptors), oak titmouse, Pacific-slope flycatcher, and Allen's hummingbird. Activities associated with construction of these facilities would result in the removal of ornamental trees and shrubs, as discussed in Impacts 3.6-1 and 3.6-2.

Moraga Road Pipeline

Large valley oaks, coast live oaks, and pines in woodland and riparian habitats as well as grassland, scrub, and cattail marsh along the Moraga Road Pipeline alignment may support nesting birds such as Cooper's hawk, sharp-shinned hawk, golden eagle, red-tailed hawk, white-tailed kite, northern harrier, osprey (and other raptors), oak titmouse, Bewick's wren, and California thrasher, which are known to occur within the Lafayette Reservoir Recreation Area (EBMUD, 1994; Skahill, 2005). The area surrounding the Moraga Road Pipeline alignment may also support burrowing owl, Pacific-slope flycatcher, Bell's sage sparrow, yellow warbler, California horned lark, yellow-breasted chat, loggerhead shrike, Allen's hummingbird, and other special-status birds. There are no known occurrences of bald eagle in the vicinity of this project site. Bald eagles roosting and foraging near the Lafayette Reservoir have a low potential to occasionally use the Moraga Road Pipeline area.

Activities associated with construction of the Moraga Road Pipeline would result in the removal of native and non-native grasslands, native and non-native trees and shrubs, and riparian habitat. Though Lafayette Creek and other drainages would be crossed at the road culvert locations, some trimming and/or disturbance of riparian vegetation would likely occur.

Sunnyside Pumping Plant

Residential ornamental vegetation, non-native pine woodland, and grassland within and surrounding the Sunnyside Pumping Plant site may provide nesting and/or foraging habitat for special-status birds such as Cooper's hawk, sharp-shinned hawk (and other raptors), oak titmouse, Pacific-slope flycatcher, California horned lark, loggerhead shrike, and Allen's hummingbird. Activities associated with construction of the Sunnyside Pumping Plant would result in the removal of pines and other ornamental vegetation and grassland.

Tice Pumping Plant and Pipeline

The Tice Pumping Plant site is located within grassland and oak woodland habitat. The Tice Pipeline area is surrounded primarily by residential development with plantings of oaks, black locusts, and other ornamental trees and shrubs. In addition, the pipeline alignment crosses Las Trampas Creek, which supports a well-developed riparian habitat. The pipeline would be installed under or above the culvert within the road. These habitats have the potential to support Cooper's hawk, sharp-shinned hawk, red-tailed hawk (and other raptors), oak titmouse, Pacific-slope flycatcher, Allen's hummingbird, and other special-status nesting birds. Activities associated with construction of the Tice Pumping Plant and Pipeline could result in the removal of grassland and oak woodland, and the disturbance or trimming of riparian vegetation and ornamental trees and shrubs.

Withers Pumping Plant

Ornamental oaks, pines, eucalyptus, and other trees and shrubs within and surrounding the Withers Pumping Plant site provide potential nesting habitat for special-status birds such as Cooper's hawk, sharp-shinned hawk, red-tailed hawk (and other raptors), oak titmouse, Pacific-slope flycatcher, and Allen's hummingbird. Activities associated with construction of this facility would result in the removal of ornamental trees and shrubs.

Mitigation Measures

Measure 3.6-4a: At all WTTIP project sites, EBMUD will avoid disturbing active nests of raptors and other special-status nesting birds by performing preconstruction surveys and creating no-disturbance buffers.

If construction activities (i.e., ground clearing and grading, including removal of trees or shrubs) are scheduled to occur during the nonbreeding season (September 1 through January 31), no mitigation is required.

If construction activities are scheduled to occur during the breeding season (February 1 through August 31), EBMUD will implement the following measures to avoid potential adverse effects on nesting raptors and other special-status birds:

- EBMUD will retain a qualified wildlife biologist to conduct preconstruction surveys of all potential nesting habitat within 500 feet of construction activities where access is available.

- If active nests are found during preconstruction surveys, EBMUD will create a no-disturbance buffer (acceptable in size to the CDFG) around active raptor nests and nests of other special-status birds during the breeding season, or until it is determined that all young have fledged. Typical buffers include 500 feet for raptors and 250 feet for other nesting birds. The size of these buffer zones and types of construction activities restricted in these areas may be further modified during coordination with the CDFG and will be based on existing noise and human disturbance levels at each WTTIP project site. Nests initiated during construction are presumed to be unaffected, and no buffer would be necessary. However, the "take"[9] of any individuals will be prohibited.

- If preconstruction surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period, no further mitigation is required. Trees and shrubs within the construction footprint that have been determined to be unoccupied by special-status birds or that are located outside the no-disturbance buffer for active nests may be removed.

Measure 3.6-4b: For the Fay Hill Reservoir and Moraga Road Pipeline projects, EBMUD will retain a qualified wildlife biologist to conduct preconstruction burrowing owl surveys in all areas that may provide suitable habitat for this species. EBMUD will avoid disturbing active burrowing owl nests during the breeding season and implement standard CDFG guidelines during the nonbreeding season.

No more than two weeks before construction, EBMUD will retain a qualified biologist to survey for burrows and burrowing owls within 500 feet of the construction corridor where access is available. The survey will conform to the protocol described by the California Burrowing Owl Consortium (1997), which includes up to four surveys on different dates if there are suitable burrows present. If occupied owl burrows are found during preconstruction surveys, a qualified burrowing owl biologist will make a determination as to whether or not construction activities would affect the occupied burrows or disrupt reproductive behavior. If the biologist determines that construction would not adversely affect occupied burrows or disrupt breeding behavior, construction may proceed without restriction or mitigation measures.

If the biologist determines that construction could adversely affect occupied burrows during the nonbreeding season (August 31 through February 1), EBMUD may passively relocate the subject owls from the occupied burrow(s) using one-way doors. There must be at least two unoccupied burrows suitable for burrowing owls within 300 feet of the occupied burrow before one-way doors are installed. The unoccupied burrows must be located 160 feet from construction activities and can be natural burrows or artificial

[9] "Take" is defined as harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, collecting, or attempting to engage in any such conduct.

burrows constructed according to current design specifications. Artificial burrows must be in place at least one-week before one-way doors are installed on occupied burrows. One-way doors must be in place for a minimum of 48 hours before burrows are excavated.

If the biologist determines that construction would physically affect occupied burrows or disrupt reproductive behavior during the nesting season (February 1 through August 31), then avoidance is the only mitigation available (California Burrowing Owl Consortium, 1997; CDFG, 1995). Construction would be delayed within 250 feet of occupied burrows until it is determined that the subject owls are not nesting or until a qualified biologist determines that juvenile owls are self-sufficient or are no longer using the natal burrow as their primary source of shelter.

Measure 3.6-4c: For the Highland Reservoir and Pipelines, the Lafayette Reclaimed Water Pipeline, and Moraga Road Pipeline projects, EBMUD will avoid disturbing winter roosts of bald eagles by performing preconstruction surveys, avoiding known wintering habitat, and creating no-disturbance buffers.

EBMUD will design construction activities to avoid disturbance or removal of trees and habitat areas known to support wintering bald eagles.

If construction activities are scheduled to occur during the wintering season (October 15 through March 15), EBMUD will implement the following measures, and any additional measures determined during informal consultation with the USFWS, to avoid potential adverse effects on bald eagles near the project alignment:

- EBMUD will retain a qualified wildlife biologist to conduct preconstruction surveys of all potential roosting habitat within one-quarter mile of construction activities where access is available.

- If active roosts are found during preconstruction surveys, EBMUD will establish a no-disturbance buffer (acceptable in size to the USFWS and CDFG) around active roosts until the end of the wintering season, or until it is determined that the roosts are no longer occupied. The size of these buffer zones and types of construction activities restricted in these areas may be further modified during coordination with the USFWS and CDFG and will be based on existing noise and human disturbance levels at each WTTIP project site.

- If preconstruction surveys indicate that roosts are inactive or potential habitat is unoccupied during the construction period, no further mitigation is required. However, habitat within known bald eagle roosting areas will not be removed.

Impact 3.6-5: Disturbance to special-status bat species.

There is no woodland and/or riparian habitat with large trees suitable for special-status bats within or adjacent to the following WTTIP project sites: Upper San Leandro WTP, Ardith Reservoir/Donald Pumping Plant, Fay Hill Pumping Plant and Pipeline Improvements, Moraga Reservoir, and Withers Pumping Plant. Therefore, these projects would not affect special-status bats.

Trees and shrubs (in woodland, riparian, and scrub habitats), grasslands, orchards, and developed and ornamental landscaped areas on and surrounding the remaining WTTIP project sites may provide suitable foraging and roosting habitat for special-status bat species, including Pacific western big-eared bat, pallid bat, long-eared myotis, fringed myotis, long-legged myotis, and Yuma myotis. These bats are protected as former federal species of concern and/or California species of special concern.

Construction activities associated with the proposed project (including clearing, grading, trimming, and removal of trees, shrubs, and other nesting habitat for pipelines, bore-and-jack pits, and project facilities) could result in direct mortality of special-status bats. In addition, construction noise and human disturbance within and adjacent to large trees and other potential roosting habitat could cause roost abandonment and death of young. These impacts would be significant. Implementation of Measure 3.6-5, below, would reduce impacts to special-status bats to a less-than-significant level. As discussed in Impact 3.6-4, construction disturbance to native habitats would be temporary and primarily linear. As discussed above in Measures 3.6-1a through 3.6-1d and Measures 3.6-2a through 3.6-2f, riparian habitats, protected trees and other sensitive areas would be revegetated or replaced upon the completion of construction. In addition, these impact areas represent a small portion of the available roosting and foraging habitat for special-status bats in the project region. Therefore, the proposed WTTIP would not result in significant impacts to nesting and foraging habitat for special-status bats that may occur in the project area.

Lafayette WTP

Oaks and other trees and riparian habitat in the adjacent Lafayette Creek may provide roosting and foraging habitat for fringed myotis bat and other special-status bats.

Alternative 1

As discussed in Impacts 3.6-1 and 3.6-2, construction of clearwells, the Leland and Bryant Pipelines, and other facilities would result in the removal of or construction adjacent to: oaks, eucalyptus, and other trees surrounding the existing Lafayette WTP; riparian habitat along Lafayette Creek; and other habitats that potentially support special-status bats.

Alternative 2

As discussed in Impacts 3.6-1 and 3.6-2**,** no trees or riparian habitat would be removed under Alternative 2.

Orinda WTP

Alternative 1

There is no woodland and/or riparian habitat with large trees suitable for special-status bats within or adjacent to areas proposed for disturbance at the Orinda WTP under Alternative 1. Therefore, this project would not affect special-status bats.

Alternative 2

Oaks surrounding facilities at the Orinda WTP, the well-developed riparian corridor of San Pablo Creek adjacent to the north side of the Orinda WTP, and the dense oak woodland between the ballfields and the Orinda WTP provide large trees for roosting special-status bats. Special-status bat species with the potential to roost on and surrounding the Orinda WTP include Pacific western big-eared bat, long-eared myotis, long-legged myotis, and fringed myotis.

Under Alternative 2, project facilities in the eastern portion of the Orinda WTP would be constructed primarily within mowed grassland and developed areas and would require the removal of trees and shrubs that are not suitable for use by special-status bats. However, some oak woodland would be disturbed or removed during construction of the clearwell and substations. Construction would also occur adjacent to the San Pablo Creek riparian corridor, which provides habitat for bats.

Walnut Creek WTP – Alternative 1 or 2

Grassland, riparian habitat, and oak woodland surrounding the Walnut Creek WTP provide roosting and foraging habitat for special-status bats such as Pacific western big-eared bat, long-eared myotis, long-legged myotis, and fringed myotis. Under Alternatives 1 and 2, project facilities would be constructed within previously disturbed areas that do not support vegetation. Thus, the potential for direct disturbance to special-status bats is very low.

Sobrante WTP – Alternative 1 or 2

The dense riparian corridor of San Pablo Creek adjacent to the existing basins at the western portion of the plant provides potential foraging and roosting habitat for fringed myotis and other special-status bats. Ornamental vegetation adjacent to San Pablo Creek may provide incidental habitat for bats utilizing San Pablo Creek riparian habitat. Construction activities on the Sobrante WTP would primarily be located within ornamental vegetation that is not likely to support special-status bats.

Orinda-Lafayette Aqueduct – Alternative 2

The Orinda-Lafayette Aqueduct site and vicinity contains pines and other ornamental trees and shrubs, grassland, and oak woodland as well as riparian habitat associated with Lafayette Creek and San Pablo Creek. Large trees within the oak woodland between the ballfields and the Orinda WTP as well as riparian habitat in the adjacent Lafayette Creek and San Pablo Creek may provide roosting and/or foraging habitat for Pacific western big-eared bat, pallid bat, long-eared myotis, long-legged myotis, fringed myotis, and other special-status bats. Removal of and construction adjacent to potential habitat for special-status bats (i.e., oak woodland, ornamental, and riparian habitats) would occur during construction of the pipeline along El Nido Ranch Road and Mt. Diablo Boulevard, microtunneling of the pipeline between the ballfields and the Orinda WTP, and other activities near San Pablo Creek, Lafayette Creek, and several small drainages, as discussed in Impact 3.6-1 and 3.6-2.

Fay Hill Reservoir

Monterey pines proposed for removal around the reservoir provide potential roosting and foraging habitat for fringed myotis and other special-status bats.

Glen Pipeline Improvements

The Glen Pipeline Improvements alignment is surrounded primarily by residential development with plantings of oaks, eucalyptus, and other ornamental trees and shrubs that are not likely to support special-status bats. Riparian habitat along a small drainage crossed by the pipeline at a road culvert may provide some foraging and roosting habitat for fringed myotis and other special-status bats. Activities associated with the construction of the Glen Pipeline could result in the trimming or disturbance of riparian vegetation.

Happy Valley Pumping Plant and Pipeline

Woodland and riparian habitats along the pipeline alignment and pumping plant site may support fringed myotis and other special-status bats. Activities associated with construction of the pipeline and pumping plant would result in the removal or disturbance of valley oaks and coast live oaks and the trimming or disturbance of riparian vegetation.

Highland Reservoir and Pipelines

The Highland Reservoir and Pipelines project site within the Lafayette Reservoir Recreation Area contains large valley oaks, coast live oaks, and pines interspersed with grassland and some coyote brush. The disturbance area includes some freshwater marsh and trees along the edge of Lafayette Reservoir and riparian habitat along Lafayette Creek. These habitats may support Pacific western big-eared bat, pallid bat, fringed myotis, long-eared myotis, long-legged myotis, and other special-status bats. Lafayette Reservoir provides good foraging habitat for Yuma myotis and other special-status bat species that forage over open water.

Activities associated with construction of the Highland Reservoir and Pipelines would result in the removal of oaks and other large native and non-native trees. Though Lafayette Creek would be crossed at the culvert location, some trimming or disturbance of riparian vegetation would likely occur.

Lafayette Reclaimed Water Pipeline

Riparian habitat along Lafayette Creek may provide roosting habitat for fringed myotis and other special-status bats. As discussed in Impacts 3.6-1 and 3.6-2, construction of the Lafayette Reclaimed Water Pipeline would result in the removal and disturbance of riparian habitat along Lafayette Creek.

Operation of the Lafayette Reclaimed Water Pipeline, including discharge of the Lafayette WTP filter backwash treatment system, could result in adverse water quality effects on Lafayette Reservoir through increased water temperatures and the introduction of chlorine, ammonia, nitrogen, and other materials. This impact is discussed fully in Section 3.5, Hydrology and Water

Quality. Given compliance with effluent and receiving water limitations as well as monitoring requirements specified in applicable NPDES permits, potential impacts to aquatic habitat within Lafayette Reservoir and to bats and other associated special-status species would be less than significant.

Leland Isolation Pipeline and Bypass Valves

Large oaks and other trees along the Leland Isolation Pipeline and Bypass Valves alignment near the Danville Pumping Plant may provide roosting habitat for fringed myotis and other special-status bats. Activities associated with construction of the pipeline could result in the removal of several trees.

Moraga Road Pipeline

Large valley oaks, coast live oaks, and pines in woodland and riparian habitats along the Moraga Road Pipeline alignment may support special-status bats such as Pacific western big-eared bat, fringed myotis, long-eared myotis, long-legged myotis, and Yuma myotis. Activities associated with construction of the Moraga Road Pipeline would result in the removal of oaks and other native and non-native trees. Though Lafayette Creek and other drainages would be crossed at the road culvert locations, some trimming and/or disturbance of riparian vegetation would likely occur.

Sunnyside Pumping Plant

Residential ornamental vegetation and non-native pine woodland within and surrounding the Sunnyside Pumping Plant site may provide roosting habitat for fringed myotis and other special-status bats. Activities associated with construction of the Sunnyside Pumping Plant would result in the removal of pines and other ornamental vegetation.

Tice Pumping Plant and Pipeline

The Tice Pumping Plant site is located within grassland and oak woodland habitat that has the potential to support roosting and foraging special-status bats such as Pacific western big-eared bat, long-eared myotis, pallid bat, long-legged myotis, and fringed myotis. In addition, riparian habitat along Las Trampas Creek may support special-status bats. The pipeline would likely be installed under or above the culvert within the road to minimize disturbance to Las Trampas Creek and riparian habitat. However, activities associated with construction of the Tice Pumping Plant and Pipeline could result in the removal of grassland and oak woodland, and the disturbance and trimming of riparian vegetation.

Mitigation Measure

Measure 3.6-5: EBMUD will avoid disturbance of the roosts of special-status bats by performing preconstruction surveys and creating no-disturbance buffers.

Prior to construction activities (i.e., ground clearing and grading, including removal of trees or shrubs) within 200 feet of trees that potential support special-status bats, EBMUD will

retain a qualified bat biologist to survey for special-status bats. If no evidence of bats (i.e., direct observation, guano, staining, strong odors) is present, no further mitigation is required.

If evidence of bats is observed, EBMUD will carry out the following measures to avoid potential adverse effects special-status bats:

- EBMUD will create a no-disturbance buffer (acceptable in size to the CDFG) around active bat roosts during the breeding season (April 15 through August 15). Bat roosts initiated during construction are presumed to be unaffected, and no buffer would be necessary. However, the take of individuals will be prohibited.

- Removal of trees showing evidence of bat activity will occur during the period least likely to affect bats, as determined by a qualified bat biologist (generally between February 15 and October 15 for winter hibernacula, and between August 15 and April 15 for maternity roosts). If exclusion is necessary to prevent indirect impacts to bats due to construction noise and human activity adjacent to trees showing evidence of bat activity, these activities will also be conducted during these periods.

Impact 3.6-6: Disturbance to San Francisco dusky-footed woodrat.

There is no oak woodland and/or riparian habitat with a dense understory suitable for San Francisco dusky-footed woodrat within or adjacent to the following WTTIP project sites: Walnut Creek WTP, Upper San Leandro WTP, Ardith Reservoir/Donald Pumping Plant, Fay Hill Pumping Plant and Pipeline Improvements, Fay Hill Reservoir, Leland Isolation Pipeline and Bypass Valves, Moraga Reservoir, Sunnyside Pumping Plant, and Withers Pumping Plant. Therefore, these projects would not affect this species.

Suitable oak woodland and riparian habitats for San Francisco dusky-footed woodrat occur within the remaining WTTIP project sites. This species is locally abundant (Hartwell, 2005b), and woodrat nests were observed along the Moraga Road Pipeline alignment and near the Orinda WTP (Alternative 2) and Happy Valley Pumping Plant and Pipeline sites. This species is protected as a former federal species of concern and California species of special concern. Vegetation removal, grading, and other facility and pipeline construction activities within San Francisco dusky-footed woodrat habitat could cause destruction of nests and mortality of individuals. These impacts would be significant. Implementation of Measure 3.6-6, below, would reduce impacts to San Francisco dusky-footed woodrat to a less-than-significant level for the projects discussed below. As discussed in Impact 3.6-4, construction disturbance to native habitats would be temporary and primarily linear. As discussed above in Measures 3.6-1a through 3.6-1d and Measures 3.6-2a through 3.6-2f, riparian habitats, protected trees, and other sensitive areas would be revegetated or replaced upon the completion of construction. In addition, these impact areas represent a small portion of the available habitat for this species in the project region. Therefore, the proposed WTTIP would not result in significant impacts to nesting and foraging habitat for San Francisco dusky-footed woodrat potentially occurring in the project area.

Lafayette WTP – Alternative 1

Alternative 1

Riparian habitat within Lafayette Creek may support San Francisco dusky-footed woodrat. As discussed in Impacts 3.6-1 and 3.6-2, construction of clearwells, the Leland and Bryant Pipelines, and other facilities under Alternative 1would result in the removal of riparian habitat along Lafayette Creek.

Alternative 2

There is no oak woodland and/or riparian habitat with a dense understory suitable for San Francisco dusky-footed woodrat within or adjacent to construction disturbance areas at the Lafayette WTP under Alternative 2. Therefore, this project would not affect this species.

Orinda WTP – Alternative 2

Alternative 1

There is no oak woodland and/or riparian habitat with a dense understory suitable for San Francisco dusky-footed woodrat within or adjacent to construction disturbance areas at the Orinda WTP under Alternative 1. Therefore, this project would not affect this species.

Alternative 2

Numerous woodrat nests were observed within the dense oak woodland between the Orinda WTP and the ballfields. The well-developed riparian corridor of San Pablo Creek adjacent to the north side of the Orinda WTP also provides potential habitat for San Francisco dusky-footed woodrat. Some oak woodland habitat adjacent to the Orinda WTP would be removed to accommodate the clearwell, substations, and other facilities.

Sobrante WTP – Alternative 1 or 2

The dense riparian corridor of San Pablo Creek adjacent to the settling basins on the western side of the WTP provides potential habitat for San Francisco dusky-footed woodrat. However, this habitat is located outside of the construction disturbance area for the proposed project. Because riparian habitat would be avoided, impacts to San Francisco dusky-footed woodrat would be less than significant.

Orinda-Lafayette Aqueduct – Alternative 2

Riparian habitat along Lafayette Creek and San Pablo Creek may provide habitat for San Francisco dusky-footed woodrat. Numerous woodrat nests were observed within the dense oak woodland between the Orinda WTP and the ballfields. As discussed in Impacts 3.6-1 and 3.6-2, the Orinda-Lafayette tunnel shaft, pipeline, microtunnel disturbance areas, and other facilities in the eastern portion of the Orinda WTP would be located within and adjacent to oak woodland known to support San Francisco dusky-footed woodrat.

Glen Pipeline Improvements

Oak woodland and the riparian corridor of an unnamed drainage provide potential habitat for San Francisco dusky-footed woodrat.

Happy Valley Pumping Plant and Pipeline

Numerous San Francisco dusky-footed woodrat nests were observed within riparian habitat adjacent to the proposed pumping plant location. Woodland and riparian habitats along the pipeline alignment may also support this species.

Highland Reservoir and Pipelines

Woodland habitats within and surrounding the Highland Reservoir and Pipelines site provide potential habitat for San Francisco dusky-footed woodrat. This species is known to occur within the Lafayette Reservoir Recreation Area (Skahill, 2005).

Lafayette Reclaimed Water Pipeline

As discussed in Impacts 3.6-1 and 3.6-2, construction of the pipeline crossing of Lafayette Creek would result in the removal of riparian habitat along Lafayette Creek.

Moraga Road Pipeline

Woodland and riparian habitat along the Moraga Road Pipeline alignment within the Lafayette Reservoir Recreation Area provides potential habitat for San Francisco dusky-footed woodrat. This species is known to occur within the recreation area (Skahill, 2005) and was observed along the pipeline alignment. In addition, woodland and riparian habitat adjacent to the Moraga Road portion of the alignment has potential to support San Francisco dusky-footed woodrat. The pipeline would be installed under or above the culvert within Moraga Road to minimize disturbance to drainages and associated riparian habitat. Minimal trimming of riparian trees may be required.

Tice Pumping Plant and Pipeline

The riparian corridor of Las Trampas Creek provides potential habitat for San Francisco dusky-footed woodrat. The pipeline would be installed under or above the culvert within the road to minimize disturbance to Las Trampas Creek and associated riparian habitat. Minimal trimming of riparian trees may be required. However, removal of riparian habitat would be avoided, and therefore impacts to San Francisco dusky-footed woodrat would be less than significant.

Mitigation Measure

Measure 3.6-6: EBMUD will avoid disturbance to San Francisco dusky-footed woodrat by performing preconstruction surveys and by avoiding or relocating nests at the following project sites: Lafayette WTP (Alternative 1), Orinda WTP (Alternative 2), Orinda-Lafayette Aqueduct, Glen Pipeline Improvements, Happy Valley Pipeline, Highland Reservoir and Pipelines, Lafayette Reclaimed Water Pipeline, and Moraga Road Pipeline.

Not more than two weeks prior to construction, a qualified wildlife biologist will conduct a preconstruction survey to identify woodrat nests within 10 feet of proposed ground disturbance. A qualified wildlife biologist will conduct additional surveys periodically throughout the duration of construction activities to identify newly constructed woodrat nests. If woodrat nests can be avoided by project activities, the qualified biologist would demarcate suitable buffer areas for avoidance. If woodrat nests are located within areas proposed for construction, nest relocation would be implemented.

Active woodrat nests found within 10 feet of proposed disturbance areas that cannot be avoided will be relocated offsite to adjacent suitable woodland habitat under the supervision of a qualified wildlife biologist. Understory vegetation would first be cleared from around the nest. Next, the wildlife biologist would disturb the nest and allow all woodrats to leave the nest. Finally, the biologist would remove the nest sticks offsite to the base of an adjacent suitable oak, bay, or other tree. Sticks would be placed at a suitable distance determined by the qualified wildlife biologist.

Impact 3.6-7: Degradation of special-status aquatic species habitat.

Aquatic habitat does not occur within the vicinity of the following WTTIP project sites: Walnut Creek WTP, Upper San Leandro WTP, Ardith Reservoir/Donald Pumping Plant, Fay Hill Pumping Plant and Pipeline Improvements, Fay Hill Reservoir, Leland Isolation Pipeline and Bypass Valves, Moraga Reservoir, Sunnyside Pumping Plant, and Withers Pumping Plant. Therefore, these projects would not affect special-status aquatic species. Potential impacts to aquatic species at the remaining WTTIP sites are discussed below.

As discussed in the Setting, several unnamed drainages along the Moraga Road Pipeline alignment as well as Lafayette Creek, Lauterwasser Creek, San Pablo Creek, Las Trampas Creek, and Lafayette Reservoir have the potential to support one or more of the following special-status aquatic species: California red-legged frog, western pond turtle, and/or foothill yellow-legged frog. Reaches of San Pablo Creek downstream from San Pablo Dam and other migration barriers provide potential habitat for steelhead. Most construction activities within and adjacent to habitat for these species would be confined to roads and other disturbed rights-of-way. With the exception of the Lafayette Creek crossing, most creek crossings for projects analyzed at a project level would be confined to culverts within roads at locations that potentially support special-status aquatic species.

Construction activities within or adjacent to aquatic, riparian, and wetland habitats have the potential to adversely affect special-status aquatic species through temporary removal of vegetation during trenching of stream crossings, alteration of the hydrologic regime, accidental direct mortality from mechanical equipment, entrapment in open trenches, and harassment due to noise or vibration. Accidental release of deleterious construction fluids, such as gasoline and hydraulic fluids, as well as increased levels of soil erosion, sedimentation, and pollutant discharges during dewatering, could result in mortality of individuals, destruction of breeding habitat, and reduced instream water quality for amphibians and fish within the WTTIP project

sites and in downstream areas. Operation of the Lafayette Reclaimed Water Pipeline and other project facilities could also cause mortality and reduce water quality through discharge of chloraminated water and the introduction of organic materials and increased water temperature within Lafayette Reservoir and other aquatic habitats (see below and Section 3.5, Hydrology and Water Quality, for more information). Removal of riparian and adjacent upland vegetation, including woodrat nests, could eliminate foraging and nesting habitat and cover, disrupt essential migratory corridors, and result in higher water temperatures that could be inhospitable to native species. These impacts would be significant. Implementation of Measures 3.6-7a through 3.6-7c would reduce impacts to special-status aquatic species to a less-than-significant level.

Lafayette WTP

Alternative 1

Protocol surveys of Lafayette Creek have not identified California red-legged frogs or suitable habitat within this drainage (Beeman, 2001). However, aquatic habitat within this drainage may support western pond turtles, which are known to occur within the Lafayette Reservoir. No other special-status aquatic species are expected to occur within Lafayette Creek or its tributary. Aquatic habitats below migration barriers downstream from this project site in the Walnut Creek watershed may support steelhead.

As discussed in Impacts 3.6-1 and 3.6-2, construction of the Leland and Bryant Pipelines and other project activities under Alternative 1 would result in removal of riparian habitat and disturbance to the bed and bank of Lafayette Creek, which provides potential habitat for western pond turtle. The western Lafayette Creek pipeline crossing would be installed using open-trench construction methods and would result in temporary removal of aquatic habitat for western pond turtle.

Alternative 2

Aquatic habitat does not occur within the vicinity of construction disturbance areas at the Lafayette WTP under Alternative 2. Therefore, this project would not affect special-status aquatic species.

Orinda WTP

Alternative 1

Aquatic habitat does not occur within the vicinity of construction disturbance areas at the Orinda WTP under Alternative 1. Therefore, this project would not affect special-status aquatic species.

Alternative 2

As discussed above, the reach of San Pablo Creek adjacent to the Orinda WTP and its tributaries are not likely to provide habitat for special-status aquatic species. California red-legged frog and western pond turtle downstream of the WTTIP project site have a low potential to move into habitat within San Pablo Creek. Reaches of San Pablo Creek downstream of San Pablo Reservoir and Dam provide potential habitat for steelhead.

Under Alternative 2, oak woodland habitat adjacent to San Pablo Creek would be removed to accommodate the clearwell, substations, and other facilities. These activities would not disturb habitat for special-status aquatic species. Impacts to California red-legged frog, western pond turtle, and other aquatic species in downstream areas could result from construction activities near and dewatering into San Pablo Creek.

Sobrante WTP – Alternative 1 or 2

San Pablo Creek adjacent to the settling basins on the western side of the WTP provides potential habitat for steelhead, California red-legged frog, foothill yellow-legged frog, and western pond turtle. Aquatic and riparian habitat associated within this drainage is located outside of the proposed construction disturbance area for the proposed project. Impacts to these and other aquatic species in downstream areas could result from construction activities near San Pablo Creek.

Orinda-Lafayette Aqueduct – Alternative 2

As discussed above, protocol surveys of Lafayette Creek have not identified California red-legged frogs or suitable habitat within this drainage (Beeman, 2001). However, aquatic habitat within this drainage may support western pond turtles, which are known to occur within the Lafayette Reservoir. The reach of San Pablo Creek adjacent to the Orinda WTP and its tributaries are not likely to provide habitat for special-status aquatic species. California red-legged frog and western pond turtle downstream of the WTTIP project site have a low potential to move into habitat within San Pablo Creek.

Removal of and construction adjacent to potential riparian habitat for western pond turtle would occur during construction of the pipeline alignment along El Nido Ranch Road and Mt. Diablo Boulevard, microtunneling near the Orinda WTP, and other activities near San Pablo Creek, Lafayette Creek, and several small drainages, as discussed in Impacts 3.6-1 and 3.6-2. Impacts to western pond turtle, steelhead, California red-legged frog, and other species in downstream areas could result from construction activities near Lafayette Creek or San Pablo Creek.

Glen Pipeline Improvements

The Glen Pipeline Improvements alignment is located in a residential area that mainly contains plantings of ornamental vegetation. The concrete-lined intermittent drainage crossed by the pipeline does not provide suitable habitat for special-status aquatic species. Impacts to steelhead and other aquatic species in downstream areas could result from construction activities within and adjacent to aquatic habitat.

Happy Valley Pumping Plant and Pipeline

Lauterwasser Creek and its tributaries provide potential habitat for California red-legged frog, foothill yellow-legged frog, and western pond turtle. The pipeline alignment would be installed under or above the culverts within the road to minimize disturbance to Lauterwasser Creek and associated riparian habitat. The pumping plant would be located outside of riparian habitat.

However, damage to this habitat may occur during construction activities. Impacts to California red-legged frog, foothill yellow-legged frog, western pond turtle, and other aquatic species in downstream areas could result from construction activities near Lauterwasser Creek.

Highland Reservoir and Pipelines

The Highland Reservoir is located within upland habitat. Seasonal aquatic habitats along the Highland Pipeline do not have the potential to support special-status species (Hartwell, 2005c). As discussed above, western pond turtles are known to be present in Lafayette Reservoir and may also occur in Lafayette Creek. The pipeline crossing of Lafayette Creek would be constructed at the culvert within Mt. Diablo Boulevard to avoid disturbance to the creek bed and bank. Impacts to western pond turtle could result from construction activities within and adjacent to Lafayette Creek and Lafayette Reservoir.

Lafayette Reclaimed Water Pipeline

As discussed in Impacts 3.6-1 and 3.6-2, construction of the pipeline crossing of Lafayette Creek would result in removal of riparian habitat and potential disturbance to the bed and bank of Lafayette Creek, which provides potential habitat for western pond turtle. Impacts to western pond turtle and other aquatic species could result from construction activities within and adjacent to Lafayette Creek.

Operation of the Lafayette Reclaimed Water Pipeline, including discharge of the Lafayette WTP filter backwash treatment system, could result in adverse water quality effects on Lafayette Reservoir through increased water temperatures and the introduction of chlorine, ammonia, nitrogen, and other materials. This impact is discussed fully in Section 3.5, Hydrology and Water Quality. Given compliance with effluent and receiving water limitations as well as monitoring requirements specified in applicable National Pollutant Discharge Elimination System (NPDES) permits, potential impacts to aquatic habitat within Lafayette Reservoir and to western pond turtles would be less than significant.

Moraga Road Pipeline

Seasonal aquatic habitat within the Lafayette Reservoir Recreation Area along the Moraga Road Pipeline is generally not suitable for special-status aquatic species (Hartwell, 2005c). However, special-status aquatic species may be present in perennial downstream aquatic habitats within the watershed. In addition, California red-legged frogs are known to occur within Laguna Creek adjacent to the paved Moraga Road between Campolindo Drive and Via Granada (CDFG, 2005). This drainage may also support western pond turtles. The pipeline would cross this drainage within the road above or below the culvert, downstream of the California red-legged frog occurrence, and habitat for this species is not likely to be removed. Other drainages along the paved portion of Moraga Road may provide some habitat for California red-legged frog as well. Pipeline crossings would be installed under or above the culvert within Moraga Road to minimize disturbance to drainages and associated riparian habitat. Minimal trimming of riparian trees may be required. Impacts to western pond turtle, California red-legged frog, steelhead, and other

aquatic species in downstream areas could result from construction activities within and adjacent to aquatic habitats.

Tice Pumping Plant and Pipeline

Las Trampas Creek provides potential habitat for California red-legged frog, foothill yellow-legged frog, and western pond turtle. Downstream aquatic habitats in the Walnut Creek watershed that are below migration barriers may support steelhead. The Tice Pipeline would be installed under or above the culvert within the road to minimize disturbance to Las Trampas Creek and associated riparian habitat. Impacts to California red-legged frog, foothill yellow-legged frog, western pond turtle, and other aquatic species in downstream areas could result from construction activities near Las Trampas Creek.

Mitigation Measures

Measure 3.6-7a: EBMUD will avoid disturbing central California coast steelhead, other aquatic species, and associated habitats.

Implementation of Measures 3.5-1a and b, 3.5-3, and 3.5-6 (see Section 3.5, Hydrology and Water Quality), as well as best management practices (BMPs) for construction activities, would reduce potential impacts to steelhead and other aquatic species and habitat resulting from sedimentation, turbidity, and hazardous materials. Specific measures aimed at protecting steelhead and other aquatic species include:

- Prior to construction, EBMUD will implement a biological resource education program for construction crews and contractors (primarily crew and construction foremen). The education program would include a review of central California coast steelhead, California red-legged frog, foothill yellow-legged frog, western pond turtle, and other special-status species and sensitive resources that could exist in the project study area (including their life history and habitat requirements); the locations of sensitive biological resources on the WTTIP project site; and their legal status and protection. The education program would include materials describing sensitive resources, resource avoidance, permit conditions, and possible fines for violations of state or federal environmental laws.

- Construction activities within and adjacent to aquatic and riparian habitats will be monitored by a qualified biologist. The biologist will survey the work area for sensitive resources prior to the start of construction each day and monitor identified biological resources during construction activities, such as initial clearing and grading, installation of silt fencing, pipeline trench excavation, and backfilling and compaction.

- Water from around the section of the worksite that is within the actively flowing channel of Lafayette Creek will be diverted past the construction site. This diversion will reduce the potential for sediment or other pollutants to enter the waterways and affect downstream resources. The diversion will be installed so as to capture water from the existing outlet structure and release the diverted water downstream of the construction site.

- Sediment curtains will be placed downstream of the construction or maintenance zone to prevent sediment disturbed during trenching activities from being transported and deposited outside of the construction zone.

- If groundwater is encountered, or if water remains within the worksite after flows are diverted, it will be pumped out of the construction area and into a retention basin constructed of hay bales lined with filter fabric. The pump(s) will be screened to avoid entrapment of aquatic species.

- Silt fencing will be installed in all areas where construction occurs within 100 feet of actively flowing water.

- A spill prevention plan for potentially hazardous materials will be prepared and implemented. The plan will include the proper handling and storage of all potentially hazardous materials, as well as the proper procedures for cleaning up and reporting any spills. If necessary, containment berms will be constructed to prevent spilled materials from reaching the creek channels.

- Equipment and materials will be stored at least 50 feet from waterways. No debris (such as trash and spoils) will be deposited within 100 feet of wetlands. Staging and storage areas for equipment, materials, fuels, lubricants, and solvents will be located outside of the stream channel and banks and be limited to the smallest size feasible as determined by EBMUD. Stationary equipment such as motors, pumps, generators, compressors, and welders located within or adjacent to the stream will be positioned over drip pans. Any equipment or vehicles driven and/or operated within or adjacent to the stream will be checked and maintained daily to prevent leaks of materials that, if introduced to water, could be deleterious to aquatic life. Vehicles will be moved away from the stream prior to refueling and lubrication.

- Proper and timely maintenance of vehicles and equipment will be performed to reduce the potential for mechanical breakdowns that could lead to a spill of materials into or around creeks. Maintenance and fueling will be conducted at least 75 feet from riparian or aquatic habitats.

- WTTIP project sites will be revegetated with an appropriate assemblage of native upland vegetation and, if necessary, riparian and wetland vegetation suitable for the area. A plan describing pre-project conditions, invasive species control measures, and restoration and monitoring success criteria will be prepared prior to construction.

Measure 3.6-7b: EBMUD will avoid disturbing California red-legged frog and its habitat.

Project activities will avoid potential habitat for California red-legged frog through the use of bore-and-jack or other trenchless construction techniques; creek crossings will be constructed above or below the culverts within paved roads at Lauterwasser Creek and its tributaries, Las Trampas Creek, and at unnamed drainages along Moraga Road. California red-legged frog habitat within San Pablo Creek near the Sobrante WTP will be avoided by constructing outside the riparian corridor. To prevent impacts to California red-legged frog during and after construction adjacent to these and other areas that provide potential habitat for this species, reasonable and prudent measures for protection of California red-legged frog from the USFWS Biological Opinion for this species (USFWS, 1999), as well as any

additional protection measures developed through informal consultation with the USFWS, will be implemented. These measures include environmental training, construction equipment and materials storage guidelines, silt fencing, and revegetation, as described in Measure 3.6-7a, as well as the following measures:

- The name and credentials of a biologist qualified to act as a project biologist/construction monitor will be submitted to USFWS for approval at least 15 days prior to the commencement of work.

- A USFWS-approved biologist will survey the worksites two weeks before the onset of construction activities. If California red-legged frogs, tadpoles, or eggs are found, the approved biologist will contact the USFWS to determine if moving any of these life-stages is appropriate. If the USFWS approves moving the animals, the biologist will be allowed sufficient time to move frogs from the worksites before work activities begin. If California red-legged frogs are not identified, construction may proceed at these sites.

- Exclusion fencing will be installed around WTTIP project sites, as directed by the USFWS, to prevent California red-legged frogs in adjacent areas from moving into project work areas.

- A USFWS-approved biologist will be present at the active worksites until such time that the removal of California red-legged frogs, instruction of workers, and habitat disturbance have been completed. After this time, the contractor or permittee will designate a person to monitor onsite compliance with minimization measures. The biologist will ensure that this individual receives training outlined in the programmatic Biological Opinion.

- During work activities, trash that may attract predators will be properly contained, removed from the worksite, and disposed of regularly. Following construction, trash and construction debris will be removed from work areas.

- Work activities within or adjacent to potential California red-legged frog aquatic habitat will be completed between April 1 and November 1.

- The USFWS-approved biologist will remove exotic species, such as crayfish and centrarchid fish, from the project area.

Should the USFWS determine through informal consultation that formal consultation is necessary, EBMUD will prepare a biological assessment and initiate formal consultation with the USFWS under Section 7 of FESA. Any additional California red-legged frog protection measures and additional habitat compensation required for program-level project impacts included in the USFWS Biological Opinion will be implemented during and after construction, as applicable.

Measure 3.6-7c: EBMUD will avoid disturbing western pond turtle, foothill yellow-legged frog, and their habitats.

No more than two weeks prior to the commencement of ground-disturbing activities, a qualified biologist retained by EBMUD will perform surveys for foothill yellow-legged frog and western pond turtle within suitable habitat on the WTTIP project sites. Surveys

will include western pond turtle nests as well as individuals. The biologist (with the appropriate agency permits) will temporarily relocate any identified western pond turtles or foothill yellow frogs upstream of the construction site, and temporary barriers will be placed around the construction site to prevent ingress.

Construction will not proceed until the work area is determined to be free of foothill yellow-legged frogs, as well as western pond turtles and their nests. The biologist will be responsible for relocating adult turtles and frogs that move into the construction zone after construction has begun. If a nest is located within a work area, the biologist (with the appropriate permits from the CDFG) may move the eggs to a suitable facility for incubation, and release hatchlings into the creek system in late fall. The biologist will be present on the WTTIP project sites during initial ground clearing and grading, culvert replacement and/or installation over drainages, and during all other construction activities within or adjacent to drainages with the potential to support foothill yellow-legged frog or western pond turtle.

Impact 3.6-8: Disruption to existing migratory wildlife corridors on WTTIP project sites and some fragmentation of this wildlife habitat.

Habitat within the following WTTIP project sites does not support mountain lions or constitute a substantial portion of an established migratory wildlife corridor: Walnut Creek WTP, Upper San Leandro WTP, Ardith Reservoir/Donald Pumping Plant, Fay Hill Pumping Plant and Pipeline Improvements, Leland Isolation Pipeline and Bypass Valves, Moraga Reservoir, and Withers Pumping Plant. Therefore, these projects would not affect existing migratory wildlife corridors or fragment wildlife habitat. Impacts at the remaining WTTIP project sites are discussed below.

Woodland and scrubland habitats suitable for mountain lions and other migratory wildlife are present within the Lafayette Reservoir Recreation Area at the Highland Reservoir and Pipelines site and along the Moraga Road Pipeline alignment. Mountain lions, a CDFG fully protected species, are known to occur within the recreation area and in the vicinity of project pipelines (Skahill, 2005). As discussed in the Setting, vegetation removal and disturbance required for these pipelines would be temporary. Disturbed areas would be revegetated with native species upon completion of the project to prevent habitat degradation or an increase in invasive plant species (see Measures 3.6-1a through 3.6-1d and Measures 3.6-2a through 3.6-2f). With the exception of the Highland Reservoir, the proposed WTTIP does not include the construction of above-ground structures in the Lafayette Reservoir Recreation Area. The Highland Reservoir site and permanent paved access road are located within grassland and woodland habitat that would continue to facilitate wildlife movement through the project area. Thus, proposed activities are not likely to significantly affect wildlife movement through the Lafayette Reservoir Recreation Area or fragment habitat for migratory or resident wildlife.

Pipeline crossings of Las Trampas Creek, Lauterwasser Creek, and San Pablo Creek would be constructed at culverts within roads, thereby avoiding riparian areas and minimizing disturbance to additional migratory wildlife corridors in the project area. Riparian habitat removal at Lafayette Creek during pipeline construction would be temporary, and disturbed areas would be

revegetated with native species (see Measures 3.6-1a through 3.6-1d and Measures 3.6-2a through 3.6-2f). The majority of facilities constructed near Lafayette Creek at the Lafayette WTP and near San Pablo Creek at the Orinda WTP would be located in areas that currently contain structures and lighting. New lighting constructed as part of these projects would be low intensity focused on specific areas to keep light from spilling onto nearby drainages and riparian habitat. Thus, due to the temporary nature of pipeline construction disturbance, post-construction revegetation of disturbed areas with native species, avoidance of aquatic and riparian habitat through pipeline installation at culverts for most stream crossings, and use of low-impact lighting focused away from sensitive habitat, the remaining WTTIP projects would have a less-than-significant impact on migratory wildlife corridors.

Lafayette WTP

Alternative 1

Lafayette Creek and its associated riparian habitat provide a migratory corridor for wildlife moving through the project area. Riparian habitat removal at Lafayette Creek during pipeline construction under Alternative 1 would be temporary, and disturbed areas would be revegetated with native species after construction. New lighting constructed as part of this project would be low-impact and would be focused on specific areas to keep light from spilling onto Lafayette Creek and adjacent riparian habitat.

Alternative 2

Habitat within the construction disturbance area at the Lafayette WTP under Alternative 2 does not support mountain lions or constitute a substantial portion of an established migratory wildlife corridor. Therefore, this project would not affect existing migratory wildlife corridors or fragment wildlife habitat.

Orinda WTP

Alternative 1

Habitat within the construction disturbance area at the Orinda WTP under Alternative 1 does not support mountain lions or constitute a substantial portion of an established migratory wildlife corridor. Therefore, this project would not affect existing migratory wildlife corridors or fragment wildlife habitat.

Alternative 2

San Pablo Creek and its associated riparian habitat, as well as oak woodland habitat between the Orinda WTP and the ballfields, provide a migratory corridor for wildlife moving through the project area. Oak woodland and scrub habitat removal at the Orinda WTP to accommodate project activities under Alternative 2 would be temporary, and disturbed areas would be revegetated with native species after construction. New lighting constructed as part of this project would be low-impact and would be focused on specific areas to keep light from spilling onto San Pablo Creek and its adjacent riparian habitat as well as oak woodland habitat between the Orinda WTP and the ballfields.

Sobrante WTP – Alternative 1 or 2

San Pablo Creek and its associated riparian habitat provide a migratory corridor for wildlife moving through the project area. Although construction is proposed adjacent to San Pablo Creek, proposed activities at the Sobrante WTP would not occur within riparian habitat and thus would not substantially fragment or otherwise affect established migratory wildlife corridors.

Orinda-Lafayette Aqueduct – Alternative 2

Lafayette Creek, San Pablo Creek, riparian habitat along these drainages, and oak woodland habitat between the Orinda WTP and the ballfields provide migratory corridors for wildlife moving through the project area. Removal of oak woodland, scrub, and/or riparian habitat near San Pablo Creek, at Lafayette Creek and its tributary, and between the Orinda WTP and the ballfields, as well as construction staging, grading, and other activities associated with pipeline construction would be temporary. These disturbed areas would be revegetated with native species after construction.

Fay Hill Reservoir

The Fay Hill Reservoir is located atop an undeveloped hill and surrounded by grassland that provides a potential migratory corridor for wildlife moving through the adjacent residential areas. Project construction would temporarily disturb a small portion of this grassland habitat, but would not substantially fragment or otherwise affect established migratory wildlife corridors.

Glen Pipeline Improvements

The unnamed drainage crossed by the Glen Pipeline Improvements alignment and associated riparian habitat provide a minor migratory corridor for wildlife moving through the project area. Construction would occur within the paved road at the location of the culvert, thereby avoiding this drainage and adjacent riparian habitat. Thus, proposed activities at the Walnut Creek WTP would not substantially fragment or otherwise affect established migratory wildlife corridors.

Happy Valley Pumping Plant and Pipeline

Lauterwasser Creek, its tributaries, and associated riparian habitat provide migratory wildlife corridors through the project area. Project construction would temporarily disturb small portions of these habitats; however, construction of the pipeline would occur within the paved road at the location of the culvert, thereby avoiding most riparian habitat. The pumping plant has been sited near the road and existing residential development. This placement minimizes riparian habitat removal and disturbance as well as impacts to oak woodland and riparian habitat along Lauterwasser Creek and its tributary. Project activities would not substantially fragment or otherwise affect established migratory wildlife corridors.

Highland Reservoir and Pipelines

As discussed above, the Highland Reservoir and Pipelines site and vicinity have the potential to provide habitat for mountain lions and other migratory wildlife moving through the Lafayette

Reservoir Recreation Area. Vegetation removal and disturbance required for the Highland Pipeline would be temporary, and disturbed areas would be revegetated with native species upon completion of the project. The Highland Reservoir and permanent paved access road would be located within contiguous grassland and woodland habitat that would continue to facilitate wildlife movement through the project area. The pipeline crossing at Lafayette Creek would be constructed at the location of the culvert within Mt. Diablo Boulevard, thereby avoiding riparian areas and minimizing disturbance to migratory wildlife at Lafayette Creek. Therefore, proposed project activities are not likely to significantly affect wildlife movement through the Lafayette Reservoir Recreation Area or fragment habitat for migratory or resident wildlife.

Lafayette Reclaimed Water Pipeline

Lafayette Creek and its associated riparian habitat provide a migratory corridor for wildlife moving through the project area. Riparian habitat removal at Lafayette Creek during pipeline construction would primarily be temporary, and disturbed areas would be revegetated with native species after construction to the extent feasible.

Moraga Road Pipeline

As discussed above, the area surrounding the Moraga Road Pipeline alignment has the potential to provide habitat for mountain lions and other migratory wildlife moving through the Lafayette Reservoir Recreation Area. Vegetation removal and disturbance required for the Moraga Road Pipeline would be temporary, and disturbed areas would be revegetated with native species upon completion of the project to prevent an increase in invasive plant species and habitat degradation. No above-ground structures that could interfere with wildlife movement or fragment wildlife habitat are proposed as part of the Moraga Road Pipeline project. Disturbance to migratory wildlife and riparian areas would be minimized at Moraga Road creek crossings by constructing the pipeline crossings at the culvert within Moraga Road. Therefore, proposed project activities are not likely to significantly affect wildlife movement through the project area or fragment habitat for migratory or resident wildlife. Project area drainages and the Moraga Road Pipeline corridor within the Lafayette Reservoir Recreation Area would continue to facilitate wildlife movement through the project area and maintain habitat connectivity for migratory wildlife.

Sunnyside Pumping Plant

The Sunnyside Pumping Plant is surrounded by grassland and oak woodland that provides a potential migratory corridor for wildlife moving through the adjacent residential areas. Project construction would remove a small portion of this grassland habitat, but would not substantially fragment or otherwise affect established migratory wildlife corridors.

Tice Pumping Plant and Pipeline

The Tice Pumping Plant is surrounded by grassland and oak woodland that provides a potential migratory corridor for wildlife moving through the adjacent residential areas. Las Trampas Creek and its associated riparian corridor also provide migratory wildlife habitat. Project construction would temporarily disturb a small portion of this grassland habitat; however, Last Trampas Creek

and riparian habitat would be avoided by performing construction within the paved road at the location of the culvert. Project activities would not substantially fragment or otherwise affect established migratory wildlife corridors.

Program-Level Elements

Lafayette WTP

Vegetation

The Lafayette WTP is a developed site situated among natural oak woodland and mixed oak riparian woodland along Lafayette Creek. The potential future facilities proposed for the Lafayette WTP under Alternative 1 would be sited in a developed area; thus, no vegetation, including protected trees, would likely be removed. However, construction of the proposed UV disinfection building and realignment of the Walter Costa Trail could damage adjacent riparian vegetation along Lafayette Creek. Implementation of measures similar to Measures 3.6-1a through 3.6-1e as well as Measure 3.6-2b, described above for the project-level elements would reduce impacts on trees at the Lafayette WTP to a less-than-significant level.

Water-Associated Features

The facilities proposed for the Lafayette WTP would be sited in a developed area; thus, no wetlands or water-associated features would be removed. However, construction of the proposed UV disinfection building could damage adjacent riparian vegetation along Lafayette Creek. In addition, grading and excavation near drainages, as well as dewatering into creeks during construction could increase sediments and construction fluids in creeks, causing turbidity and reduced water quality, which could then adversely affect aquatic species. Discharges of chlorminated water also may adversely impact jurisdictional features and associated species. Impacts to jurisdictional features, including riparian corridors, are considered significant. Implementation of measures similar to Measures 3.6-1a through 3.6-1e as well as Measure 3.6-2b would reduce these impacts to a less-than-significant level.

Special-Status Plants

Construction of the proposed UV disinfection building could damage adjacent riparian vegetation along Lafayette Creek that may include Northern California black walnut and western leatherwood. Any impacts on these special-status plants would be considered significant. Implementation of measures similar to Measures 3.6-3a through 3.6-3c would reduce impacts on special-status plants at the Lafayette WTP to a less-than-significant level.

Special-Status Wildlife Species

Oaks, eucalyptus, and other trees and shrubs at the Lafayette WTP and riparian habitat in the adjacent Lafayette Creek may provide habitat for special-status nesting birds species such as Cooper's hawk, sharp-shinned hawk, red-tailed hawk (and other raptors), oak titmouse, Pacific-slope flycatcher, and Allen's hummingbird as well as fringed myotis bat and other

special-status bats. No suitable habitat for special-status aquatic species is present on the project site. However, riparian and aquatic habitat within the adjacent Lafayette Creek may support western pond turtle. Steelhead and other special-status aquatic species may occur in downstream aquatic habitats. Any impacts to special-status wildlife species would be considered significant and require mitigation similar to that described above for the project-level elements.

Migratory Wildlife Corridors

Facilities proposed at the Lafayette WTP would be constructed in developed areas with ornamental landscaping; these areas do not provide a migratory corridor for wildlife moving through the project area. Thus, proposed activities at this site are not expected to fragment or otherwise affect established migratory wildlife corridors.

Orinda WTP

Vegetation

The Orinda WTP is a developed site situated among natural oak woodland and mixed oak riparian woodland along San Pablo Creek. Under Alternative 1 or 2, construction activities for the proposed facilities (primarily open-trench construction for the pipelines and construction of the UV disinfection building, high-rate sedimentation unit, and chlorine contact basin) would potentially require removal of some upland and riparian trees. Some of these trees may meet the criteria for protection under Orinda's tree ordinance. The clearwell and chlorine contact basin would be located within existing developed areas at the ballfields. The other program-level clearwell (Alternative 1 only) and pumping plants would be located at the site of the existing settling basins. Implementation of measures similar to Measures 3.6-1a through 3.6-1e and Measures 3.6-2a through 3.6-2f, above, would reduce any impacts on trees at the Orinda WTP to a less-than-significant level.

Water-Associated Features

Under Alternative 1 or 2, construction activities for the proposed facilities (primarily open-trench construction for the pipelines and construction of the UV disinfection building, high-rate sedimentation unit and chlorine contact basin) could adversely affect two unnamed tributaries to San Pablo Creek as well as San Pablo Creek and remove associated riparian habitat. These unnamed tributaries are potentially subject to Sections 401 and 404 of the Clean Water Act and Sections 1600–1616 of the California Fish and Game Code; the associated riparian habitat is potentially subject to Sections 1600–1616 of the California Fish and Game Code. Any impacts to jurisdictional drainages through direct fill or removal, dewatering during construction, discharge of chloraminated water, or other means would be considered significant. Implementation of measures similar to Measures 3.6-1a through 3.6-1e and Measures 3.6-2a through 3.6-2f would reduce these impacts to a less-than-significant level.

Special-Status Plants

Under Alternative 1 or 2, construction activities for the facilities (primarily the UV disinfection building, high-rate sedimentation unit, and pipelines to the ballfields) would adversely affect two

unnamed tributaries to San Pablo Creek as well as San Pablo Creek and remove associated riparian habitat that may include the special-status plants Northern California black walnut and western leatherwood. Special-status plant impacts would likely be similar to those described above for the project-level elements. Impacts to special-status plants would be considered significant. Implementation of measures similar to Measures 3.6-3a through 3.6-3c would reduce these impacts to a less-than-significant level.

Special-Status Wildlife Species

The well-developed riparian corridor of San Pablo Creek adjacent to the north side of the Orinda WTP and the dense oak woodland between the ballfields and the Orinda WTP provide potential nesting and/or roosting habitat for Cooper's hawk, sharp-shinned hawk, red-tailed hawk (and other raptors), oak titmouse, Pacific-slope flycatcher, Allen's hummingbird, Bewick's wren, Pacific western big-eared bat, long-eared myotis, long-legged myotis, and fringed myotis. In addition, numerous San Francisco dusky-footed woodrat nests were observed within this area. Two small intermittent tributaries to San Pablo Creek flow through oak woodland habitat between the Orinda WTP and the ballfields. California red-legged frog and western pond turtle downstream of the project site have a low potential to move into habitat within San Pablo Creek. Construction activities associated with pipelines and other facilities would result in disturbance and removal of habitat along the two intermittent drainages. Construction activities within aquatic and riparian habitat could result in mortality of California red-legged frog and western pond turtle if these species move into the construction area. Additional potential impacts to other aquatic species in downstream reaches of San Pablo Creek are discussed in Impact 3.6-7, above. Impacts to special-status nesting birds, bats, San Francisco dusky-footed woodrat, and aquatic species resulting from construction activities are discussed above in Impacts 3.6-4, 3.6-5, 3.6-6, and 3.6-7.

While the Orinda WTP is near proposed critical habitat for Alameda whipsnake, the project area itself does not provide any of the primary habitat elements, nor is this species known to occur there. Thus, proposed activities at the Orinda WTP are not expected to affect this species.

Migratory Wildlife Corridors

San Pablo Creek and its associated riparian habitat, as well as oak woodland habitat between the Orinda WTP and the ballfields, provide a migratory corridor for wildlife moving through the project area. Construction activities associated with pipelines and other facilities, including tree removal, grading, and other activities, would result in disturbance and removal of oak woodland. Vegetation removal and disturbance would be temporary, and disturbed areas would be revegetated with native species upon completion of the project. No above-ground structures are proposed as part of the project; therefore, proposed project activities are not likely to significantly affect wildlife movement through the project area or fragment habitat for migratory or resident wildlife. Oak woodland habitat near the Orinda WTP would continue to facilitate wildlife movement through the project area and maintain habitat connectivity for migratory wildlife. Project impacts would likely be less than significant, and no mitigation would be required.

Walnut Creek WTP

Vegetation

The potential program-level facilities proposed for the Walnut Creek WTP would be constructed within previously disturbed areas that do not support native vegetation. No trees would be removed, and project activities would not affect trees protected by local ordinances.

Water-Associated Features

The proposed construction areas at the Walnut Creek WTP do not support any features that are subject to Sections 401 and 404 of the Clean Water Act and Sections 1600–1616 of the California Fish and Game Code; thus, the facilities proposed at the Walnut Creek WTP would not likely affect potentially jurisdictional water features. No mitigation would be required.

Special-Status Plants

The Walnut Creek WTP site does not support habitat for special-status plants; thus, the facilities proposed at the Walnut Creek WTP would not likely affect special-status plants. No mitigation would be required.

Special-Status Wildlife Species

Under Alternative 1 or 2, project facilities would be constructed within previously disturbed areas that do not support vegetation. However, grassland and oak woodland vegetation in surrounding areas may provide habitat for special-status nesting birds such as Cooper's hawk, sharp-shinned hawk (and other raptors), oak titmouse, Pacific-slope flycatcher, loggerhead shrike, and Allen's hummingbird as well as Pacific western big-eared bat, pallid bat, long-eared myotis, long-legged myotis, and fringed myotis. No suitable habitat for aquatic species or other special-status species is present on the project site. Indirect disturbance and other impacts to special-status nesting birds and bats resulting from construction activities would likely be similar to those discussed above in Impacts 3.6-4 and 3.6-5.

Migratory Wildlife Corridors

The Walnut Creek WTP site is surrounded by grassland and oak woodland that may provide a potential migratory corridor for wildlife moving through the adjacent residential areas. Project construction activities would be located within previously disturbed areas outside of potential migratory wildlife corridors. Thus, the proposed project would not substantially fragment or otherwise affect established migratory wildlife corridors or reduce the value of the surrounding area for migratory wildlife.

Leland Reservoir Replacement

Vegetation

Replacement of the Leland Reservoir could result in the removal of protected trees. Impacts on jurisdictional drainages would be considered significant. Implementation of measures similar to Measures 3.6-1a through 3.6-1e and Measures 3.6-2a through 3.6-2f would reduce impacts on trees at the Leland Reservoir site to a less-than-significant level.

Water-Associated Features

The site of the proposed replacement of the Leland Reservoir contains a drainage with riparian vegetation, northwest of the existing reservoir, that may be subject to Sections 401 and 404 of the Clean Water Act and Sections 1600–1616 of the California Fish and Game Code. Grading and excavation for the new facilities could indirectly affect the drainage and associated riparian habitat and result in erosion. Dewatering during construction and discharges of chloraminated water may also adversely impact jurisdictional features and associated species. Implementation of measures similar to Measures 3.6-1a through 3.6-1e and Measures 3.6-2a through 3.6-2f would likely reduce these impacts to a less-than-significant level.

Special-Status Plants

The site of the Leland Reservoir replacement contains a natural drainage with riparian vegetation northwest of the existing reservoir. Riparian vegetation that includes the special-status plants Northern California black walnut and western leatherwood could be directly or indirectly affected by project activities. Any special-status plant impacts would be similar to those described above for the project-level elements. Implementation of measures similar to Measures 3.6-3a through 3.6-3c would likely reduce any impacts to a less-than-significant level.

Special-Status Wildlife Species

Trees and shrubs at the Leland Reservoir replacement site may provide habitat for special-status nesting birds such as Cooper's hawk, sharp-shinned hawk (and other raptors), oak titmouse, Pacific-slope flycatcher, loggerhead shrike, and Allen's hummingbird as well as fringed myotis and other special-status bats. Though a tributary to Las Trampas Creek is located near the project site, no suitable habitat for special-status aquatic species is likely to occur on the project site.

Migratory Wildlife Corridors

Ornamental vegetation and other habitat within the construction disturbance area at Leland Reservoir are not likely to provide a migratory corridor for wildlife moving through the project area. The site is bound by Highway 24 to the north and residential development on its other sides. Project construction would likely remove a small portion of habitat, but would not substantially fragment or otherwise affect established migratory wildlife corridors. As discussed above, project impacts would likely be less than significant, and no mitigation would be required.

New Leland Pressure Zone Reservoir and Pipeline

Vegetation

The New Leland Pressure Zone Reservoir and Pipeline site primarily supports oaks, ornamental vegetation associated with adjacent residential development, coastal scrub, and grassland. The project also includes a bore-and-jack crossing of San Ramon Creek. Construction activities associated with construction of the reservoir, access roads, and San Ramon Creek crossing could result in the removal of protected trees. Implementation of measures similar to Measures 3.6-1a through 3.6-1e would reduce impacts on trees to a less-than-significant level.

Water-Associated Features

The reservoir and access roads proposed for the New Leland Pressure Zone Reservoir and Pipeline would likely be sited in upland areas; thus, wetlands or water-associated features are not likely to be removed for these project components. However, construction activities associated with the bore-and-jack crossing of San Ramon Creek as well as dewatering and discharge of chloraminated water could result in erosion, sedimentation, release of deleterious materials, and other impacts to San Ramon Creek and other jurisdictional features in the project area. Impacts to jurisdictional features, including riparian corridors, would be similar to those discussed above and would be considered significant.

Special-Status Plants

Construction activities could directly or indirectly affect special-status plants, if present within grassland, coastal scrub, woodland, and riparian habitat at the New Leland Pressure Zone Reservoir and Pipeline site. Any special-status plant impacts would be similar to those described above for the project-level elements.

Special-Status Wildlife Species

Trees and other vegetation and riparian habitat at the New Leland Pressure Zone Reservoir and Pipeline site may provide habitat for special-status nesting birds such as Cooper's hawk, sharp-shinned hawk, burrowing owl, white-tailed kite (and other raptors), oak titmouse, Pacific-slope flycatcher, California horned lark, loggerhead shrike, and Allen's hummingbird as well as fringed myotis and other special-status bats. California red-legged frog, western pond turtle, and other aquatic species may occur within San Ramon Creek. Potential impacts to special-status wildlife species would be similar to those described above for the project-level elements.

Migratory Wildlife Corridors

Habitat within the construction disturbance area at the New Leland Pressure Zone Reservoir and Pipeline site is part of the Sugarloaf Open Space and is likely to provide a migratory corridor for wildlife moving through the project area. The site is surrounded by Interstate 680 to the west and residential development to the east. Project construction would likely remove a small portion of habitat, but would not substantially fragment or otherwise affect established migratory wildlife corridors. As discussed above, project impacts would likely be less than significant, and no mitigation would be required.

St. Mary's Road/Rohrer Drive Pipeline

Vegetation

Vegetation along the pipeline alignment consists primarily of ornamental species, mixed oak woodland, and mixed riparian woodland. Upland and riparian trees that occur within or immediately adjacent to the pipeline construction zone could be damaged by construction activities, such as excavating, grading, and soil compaction, and could result in mortality if the damage is extensive. Some of these upland and riparian trees may meet the criteria for protection under Lafayette's tree ordinance.

Water-Associated Features

Las Trampas Creek and several unnamed tributaries to Las Trampas Creek parallel the proposed pipeline alignment along St. Mary's Road and Moraga Road. Trenching and dewatering activities could expose these potentially jurisdictional water features to temporary disturbance, sedimentation, soil erosion, and undercutting. Riparian vegetation along these features might also be removed.

Special-Status Plants

Las Trampas Creek and several unnamed tributaries to Las Trampas Creek parallel the proposed pipeline alignment along St. Mary's Road and Moraga Road and support riparian vegetation. Riparian vegetation that includes the special-status plants Northern California black walnut and western leatherwood could be directly or indirectly affected by project activities.

Special-Status Wildlife Species

The St. Mary's Road/Rohrer Drive Pipeline would likely be constructed within paved roads or other disturbed rights-of-way. However, the pipeline alignment would be located adjacent to and potentially within ornamental landscaping, grassland, oak woodland, and riparian habitat associated with Las Trampas Creek, Grizzly Creek, and other drainages that may support Cooper's hawk, sharp-shinned hawk, burrowing owl, golden eagle, red-tailed hawk (and other raptors), oak titmouse, yellow warbler, white-tailed kite, Pacific-slope flycatcher, California horned lark, yellow-breasted chat, loggerhead shrike, Allen's hummingbird, Bewick's wren, California thrasher, Pacific western big-eared bat, pallid bat, fringed myotis, long-eared myotis long-legged myotis, Yuma myotis, and San Francisco dusky-footed woodrat. In addition, these drainages could support steelhead, California red-legged frog, foothill yellow-legged frog, and western pond turtle.

Alameda Whipsnake

The St. Mary's Road/Rohrer Drive Pipeline would likely be constructed within paved roads or other disturbed rights-of-way. However, the pipeline alignment would be located adjacent to USFWS proposed critical habitat for Alameda whipsnake. Coastal scrub, woodland, grassland, riparian, and other habitats along this pipeline alignment may support this species. If Alameda whipsnakes are present, grading and other construction activities within or adjacent to the alignment have the potential to result in harassment due to noise or vibration, entrapment in pipeline trenches, and other harm (including direct mortality). In addition, the pipeline could result in temporary removal of proposed critical habitat for this species. These impacts would be significant.

EBMUD will ensure that construction-related impacts to individual Alameda whipsnakes and critical habitat are mitigated to a less-than-significant level through the development and implementation of an Alameda Whipsnake Protection and Monitoring Plan. This plan will be approved by the USFWS during formal consultation under Section 7 of FESA and would include, but not be limited to, the following measures: preconstruction and/or trapping surveys,

installation of exclusion fencing, biological monitoring, worker environmental training, and revegetation of Alameda whipsnake habitat removed during project construction.

Migratory Wildlife Corridors

The St. Mary's Road/Rohrer Drive Pipeline would likely be constructed within paved roads or other disturbed rights-of-way. However, the pipeline alignment would be located adjacent to oak woodland and riparian habitat associated with Las Trampas Creek, Grizzly Creek, and other drainages that provide movement corridors for migratory wildlife. Construction of the pipelines could result in tree removal, grading, and other activities within oak woodland and riparian habitats. Vegetation removal and disturbance would be temporary, and disturbed areas would be revegetated with native species upon completion of the project. No above-ground structures are proposed as part of the project; therefore, proposed project activities are not likely to significantly affect wildlife movement through the project area or fragment habitat for migratory or resident wildlife. Habitat near the St. Mary's Road/Rohrer Driver Pipeline alignment would continue to facilitate wildlife movement through the project area and maintain habitat connectivity for migratory wildlife. Project impacts would likely be less than significant, and no mitigation would be required.

San Pablo Pipeline

Vegetation

The proposed pipeline alignment would parallel a variety of native plant communities, including upland and riparian woodlands, shrublands, grasslands, meadows and wetlands. Upland and riparian trees that occur within or immediately adjacent to the pipeline construction zone could be damaged by construction activities, such as excavating, grading, and soil compaction, and could result in mortality if the damage is extensive. Some trees may meet the criteria for protection under Orinda's tree ordinance.

Water-Associated Features

Several drainages to San Pablo Reservoir and associated wetlands cross the proposed pipeline alignment. Trenching activities and dewatering could expose these features to temporary disturbance, sedimentation, soil erosion, and undercutting. Riparian vegetation along these features might also be removed.

Special-Status Plants

Trenching activities for the pipeline could expose riparian vegetation containing the special-status plants Northern California black walnut and western leatherwood to temporary disturbance, such as excavation, soil erosion, and undercutting. Special-status plant impacts would be similar to those described above for the project-level elements.

Special-Status Wildlife Species

The area surrounding the San Pablo Pipeline alignment contains large valley oaks, eucalyptus, pines, riparian habitats, and coyote brush scrub interspersed with grassland. Bald eagle, golden

eagle, and yellow warbler are known to occur within the project area, and the following special-status bird species may use these habitats for nesting: Cooper's hawk, sharp-shinned hawk, golden eagle, red-tailed hawk, white-tailed kite, northern harrier, burrowing owl, osprey (and other raptors), oak titmouse, Bewick's wren, Pacific-slope flycatcher, Bell's sage sparrow, California horned lark, yellow-breasted chat, loggerhead shrike, Allen's hummingbird, and California thrasher. The project area may also support special-status bats, such as Pacific western big-eared bat, pallid bat, fringed myotis, long-eared myotis, long-legged myotis, and Yuma myotis, as well as San Francisco dusky-footed woodrat, which is common in woodland and riparian habitats throughout the EBMUD watershed lands. Both California red-legged frog and western pond turtle are known to occur within the San Pablo Recreation Area. These species may be present within aquatic habitat near the San Pablo Pipeline alignment. Downstream aquatic habitats may support steelhead and other special-status aquatic species.

Though the pipeline would be located on or near an existing trail, vegetation removal and disturbance to upland, aquatic, and riparian habitats could occur. In addition, the San Pablo Pipeline project could result in disturbance or removal of trees and habitat areas known to be utilized by wintering bald eagles. Potential impacts to special-status nesting birds, burrowing owl, bald eagle, bats, San Francisco dusky-footed woodrat, and aquatic species resulting from construction activities would be similar to those discussed above under the project-level elements. However, if construction activities are not able to avoid removal of known bald eagle winter roosts, impacts could remain significant.

Alameda Whipsnake

Although the San Pablo Pipeline alignment would be located on or near an existing trail, vegetation removal within areas potentially supporting Alameda whipsnake could occur. The project area is located within USFWS proposed critical habitat for this species. Coastal scrub, woodland, grassland, and other habitats along the pipeline alignment could support this species. If Alameda whipsnakes are present, grading and other construction activities within or adjacent to these areas have the potential to result in harassment due to noise or vibration, entrapment in pipeline trenches, and other harm (including direct mortality). In addition, the pipeline could result in temporary removal of proposed critical habitat for this species. Measures similar to those described above under the St. Mary's Road/Rohrer Drive Pipeline discussion would likely be required.

Migratory Wildlife Corridors

The area surrounding the San Pablo Pipeline alignment contains woodland, scrub, grassland, and riparian habitats that may support that provide habitat for mountain lions and other migratory wildlife moving through the San Pablo Recreation Area. Although the pipeline would be located on or near an existing trail, vegetation removal could occur. Vegetation removal and disturbance required to install the pipeline would be temporary, and disturbed areas would be revegetated with native species upon completion of the project. No above-ground structures are proposed as part of the San Pablo Pipeline project; therefore, proposed project activities are not likely to significantly affect wildlife movement through the project area or fragment habitat for migratory or resident wildlife. The San Pablo Dam Recreation Area would continue to facilitate wildlife

movement through the project area and maintain habitat connectivity for migratory wildlife. Project impacts would be less than significant, and no mitigation would be required.

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