

# **39<sup>th</sup> Avenue Reservoir Replacement Project**

## **Biological Resources Assessment**

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#### **1.0 INTRODUCTION**

On March 20, 2012, East Bay Municipal Utility District (EBMUD) biologists performed an assessment of biological resources at EBMUD's 39<sup>th</sup> Avenue Reservoir Replacement Project (Proposed Project) site in the City of Oakland (Alameda County), California. This report describes the results of the assessment, which evaluated the Proposed Project site for the potential to support special status species, and the presence of other sensitive biological resources protected by local, state, and federal laws and regulations. This report also contains an evaluation of potential impacts to special status species and sensitive biological resources that may occur as a result of the Proposed Project and potential measures to compensate for those impacts. This biological assessment provides general information on the potential presence of sensitive species and habitats, but is not a protocol level survey for listed species that may be required for project approval by local, state, or federal agencies. This assessment is based on information available at the time of the study and on site conditions that were observed on the date of the site visit.

#### **1.1 Project Setting**

The Proposed Project is located in the City of Oakland, a city of about 390,000 within a 78 square mile area west of the Berkeley Hills. The Berkeley Hills affect the local climate by their elevation and situation. The oceanic marine layer, which is most developed during the summer months, is usually less than 2,000 feet deep and thus is blocked by the range. This produces a "fog shadow" effect on the areas directly east, which are consequently warmer than areas west of the hills. In winter during spells of tule fog inland, the reverse occurs, with the fog usually confined to areas east of the hills. The Berkeley Hills also have an effect on rainfall, increasing the amount of precipitation along the western slopes, and leaving areas east of the hills relatively drier. In the spring and fall, strongly sinking air from aloft combining with inland high pressure periodically sends hot, dry, and gusty winds across the ridges of the Berkeley Hills, posing a significant fire danger.

The 39<sup>th</sup> Avenue Reservoir Replacement Project is located at the existing 39<sup>th</sup> Avenue Reservoir site; the northeast end of Maybelle Avenue in the City of Oakland. The fenced 8.2 acre Proposed Project site (site) is bounded by 39<sup>th</sup> Avenue to the northwest and Reinhardt Drive to the east. A portion of the site was originally a sag pond created by the Hayward Fault, which lies just west of the reservoir. The Proposed Project site is within a

residential community and is completely encircled by homes. The site is landscaped with numerous redwood trees, pine trees, non-native grasses, and shrubs. The reservoir was originally constructed in 1920 and reconstructed in 1962. The Proposed Project site is zoned as residential (detached unit) by the City of Oakland.

## **1.2 Proposed Project**

EBMUD will demolish its existing 10.2 million gallon (MG) open-cut reservoir and replace it with a new 3.5 MG concrete tank. Basic elements of the Proposed Project include:

- Demolition of the existing reservoir roof system, concrete lining, dam embankment, and existing appurtenances
- Installation of a 3.5 MG concrete tank including a valve pit structure and an inlet/outlet piping modification. The tank will be situated towards the eastern portion of the site in order to avoid the Hayward Fault Zone
- The construction footprint is approximately 3 acres
- Reservoirs will have a flat roof to minimize visual impacts
- The bottom of the tank will be set at approximately 408 feet with an overflow elevation of 433 feet, and a tank diameter of approximately 175 feet
- The existing cast iron portion of the inlet/outlet which extends beyond the north west embankment will be replaced
- Installation of new landscaping features to provide screening by using topographic, hardscape, landscape and plant materials

## **2.0 REGULATORY BACKGROUND**

The following sections explain the regulatory context of the biological assessment, including applicable laws and regulations that were applied to the field investigations and analysis of potential project impacts.

### **2.1 Sensitive and Special Status Species**

Special status species include those plants and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). These acts afford protection to both listed and proposed species. In addition, CDFG Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue; USFWS Birds of Conservation Concern, sensitive species included in USFWS Recovery Plans; and, CDFG special status invertebrates are all considered special status species. Although CDFG Species of Special Concern generally have no special legal status, they are given special consideration under CEQA.

In addition to regulations for special status species, the active nests of most common bird species are protected by the Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code. While active nests of common bird species are not considered to be of special-status under CEQA, these nests are protected by state and federal law. Under this legislation, destroying active nests, eggs, and young is illegal. Plant species on California Native Plant Society (CNPS) Lists 1 and 2 and locally rare, unusual and significant plants (Lake 2010) are also considered special status plant species. Substantial adverse effects to

these species are considered significant according to CEQA. CNPS List 3 and List 4 plants have little or no protection under CEQA, but are included in this analysis for completeness.

## **2.2 Sensitive and Special Status Biological Communities**

Special status biological communities include communities and habitats that fulfill special functions or have special values, such as wetlands, streams, and riparian habitat, and sensitive natural plant communities. These communities and habitats are protected under federal regulations such as the Clean Water Act, state regulations such as the Porter-Cologne Act, the California Department of Fish and Game (CDFG) Streambed Alteration Program, and the California Environmental Quality Act (CEQA), or local ordinances or policies (City or County Tree Ordinances, Special Habitat Management Areas, and General Plan Elements).

**Waters of the United States.** The U.S. Army Corps of Engineers (Corps) regulates “Waters of the United States” under Section 404 of the Clean Water Act (CWA). “Waters of the U.S.” are defined broadly as waters susceptible to use in commerce, including interstate waters and wetlands, all other waters (intrastate waterbodies, including wetlands), and their tributaries (33 CFR 328.3). Potential wetland areas, according to the three criteria used to delineate wetlands stated in the Corps Wetlands Delineation Manual (Environmental Laboratory 1987), are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Areas that are inundated for sufficient duration and depth to exclude growth of hydrophytic vegetation are subject to Section 404 jurisdiction as “other waters” and are often characterized by an ordinary high water mark. Other waters, for example, generally include lakes, rivers, and streams. The placement of fill material into “Waters of the U.S.” (including wetlands) generally requires an individual or nationwide permit from the Corps under Section 404 of the CWA.

**Waters of the State.** The term “Waters of the State” is defined by the Porter-Cologne Act as “any surface water or groundwater, including saline waters, within the boundaries of the state.” The Regional Water Quality Control Board (RWQCB) protects all waters in its regulatory scope, but has special responsibility for wetlands, riparian areas, and headwaters. These waterbodies have high resource value, are vulnerable to filling, and are not systematically protected by other programs. RWQCB jurisdiction includes “isolated” wetlands and waters that may not be regulated by the Corps under Section 404. “Waters of the State” are regulated by the RWQCB under the State Water Quality Certification Program which regulates discharges of fill and dredged material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Projects that require a Corps permit, or fall under other federal jurisdiction, and have the potential to impact “Waters of the State,” are required to comply with the terms of the Water Quality Certification determination. If a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to “Waters of the State,” the RWQCB has the option to regulate the dredge and fill activities under its state authority in the form of Waste Discharge Requirements.

**Streams, Lakes, and Riparian Habitat.** Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by CDFG under Sections 1600-1616 of the

State Fish and Game Code. Alterations to or work within or adjacent to streambeds or lakes generally require a Lake and Streambed Alteration Agreement. The term stream, which includes creeks and rivers, is defined in the California Code of Regulations as follows: “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation” (14 CCR 1.72). In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG ESD 1994). Riparian is defined as, “on, or pertaining to, the banks of a stream;” therefore, riparian vegetation is defined as, “vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself” (CDFG ESD 1994). Removal of riparian vegetation also requires a Lake and Streambed Alteration Agreement from CDFG.

**Other Sensitive Biological Communities.** Other sensitive biological communities not discussed above include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the CDFG. CDFG ranks sensitive communities as “threatened” or “very threatened” and keeps records of their occurrences in its California Natural Diversity Database (CNDDDB). Sensitive plant communities are also identified by CDFG on their List of California Natural Communities Recognized by the CNDDDB. Impacts to sensitive natural communities identified in local or regional plans, policies, and regulations or by the CDFG or the U.S. Fish and Wildlife Service (USFWS) must be considered and evaluated under CEQA (California Code of Regulations: Title 14, Div. 6, Chap. 3, Appendix G). Specific habitats may also be identified as sensitive in City or County General Plans or ordinances.

Wildlife movement corridors are defined as areas that connect suitable wildlife habitat areas in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features such as canyon drainages, ridgelines, or areas with vegetation cover provide corridors for wildlife travel. Wildlife movement corridors are important because they provide access to mates, food, and water; allow the dispersal of individuals away from high population density areas; and facilitate the exchange of genetic traits between populations (Beier and Loe 1992). Wildlife movement corridors are considered sensitive by resource and conservation agencies. In general, any activities in or adjacent to defined wildlife movement corridors (i.e., riparian corridor, areas that are contiguous with adjacent open space areas, etc.) that could potentially disturb, restrict movement or activity, disrupt natal areas, or facilitate increased predation of wildlife species would be considered a significant adverse impact.

### **2.3 Local Policies and 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. However, it is 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.

**Alameda County.** The Alameda County tree ordinance (Ordinance No.: 0-2004-23) preserves and protects trees within County rights-of-way (land, which by deed, conveyance, agreement, dedication, usage or process of law is reserved for use by the County or any other public entity or by the licensees or agents of the County or any other public entity). The ordinance prohibits any person or utility to remove or cause to be removed any tree from the right-of-way unless so authorized by an encroachment permit issued by the County. In Alameda County Resolution No. 2008-222, the Board of Supervisors directed the Community Development Agency to encourage private landscaping projects to include Bay-Friendly landscaping elements. Bay-Friendly landscaping includes landscaping in harmony with the natural conditions of the San Francisco Bay watershed and protecting and enhancing wildlife habitat and diversity

**City of Oakland.** A permit must be applied for before removing a protected tree. A permit is also required if work might damage or destroy a protected tree. Protected trees include coast live oak (*Quercus agrifolia*) four inches or larger in diameter, measured four and a half feet above the ground, or any other species nine inches in diameter or larger, except eucalyptus and Monterey pine trees. Eucalyptus trees are not protected and no permit is required. Monterey pines do not require a permit but the species must be verified by city staff prior to removal.

## **2.4 Conservation Plans**

Habitat Conservation Plans (HCP) are long-term agreements between an applicant and the U.S. Fish and Wildlife Service. They are designed to offset any harmful effects that a proposed activity might have on federally-listed threatened and endangered species. The HCP process allows development to proceed while providing a conservation basis to conserve the species and provide for incidental take. A “No Surprises” policy provides assurances to landowners participating in HCP efforts

The Natural Communities Conservation Plan (NCCP) Program, managed by CDFG, is designed to conserve multiple species and their habitats, while also providing for the compatible use of private land. Through local planning, the NCCP planning process protects wildlife and habitat before the landscape becomes so fragmented or degraded by development that listings are required under the federal Endangered Species Act. Instead of saving small, disconnected units of habitat for just one species at a time, agencies, local jurisdictions, and other interested parties have an opportunity, through the NCCP, to work cooperatively to develop plans that consider broad landscapes, or “ecosystems,” and the needs of many species. Partners enroll in the programs and, by mutual consent, habitat areas with high conservation values are set aside and may not be developed. Partners also agree to study, monitor, and develop management plans for these “reserve” areas. The program provides a process for fostering economic growth by allowing approved development in enrolled areas with lower conservation values.

## **3.0 METHODS**

On March 20, 2012 the Proposed Project site was traversed on foot to determine (1) plant communities and habitats present within the Proposed Project site, (2) if existing conditions provided suitable habitat for any special status plant or wildlife species, and (3) if sensitive habitats and/or species were present. All plant species encountered were recorded.

### 3.1 Sensitive and Special Status Species

#### 3.2.1 Literature Review

Potential occurrence of special status species in the Proposed Project site was evaluated by first determining which special status species occur in the vicinity of the Proposed Project site through a literature and database search. Due to the level of development in the area, California Natural Diversity Database (CNDDDB) records searches for known occurrences of special status species focused on a one mile radius around the Proposed Project site. The following sources were reviewed to determine which special status plant and wildlife species may occur or have been documented to occur in the vicinity of the Proposed Project site:

- California Department of Fish and Game California Natural Diversity Database records (CDFG-CNDDDB 2011)
- Special Vascular Plants, Bryophytes, and Lichens List (CDFG 2012)
- Special Animals List (CDFG 2011)
- USFWS quadrangle species list for the Oakland East quad (USFWS 2012)
- CNPS Electronic Inventory records (CNPS 2012)
- CNPS list of Rare, Unusual and Significant Plants of Alameda and Contra Costa Counties (Lake 2010)
- Alameda County Breeding Bird Atlas (Richmond et al. 2011)

#### 3.2.2 Site Assessment

The Proposed Project site was surveyed to search for suitable habitats for species identified in the literature review as occurring in the vicinity. The potential for each special status species to occur in the Proposed Project site was then evaluated according to the following criteria:

- 1) **No Potential.** Habitat on and adjacent to the Proposed Project site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- 2) **Unlikely.** Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the Proposed Project site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- 3) **Moderate Potential.** Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the Proposed Project site is unsuitable. The species has a moderate probability of being found on the site.
- 4) **High Potential.** All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the Proposed Project site is highly suitable. The species has a high probability of being found on the site.
- 5) **Present.** Species is observed on the Proposed Project site or has been recorded (i.e. CNDDDB, other reports) on the Proposed Project site recently.

The site assessment is intended to identify the presence or absence of suitable habitat for each special status species known to occur in the vicinity in order to determine its

potential to occur in the Proposed Project site. The site assessment does not constitute a protocol-level survey and is not intended to determine the actual presence or absence of a species; however, if a special status species is observed during the site visit, its presence was recorded and discussed.

### **3.2 Sensitive and Special Status Biological Communities**

Prior to the site visit, the soils (Natural Resources Conservation Service Web Soil Survey) of the site were examined to determine if any unique soil types (e.g., limestone, serpentine, and gabbro) that could support sensitive plant communities and/or aquatic features were present in the Proposed Project Area. Biological communities present in the Proposed Project site were classified based on existing plant community descriptions described in *A Manual of California Vegetation* (Sawyer et al. 2009) and/or *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988). However, in some cases it is necessary to identify variants of community types or to describe non-vegetated areas that are not described in the literature. Biological communities were classified as sensitive or non-sensitive as defined by CEQA and other applicable laws and regulations.

Sensitive biological communities are defined as those communities that are given special protection under CEQA and other applicable federal, state, and local laws, regulations and ordinances as discussed above in Section 2. Methods used to identify sensitive biological communities are discussed below.

**Wetlands, Waters and Riparian.** The Proposed Project site was surveyed to determine if any wetlands and waters potentially subject to jurisdiction by the Corps, RWQCB, or CDFG were present. The preliminary wetland assessment was based primarily on the presence of wetland plant indicators and any observed indicators of wetland hydrology or wetland soils. The preliminary waters and riparian assessment were based primarily on hydrologic indicators.

**Other Sensitive Biological Communities.** The Proposed Project site was surveyed for the presence of other sensitive biological communities, including sensitive plant and wildlife species habitats, sensitive plant communities recognized by CDFG, and wildlife movement/nursery areas. Aerial photographs of the Proposed Project area were evaluated for riparian corridors and areas that are contiguous with adjacent open space areas.

## **4.0 RESULTS**

### **4.1 Soils**

Soils at the site are Xerorthents-Los Osos complex, 30 to 50 percent slopes. Xerorthents consist of soil material resulting from cutting or filling for urban development. The Los Osos series consists of moderately deep, well drained soils that formed in material weathered from sandstone and shale. This soil type is typically continuously dry after May until October and is moist or saturated the rest of the year.

### **4.2 Sensitive and Special Status Species**

#### **4.2.1 Sensitive and Special Status Plant Species**

Sensitive plant species identified as occurring in the Proposed Project site or potentially affected by the Proposed Project (USFWS 2012), and species for which CNDDDB occurrences (CDFG-CNDDDB 2011) have been noted within one mile of the

Proposed Project site are listed in Table 1 and discussed individually below. Locally rare, unusual and significant plants that may occur in the Proposed Project area (Lake 2010) are shown in Table 2. See Tables 1 and 2 for species' status.

**Bent-flowered fiddleneck** (*Amsinkia lunaris*) is an annual herb found in coastal bluff scrub habitats, cismontane woodlands and valley and foothill grasslands; usually on shaded or sheltered slopes in openings or edges of oak woodland, in herb-rich understory of coast live oak (*Quercus agrifolia*) and big-leaf maple (*Acer macrophyllum*), on edges of poison oak (*Toxicodendron diversilobum*) thickets, and on steep grassy banks in woodland openings. It flowers from March to June.

**Pallid manzanita** (*Arctostaphylos pallida*) is a perennial shrub that grows on rocky ridges and outcrops where there is no little or no topsoil and the nutrient supply is low. The largest, most dense stands occur in shales and cherts, with smaller populations in sandstones. Fire is the only reliable method of reproduction. It flowers from January through March.

**Round-leaved filaree** (*California macrophylla*) is an annual (biennial) herb that grows in open habitat such as grassland and scrub. It flowers from March through July.

**Santa Clara red ribbons** (*Clarkia concinna* ssp. *automixa*) is an annual herb found in woodland habitats in sunny to half shady sites. It grows best in pebbly, loamy soil, sandy clay soil that is moist. It flowers from April through June.

**Presidio clarkia** (*Clarkia franciscana*) is an annual herb restricted to serpentine soils in grassland and coastal scrub communities and is known from only two locations within highly urbanized areas of the San Francisco Bay area. It flowers from May through June.

**Western leatherwood** (*Dirca occidentalis*) is a deciduous perennial shrub that is generally found on north or north east slopes in mixed evergreen forests and chaparral. It flowers from November through March.

**Tiburon buckwheat** (*Eriogonum luteolum* var. *caninum*) is an annual herb that grows on exposed serpentine soils. It flowers from May through October.

**Fragrant fritillary** (*Fritillaria liliacea*) is a perennial herb found in coastal scrub, valley and foothill grassland, and coastal prairie typically in open hilly grasslands on andesitic and basaltic soils. It flowers from February through April.

**Diablo helianthella** (*Helianthella castanea*) is a perennial herb that grows on slopes and hillsides in grassland, open woods, and chaparral, and is most frequently encountered at the interface between chaparral and adjacent plant communities. Flowers appear from April to June.

**Loma Prieta hoita** (*Hoita strobilina*) is a perennial herb that occurs in chaparral, riparian and oak woodland habitats usually in serpentine soils. It flowers from June through August.



**Robust monardella** (*Monardella villosa* ssp. *villosa*) is a perennial herb found in openings in broadleaved upland forest, chaparral, cismontane woodland, valley and foothill grasslands, and coastal scrub. The species flowers from June to July.

**Woodland woollythreads** (*Monolopia gracilens*) is an annual herb typically found on serpentine soils in grasslands, chaparral, oak woodlands, and coniferous forest openings. It flowers from February through July.

**San Francisco popcorn flower** (*Plagiobothrys torreyi* var. *diffusus*) is an annual herb that occurs in coastal prairie and grassland habitats. It flowers from March through June.

The **most beautiful jewelflower** (*Streptanthus glandulosus* ssp. *glandulosus*) is an annual herb most commonly found in serpentine soils on barren slopes, chaparral openings and steep woodlands. It flowers from April through July.

The Proposed Project site visit was conducted outside of the blooming period of many plant species and it was not possible to identify all potential plant species that might be present. Therefore, the site visit focused on evaluating the suitability of the onsite habitats to support special-status plant species occurring in the region.

The Proposed Project site is landscaped and regularly maintained. The plant species present within the construction area are characteristic of disturbed and urban habitats and include only planted landscape and other non-native species. Plant species observed during the site visit are shown in Table 3. The Proposed Project site lacks unique substrates, (e.g., alkaline or serpentine soils) micro-habitats (e.g., volcanic rock outcrops, vernal pools, etc.), is entirely surrounded by residential development, and does not provide habitat characteristics associated with special status plant species. For these reasons, no special-status plant species are expected to occur in the Proposed Project site and no special-status plant species were observed during the site visit.

#### 4.2.2 Sensitive and Special Status Wildlife Species

Sensitive wildlife species identified as occurring in the Proposed Project site or potentially affected by the Proposed Project (USFWS 2012), and species for which CNDDDB occurrences (CDFG-CNDDDB 2011) have been noted within one mile of the Proposed Project site are listed in Table 1 and discussed individually below. Table 4 lists the bird species that potentially nest in the vicinity of the Proposed Project site. See Table 1 for species' status.

**Vernal pool fairy shrimp** (*Branchinecta lynchi*) occur primarily in vernal pools, seasonal wetlands that fill with water during fall and winter rains and dry up in spring and summer. They typically hatch when the first rains of the year fill vernal pools and mature in about 41 days under typical winter conditions. Adult fairy shrimp live only for a single season, while there is water in the pools. Toward the end of their brief lifetime, females produce thick-shelled "resting eggs" also known as cysts. During the summer, these cysts become embedded in the dried bottom mud, and during the winter, they are frozen for varying periods. These cysts hatch when the rains come again.

**Bay checkerspot butterflies** (*Euphydryas editha bayensis*) historically occurred in Contra Costa, Alameda, San Francisco, and especially San Mateo and Santa Clara Counties where the only known populations remain. Serpentine outcrops harbor the native plants bay checkerspot butterflies require. The primary larval food plant is dwarf plantain (*Plantago erecta*). For those larvae who might not have accomplished their fourth instar before plantain dries, purple owl's clover (*Castilleja densiflora*), and exerted paintbrush (*Castilleja exserta*) are critical for the extra food needed to reach diapause. Nectar plants for the adults include California goldfields (*Lasthenia californica*), desert parsley (*Lomatium* sp.), and tidy-tips (*Layia platyglossa*). The emergence of the butterflies from pupae between late February and early May correlates to the blooming of their nectar plants. Feeding, mating and egg laying all occur during this 4-6 week flight season. The normal life span of the bay checkerspot butterfly is one year.

The **callippe silverspot butterfly** (*Speyeria callippe callippe*) is found exclusively within the grassy hills surrounding San Francisco Bay that support its native host plant, Johnny-jump-up (*Viola pedunculata*). This species is univoltine, has five larval instars, and develops for two weeks in a pupal case before emerging as an adult. The adult flight period averages from mid-May to mid-July. The adult feeds on several native and non-native flowering plants.

The only known spawning population for the Southern Distinct Population Segment of **green sturgeon** (*Acipenser meditostris*) is in the Sacramento River both downstream and upstream of the Red Bluff Diversion Dam. Juveniles rear in fresh and estuarine areas for 1-4 years before dispersing into salt water. Juvenile green sturgeon feed in San Pablo Bay, Suisun Bay, and the Delta. Green sturgeon spawn every 2-4 years. Spawning occurs from March to July, with peak activity from mid-April to mid-June.

The **tidewater goby** (*Eucyclogobius newberryi*) occurs in brackish water along the California coast. It is found from the Smith River, Del Norte County to northern San Diego County. Tidewater gobies generally live for only one year, with few individuals living longer than a year. Reproduction occurs at all times of the year, with the peak of spawning activity occurring during the spring and then again in the late-summer. It inhabits lagoons formed by streams running into the sea. The tidewater goby prefers salinities of less than 10 ppt.

**Delta smelt** (*Hypomesus transpacificus*) primarily live in low salinity habitats of the northern estuary prior to migrating into freshwater habitats to spawn. Spawning occurs in sloughs and shallow edge areas in the Delta and Sacramento River above Rio Vista in the Cache Slough/Sacramento River Deep Water Ship Channel complex. Spawning has been historically recorded in Suisun Marsh. Rearing occurs in or just above the low salinity zone of the Delta, typically in Suisun Bay.

The **Central California Coast steelhead** (*Oncorhynchus mykiss*) Distinct Population Segment includes all naturally spawned anadromous populations below natural and manmade impassable barriers in California streams from the Russian River (inclusive) to Aptos Creek (inclusive), the drainages of San

Francisco, San Pablo, and Suisun Bays, and tributary streams to Suisun Marsh. Historically, most streams with suitable habitat within the San Francisco Bay Estuary supported steelhead populations, however, currently only small runs, estimated to be less than 10,000 fish, exist in the San Francisco Bay tributaries. Ocean-maturing steelhead typically spawn between December and April, with the peak between January and March, but migrating steelhead may be seen in the San Francisco Bay and Suisun Marsh and Bay as early as August. After spawning, steelhead may return to the ocean and spawn the following year. Within 1-4 years (usually 2 years), steelhead migrate downstream as “smolts.”

**Spring-run Chinook salmon** (*Oncorhynchus tshawytscha*) immigrate from the ocean into the Delta in late January and early February, entering the Sacramento River between March and September. Adult spring-run Chinook salmon may hold in natal tributaries for up to several months before spawning. Spawning occurs in mainstem and tributaries to the Sacramento River and San Joaquin River between mid-August and early October, peaking in September. Spring-run Chinook salmon rear in streams of the Sacramento River and San Joaquin River watersheds for 12-16 months, but some migrate to the ocean within 8 months. Emigration occurs from freshwater spawning areas in the Sacramento River and San Joaquin River watersheds downstream through the Delta to the ocean.

**Winter-run Chinook salmon** (*Oncorhynchus tshawytscha*) spawn in the mainstem Sacramento River between Keswick Dam and Red Bluff Diversion Dam, and Battle Creek. Upstream migration of adult winter-run Chinook salmon reportedly occurs from December to July with a peak between January and April. Spawning on the Sacramento River occurs between late-April and mid-August with a peak generally in May and June. Immigration and emigration occurs in the Sacramento River watershed downstream through the Delta to the ocean. During smoltification, rearing occurs within the region between the Delta and the mouth of San Francisco Bay. Juvenile rearing in the Delta occurs primarily from November through early May.

Contra Costa and Alameda counties contain the majority of known **California red-legged frog** (*Rana draytonii*) occurrences in the San Francisco Bay Area. Breeding sites include a variety of aquatic habitats. Larvae, tadpoles and metamorphs use streams, deep pools, backwaters (within streams and creeks), ponds, marshes, sag ponds, dune ponds, and lagoons. During dry periods, California red-legged frogs are seldom found far from water. However, during wet weather, individuals may make overland excursions through upland habitats over distances up to two miles. California red-legged frogs breed from November through April. Larvae metamorphose in 3.5 to 7 months, typically between July and September.

The **Alameda whipsnake's** (*Antrozous pallidus*) range is restricted to the inner Coast Range in western and central Contra Costa and Alameda Counties. The Alameda whipsnake occurs primarily in coastal scrub and chaparral communities, but also forages in a variety of other communities, including grasslands and open woodlands. Rock outcrops with deep crevices or abundant rodent burrows are important habitat components for overnight dens, refuges from predators and

excessive heat, and foraging. The Alameda whipsnake requires open and partially open, low-growing shrub communities for many of its biological needs. Alameda whipsnakes have two seasonal peaks in activity, one during the spring mating season and the other during late summer/early fall.

The Pacific coast population of the **western snowy plover** (*Charadrius alexandrinus nivosus*) breeds primarily on coastal beaches from southern Washington to southern Baja California, Mexico. Sand spits, dune-backed beaches, beaches at creek and river mouths, and salt pans at lagoons and estuaries are the main coastal habitats for nesting. Earliest nests on the California coast occur during the first week of March in some years and by the third week of March in most years. Peak nesting is from mid-April to mid-June. Hatching lasts from early April through mid-August, with chicks reaching fledging age approximately one month after hatching. While some snowy plovers remain in their coastal breeding areas year-round, others migrate south or north for winter.

The **California brown pelican** (*Pelecanus occidentalis californicus*) is found in estuarine, marine subtidal, and marine pelagic waters along the California coast. It breeds on the Channel Islands from March to early August, and lays eggs March to April, and as late as June. Usually rests on water or inaccessible rocks (either offshore or on mainland), but also uses mudflats, sandy beaches, wharfs, and jetties. After breeding, beginning as early as mid-May, individuals leave colonies in the Channel Islands and in Mexico, and disperse along the entire California coast. Most return to breeding colonies by March or April.

The **California clapper rail** (*Rallus longirostris obsoletus*) occurs yearlong in coastal wetlands and brackish areas around San Francisco, Monterey, and Morro bays. They prefer emergent wetland dominated by pickleweed (*Arthrocnemum subterminale*) and cordgrass (*Spartina* sp.), and brackish emergent wetland with these two species and bulrush (*Scirpus* sp.). In the San Francisco Bay area, it breeds mid-March through July, with peaks observed early May and late June. They forage in higher marsh vegetation, along vegetation and mudflat interface, and along tidal creeks. In saline emergent wetlands, they nest mostly in lower zones, where cordgrass is abundant and tidal sloughs are nearby, and in fresh or brackish water. They build nests in dense cattail (*Typha* sp.) or bulrush.

The **California least tern** (*Sternula antillarum browni*) is migratory in California, usually arriving at breeding territories in mid-May in northern California. Breeding colonies in San Francisco Bay are typically located in abandoned salt ponds and along estuarine shores. They feed primarily in shallow estuaries or lagoons where small fish are abundant and nest in loose colonies on open, sandy or gravelly shores near shallow-water feeding areas in areas relatively free of human or predatory disturbance. Most nests are completed by mid-June.

The **salt marsh harvest mouse** (*Reithrodontomys raviventris*) is found only in saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed (*Arthrocnemum subterminale*) saline emergent wetland is preferred habitat. Grasslands adjacent to pickleweed marsh are used, but only when new grass

growth affords suitable cover in spring and summer months. It breeds mostly from March to November.

The **American badger** (*Taxidea taxus*) is most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Badgers dig burrows in friable soil for cover and frequently reuse old burrows, although some may dig a new den each night, especially in summer. Badgers mate in summer and early fall and young are born in burrows mostly in March and April.

The Proposed Project site visit focused on evaluating the suitability of the onsite habitats to support special-status fish and wildlife species occurring in the region. The site is landscaped and regularly maintained. The plant species present within the Proposed Project site are characteristic of disturbed and urban habitats and are dominated by planted landscape and other non-native species (Table 3). The Proposed Project site does not provide habitat characteristics associated with special status wildlife species (e.g., open water, native vegetation communities, rock outcrops, vernal pools, wetlands, riparian habitat, etc.), and is entirely surrounded by residential development. For these reasons, no special-status wildlife species were observed during the site visit or are expected to occur in the Proposed Project site.

#### **4.3 Sensitive and Special Status Biological Communities**

The entire Proposed Project site is considered an urban habitat as defined by Mayer and Laudenslayer (1988). A distinguishing feature of urban wildlife habitat is the mixture of native and exotic species. Urban vegetation is relatively static in species composition because of maintenance. The vegetation on the Proposed Project site consists of planted native and non-native landscape tree species. Understory vegetation of the Proposed Project site is dominated by English ivy (*Hedera helix*), non-native grasses and forbs. A list of plant species observed on site is included in Table 3.

**Sensitive Biological Communities.** A review of the CNDDDB (CNDDDB 2011) indicates that Serpentine Bunchgrass Grassland community occurs within one mile of the Proposed Project site.

*Serpentine Bunchgrass Grassland* - Over sixty percent of the serpentine vegetation in the San Francisco Bay Region is Serpentine Bunchgrass Grassland (McCarten 1993). The soil is generally deeper in the bunchgrass habitats than in other serpentine communities. The native bunchgrass species associated with this community are *Calamagrostis ophitidis*, *Elymus glaucus*, *Festuca idahoensis*, *Koeleria macrantha*, *Melica torreyana*, *Poa secunda* ssp. *secunda*, *Elymus multisetus* and *Stipa pulchra*. The diversity and density of this vegetation appears to be a function of disturbance and localized habitat conditions. Grazing and other disturbances of the bunchgrass reduce density and diversity often resulting in sparse vegetation dominated by annual grasses and with *Stipa pulchra* representing the only bunchgrass species. Localized soil and moisture conditions also exist that result in very dense hummocks of single species such as *Calamagrostis ophitidis*, *Elymus glaucus*, *Koeleria macrantha*, or *Elymus multisetus*.

No Serpentine Bunchgrass Grassland or other sensitive biological communities occur on the Proposed Project site.

**Wetlands, Waters and Riparian Habitats.** Waters and riparian habitats are located about 500 ft from the Proposed Project site and occur in Lion Creek. Lion Creek originates in the Berkeley Hills, flowing largely through culverts and channels to its mouth at San Leandro Bay. Leidy et al (2005) concluded that the Lion Creek watershed (including Lion, Horseshoe, and Chimes creeks) historically supported anadromous steelhead (*Oncorhynchus mykiss*). Suitable habitat upstream from Highway 13 in the Berkeley Hills supports a small, isolated and apparently self-sustaining population of what may be wild steelhead. Extensive channelization and culverting of Lion Creek between the Bay and Horseshoe Creek near State Highway 13 likely serve as barriers to migrating steelhead, although an assessment of possible downstream barriers was recommended (Hagar and Demgen 1998). The Proposed Project will not impact nearby waters or riparian habitats.

Two drainage areas located onsite (east and west of the existing reservoir) have the potential to contain wetlands. The sparsely vegetated drainage areas contain plant species characteristic of wetlands (willows *Salix* sp., rushes *Juncus* sp., sedges *Carex* sp., and velvetgrass *Holcus lanatus*), and exhibit wetland hydrology. These drainage areas may be considered to be jurisdictional wetlands by the Corps.

**Other Sensitive Biological Communities.** Wildlife corridors link together areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. Wildlife movement activities usually fall into one of three movement categories: (1) dispersal (e.g., juvenile animals from natal areas, or individuals extending range distributions); (2) seasonal migration; and (3) movements related to home range activities (foraging for food or water, defending territories, searching for mates, breeding areas, or cover). The Proposed Project site does not function as an important regional wildlife corridor or nursery area because the site and adjacent areas have been developed, paved, or landscaped. The site is surrounded by residential uses on all four sides, and is adjacent to the Warren Freeway (SR-13).

#### **4.4 Local Policies and Ordinances**

Numerous trees occur on Proposed Project site that are considered “protected trees” by the City of Oakland (coast live oaks, and big leaf maple, deodar cedar and coast redwoods  $\geq 9$  in. dia.).

#### **4.5 Conservation Plans**

There are no approved Habitat Conservation Plans or Natural Community Conservation Plans in the Project Area. Therefore, no further discussion of this topic is provided.

### **5.0 POTENTIAL IMPACTS AND MITIGATION**

The following section presents potential impacts and recommended measures to avoid or reduce impacts to sensitive habitats and species. For the purposes of this biological assessment, the Proposed Project is considered to have a significant impact if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan

## **5.1 Sensitive and Special Status Species**

### **5.1.1 Sensitive and Special Status Plant Species**

The Proposed Project site does not contain any habitat suitable to support the sensitive and special status plant species identified in Tables 1 or 2. The Proposed Project site is landscaped and regularly maintained. The habitats present within the construction area are characteristic of disturbed and urban habitats and are dominated by planted landscape and other non-native species. No impacts to sensitive and special status plant species are anticipated.

### **5.1.2 Sensitive and Special Status Wildlife Species**

The Proposed Project site does not contain any habitat suitable to support the sensitive species identified in Table 1. The Proposed Project site is landscaped and regularly maintained. The habitats present within the construction area are characteristic of disturbed and urban habitats and include only planted landscape and other non-native species. No impacts to the special status wildlife species listed in Table 1 are anticipated.

**Nesting Special Status Bird Species.** Avian species that are protected under the Migratory Bird Treaty Act or the California Fish and Game Code have potential to nest within the Proposed Project area. These species may use trees, shrubs, man-made structures or the ground for nesting habitat. Disruption of nesting special status avian species could occur as a result of increased human activity (e.g., due to the use of heavy equipment and human traffic) during the breeding season (approximately February through August in the Berkeley Hills). Construction activities could disturb nesting avian species and lead to nest abandonment or poor reproductive success.

Implementation of the following mitigation measures will lessen potential impacts to nesting avian species to a less than significant level.

- If site clearing, demolition, and construction do not commence between September 1 and January 31, then preconstruction surveys, for nesting birds should be conducted by a qualified biologist to ensure that no nest will be

disturbed during project implementation. This survey shall be conducted no more than 14 days prior to the initiation of demolition/construction activities during the early part of the breeding season (February through April) and no more than 30 days prior to the initiation of these activities during the late part of the breeding season (May through August). During this survey, the biologist will inspect all trees and other habitats in and immediately adjacent to the impact areas for nests. If an active nest is found sufficiently close to work areas to be disturbed by these activities, the biologist, in consultation with CDFG, will determine the extent of a construction-free buffer zone to be established around the nest to ensure that no nests of species protected by the Migratory Bird Treaty Act or State code will be disturbed during project implementation.

- If active nests of migratory bird species (listed in the MBTA and/or raptors) are within the project area or in areas subject to disturbance from project activities, a no-disturbance buffer will be required in order to avoid nest disturbance. Avoidance buffer is based on the nest location, topography, cover and species' tolerance to disturbance and is determined by a qualified biologist.
- If an avoidance buffer is not achievable, a qualified biologist will monitor the nest(s) to document that no take of the nest (nest failure) has occurred. Active nests cannot be taken or destroyed under the MBTA and, for raptors, under the CFGC. If it is determined that construction activity is resulting in nest disturbance, work should cease immediately and CDFG should be contacted.

**Bat Species.** Roosting habitats for several bat species are present in the Proposed Project site. These species typically use buildings, trees, bridges, and rock crevices for roost habitat. Construction activities may result in the removal or disturbance of hibernation or maternal roost sites due to tree removal, ground disturbance, noise or human intrusion. This may result in direct mortality and reduction in reproductive success. Implementation of the following mitigation measures will lessen potential impacts to bat species to a less than significant level.

- Preconstruction surveys should be conducted by a qualified biologist for all construction areas that provide suitable bat roosting habitat including snags, rotten stumps, mature trees with broken limbs, exfoliating bark, dense foliage, structures, bridges, culverts, caves, rock outcrops, etc.
- Bat colonies and roost sites should be avoided to the maximum extent practicable between October 16 and February 28, and between April 16 and August 31.
- If potential roost sites (trees, snags, facilities, structures, etc.) are to be removed, trimmed, demolished, or repaired between March 1 and April 15 and/or September 1 through October 15, limbs smaller than 3 in. in diameter should be cut and/or portions of the facility/structure removed, and the tree, structure, or facility left overnight to allow time for any bats using the roost to leave and find another roost. A biological monitor should be present during the initial trimming or facility removal. Trees may be cut down, or the facility/structure removed the following day, pending inspection by the biologist.



- If maternity roost sites are identified during preconstruction surveys, and construction work is likely to disturb these sites and cannot be rescheduled, CDFG should be contacted to discuss options for avoidance and mitigation.

## 5.2 Sensitive and Special Status Biological Communities

**Sensitive Biological Communities.** Planted native and non-native trees, shrubs and non-native ground cover dominate the plant species within the Proposed Project site. No sensitive biological communities occur on the site. No impacts to sensitive and special status biological communities are anticipated.

**Wetlands, Waters and Riparian Habitats.** Two drainage areas located onsite (east and west of the existing reservoir) have the potential to contain wetlands. The sparse vegetation in the drainage areas contains some plant species characteristic of wetlands (willows *Salix* sp., rushes *Juncus* sp., sedges *Carex* sp., and velvetgrass *Holcus lanatus*), surface water, and/or saturated soils. These drainage areas may be considered to be jurisdictional wetlands by the Corps. Modifications to the inlet/outlet pipe and the removal of the reservoir dam have the potential to impact the drainage area to the west of the reservoir, where historically a sag pond existed.

Implementation of the following mitigation measure will lessen potential impacts to wetlands to a less than significant level.

- If impacts to potentially jurisdictional wetlands cannot be avoided, then a qualified biologist will complete a formal wetland delineation in accordance with Corps guidelines and EBMUD will obtain the appropriate permits/agreements, such as 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. Terms and conditions of these permits will likely constrain construction activities.

**Other Sensitive Biological Communities.** The Proposed Project site does not function as an important regional wildlife corridor or nursery site because the site and adjacent areas have been developed, paved, or landscaped. The site is surrounded by residential uses on all four sides, and is adjacent to the Warren Freeway (SR-13). No impacts to other sensitive biological communities are anticipated.

## 5.3 Local Plans and Ordinances

Chapter 12.36 of the City of Oakland Municipal code identifies protected trees, including coast live oak, coast redwood, deodar cedar and big leaf maple. Protected trees that are subject to the City of Oakland's tree ordinance may be removed for the Proposed Project.

Implementation of the following mitigation measures will lessen potential impacts to locally protected tree species to a less than significant level.

- 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 Proposed 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 drip line of each tree to hold back fill. The delineation markers will remain in place for the duration of all construction work.

- Landscape vegetation, including trees, removed as a result of the Proposed Project will be replaced with species identified by the City of Oakland Watershed Improvement Program as “Fire Wise Native Plants.”
- The non-native trees and shrubs will be replaced on a 1:1 basis and native trees replaced on a 3:1 basis. A five-year tree monitoring program will be implemented with appropriate performance standards which may include, but are not limited to a not less than 75 percent survival rate of replacement tree plantings and a requirement that trees be able to be self-sustaining at the end of five years.

## 6.0 REFERENCES

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**Table 1. List of Special Status Plant and Wildlife Species (CDFG-CNDDDB 2011, USFWS 2012).**

COMMON NAME	SCIENTIFIC NAME	CNDDDB <sup>1</sup>	FEDERAL STATUS <sup>2</sup>	STATE STATUS <sup>2</sup>	CNPS STATUS <sup>3</sup>	OCCURRENCE POTENTIAL
<b>Plants</b>						
bent flowered fiddleneck	<i>Amsinckia lunaris</i>	1 (1932)	None	Special Plant	List 1B.2	No Potential
pallid manzanita	<i>Arctostaphylos pallida</i>	0	Threatened	Endangered	List 1B.1	No Potential
round-leaved filaree	<i>California macrophylla</i>	1 (1891)	None	Special Plant	List 1B.1	No Potential
Santa Clara red ribbons	<i>Clarkia concinna</i> ssp. <i>automixa</i>	1 (1936)	None	Special Plant	List 4.3	No Potential
Presidio clarkia	<i>Clarkia franciscana</i>	1 (2004)	Endangered	Endangered	List 1B.1	No Potential
western leatherwood	<i>Dirca occidentalis</i>	1 (ND)	None	Special Plant	List 1B.2	No Potential
Tiburon buckwheat	<i>Eriogonum luteolum</i> var. <i>caninum</i>	2 (2007)	None	Special Plant	List 1B.2	No Potential
fragrant fritillary	<i>Fritillaria liliacea</i>	1 (1920)	None	Special Plant	List 1B.2	No Potential
Diablo helianthella	<i>Helianthella castanea</i>	1 (1894)	None	Special Plant	List 1B.2	No Potential
Loma Prieta hoita	<i>Hoita strobilina</i>	1 (1865)	None	Special Plant	List 1B.1	No Potential
robust monardella	<i>Monardella villosa</i> ssp. <i>villosa</i>	1 (1892)	None	Special Plant	List 1B.2	No Potential
woodland woollythreads	<i>Monolopia gracilens</i>	1 (1888)	None	Special Plant	List 1B.2	No Potential
San Francisco popcorn-flower	<i>Plagiobothrys torreyi</i> var. <i>diffusus</i>	1 (1997)	None	Endangered	List 1B.1	No Potential
most beautiful jewel-flower	<i>Streptanthus glandulosus</i> ssp. <i>glandulosus</i>	3 (2004)	None	Special Plant	List 1B.2	No Potential
<b>Invertebrates</b>						
vernal pool fairy shrimp	<i>Branchinecta lunchi</i>	0	Threatened	Special Animal		No Potential
Bay checkerspot butterfly	<i>Euphydryas editha bayensis</i>	2 (1980)	Threatened	Special Animal		No Potential
callippe silverspot butterfly	<i>Speyeria callippe callippe</i>	0	Endangered	Special Animal		No Potential
<b>Fish</b>						
green sturgeon	<i>Acipenser medirostris</i>	0	Threatened	Species of Special Concern		No Potential
tidewater goby	<i>Eucyclogobius newberryi</i>	0	Endangered	Species of Special Concern		No Potential
delta smelt	<i>Hypomesus transpacificus</i>	0	Threatened	Endangered		No Potential
Central California Coast steelhead	<i>Oncorhynchus mykiss</i>	0	Threatened	Special Animal		No Potential
Chinook salmon – Central Valley spring run	<i>Oncorhynchus tshawytscha</i>	0	Threatened	Threatened		No Potential
Chinook salmon – Sacramento River winter run	<i>Oncorhynchus tshawytscha</i>	0	Endangered	Endangered		No Potential

**Table 1 cont. List of Special Status Plant and Wildlife Species (CDFG-CNDDDB 2011, USFWS 2012).**

COMMON NAME	SCIENTIFIC NAME	CNDDDB <sup>1</sup>	FEDERAL STATUS <sup>2</sup>	STATE STATUS <sup>2</sup>	CNPS STATUS <sup>3</sup>	OCCURRENCE POTENTIAL
<b>Amphibians &amp; Reptiles</b>						
California red-legged frog	<i>Rana draytonii</i>	0	Threatened	Species of Special Concern		<b>No Potential</b>
Alameda whipsnake	<i>Masticophis lateralis euryxanthus</i>	10 (2008)	Threatened	Threatened		<b>No Potential</b>
<b>Birds</b>						
western snowy plover	<i>Charadrius alexandrinus nivosus</i>	0	Threatened	Species of Special Concern		<b>No Potential</b>
California brown pelican	<i>Pelecanus occidentalis californicus</i>	0	Delisted	Special Animal		<b>No Potential</b>
California clapper rail	<i>Rallus longirostris obsoletus</i>	0	Endangered	Endangered		<b>No Potential</b>
California least tern	<i>Sternula antillarum</i>	0	Endangered	Endangered		<b>No Potential</b>
<b>Mammals</b>						
salt marsh harvest mouse	<i>Reithrodontomys raviventris</i>	0	Endangered	Endangered		<b>No Potential</b>
American badger	<i>Taxidea taxus</i>	1 (1930)	None	Species of Special Concern		<b>No Potential</b>

<sup>1</sup> CNDDDB observations and last date observed. <sup>2</sup> STATUS – **Endangered:** Listed as being in danger of extinction; **Threatened:** Listed as likely to become endangered in the foreseeable future; **Special Animal, Special Plant:** Taxa considered by CDFG to be those of greatest conservation need; **Species of Special Concern:** declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction (CDFG). <sup>3</sup> CNPS – **List 1A:** Plants Presumed Extinct in California; **List 1B:** Plants Rare, Threatened, or Endangered in California and Elsewhere; **List 2:** Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere; **List 3:** Plants About Which We Need More Information – A Review List; **List 4:** Plants of Limited Distribution – A Watch List. Threat Ranks: **0.1-**Seriously threatened in California (high degree/immediacy of threat); **0.2-**Fairly threatened in California (moderate degree/immediacy of threat); **0.3-**Not very threatened in California (low degree/immediacy of threats or no current threats known)

**Table 2. Locally Rare, Unusual and Significant Plants Potentially Occurring in the Proposed Project Site (Lake 2010)**

FEDERAL STATUS	STATE STATUS <sup>1</sup>	LOCAL LIST <sup>2</sup>	CNPS LIST <sup>3</sup>	COMMON NAME	SCIENTIFIC NAME
None	Special Plant	A1	List 1B.2	big-scale balsamroot	<i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>
None	Special Plant	A2	List 4.2	Oakland star-tulip	<i>Calochortus umbellatus</i>
None	None	A2	None	dense sedge	<i>Carex densa</i>
None	None	A2	None	many ribbed sedge	<i>Carex multcostata</i>
None	None	A2	None	Franciscan paintbrush	<i>Castilleja subinclusa</i> ssp. <i>franciscana</i>
None	None	A2	None	blueblossom	<i>Ceanothus thyrsiflorus</i>
None	None	A2	None	spotted coralroot	<i>Corallorhiza maculata</i> var. <i>maculata</i>
None	None	A2	None	prickly popcorn flower	<i>Cryptantha muricata</i>
None	None	A2	None	Torrey's cryptantha	<i>Cryptantha torreyana</i>
None	None	A2	None	coastal tarweed	<i>Deinandra corymbosa</i> ssp. <i>corymbosa</i>
None	None	A2	None	Pacific bleedinghearts	<i>Dicentra formosa</i>
None	Special Plant	A2	List 1B.2	western leatherwood	<i>Dirca occidentalis</i>
None	None	A2	None	burhead	<i>Echinodorus berteri</i>
None	None	A1	None	Mexican lovegrass	<i>Eragrostis mexicana</i> ssp. <i>virescens</i>
None	None	A2	None	elmer fescue	<i>Festuca elmeri</i>
None	Special Plant	A1	List 1B.2	fragrant fritillary	<i>Fritillaria liliacea</i>
None	Special Plant	A1	List 1B.1	blue coast gilia	<i>Gilia capitata</i> ssp. <i>chamissonis</i>
None	Special Plant	A2	List 1B.2	Diablo helianthella	<i>Helianthella castanea</i>
None	None	A2	None	California dwarf flax	<i>Hesperolinon californicum</i>
None	None	A2	None	Douglas Iris	<i>Iris douglasiana</i>
None	None	A2	None	brown headed rush	<i>Juncus phaeocephalus</i>
None	None	A2	None	leopard lily	<i>Lilium pardalinum</i> ssp. <i>pardalinum</i>
None	None	A1	None	many colored lupine	<i>Lupinus variicolor</i>
None	Special Plant	A2	List 1B.2	robust monardella	<i>Monardella villosa</i> ssp. <i>globosa</i>
None	None	A2	None	California wax myrtle	<i>Morella californica</i>
None	None	A2	None	hairy wood sorrel	<i>Oxalis pilosa</i>
None	None	A1	None	wild petunia	<i>Petunia parviflora</i>
None	None	A2	None	dense flowered rein orchid	<i>Piperia elongata</i>
None	None	A1	None	Bloomer's buttercup	<i>Ranunculus orthorhynchus</i> var. <i>bloomeri</i>
None	None	A2	None	western bog yellow cress	<i>Rorippa palustris</i> var. <i>occidentalis</i>
None	None	A2	None	golden dock	<i>Rumex maritimus</i>
None	None	A1	None	wappato	<i>Sagittaria latifolia</i>
None	None	A2	None	Nuttall willow	<i>Salix scouleriana</i>
None	None	A2	None	coast sanicle	<i>Sanicula laciniata</i>

**Table 2. Locally Rare, Unusual and Significant Plants Potentially Occurring in the Proposed Project Site (Lake 2010)**

FEDERAL STATUS	STATE STATUS <sup>1</sup>	LOCAL LIST <sup>2</sup>	CNPS LIST <sup>3</sup>	COMMON NAME	SCIENTIFIC NAME
None	None	A1	None	western ladies tresses	<i>Spiranthes porrifolia</i>
None	None	A2	None	annual mitra	<i>Stephanomeria elata</i>
None	Special Plant	A2	List 1B.2	most beautiful jewel-flower	<i>Streptanthus glandulosus</i> ssp. <i>glandulosus</i>
None	None	A2	None	white panicle aster	<i>Symphotrichum lanceolatum</i> var. <i>hesperium</i>
None	None	A2	None	Chilean clover	<i>Trifolium macraei</i>
None	None	A2	None	venus looking glass	<i>Triodanis biflora</i>
None	None	A2	None	yellow owl's clover	<i>Triphysaria versicolor</i> ssp. <i>faucibarbata</i>
None	None	A1	None	Dudley's sedge	<i>Carex dudleyi</i>

<sup>1</sup> **STATUS – Endangered:** Listed as being in danger of extinction; **Threatened:** Listed as likely to become endangered in the foreseeable future; **Special Plant:** Taxa considered by CDFG to be those of greatest conservation need; **Species of Special Concern:** declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction (CDFG). <sup>2</sup> **Local List A1:** Species known from 2 or less botanical regions in Alameda and Contra Costa counties, either currently or historically; **A1x:** Species previously known from Alameda or Contra Costa counties, but now believed to have been extirpated; **A1?:** Species possibly occurring in Alameda or Contra Costa counties but there are questions about identification or location; **A2:** Species currently known from 3 to 5 botanical regions in Alameda and Contra Costa counties, or, if more, meeting other important criteria such as small populations, stressed or declining populations, small geographical range, limited or threatened habitat, etc. <sup>3</sup> **CNPS – List 1A:** Plants Presumed Extinct in California; **List 1B:** Plants Rare, Threatened, or Endangered in California and Elsewhere; **List 2:** Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere; **List 3:** Plants About Which We Need More Information – A Review List; **List 4:** Plants of Limited Distribution – A Watch List. Threat Ranks: **0.1-**Seriously threatened in California (high degree/immediacy of threat); **0.2-**Fairly threatened in California (moderate degree/immediacy of threat); **0.3-**Not very threatened in California (low degree/immediacy of threats or no current threats known)

**Table 3. Plant species observed at EBMUD's 39<sup>th</sup> Avenue Reservoir Replacement Project site (March 20, 2012)**

COMMON NAME	SCIENTIFIC NAME	ORIGIN
blackwood acacia	<i>Acacia melanoxylon</i>	Non-native
big leaf maple	<i>Acer macrophyllum</i>	Native
buckeye	<i>Aesculus californica</i>	Native
white flowered onion	<i>Allium triquetrum</i>	Non-native
strawberry tree	<i>Arbutus unedo</i>	Non-native
thoroughwort	<i>Argentina adenophora</i>	Non-native
giant reed	<i>Arundo donax</i>	Non-native
Wild oats	<i>Avena</i> sp.	Non-native
bromegrass	<i>Bromus diandrus</i>	Non-native
sedge	<i>Carex</i> sp.	Native
deodar cedar	<i>Cedrus deodara</i>	Non-native
valerian	<i>Cetranthus ruber</i>	Non-native
miner's lettuce	<i>Claytonia perfoliata</i>	Native
beaked hazelnut	<i>Corylus cornuta</i>	Native
cotoneaster	<i>Cotoneaster buxifolius</i>	Non-native
cotoneaster	<i>Cotoneaster pannosum</i>	Non-native
montbretia	<i>Crococsmia crocosmiliflora</i>	Non-native
upright veldt grass	<i>Ehrharta erecta</i>	Non-native
stork's bill	<i>Erodium moschatum</i>	Non-native
goose grass	<i>Galium aparine</i>	Native
French broom	<i>Genista monspessulana</i>	Non-native
Robert geranium	<i>Geranium robertianum</i>	Non-native
cranesbill	<i>Geranium dissectum</i>	Non-native
English ivy	<i>Hedera helix</i>	Non-native
Christmas berry	<i>Heteromeles arbutifolia</i>	Native
velvetgrass	<i>Holcus lanatus</i>	Non-native
common rush	<i>Juncus effusus</i>	Native
prickly lettuce	<i>Lactuca serriola</i>	Non-native
Italian ryegrass	<i>Lolium multiflorum</i>	Non-native
honeysuckle	<i>Lonicera etrusca</i>	Non-native
honesty	<i>Lunaria annua</i>	Non-native
mallow	<i>Malva arborea</i>	Non-native
bur clover	<i>Medicago polymorpha</i>	Non-native
Bermuda buttercup	<i>Oxalis pes-caprae</i>	Non-native
bristly ox tongue	<i>Picris echioides</i>	Non-native
Monterey pine	<i>Pinus radiata</i>	Native
pittosporum	<i>Pittosporum tenulifolium</i>	Non-native
smartweed	<i>Polygonum convulvulus</i>	Non-native
Catalina cherry	<i>Prunus ilicifolia lyonii</i>	Native
coast live oak	<i>Quercus agrifolia</i>	Native
rose	<i>Rosa</i> sp.	
Himalayan blackberry	<i>Rubus armeniacus</i>	Non-native
willow	<i>Salix</i> sp.	
elderberry	<i>Sambucus</i> sp.	Native
old man of spring	<i>Senecio vulgaris</i>	Non-native



**Table 3 cont. Plant species observed at EBMUD's 39<sup>th</sup> Avenue Reservoir Replacement Project site (March 20, 2012)**

COMMON NAME	SCIENTIFIC NAME	ORIGIN
coast redwood	<i>Sequoia sempervirens</i>	Native
chickweed	<i>Stellaria media</i>	Non-native
lilac	<i>Syringia</i> sp.	Non-native
hedge parsley	<i>Torilis arvensis</i>	Non-native
Nasturtium	<i>Tropaleum majus</i>	Non-native
vetch	<i>Vicia</i> sp.	Non-native
vinca	<i>Vinca major</i>	Non-native
foxtail fescue	<i>Vulpia myuros</i>	Non-native
common cala	<i>Zantedeschia aethiopica</i>	Non-native

**Table 4. Potential Nesting Bird Species in the Proposed Project Site (Richmond et al. 2011)**

COMMON NAME	SCIENTIFIC NAME	STATE/FEDERAL STATUS
California quail	<i>Callipepla californica</i>	None/None
turkey vulture	<i>Cathartes aura</i>	None/MBTA
Cooper's hawk	<i>Accipiter cooperii</i>	CDFG Watch List/MBTA
red-shouldered hawk	<i>Buteo lineatus</i>	None/MBTA
red-tailed hawk	<i>Buteo jamaicensis</i>	None/MBTA
American kestrel	<i>Falco sparverius</i>	None/MBTA
killdeer	<i>Charadrius vociferus</i>	None/MBTA
band-tailed pigeon	<i>Patagioenas fasciata</i>	None/MBTA
mourning dove	<i>Zenaida macroura</i>	None/MBTA
barn owl	<i>Tyto alba</i>	None/MBTA
western screech-owl	<i>Megascops kennicottii</i>	None/MBTA
great horned owl	<i>Bubo virginianus</i>	None/MBTA
common poorwill	<i>Phalaenoptilus nuttallii</i>	None/MBTA
white-throated swift	<i>Aeronautes saxatalis</i>	None/MBTA
Anna's hummingbird	<i>Calypte anna</i>	None/MBTA
Allen's hummingbird	<i>Selasphorus sasin</i>	CDFG Special Animal/MBTA
Nuttall's woodpecker	<i>Picoides nuttallii</i>	CDFG Special Animal/MBTA
downy woodpecker	<i>Picoides pubescens</i>	None/MBTA
hairy woodpecker	<i>Picoides villosus</i>	None/MBTA
northern flicker	<i>Colaptes auratus</i>	None/MBTA
olive-sided flycatcher	<i>Contopus cooperi</i>	CDFG Species of Special Concern/MBTA
western wood-pewee	<i>Contopus sordidulus</i>	None/MBTA
Pacific-slope flycatcher	<i>Empidonax difficilis</i>	None/MBTA
black phoebe	<i>Sayornis nigricans</i>	None/MBTA
ash-throated flycatcher	<i>Myiarchus cinerascens</i>	None/MBTA
Cassin's vireo	<i>Vireo cassinii</i>	None/MBTA
Hutton's vireo	<i>Vireo huttoni</i>	None/MBTA
warbling vireo	<i>Vireo gilvus</i>	None/MBTA
Steller's jay	<i>Cyanocitta stelleri</i>	None/MBTA
western scrub-jay	<i>Aphelocoma californica</i>	None/MBTA
American crow	<i>Corvus brachyrhynchos</i>	None/MBTA
common raven	<i>Corvus corax</i>	None/MBTA
violet-green swallow	<i>Tachycineta thalassina</i>	None/MBTA
northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>	None/MBTA
cliff swallow	<i>Petrochelidon pyrrhonota</i>	None/MBTA
barn swallow	<i>Hirundo rustica</i>	None/MBTA
chestnut-backed chickadee	<i>Poecile rufescens</i>	None/MBTA
oak titmouse	<i>Baeolophus inornatus</i>	CDFG Special Animal/MBTA
bustit	<i>Psaltriparus minimus</i>	None/MBTA
red-breasted nuthatch	<i>Sitta canadensis</i>	None/MBTA
pygmy nuthatch	<i>Sitta pygmaea</i>	None/MBTA
brown creeper	<i>Certhia americana</i>	None/MBTA
Bewick's wren	<i>Thryomanes bewickii</i>	None/MBTA
Pacific wren	<i>Troglodytes pacificus</i>	None/None

**Table 4 cont. Potential Nesting Bird Species in the Proposed Project Site (Richmond et al. 2011)**

COMMON NAME	SCIENTIFIC NAME	STATE/FEDERAL STATUS
blue-gray gnatcatcher	<i>Polioptila caerulea</i>	None/MBTA
wren tit	<i>Chamaea fasciata</i>	None/None
western bluebird	<i>Sialia mexicana</i>	None/MBTA
Swainson's thrush	<i>Catharus ustulatus</i>	None/MBTA
American robin	<i>Turdus migratorius</i>	None/MBTA
northern mockingbird	<i>Mimus polyglottos</i>	None/MBTA
California thrasher	<i>Toxostoma redivivum</i>	None/MBTA
cedar waxwing	<i>Bombycilla cedrorum</i>	None/MBTA
orange-crowned warbler	<i>Oreothlypis celata</i>	None/MBTA
Wilson's warbler	<i>Cardellina pusilla</i>	None/MBTA
spotted towhee	<i>Pipilo maculatus</i>	None/MBTA
California towhee	<i>Melospiza crissalis</i>	None/MBTA
song sparrow	<i>Melospiza melodia</i>	None/MBTA
dark-eyed junco	<i>Junco hyemalis</i>	None/MBTA
black-headed grosbeak	<i>Pheucticus melanocephalus</i>	None/MBTA
lazuli bunting	<i>Passerina amoena</i>	None/MBTA
Brewer's blackbird	<i>Euphagus cyanocephalus</i>	None/MBTA
brown-headed cowbird	<i>Molothrus ater</i>	None/MBTA
hooded oriole	<i>Icterus cucullatus</i>	None/MBTA
purple finch	<i>Carpodacus purpureus</i>	None/MBTA
house finch	<i>Carpodacus mexicanus</i>	None/MBTA
lesser goldfinch	<i>Spinus psaltria</i>	None/MBTA
American goldfinch	<i>Spinus tristis</i>	None/MBTA
house sparrow	<i>Passer domesticus</i>	None/None