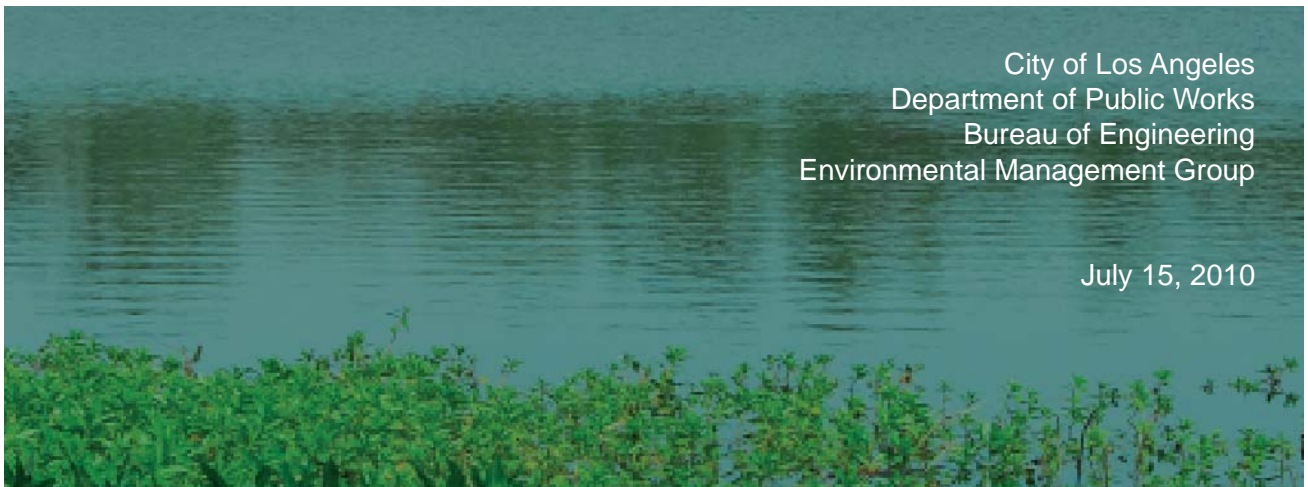


DRAFT ENVIRONMENTAL IMPACT REPORT FOR

Echo Park Lake REHABILITATION PROJECT



City of Los Angeles
Department of Public Works
Bureau of Engineering
Environmental Management Group

July 15, 2010



Draft Environmental Impact Report
Echo Park Lake Rehabilitation Project
State Clearinghouse No.: 2009091036

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EXECUTIVE SUMMARY

ES.1 INTRODUCTION AND BACKGROUND

This Environmental Impact Report (EIR) has been prepared by the City of Los Angeles Department of Public Works, Bureau of Engineering to evaluate potential environmental effects that would result from development of the proposed Echo Park Lake Rehabilitation Project (proposed project). This EIR has been prepared in conformance with the California Environmental Quality Act of 1970 (CEQA) statutes (Cal. Pub. Res. Code, Section 21000 et. seq., as amended) and implementing guidelines (Cal. Code Regs., Title 14, Section 15000 et. seq., 2009). The City of Los Angeles (City) Department of Public Works, Bureau of Engineering (BOE) is the lead agency under CEQA.

The State of California has identified Echo Park Lake (Lake) as an impaired water body with the following types of water quality issues: algae, ammonia, eutrophic conditions, copper, lead, odor, polychlorinated biphenyls (PCBs), trash, and pH. As a result, the City is proposing to implement in-lake improvements; vegetation, habitat and park improvements; and parkland structural best management practices at the Lake. The proposed project would be consistent with the Regional Water Quality Control Board's intent to restore the existing and potential beneficial water quality uses in the Lake. The existing beneficial uses include non-contact water recreation (REC-2) and wildlife habitat (WILD). The potential beneficial uses include municipal and domestic water supply (MUN), warm freshwater habitat (WARM), and wetland habitat (WET).

ES.2 PROJECT LOCATION AND SETTING

The project site is located at 751 Echo Park Avenue within the Echo Park/Silver Lake community of the City of Los Angeles and is bound by Park Avenue on the north, Echo Park Avenue on the east, Bellevue Avenue on the south, and Glendale Boulevard on the west. The project site includes a 24-acre portion of Echo Park, an open-space recreational facility. The Lake occupies 14.14 acres and is surrounded by 10 acres of open recreational space. A two-acre portion of the Park is located on the south side of Bellevue Avenue and a five-acre portion of the Park is located further south on the south side of US 101. These seven acres are not part of the project site. In 2006, the City designated the Park as Historic-Cultural Monument (HCM) No. 836.

The project site is surrounded by a highly urban area consisting of commercial, public facility and multi-family residential uses. The Sunset Boulevard commercial corridor is located approximately 0.1 mile north of the project site. Additional recreational facilities are associated with a two-acre portion of the Park located across the street from the project site, on the south side of Bellevue Avenue and directly north of the US Highway 101 (US 101, Hollywood Freeway). This two-acre area is not a part of the project site. The recreational facilities include a playground, picnic tables, a shallow pool, and the Echo Park Recreation Center building. The Echo Park Recreation Center is operated by the City of Los Angeles Department of Recreation and Parks (RAP) and includes indoor basketball courts, a community room, gymnasium, and indoor pool. In addition, various community sports programs and classes are

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offered at the recreation center. Located directly south of the US 101 is an additional five-acre portion of the Park, which is also not a part of the project site. This area includes six tennis courts with lighting, a baseball field with lighting, and the Echo Park Child Care Center and playground.

One- to four-story single- and multi-family residential buildings are located west of the project site, on the west side of Glendale Boulevard. One- to two-story single- and multi-family residential buildings and a large two- to five-story church are located north of the project site, on the north side of Park Avenue. The church includes Angelus Temple, which is a designated National Historic Landmark (No. 92001875).¹ One- to four-story single- and multi-family residential buildings and a large two- to four-story church are located east of the project site, on the east side of Echo Park Avenue. The residential and other land uses located to the east and west of the project site are generally located at a higher elevation; upgradient from the relatively sunken project site.

ES.3 PROJECT OBJECTIVES

The primary objectives of the proposed project include the following:

- Improve the water quality in the Lake and contribute to water quality improvement in the Los Angeles River Watershed.
- Reduce the use of municipal potable water required to maintain the water level of the Lake.
- Comply with the Regional Water Quality Control Board's intent to restore the existing and potential beneficial water quality uses in the Lake. The existing beneficial uses include REC-2 and WILD. The potential beneficial uses include MUN, WARM, and WET.
- Assist the City in meeting the current and future total maximum daily load (TMDL) requirements.
- Implement multi-purpose solutions at the Lake, consistent with the Proposition O objectives of water supply, water quality, flood protection, water conservation, and recreation.

ES.4 ACHIEVING PROJECT OBJECTIVES

The proposed project would specifically achieve the project objectives by:

- Installing hydrodynamic separators on the main storm drain in-flow pipes entering the northeast corner of the Lake to screen out floatable trash and suspended sediment that would otherwise enter the Lake.
- Installing wetland treatment areas within the Lake along with a recirculation piping system and pump station to circulate Lake water through the wetland treatment areas so that filtration and

¹ National Park Service, National Historic Landmark Program – Angelus Temple. Available: <http://tps.cr.nps.gov/nhl/detail.cfm?ResourceId=2136&ResourceType=Building>. Accessed: December 2009.

biologic uptake of pollutants would occur, thereby removing storm water pollutants from the water.

- Replacing fountain pump station and developing aeration systems so that water circulation in the Lake, as well as dissolved oxygen levels would be improved.
- Incorporating a low permeability bentonite liner into the Lake bed to reduce water loss by exfiltration through the Lake bed.
- Implementing storm water management Best Management Practices (BMPs) such as rain gardens and porous pavement areas within the Park to assist in the removal of storm water pollutants and to promote opportunities for infiltration of collected surface storm water runoff into the groundwater aquifer.
- Constructing a submerged divider berm across the Lake to divide the Lake into two basins so that the volume of water bearing against the original dam that forms the Lake (Bellevue Avenue), is less than 50 acre-feet, thereby removing the Lake from jurisdiction of the California Department of Water Resources, Division of Safety of Dams (DSOD) as a non-compliant dam.
- Provide a new outlet structure at the south end of the Lake to replace a non-functional existing outlet valve so that the Lake would improve service as a storm water management facility during storm events.
- Create a low-flow collection and force main pumping system so that dry weather flow from the western side of the Lake is collected and diverted into the hydrodynamic separators and the new wetland treatment area at the northeastern end of the Lake. This would reduce the amount of municipal potable water used to fill the Lake.
- Restore the lotus bed in the northwestern lobe of the Lake.

ES.5 PROPOSED PROJECT CHARACTERISTICS

The key components of the proposed project would include:

- The existing Lake bottom would be excavated and replaced with a new Lake liner consisting of bentonite-enhanced clay in order to reduce exfiltration losses from the Lake (i.e., to reduce the loss of water through the Lake bed and into the soil beneath). In addition, a lime-stabilized sub-grade base would be installed.
- Approximately 4.2 acres of wetlands would be constructed with approximately 2.7 acres within the northeastern lobe of the Lake. The remaining 1.5 acres would be constructed within the southern, eastern and western portions of the littoral zone of the Lake. The wetlands would help to achieve water quality objectives and provide wildlife habitats. Constructing 4.2 acres of wetlands is considered the maximum practical green solution and would not impact use of the Lake for various recreational activities. The average depth of water in the wetland areas would

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be 1.5 feet. The four existing floating wetland islands near the center of the Lake would be removed with the proposed project.

- A new Lake outlet structure would be constructed at the southeastern corner of the Lake to provide a reliable drainage system, provide the operational flexibility to effectively control the water level, and to help manage water quality.
- An approximately four-foot-tall by six-foot-wide submerged partition berm would be constructed near the southern portion of the Lake (with an east-west orientation), to comply with California Department of Water Resources Division of Safety of Dams (DSOD) standards, which limits the volume of water bearing against the existing dam at the south end to less than 50 acre-feet (the lower threshold of DSOD jurisdiction).
- The existing deteriorated lotus bed area located within the northwestern lobe of the Lake would be restored with new lotus plants similar to those that have historically existed within the Lake.
- A new pump house would be constructed near the southeastern shore of the Lake, as well as a water recirculation piping system. This new recirculation system would allow for water to be drawn from the southern end of the Lake and distributed to the new wetland areas, as well as to the lotus bed, in order to reduce nutrients, bacteria, and other pollutants in the Lake.
- The existing storm drains inletting on the northeastern side of the Lake would be modified to divert low-flow urban runoff into the Lake to reduce the usage of municipal potable water to fill the Lake.
- A storm drain extension would occur along the east side of the Lake south towards the existing tennis courts located south of US 101. This extension would convey flood waters away from the site.
- Aquatic emergent plants would be planted at various points within the Lake's littoral zone for nutrient control, habitat availability, biological diversity, and aesthetic improvements.
- Various improvements to the Lake's edge and adjacent areas would occur. The existing storm water overflow structure along the western edge of the Lake would be modified to create an overlook area including railings, steps, benches, and interpretive signage. In addition, a new boardwalk area with similar features would be constructed along the northeastern lobe of the Lake, as a result of modifications to the existing concrete outfall structures and concrete ramps. Additional interpretive signage would be provided at approximately five other locations near the Lake edge. Other Lake edge improvements include the installation of rip-rap (i.e., rock material) and wall repair and replacement.
- A majority of the existing asphalt pathway along the Lake perimeter would be replaced with pervious materials, such as stabilized decomposed granite or similar materials, in order to reduce surface runoff. Traditional concrete would likely be used in a few areas.

- Hydrodynamic separators would be installed in the existing storm drain systems at the northeast corner of the Park to remove trash and debris from the storm water before it is discharged to the Lake.
- Rain gardens would be constructed at various points along and near the Lake edge to provide temporary runoff control from the Park and hardscape areas, as well as to promote infiltration and pollutant removal. Rain gardens would be used to catch surface runoff and filter the runoff through planting, sand, and/or gravel before it infiltrates into the ground or is released into the storm drains.
- The existing irrigation system would be upgraded with smart technology to improve efficiency.
- Portions of the existing storm drains that flow into and around the Lake would be modified with a pump system to divert approximately 110,000 gallons of dry season flow (urban runoff) into the Lake, first passing through the hydrodynamic separators and the wetlands in the northeastern lobe of the Lake in order to maintain the water level and for water treatment purposes.
- An aeration device would be installed at or near the new pump station to ensure adequate oxygenation of Lake water.

ES.6 AREAS OF CONTROVERSY

A public agency scoping meeting was held near the project site at Logan Street Elementary School on September 23, 2009. The purpose of this meeting was to seek input from public agencies and the general public regarding the environmental issues and concerns that may potentially result from the proposed project. Approximately 17 people attended the scoping meeting. The following list summarizes the public comments and questions that were received at the scoping meeting related to environmental issues:

- **Aesthetics.** The need for a buffer between the Park and adjacent streets should be addressed. The Park is a community park; can additional landscaping be installed to provide a visual buffer between the Park and the traffic on adjacent streets? (see Chapter 3.1 Aesthetics)
- **Biological Resources.** Potential impacts to the existing wildlife population at the Park should be addressed. Potential construction impacts to bird migration and nesting needs to be discussed. Will birds and other wildlife be able to get water at the Park during construction? The start date of construction should be pushed back (e.g., March, April, or summer start date) so that construction would not interrupt bird migration and nesting. (see Chapter 3.3 Biological Resources)
- **Cultural Resources.** Is the lighting at the Park historic? Potential impacts to any historic lighting should be addressed. The historic use of the Lake should also be addressed. (see Chapter 3.4 Cultural Resources)
- **Hazards and Hazardous Materials.** The potential impacts of hazardous materials at the Park should be addressed. (see Chapter 3.5 Hazards and Hazardous Materials)

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- **Hydrology and Water Quality.** How will fireworks at the Park impact the water in the Lake? (see Chapter 3.6 Hydrology and Water Quality)
- **Recreation.** The potential impacts to the recreational use of the Lake should be addressed. (see Chapter 3.8 Recreation)
- **Transportation and Traffic.** The potential traffic impacts of the proposed project should be addressed. (see Chapter 3.9 Transportation and Traffic)

In addition to the comments provided at the scoping meeting, 20 comment letters were received in response to the Notice of Preparation and Initial Study for this project. Copies of the comment letters are provided in Appendix A. The primary areas of controversy identified by the public and agencies included the following potential issues:

- Construction-related truck trips on state highways should be limited to off-peak commute periods, especially along congested commuter corridors such as US 101 and State Route 2 (SR 2, Glendale Freeway).
- The project should avoid platooning of truck trips on mainline freeways, on freeway ramps, and freeway ramp intersections. The transport of over-size or over-weight vehicles on state highways would require a California Department of Transportation (Caltrans) Transportation Permit.
- The potential groundwater and/or soil gas pathways contamination should be evaluated.
- The potential impacts to the historic character of the Lake and the Lake edge should be evaluated.
- The construction phase of the proposed project should limit potential impacts to biological resources, such as migrating and resident birds.
- The visual character of the proposed relocated pump house should be consistent with the existing boathouse on the project site.
- Consider other design configurations of the proposed constructed wetlands and boardwalk.
- The potential for pollution to enter the Lake should be evaluated.

ES.7 SUMMARY OF ENVIRONMENTAL IMPACTS

An analysis of environmental impacts caused by the proposed project has been conducted and is contained in this EIR. Ten issue areas are analyzed in detail in Chapter 3.0 (including Greenhouse Gases within Chapter, 3.2 Air Quality). Table ES-1 provides a summary of the potential environmental impacts that would result during construction and operation of the proposed project, mitigation measures that would lessen significant environmental impacts, and the level of significance of the environmental

impacts that would remain after implementation of mitigation. The proposed project would create significant and unavoidable impacts related to aesthetics (Chapter 3.1), construction air quality (Chapter 3.2), cultural resources (Chapter 3.4), and construction noise (Chapter 3.7). The EIR identifies potentially significant impacts requiring mitigation for biological resources (Chapter 3.3), hazards and hazardous materials (Chapter 3.5), hydrology and water quality (Chapter 3.6), and transportation and traffic (Chapter 3.9). The EIR identified less than significant impacts for recreation (Chapter 3.8). As discussed in Chapter 4.0, the proposed project would not contribute to significant cumulative impacts. Table ES-1, presented subsequently in this executive summary, provides a summary of the environmental impacts detailed in Chapter 3.0 of this EIR. In Table ES-1, for impacts that were determined to be less than significant and with no mitigation measures required, a “Not Applicable” determination is stated under the “Level of Significance After Mitigation” column.

ES.8 ALTERNATIVES TO THE PROPOSED PROJECT

The CEQA Guidelines Section 15126.6 requires consideration and discussion of alternatives to the proposed project in an EIR. Several alternatives, including alternate sites, were considered but rejected from consideration in this EIR. Three alternatives, including the No Project Alternative, are reviewed in Chapter 5.0 of this document. This section summarizes alternatives to the project that were developed, as well as the No Project Alternative, as required under CEQA.

NO PROJECT ALTERNATIVE

Under the No Project Alternative, the proposed in-lake improvements, wetland treatment areas, water recirculation and fountain systems, Park improvements and the partition berm would not be constructed on the project site. Because these improvements would not be implemented, the water quality of the Lake would not be improved and the Lake would continue to be included on the 303(d) list for impaired water bodies. Under the No Project Alternative, the Lake and Park would continue to operate as under existing conditions. The historic lotus bed would continue to be severely degraded, and the Lake would continue to be on the DSOD list of non-complying lakes and dams. Future environmental conditions would be unchanged from those that currently exist, which are described in the environmental setting sections of Chapter 3.0. The No Project Alternative would not meet any of the project objectives. Under this alternative, the Lake water quality would likely violate the anticipated water quality regulations as no improvements would be made to the Lake to improve the water quality.

MECHANICAL TREATMENT ALTERNATIVE

Under the Mechanical Treatment Alternative, a mechanical treatment train would be constructed on the project site to treat storm water inflow and Lake water. This would replace the use of the constructed wetlands that are included under the proposed project. The treatment train would consist of an underground, fully-contained treatment system that would utilize rapid ballasted flocculation and would consist of a combination of mixing and settling tanks and chemical and sand feed hoppers. Placing the facility underground would minimize aesthetic concerns and enhance physical security, as compared to

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placing the facility above-ground. The treatment process would require a steady supply of expendable polymer and a power supply for the feed pumps. It would also require daily visits by a trained operator and periodic visits by a truck to replenish chemical supplies. The treatment process would recycle the sand and pump the settled solids to the nearest sanitary sewer. A mechanical flocculation treatment system would only be capable of dealing with phosphorous bound to micro particles in the storm water. Removal of nitrogen would require more advanced treatment utilizing membranes. However, this alternative would be designed to meet water quality objectives. Similar to the proposed project, the project site would be fenced and closed during the construction phase. The construction scenario would be similar to the proposed project. However, the construction of the underground mechanical treatment plant would require additional excavation and hauling activities as compared to the proposed project, likely resulting in increased construction truck trips. Except for the daily and periodic trips required, the operations of the project site after the completion of the Mechanical Treatment Alternative would be identical to the proposed project, which would not change operations from the existing condition.

WETLANDS RECONFIGURATION ALTERNATIVE

Under the Wetlands Reconfiguration Alternative, 8.5 acres of constructed wetlands would be provided within the Lake to treat and improve the water quality of the Lake by meeting water quality objectives. This alternative would include an additional 4.3 acres of constructed wetlands above the proposed project's 4.2 acres. Two wetlands reconfiguration options are included under this alternative. For Option 1, of the total 8.5 acres of constructed wetlands included under this alternative, 2.7 acres would be provided within the northeastern lobe of the Lake, encompassing the man-made island. The remaining 5.8 acres of wetlands would be located within the southern portion of the Lake and edge wetlands along the eastern and western shores.

Option 2 would involve placing 2.7 acres of constructed wetlands within the northeastern lobe of the Lake, encompassing the man-made island. In addition, 5.8 acres of wetlands would be placed in the center of the Lake to preserve the open water visual quality near the Lake shore. Although feasible, the recirculation of Lake water through this central Lake wetland would be complex in terms of arranging the distribution piping network and outlets. This central wetland configuration would also interfere with the use of the Lake for dragon boat races during the annual Lotus Festival.

Similar to the proposed project, the project site would be fenced and closed during the construction phase of the Wetlands Reconfiguration Alternative. The construction scenario would be similar to the proposed project. However, the installation of 4.3 additional acres of wetlands as compared to the proposed project would result in a slight increase in construction truck trips. The operations of the project site after the completion of the Wetlands Reconfiguration Alternative would be similar to the proposed project, which would not change operations from existing conditions.

TABLE ES-1 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
AESTHETICS			
VIS-1: The proposed project would substantially degrade the existing visual character or quality of the site and its surroundings with implementation of the solar lighting option.	Significant	No feasible mitigation measures are available.	Significant Unavoidable
VIS-2: The proposed project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.	Less than significant	No mitigation measures are required.	Not Applicable
AIR QUALITY			
AIR-1: During the construction phase, regional NO _x emissions would exceed the SCAQMD significance threshold. In addition, daily construction emissions would exceed the SCAQMD localized significance thresholds for PM _{2.5} and PM ₁₀ .	Significant	<p>AIR-A Contractors shall maintain equipment and vehicle engines in good condition and in proper tune per manufacturers' specifications.</p> <p>AIR-B Contractors shall utilize electricity from the electrical grid rather than temporary diesel or gasoline generators, as feasible.</p> <p>AIR-C Heavy-duty trucks shall be prohibited from idling in excess of five minutes, both on- and off-site.</p> <p>AIR-D All diesel-powered construction equipment in use shall require control equipment that meets at a minimum Tier III emissions requirements. In the event Tier III equipment is not available, diesel powered construction equipment in use shall require emissions control equipment with a minimum of Tier II diesel standards.</p>	Significant Unavoidable
AIR-2: The proposed project would not expose sensitive receptors to substantial pollutant concentrations from on-site emissions of criteria pollutants, or off-site emissions of CO during construction activities. Specifically, the CO concentrations resulting from the proposed project would not violate the CAAQS for either the one-hour period (20 ppm) or the eight-hour period (9.0 ppm).	Less than significant	No mitigation measures are required.	Not Applicable
AIR-3: The proposed project would not generate TAC emissions that generate a health risk that exceeds ten persons in one million.	Less than significant	No mitigation measures are required.	Not Applicable

TABLE ES-1 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (CONT.)

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
<p>AIR-4: The proposed project would create a temporary odor nuisance during construction.</p>	<p>Significant</p>	<p>AIR-E The construction contractor shall develop an Odor Control Management Plan to meet the limits of 10 parts per billion hydrogen sulfide at the site perimeter. The Plan shall include or consider the following elements:</p> <ul style="list-style-type: none"> • A methodology for phased or staged operations to minimize the surface area of sediment exposed during Lake draining and material removal and handling. • Monitoring and recording of hydrogen sulfide at the construction site perimeter to ensure compliance and implementation of the Plan. • Monitoring with a field olfactometer to establish threshold levels at which additional measures must be incorporated to limit total odors. • Utilization of lime stabilization (or similar technology) to speed the dewatering process for the sediment layer which contains organic material. Sufficient lime shall be stockpiled to enable the contractor to raise the pH level to 12 to contain odors and suppress microbiological decay of the organic material to objectionable gas products. The quantity of lime would be dependent on the contractors staging plan and how much area is to be uncovered. • Procurement and local storage of an oxidizing chemical that can be applied in liquid form to treat stock piles of sediment or particularly odorous excavation areas. <p>AIR-F The bid schedule shall include an allowance of \$50,000 to be used as directed by the City to mitigate odor issues during periods when the contractor is meeting the hydrogen sulfide standard but additional measures are needed because of complaints or olfactometer readings.</p>	<p>Less than significant</p>

TABLE ES-1 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (CONT.)

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		AIR-G The City shall establish a neighborhood odor monitoring group to monitor and record odor conditions from the community viewpoint.	
AIR-5: The proposed project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).	Significant	See mitigation measures AIR-A through AIR-D above.	Significant Unavoidable
AIR-6: The proposed project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. The impact would be less than significant.	Less than significant	No mitigation measures are required.	Not Applicable
AIR-7: The proposed project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. The impact would be less than significant.	Less than significant	No mitigation measures are required.	Not Applicable
BIOLOGICAL RESOURCES			
BIO-1: The proposed project would cause 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. Mitigation measures are required.	Significant	BIO-A A qualified biologist shall conduct preconstruction surveys to identify any bat species on the project site. Preconstruction surveys shall be conducted between two weeks to one month prior to commencement of construction to inventory the bat species on-site (if present). Trees that would be removed during construction shall receive particular attention. The survey area shall include the project footprint (including all portions of the Lake where construction activities would occur, staging areas, and equipment storage areas). The entire project site shall be surveyed for the presence or sign of roosting bats. Any potential bat habitats, such as tree cavities, crevices, burrows, buildings, etc., shall be identified and surveyed for bats	Less than significant

TABLE ES-1 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (CONT.)

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		<p>or evidence of bat usage. Active maternal colonies and/or roosts shall be mapped and appropriate nondisturbance buffer zones, as determined by the biologist shall be observed. Concurrence from CDFG regarding the appropriate nondisturbance buffers may be necessary. If sensitive species are detected, additional avoidance measures may be necessary and shall be determined in coordination with CDFG. Such measures shall include passive relocation of bats. Passive relocation of bats from roost sites may only be conducted with approval of CDFG.</p> <p>BIO-B A preconstruction survey for nesting birds shall be conducted within two weeks of commencement of project construction regardless of the time of year. If unanticipated special status species are observed during preconstruction surveys, CDFG shall be contacted to develop additional avoidance measures. The preconstruction bird survey shall be performed to detect any protected native birds in the trees to be removed and within other suitable nesting habitat within 100 feet of the construction work area. At least one survey shall be conducted no more than 72 hours prior to the disturbance of suitable nesting habitat by a qualified biologist with experience in conducting nesting bird surveys. If a protected (i.e., nesting) native bird is found, the City, or its contractor, shall halt all clearance/construction disturbance activities within 50 feet of nesting habitat (within 100 feet for raptor nesting habitat) until August 31 or until the nest is no longer active as confirmed by a qualified biologist. If an active nest is located, clearing and construction within 50 feet of the nest (within 100 feet for raptor nests) shall be postponed until the nest is vacated, juveniles have fledged, and there is no evidence of a second attempt at nesting. The nest status shall be monitored by a qualified biologist.</p>	

TABLE ES-1 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (CONT.)

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		<p>Limits of construction to avoid a nest shall be established in the field with flagging and stakes or construction fencing demarcating the nondisturbance buffer zone. Construction personnel shall be instructed on the sensitivity of the area. A biological monitor shall be present during construction activities that occur within 100 feet of any flagged boundaries. Once a flagged nest is determined to be no longer active, the biological monitor shall remove all flagging and allow construction activities to proceed.</p> <p>The buffer areas described above were determined based on the sensitivity of the species to human disturbance given the urbanized nature and existing high disturbance levels at the Park. Nesting great blue herons, which are known to nest on the island, are presumably more sensitive to disturbance as it is somewhat protected from disturbance in the center of the Lake. Great blue herons may require greater buffer areas than those described above. See mitigation measure BIO-C.</p> <p>BIO-C To avoid disturbing nesting great blue herons, dewatering and construction shall begin before herons have the opportunity to nest or immediately after their nesting period is complete. When all aquatic species are removed from the Lake, the herons would lose their year-round food supply. Although potential nesting habitat would still be present the following nest season, while construction is presumably ongoing, the herons may be deterred from nesting by the lack of food resources and by construction activities. The current schedule projects construction to begin in January 2011. A delay in this schedule would infringe on the nesting season. A delay in construction would require installation of a CDFG-approved method of nesting deterrence.</p> <p>If herons manage to nest, construction activities shall</p>	

TABLE ES-1 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (CONT.)

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		<p>be altered within 100 to 500 feet of the nests; the exact buffer distance shall be determined in consultation with CDFG. A biological monitor shall regularly monitor the nest during the construction phase. If all work is scheduled in the area around the man-made island during the period when herons are not likely to be nesting, the probability of construction delays would be reduced.</p> <p>Contractor education regarding sensitive species present and potentially occurring on-site shall be conducted prior to the start of construction for all personnel working on-site. A qualified biologist shall review the measures established to protect sensitive species, particularly nesting birds. Handouts with photos shall be provided to facilitate identification of a potential nest, as well as procedures that should be implemented if a bird nest or other sensitive species is found.</p> <p>BIO-D To avoid disturbance or loss of avian nests sites during on-going maintenance, once the project is in operation, nest survey and avoidance strategies shall be developed and incorporated into the project Maintenance and Operations Plan. The methods employed shall be similar to those outlined above during construction. The optimal time to harvest vegetation is outside of the nesting season (September through December), however, waterfowl may be nesting at the Lake year-round. Waterfowl are likely to nest in wetland vegetation, therefore, surveys and avoidance strategies shall be employed at all times of the year. The project Maintenance and Operations Plan shall include regular training requirements for City maintenance staff that emphasize applicable laws and regulations, identification of nests, what to do if a nest is found, and how to best avoid disturbing nests.</p>	

TABLE ES-1 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (CONT.)

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
BIO-2: The proposed project would not cause 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 US Fish and Wildlife Service. Impacts would be less than significant.	Less than significant	No mitigation measures are required.	Not Applicable
BIO-3: The proposed project would not cause 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. Impacts would be less than significant.	Less than significant	No mitigation measures are required.	Not Applicable
BIO-4: The proposed project would 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. Mitigation measures are required.	Significant	See mitigation measures BIO-A through BIO-C above.	Less than significant
BIO-5: The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. Impacts would be less than significant.	Less than significant	No mitigation measures are required.	Not Applicable
CULTURAL RESOURCES			
CR-1: The proposed project would potentially cause a substantial adverse change in the significance of a historical resource. The impact would be less than significant.	Significant	No mitigation measures are required.	Significant Unavoidable
CR-2: The proposed project would potentially cause a substantial adverse change in the significance of an archaeological resource. Mitigation measures are required to ensure less than significant impacts.	Potentially Significant	CR-A All ground-disturbing activities in the southern end of the project site in the vicinity of Bellevue Avenue shall be monitored by a qualified archaeological monitor. Archaeological monitors shall be under the direct supervision of a Principal Investigator or Project	Less than significant

TABLE ES-1 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (CONT.)

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		<p>Manager certified by the Register of Professional Archaeologists (qualifications derived from 36 CFR Part 61). Ground-disturbing activities to be monitored include, but are not limited to, the grading, trenching, lake outlet construction, and tree removal and plantings.</p> <p>CR-B Unique archaeological materials (as the term is defined in CEQA, Public Resources Code Section 21083.2(g)) recovered during archaeological monitoring shall be curated for posterity and available by future researchers at an accredited curational facility.</p>	
HAZARDS AND HAZARDOUS MATERIALS			
<p>HAZ-1: The proposed project would potentially create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Mitigation measures are required.</p>	<p>Potentially Significant</p>	<p>HAZ-A After the Lake is drained of water, the soil shall be allowed to dry and then additional unsaturated samples taken from the areas where the soil exceeded the STLC for lead. The additional samples shall further define the extent of soil exceeding the STLC and allow for the removal of the impacted soil prior to recontouring of the Lake bottom.</p> <p>HAZ-B In order to minimize contaminated groundwater infiltration into the drained Lake bed, before and after the Lake is drained of water, groundwater elevations in the four groundwater monitoring wells shall be measured and water samples shall be collected daily and analyzed from all wells. The duration of measurements and samples shall be based on the rate of the water lowering in the Lake and the response of the groundwater table to the draining of the Lake. If the measurements at each groundwater monitoring well are not below seven feet, a groundwater extraction well(s) shall be installed in the alluvial channel to reduce contaminated groundwater infiltration into the Lake bed.</p>	<p>Less than significant</p>

TABLE ES-1 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (CONT.)

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		<p>HAZ-C To limit the impact of the PCE and TCE plumes in groundwater during the Lake dewatering process, sheet piling and dewatering wells shall be placed along the northern edge of the Lake.</p> <p>HAZ-D The City, in contact with the California Regional Water Quality Control Board, shall monitor the progress on the Work Plan prepared for Hollyway Cleaners in order to ensure that the PCE plume migrating off-site does not pose an ecological and hydrological threat to Echo Park Lake.</p> <p>HAZ-E Soil containing hazardous levels of soluble lead shall be chemically treated and stabilized on-site with available lead treatment technologies utilizing in-situ or ex-situ methods for remediating the lead to less than 5.0 mg/L (the STLC). Following treatment of the soil, representative samples shall be collected to confirm that all soil containing hazardous levels of lead has been treated to levels below the STLC. Confirmation soil samples shall be collected and sent to an off-site environmental laboratory for testing. The lead treatment technology shall comply with all federal, state, and local requirements. In the event the soil is not needed at the project site as part of the new Lake structure, the soil shall be removed and disposed as a non-hazardous waste.</p> <p>Some small quantities of soils classified as hazardous may be hauled off-site to an appropriate Class I or Class II Hazardous waste Landfill, or other appropriate treatment or recycling facility, as appropriate for the type of contamination present. Any applicable testing and disposal procedures shall be followed.</p> <p>The contractor shall provide the City legible copies of all soil and debris manifests, as well as copies of any remediation approval letters.</p> <p>HAZ-F All hazardous soil excavation activities shall be performed by workers that are trained in Occupation</p>	

Executive Summary

TABLE ES-1 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (CONT.)

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		<p>Safety and Health Administration (OSHA) hazardous waste operations according to 29 CFR 1910.120 (HAZWOPER). In addition, the trucking company shall be a licensed hazardous waste hauler. The contractor shall provide the City copies of all soil and debris manifests, as well as copies of any remediation approval letters.</p> <p>HAZ-G Equipment shall require decontamination when moving from hazardous to non-hazardous areas. If soil tracking is assumed negligible, a final decontamination (one event) shall be performed upon completion of hazardous soil excavation.</p> <p>HAZ-H The site-specific health and safety plan shall be in place at the beginning of the soil work and account for all hazardous waste operations.</p> <p>HAZ-I A 40-hour trained representative or an industrial hygienist shall be present to supervise hazardous waste operations and ensure compliance.</p>	
HYDROLOGY AND WATER QUALITY			
<p>HYDRO-1: Construction and operation of the proposed project may potentially violate a water quality standard or waste discharge requirement, or otherwise substantially degrade water quality. Mitigation measures are required.</p>	Potentially Significant	<p>HYDRO-A Biological or non-chemical means of controlling exotics and pests shall be utilized over pesticides where feasible. Should chemical pesticides or herbicides be required, less-persistent compounds shall be used in accordance with manufacturers' recommendations and general standards of use. Application of chemicals shall not occur immediately before and during rain storms or within the 24-hour period in which rain is forecast to occur.</p>	Less than significant
<p>HYDRO-2: Implementation of the proposed project would not alter drainage pattern of the site which could potentially result in flooding on- or off-site. Further, construction and operation of the proposed project would not increase the amount of runoff, potentially exceeding the capacity of the existing storm drain system or providing substantial</p>	Less than significant	No mitigation measures are required.	Not Applicable

TABLE ES-1 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (CONT.)

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
additional sources of polluted runoff. The impact would be less than significant.			
HYDRO-3: The proposed project site would not place structures within the 100-year flood zone, potentially impeding or redirecting flow. The impact would be less than significant.	Less than significant	No mitigation measures are required.	Not Applicable
NOISE			
NOISE-1: Construction of the proposed project would result in a substantial temporary increase in ambient noise levels in the vicinity of the project site. Mitigation measures are required.	Significant	<p>NOISE-A All construction equipment shall be equipped with residential-grade mufflers and other suitable noise attenuation devices.</p> <p>NOISE-B Grading and construction contractors shall use quieter equipment, such as rubber-tired equipment rather than metal-tracked equipment.</p> <p>NOISE-C All residential units located within 500 feet of the construction site shall be sent a notice regarding the construction schedule of the proposed project. A sign, legible at a distance of 50 feet shall also be posted at the construction site. All notices and the signs shall indicate the dates and duration of construction activities, as well as provide a telephone number where residents can inquire about the construction process and register complaints.</p> <p>NOISE-D A “noise disturbance coordinator” provided by the City shall be established. The disturbance coordinator shall be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and shall be required to implement reasonable measures such that the complaint is resolved. All notices that are sent to residential units within 500 feet of the construction site and all signs posted at the construction site shall list the telephone number for the disturbance coordinator.</p>	Significant Unavoidable

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TABLE ES-1 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (CONT.)

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
NOISE-2: The proposed project would not expose persons to noise levels in excess of City standards during project operation.	Less than significant	No mitigation measures are required.	Not Applicable
NOISE-3: Construction of the proposed project would not expose people to excessive ground-borne vibration.	Less than significant	No mitigation measures are required.	Not Applicable
NOISE-4: Operation of the proposed project would not expose people to excessive ground-borne vibration.	Less than significant	No mitigation measures are required.	Not Applicable
RECREATION			
REC-1: The proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.	Less than significant	No mitigation measures are required.	Not Applicable
REC-2: The proposed project does not include recreational facilities or require the construction or expansion of recreational facilities.	Less than significant	No mitigation measures are required.	Not Applicable
TRANSPORTATION AND TRAFFIC			
TRANS-1: The proposed project would not cause an increase in traffic that would be substantial in relation to the existing traffic load and capacity of the street system taking into account all relevant components of the circulation system during construction activities with implementation of mitigation measures.	Significant	TRANS-A In order to minimize impacts during construction Phase D, truck trips shall be scheduled outside the morning and evening peak hours. TRANS-B A construction traffic management plan shall be prepared and submitted to LADOT for review and approval prior to the start of any construction work. This plan shall include such elements as the designation of haul routes for construction-related trucks, the location of access to the construction site, any driveway turning movement restrictions, temporary traffic control devices or flagmen, travel-time restrictions for construction-related traffic to avoid peak travel periods on selected roadways, and designated staging and parking areas for workers and equipment.	Less than significant

TABLE ES-1 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (CONT.)

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		<p>TRANS-C A site-specific construction work site traffic control plan shall be prepared for each construction phase and submitted to LADOT for review and approval prior to the start of any construction work. This plan shall include such elements as the location of any lane closures, restricted hours during which lane closures (if any) would not be allowed, local traffic detours (if any), protective devices and traffic controls (such as barricades, cones, flagmen, lights, warning beacons, temporary traffic signals, warning signs), access limitations for abutting properties (if any), and provisions to maintain emergency access through construction work areas.</p> <p>TRANS-D Signage shall be provided indicating alternative pedestrian and bicycle access routes where existing facilities would be affected. This shall include the sidewalks and pedestrian pathways around the perimeter of the project site.</p> <p>TRANS-E Advanced notice shall be provided of planned construction activities to any affected residents, businesses, and property owners in the vicinity of the construction site.</p> <p>TRANS-F Coordination with emergency service providers (police, fire, ambulance, and paramedic services) shall occur to provide advance notice of on-going construction activity and construction hours.</p> <p>TRANS-G Coordination with public transit providers (Metro, LADOT DASH) shall occur to provide advance notice of on-going construction, construction hours and, where necessary, to identify sites for temporary bus stops within a reasonable walking distance of any displaced bus stops. It may be necessary or desirable to temporarily relocate the southbound Pico Union/Echo Park DASH stop adjacent to the project site from the east side of Echo Park Avenue.</p>	

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TABLE ES-1 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES (CONT.)

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
TRANS-2: The proposed project would not conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.	Less than significant	No mitigation measures are required.	Not Applicable

1.0 INTRODUCTION

1.1 SUMMARY OF THE PROPOSED PROJECT

This Environmental Impact Report (EIR) has been prepared by the City of Los Angeles Department of Public Works, Bureau of Engineering to evaluate potential environmental effects that would result from development of the proposed Echo Park Lake Rehabilitation Project (proposed project). This EIR has been prepared in conformance with the California Environmental Quality Act of 1970 (CEQA) statutes (Cal. Pub. Res. Code, Section 21000 et. seq., as amended) and implementing guidelines (Cal. Code Regs., Title 14, Section 15000 et. seq., 2009). The City of Los Angeles (City) Department of Public Works, Bureau of Engineering (BOE) is the lead agency under CEQA.

The State of California has identified Echo Park Lake (Lake) as an impaired water body with the following types of water quality issues: algae, ammonia, eutrophic conditions, copper, lead, odor, polychlorinated biphenyls (PCBs), trash, and pH. As a result, the City is proposing to implement in-lake improvements; vegetation, habitat and park improvements; and parkland structural best management practices at the Lake. The proposed project would be consistent with the Regional Water Quality Control Board's intent to restore the existing and potential beneficial water quality uses in the Lake. The existing beneficial uses include non-contact water recreation (REC-2) and wildlife habitat (WILD). The potential beneficial uses include municipal and domestic water supply (MUN), warm freshwater habitat (WARM), and wetland habitat (WET).

The project site is located at 751 Echo Park Avenue within the Echo Park/Silver Lake community of the City of Los Angeles and is bound by Park Avenue on the north, Echo Park Avenue on the east, Bellevue Avenue on the south, and Glendale Boulevard on the west. The project site includes a 24-acre portion of Echo Park, an open-space recreational facility. The Lake occupies 14.14 acres and is surrounded by 10 acres of open recreational space. A two-acre portion of the Park is located on the south side of Bellevue Avenue and a five-acre portion of the Park is located further south on the south side of US 101. These seven acres are not part of the project site. In 2006, the City designated the Park as Historic-Cultural Monument (HCM) No. 836.

The City of Los Angeles is implementing a Clean Water Bond Program approved by voters in November 2004 as Proposition O. Proposition O authorized the City to issue a series of general obligation bonds for up to \$500 million for projects to protect public health by cleaning up pollution in the City's watercourses, beaches, and ocean. The measure also funds improvements to protect water quality, provide flood protection, and increase water conservation, habitat protection, and open space.

The proposed project is a major component of the Proposition O Program. A Pre-Design Report (July 2009) was prepared by Black & Veatch to identify and describe the proposed project, describe the extensive investigations undertaken at the project site, discuss preliminary budget and schedule information, and present recommendations for proposed project implementation. The Pre-Design Report and associated engineering drawings are incorporated into this EIR by reference.

1.0 Introduction

The primary elements of the proposed project include replacing the deteriorating Lake bottom, constructing wetland areas within the Lake to help achieve water quality objectives; constructing a new lake outlet; constructing a partition berm in the Lake to comply with California Division of Safety of Dams (DSOD) requirements; constructing a recirculation pump and piping system to circulate the Lake water; modifying existing storm drains inletting to the Lake to divert low-flow urban runoff into the Lake; placing aquatic emergent plants at various points along the Lake edge and within the Lake; various improvements to the Lake's edge and areas adjacent to the Lake's edge; replacing a majority of the existing asphalt pathway around the Lake perimeter with pervious materials; installing hydrodynamic separators in the existing storm drain systems to remove trash and debris; installing rain gardens around the Lake; and upgrading the irrigation system to improve efficiency.

1.2 PROJECT OUTREACH

Prior to the preparation of the Initial Study under CEQA (discussed below), the BOE held numerous public outreach and community meetings regarding the on-going design of the proposed project. In addition, specific project issues were discussed including cultural resources, biological resources, and wildlife concerns. A list of those meetings are presented in Table 1-1.

TABLE 1-1 PROJECT OUTREACH AND COMMUNITY MEETINGS

Type of Meeting	Date	Topics Covered
Community Meeting	March 3, 2008	Council District 13
Community Meeting	April 17, 2008	Angelus Temple
Community Meeting	April 17, 2008	Episcopal Cathedral of St. Paul
Community Meeting	April 17, 2008	Foursquare Gospel Church
Community Meeting	January 7, 2009	Echo Park Trash Abatement Program
Community Group Presentation	April 15, 2008	Echo Park Advisory Board
Community Group Presentation	May 15, 2008	Echo Park Chamber of Commerce
Community Event	July 11-12, 2008	Echo Park Lotus Festival
Community Outreach	June 09, 2008	Development of Project Vision
Community Outreach	July 23, 2008	Project Progress Update
Community Outreach	October 8, 2008	Cultural Landscape Report & Geotechnical Study
Community Outreach	Nov 19, 2008	Project Progress Update
Community Outreach	April 22, 2009	Project Recommendations
Community Outreach	June 2009	Project Update
Scoping Meeting	September, 23 2009	Design Update/Environmental
Community Outreach	September 29, 2009	Project Site Tour

Source: Black & Veatch 2009

1.3 THE CEQA ENVIRONMENTAL PROCESS

CEQA requires preparation of an EIR when there is substantial evidence supporting a fair argument that a proposed project may have a significant effect on the environment. The purpose of an EIR is to provide decision makers, public agencies, and the general public with an objective and informational document that fully discloses the environmental effects of the proposed project. The EIR process is intended to facilitate the objective evaluation of potentially significant direct, indirect, and cumulative impacts of the proposed project, and to identify feasible mitigation measures and alternatives that would reduce or avoid the proposed project's significant effects. In addition, CEQA specifically requires that an EIR identify those adverse impacts determined to be significant after mitigation.

In accordance with the CEQA Guidelines, an Initial Study was prepared and a Notice of Preparation distributed on September 10, 2009, to public agencies, interested organizations, and the general public. The purpose of the Notice of Preparation was to provide notification that the City plans to prepare an EIR and to solicit input on the scope and content of the EIR. The Notice of Preparation was distributed to approximately 43 agencies and 1,614 property owners and occupants; approximately 20 written comment letters and e-mails were received from various agencies, organizations, and individuals. These letters, e-mails, and the Notice of Preparation are included in Appendix A of this EIR.

A public agency scoping meeting was held near the project site at Logan Street Elementary School on September 23, 2009. The purpose of this meeting was to seek input from public agencies and the general public regarding the environmental issues and concerns that may potentially result from the proposed project. Approximately 17 people attended the scoping meeting. The following list summarizes the public comments and questions that were received at the scoping meeting related to environmental issues:

- **Aesthetics.** The need for a buffer between the Park and adjacent streets should be addressed. Echo Park is a community park; can additional landscaping be installed to provide a visual buffer between the Park and the traffic on adjacent streets? (see Chapter 3.1 Aesthetics)
- **Biological Resources.** Potential impacts to the existing wildlife population at the Park should be addressed. Potential construction impacts to bird migration and nesting needs to be discussed. Will birds and other wildlife be able to get water at the Park during construction? The start date of construction should be pushed back (e.g., March, April, or summer start date) so that construction would not interrupt bird migration and nesting. (see Chapter 3.3 Biological Resources)
- **Cultural Resources.** Is the lighting at the Park historic? Potential impacts to any historic lighting should be addressed. The historic use of the Lake should also be addressed. (see Chapter 3.4 Cultural Resources)
- **Hazards and Hazardous Materials.** The potential impacts of hazardous materials at the Park should be addressed. (see Chapter 3.5 Hazards and Hazardous Materials)

1.0 Introduction

- **Hydrology and Water Quality.** How will fireworks at the Park impact the water quality in the Lake? (see Chapter 3.6 Hydrology and Water Quality)
- **Recreation.** The potential impacts to the recreational use of the Lake should be addressed. (see Chapter 3.8 Recreation)
- **Transportation and Traffic.** The potential traffic impacts of the proposed project should be addressed. (see Chapter 3.9 Transportation and Traffic)

This EIR focuses on the environmental impacts identified as potentially significant during the Initial Study process, including the comments received in response to the Notice of Preparation. The issue areas analyzed in detail in this EIR include aesthetics, air quality (including greenhouse gas emissions), biological resources, cultural resources, hazards and hazardous materials, hydrology and water quality, noise, recreation, and transportation and traffic. Effects not found to be significant are addressed in subsection 4.2 of Chapter 4.0 Impacts Overview of this EIR.

This Draft EIR is being circulated for 45 days for public review and comment. The timeframe of the public review period is identified in the Notice of Availability attached to this Draft EIR. During this period, comments from the general public, organizations, and agencies regarding environmental issues analyzed in the Draft EIR and the Draft EIR's accuracy and completeness may be submitted to the lead agency at:

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Fax: (213) 847-0656
E-Mail: Maria.Martin@lacity.org

General questions about this EIR and the EIR process should also be submitted to the lead agency at the address above. The City will prepare written responses to all comments pertaining to environmental issues raised in the Draft EIR if they are submitted in writing and postmarked by the last day of the public review period identified in the Notice of Availability.

Prior to approval of the proposed project, the City, as the lead agency and decision-making entity, is required to certify that this EIR has been completed in accordance with CEQA, that the proposed project has been reviewed and the information in this EIR has been considered, and that this EIR reflects the independent judgment of the City. CEQA also requires the City to adopt "findings" with respect to each significant environmental effect identified in the EIR (Pub. Res. Code Section 21081; Cal. Code Regs., Title 14, Section 15091). For each significant effect, CEQA requires the approving agency to make one or more of the following findings:

- The proposed project has been altered to avoid or substantially lessen significant impacts identified in the Final EIR.
- The responsibility to carry out such changes or alterations is under the jurisdiction of another agency.
- Specific economic, legal, social, technological, or other considerations, which make infeasible the mitigation measures or alternatives identified in the Final EIR.

If the City concludes that the proposed project would result in significant effects that cannot be substantially lessened or avoided by feasible mitigation measures and alternatives, the City must adopt a “Statement of Overriding Considerations” prior to approval of the proposed project (Pub. Res. Code Section 21081 (b)). Such statements are intended under CEQA to provide a written means by which the lead agency balances in writing the benefits of the proposed project and the significant and unavoidable environmental impacts. Where the lead agency concludes that the economic, legal, social, technological, or other benefits outweigh the unavoidable environmental impacts, the lead agency may find such impacts “acceptable” and approve the proposed project.

In addition, public agencies, when approving a project, must also adopt a Mitigation Monitoring or Reporting Program describing the changes that were incorporated into the proposed project or made a condition of project approval in order to mitigate or avoid significant effects on the environment (Pub. Res. Code Section 21081.6). The Mitigation Monitoring or Reporting Program is adopted at the time of project approval and is designed to ensure compliance during project implementation. Upon approval of the proposed project, the City would be responsible for implementation of the proposed project’s Mitigation Monitoring or Reporting Program.

1.4 ORGANIZATION OF THE EIR

This EIR is organized as follows:

The **Executive Summary** provides an overview of the information provided in detail in subsequent chapters. It consists of an introduction; a description of the proposed project and alternatives considered; a discussion of areas of controversy and issues to be resolved; and a table that summarizes the potential environmental impacts in each category, the significance determination for those impacts, mitigation measures, and significance after mitigation.

Chapter 1.0 provides a brief description of the proposed project. It includes a brief overview of the CEQA environmental review process and a section describing the organization of the EIR.

Chapter 2.0 provides a detailed description of the proposed project. Project objectives are identified, and information on the proposed project characteristics and construction scenario is provided. This section also includes a description of the intended uses of the EIR and public agency actions.

1.0 Introduction

Chapter 3.0 describes the potential environmental effects of implementing the proposed project. The discussion in Chapter 3.0 is organized by nine environmental issue areas, as follows:

- Aesthetics
- Air Quality (including Greenhouse Gas Emissions)
- Biological Resources
- Cultural Resources
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Noise
- Recreation
- Transportation and Traffic

For each environmental issue, the analysis and discussion are organized into five subsections as described below:

Environmental Setting - This subsection describes, from a local and regional perspective, the physical environmental conditions in the vicinity of the proposed project at the time of publication of the Notice of Preparation. The environmental setting establishes the baseline conditions by which the City will determine whether specific project-related impacts are significant.

Regulatory Setting - This subsection describes any federal, state and/or local regulations that are applicable to the proposed project.

Environmental Impacts - This subsection provides detailed information on the environmental effects of the proposed project, and whether the impacts of the proposed project would meet or exceed the established significance criteria.

Mitigation Measures - This subsection identifies potentially feasible mitigation measures that would avoid or substantially reduce significant adverse project-related impacts.

Significance after Mitigation - This subsection indicates whether project-related impacts would be reduced to below a level of significance with implementation of the mitigation measures identified in the EIR. This subsection also identifies any residual significant and unavoidable adverse effects of the proposed project that would result even after the mitigation measures have been implemented.

Chapter 4.0 presents the other mandatory CEQA sections, including the following:

Unavoidable Significant Adverse Impacts - This subsection identifies and summarizes the unavoidable significant impacts described in detail in Chapter 3.0.

Effects Not Found to Be Significant - This subsection identifies and summarizes the issue areas that were determined to have no adverse environmental effect or a less than significant environmental effect given the established significance criteria.

Cumulative Impacts - This subsection addresses the potentially significant cumulative impacts that may result from the proposed project when taking into account related or cumulative impacts resulting from other past, present, and reasonably foreseeable future projects.

Irreversible Environmental Changes - This subsection addresses the extent to which the proposed project would result in the commitment of nonrenewable resources.

Growth-Inducing Impacts - This subsection describes the potential of the proposed project to induce economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment.

Chapter 5.0 describes and evaluates the comparative merits of a reasonable range of alternatives to the proposed project that would feasibly attain most of the basic objectives of the proposed project and avoid or substantially lessen potentially significant project-related impacts. The chapter also describes the preliminary site constraints analysis and rationale for selecting the range of alternatives discussed in the EIR and identifies the alternatives considered by the City that were rejected from further discussion as infeasible during the scoping process. Chapter 5.0 also includes a discussion of the environmental effects of the No Project Alternative and identifies the environmentally superior alternative.

Chapter 6.0 provides a list of acronyms and abbreviations used in this EIR.

Chapter 7.0 identifies those persons responsible for the preparation of this EIR.

Chapter 8.0 provides a list of sources used in the preparation of the EIR. Footnote references are also provided in each chapter.

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2.0 PROJECT DESCRIPTION

This chapter provides a description of the Echo Park Lake Rehabilitation Project (proposed project) evaluated in Chapter 3.0 of this EIR. The project location, environmental setting, and project objectives are described, followed by a description of project characteristics, construction scenario, and a summary of project approvals that would be required with the implementation of the proposed project. This information is provided pursuant to the CEQA Guidelines Section 15124.

2.1 PROJECT LOCATION

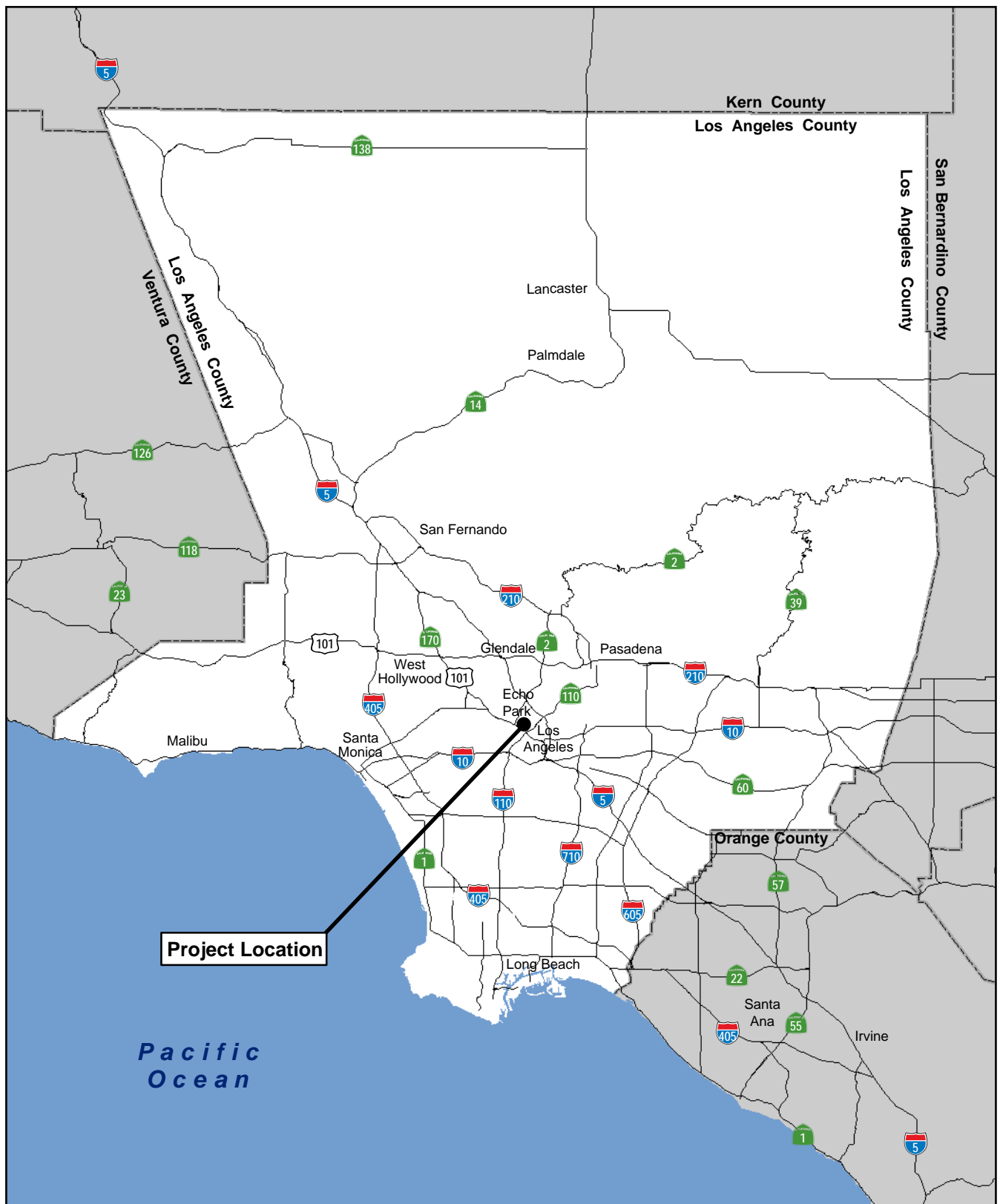
The project site is located at 751 Echo Park Avenue within the Echo Park/Silver Lake community of the City of Los Angeles and is bound by Park Avenue on the north, Echo Park Avenue on the east, Bellevue Avenue on the south, and Glendale Boulevard on the west. The project site is also located within the Los Angeles River Watershed. US Highway 101 (US 101, Hollywood Freeway) is oriented in an east-west direction in this area of Los Angeles, and is located approximately 0.05 mile (250 feet) south of the project site. State Route 110 (SR 110, Pasadena Freeway) is oriented in a north-south direction and is located approximately 0.8 mile east of the project site. The project site includes an approximately 24-acre portion of Echo Park (Park), an open-space recreational facility. The Lake occupies 14.14 acres and is surrounded by 10 acres of open recreational space. A two-acre portion of the Park is located on the south side of Bellevue Avenue and a five-acre portion of the Park is located further south, on the south side of US 101. These seven acres are not a part of the project site. Figure 2-1 shows the location of the project site in a regional context and Figure 2-2 shows the local project vicinity.

2.2 PHYSICAL ENVIRONMENTAL SETTING

2.2.1 PROJECT SITE

The Park has been a part of the City's history for more than 150 years. Historical records indicate that the Lake was originally built as a water supply reservoir (Reservoir No. 4) in the 1860s. Over time, the use of the Lake has been transformed to that of a detention basin in the storm drainage system, providing hydraulic relief during storm events in the form of flood control before discharging to the Los Angeles River. Two city storm drains, housed in a large concrete structure, empty into the Lake at the northeastern end, and the lake outlet is located at the southern end. These storm drains are designed to flow into the Lake during high flows and are diverted during low flows. On the west side of the Lake, the County of Los Angeles maintains a flood control outfall, which is also designed to flow into the Lake during high flows and is diverted during low flows. The south end of the Lake currently includes a dam, which was previously constructed during the Lake's former use as a water supply reservoir. This dam would remain in place with the proposed project.¹

¹ EDAW, Inc. *Cultural Resources Phase I and Cultural Landscape Treatment Plan for the Proposed Echo Park Rehabilitation Project City of Los Angeles, California*. November 2008.



Source: California Geospatial Information Library (2003-5)

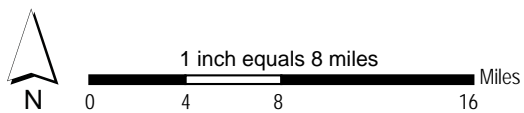
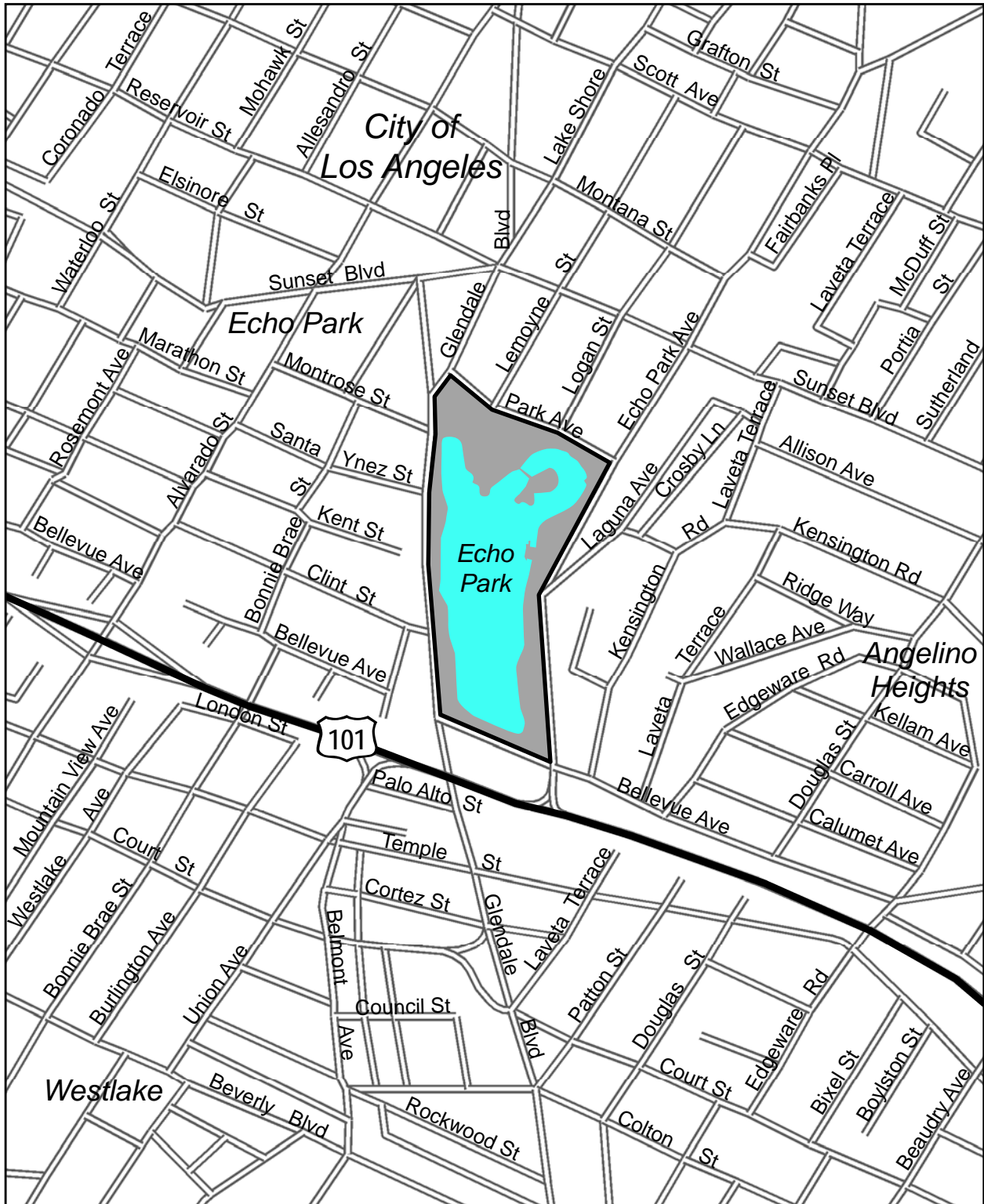


Figure 2-1
Regional Location Map



Source: ESRI Data & Maps 2005



Project Site

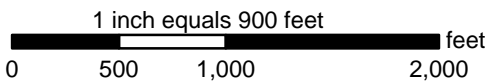


Figure 2-2
Project Location

2.0 Project Description

Key features and activities in and around the Lake include a footbridge, boathouse, the lotus bed, a man-made island, paddle boating, catch-and-release fishing, a fountain, model boating, jogging, and perimeter walking pathways. In addition, four floating wetland islands are located at the north-south centerline of the Lake.

The project site is operated and maintained by the City of Los Angeles Department of Recreation and Parks (RAP). A RAP maintenance building and parking lot (RAP maintenance yard) is located within the northwest portion of the Park. The entire maintenance yard is approximately 15,000 square feet in area, including 16 parking spaces. In addition, the maintenance yard is permitted for use and access only by RAP maintenance staff. The project site also includes a restroom building in the northern portion of the Park along Park Avenue, as well as a small pump house on the peninsula directly south of the maintenance yard, and additional restroom facilities along the west side of the Park. The Park contains numerous palm trees, other canopy trees, shrubs and open grassy and sloped areas. Two levels of landscaped stone terraces are located in the open recreational space directly south of the Lake. The stone terraces include areas of densely planted bushes and shrubs, as well as small and mature canopy trees.

In 1935, the Lady of the Lake (Reina de Los Angeles) statue was installed in the northern portion of the Park at the tip of the peninsula directly adjacent to the Lake edge (the location of the current pump house). In 1986, the statue was removed from this location and was placed in storage while the pump house was then constructed at that location. In 1999, the statue was installed at its current location, on the east side of the Park, just north of the boathouse. Since 1976, the bronze bust sculpture of José Martí has remained in the northwestern corner of the Park. The proposed project would preserve the sculpture in its current location.

In 2006, the City designated the Park as Historic-Cultural Monument (HCM) No. 836. Features contributing to this designation were the Spanish Colonial Revival-style architecture in the Park, English-style landscaping, and defining characteristics including the Lake itself, the footbridge, perimeter paths, boathouse, recreation building, the lotus beds, and the Park's unusual trees.

Currently, the project site includes one vehicular access point and numerous pedestrian access points. The vehicular driveway, leading to the maintenance yard, is located in the northeastern portion of the project site with access from Park Avenue. Approximately four pedestrian access points to the Park from Glendale Boulevard and from Echo Park Avenue are located along the west and east sides of the Park, respectively. Approximately three pedestrian access points to the Park from Park Avenue and from Bellevue Avenue are located along the north and south sides of the Park, respectively.

The ground surface at the project site has gentle to moderate slopes that drain toward the Lake edge at an elevation of approximately 385 feet above mean sea level. The open recreational space at the north end of the Park is relatively flat. The Lake bottom is relatively shallow and ranges from approximately 380 to

375 feet above mean sea level. Water depths range from approximately three to eight feet. In the northeast lobe of the Lake, the bottom is estimated to range between two and three feet in depth.²

2.2.2 SURROUNDING SETTING

The project site is surrounded by a highly urbanized area consisting of commercial, public facility and single- and multi-family residential uses. The Sunset Boulevard commercial corridor is located approximately 0.1 mile north of the project site. Additional recreational facilities are associated with a two-acre portion of the Park located across the street from the project site, on the south side of Bellevue Avenue and directly north of US 101. This two-acre area is not a part of the project site. The recreational facilities include a playground, picnic tables, a shallow pool, and the Echo Park Recreation Center building. The Echo Park Recreation Center is operated by RAP and includes indoor basketball courts, a community room, gymnasium, and indoor pool. In addition, various community sports programs and classes are offered. Located directly south of US 101 is an additional five-acre portion of the Park, which is also not a part of the project site. This area includes six tennis courts with lighting, a baseball field with lighting, and the Echo Park Child Care Center and playground.

One- to four-story single- and multi-family residential buildings are located west of the project site, on the west side of Glendale Boulevard. One- to two-story single- and multi-family residential buildings and a large two- to five-story church are located north of the project site, on the north side of Park Avenue. The church includes Angelus Temple, which is a designated National Historic Landmark (No. 92001875).³ One- to four-story single- and multi-family residential buildings and a large two- to four-story church are located east of the project site, on the east side of Echo Park Avenue. The residential and other land uses located to the east and west of the project site are generally located at a higher elevation. The hillside slopes located east and west of the project site ascend to elevations of approximately 480 to 500 feet above mean sea level.⁴

As previously mentioned, the project site is located within the Los Angeles River Watershed. This watershed is approximately 834 square miles in area and extends from the eastern portions of the Santa Monica Mountains, Simi Hills, and Santa Susana Mountains to the San Gabriel Mountains in the west. The Los Angeles River Watershed encompasses and is shaped by the path of the Los Angeles River, which flows from its headwaters in the mountains eastward to the northern corner of Griffith Park where the channel turns southward through the Glendale Narrows before it flows across the coastal plain toward Long Beach.⁵

² Ninyo & Moore. *Draft Well Installation and Groundwater Monitoring Report Echo Park Lake Rehabilitation Project*. September 2009.

³ National Park Service, National Historic Landmark Program – Angelus Temple. Available: <http://tps.cr.nps.gov/nhl/detail.cfm?ResourceId=2136&ResourceType=Building>. Accessed: December 2009.

⁴ Ninyo & Moore. *Draft Well Installation and Groundwater Monitoring Report Echo Park Lake Rehabilitation Project*. September 2009.

⁵ County of Los Angeles, Department of Public Works, Watershed Management – Los Angeles River Watershed. Available: <http://ladpw.org/wmd/watershed/LA/>. Accessed: December 2009.

2.0 Project Description

The Lake is centrally located within the Los Angeles River Watershed, just east of the Ballona Creek Watershed, and south of the convergence of Verdugo Wash and Arroyo Seco. The Lake discharges to a storm drain, which is a tributary to the Los Angeles River, Reach 2. Reach 2 is a five-mile long stretch of the Los Angeles River spanning the area between Arroyo Seco south to Washington Boulevard in Downtown Los Angeles. According to the City of Los Angeles Watershed Protection Division, the tributary area which drains to the Lake is approximately 770 residential/commercial acres. Historically, the Lake was designed as a detention basin to provide hydraulic relief to the surrounding storm drain system as a form of flood control. Currently, the Lake still acts as a collection point for area runoff, but requires the addition of City potable water to maintain the water level. The proposed project would seek to reduce the use of potable water for this purpose.

2.2.3 GENERAL PLAN DESIGNATION AND ZONING

The project site is located within the Silver Lake-Echo Park-Elysian Valley Community Plan Area in the central area of the City of Los Angeles. The City of Los Angeles General Plan designates the project site as an open space land use.⁶ The project site is zoned Open Space (OS-1XL), which allows for the development of parks, recreational facilities, natural resource preserves for the managed production of resources, marine and ecological preserves, public water supply reservoirs, water conservation areas and sanitary landfill sites that have received certificates of closure in compliance with federal and state regulations.⁷ The project site is located within Height District No. 1, which is designated as being a Very Limited (VL) Height District. Height District 1-VL allows for the development of structures that are three stories or 45 feet in height. According to the General Plan Safety Element, the project site and surrounding area is within a hillside area.⁸

The project site is located within the recently adopted Echo Park Community Design Overlay District. The district is bounded by Sunset Boulevard on the north, Bonnie Brae Street on the west, Echo Park Avenue on the east, and US 101 on the south. The purpose of this district is to preserve the original development pattern, neighborhood character and architectural resources in the Echo Park community.

The multi-family residential and church land uses located east of the project site, on the east side of Echo Park Avenue, are designated as being within the City of Los Angeles Planning Department Angelino Heights Historic Preservation Overlay Zone (HPOZ). The Angelino Heights HPOZ was the first designated HPOZ in the City. Angelino Heights contains quality examples of Victorian-era architectural styles in Los Angeles, as well as later examples of Craftsman and Mission Revival styles.⁹

⁶ City of Los Angeles, Zone Information and Map Access System (ZIMAS). Available: <http://zimas.lacity.org/>. Accessed: October 22, 2009.

⁷ City of Los Angeles, Zone Information and Map Access System (ZIMAS). Available: <http://zimas.lacity.org/>. And City of Los Angeles Municipal Code, Chapter I (Planning and Zoning Code). Available: http://www.amlegal.com/nxt/gateway.dll?f=templates&fn=default.htm&vid=amlegal:lapz_ca. Accessed: October 22, 2009.

⁸ City of Los Angeles, Department of Planning. Safety Element of the Los Angeles City General Plan. Available: <http://cityplanning.lacity.org/>. Accessed: December 2009.

⁹ City of Los Angeles, Department of Planning, Office of Historic Resources. Available : <http://preservation.lacity.org/hpoz/la/angelino-heights>. Accessed: December 2009.

2.3 PROJECT OBJECTIVES

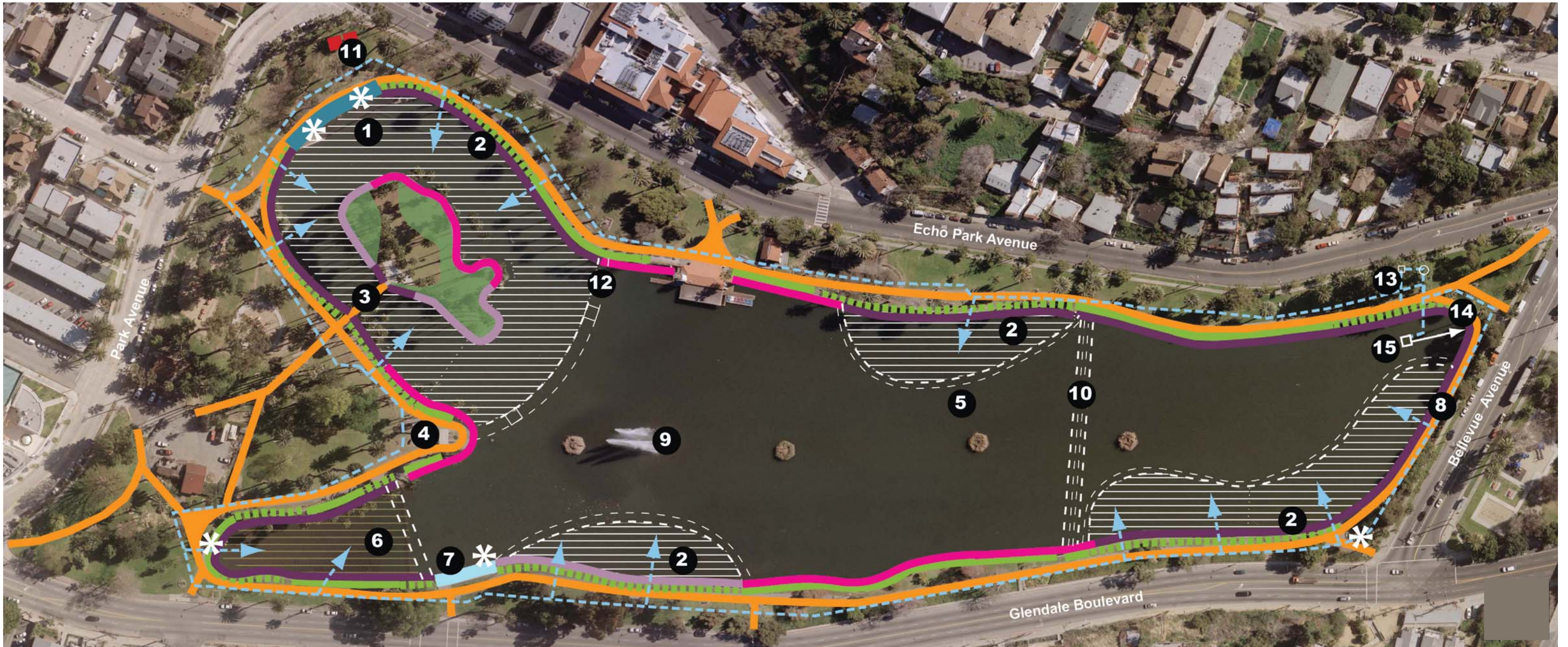
The primary objectives of the proposed project include the following:

- Improve the water quality in the Lake and contribute to water quality improvement in the Los Angeles River Watershed.
- Reduce the use of municipal potable water required to maintain the water level of the Lake.
- Comply with the Regional Water Quality Control Board's intent to restore the existing and potential beneficial water quality uses in the Lake. The existing beneficial uses include non-contact water recreation (REC-2) and wildlife habitat (WILD). The potential beneficial uses include municipal and domestic water supply (MUN), warm freshwater habitat (WARM), and wetland habitat (WET).
- Assist the City in meeting the current and future total maximum daily load (TMDL) requirements.
- Implement multi-purpose solutions at the Lake, consistent with the Proposition O objectives of water supply, water quality, flood protection, water conservation, and recreation.

2.4 PROPOSED PROJECT CHARACTERISTICS

The State of California has identified the Lake as an impaired water body with the following types of water quality issues: algae, ammonia, eutrophic conditions, copper, lead, odor, polychlorinated byphenyls (PCBs), trash, and pH. As a result, the City is proposing to implement in-lake improvements; vegetation, habitat and park improvements; and parkland structural best management practices at the Lake. The proposed project would be consistent with the Regional Water Quality Control Board's intent to restore the existing and potential beneficial water quality uses in the Lake. An overview of the proposed project components are illustrated in Figure 2-3. Below is a description of the key components of the proposed project.

- The existing Lake bottom would be excavated and replaced with a new Lake liner consisting of bentonite-enhanced clay in order to reduce exfiltration losses from the Lake (i.e., to reduce the loss of water through the Lake bed and into the soil beneath). In addition, a lime-stabilized sub-grade base would be installed.



NOTES

- | | |
|--|---|
| <ul style="list-style-type: none"> 1 Proposed wetland area - stormwater inlet 2 Proposed wetland area - Lake edge 3 Existing bridge to remain 4 Pump building replaced by "Lady of the Lake" statue 5 Floating islands to be removed (Typ. of 4) 6 Rehabilitated Lotus beds 7 Stormwater overflow converted to proposed overlook 8 Existing stone terraces/walls to remain 9 Existing fountain to remain | <ul style="list-style-type: none"> 10 Proposed submerged partition 11 Hydrodynamic separators 12 Diversion structure 13 Recirculation pump station & valve vault 14 Existing outlet vault 15 Outlet structure |
|--|---|

LEGEND OF IMPROVEMENTS

- | | |
|--|---|
| <ul style="list-style-type: none"> Edge condition - Type 1 (vegetated) Edge condition - Type 2 (concrete) Edge condition - Type 3 (rip rap) Edge condition - Type 3 (boardwalk) Aquatic terrace - Type 4 (overlook) Path - porous pavement ✱ Interpretive signage location Planting buffer - lawn Planting buffer - shrubs | <ul style="list-style-type: none"> Recirculation piping Wetland area Lotus bed area Understory shrubs |
|--|---|

Source: Black & Veatch and AECOM, 2010



Figure 2-3
Proposed Project Components

2.0 Project Description

- Approximately 4.2 acres of wetlands would be constructed with approximately 2.7 acres within the northeastern lobe of the Lake. The remaining 1.5 acres would be constructed within the southern, eastern and western portions of the littoral zone of the Lake. The wetlands would help to achieve water quality objectives and provide wildlife habitats. Constructing 4.2 acres of wetlands is considered the maximum practical green solution and would not impact use of the Lake for various recreational activities. The average depth of water in the wetland areas would be 1.5 feet. The four existing floating wetland islands near the center of the Lake would be removed with the proposed project.
- A new Lake outlet structure would be constructed at the southeastern corner of the Lake to provide a reliable drainage system, provide the operational flexibility to effectively control the water level, and to help manage water quality.
- An approximately four-foot-tall by six-foot-wide submerged partition berm would be constructed near the southern portion of the Lake (with an east-west orientation), to comply with California Department of Water Resources Division of Safety of Dams (DSOD) standards, which limits the volume of water bearing against the existing dam at the south end to less than 50 acre-feet (the lower threshold of DSOD jurisdiction).
- The existing deteriorated lotus bed area located within the northwestern lobe of the Lake would be restored with new lotus plants similar to those that have historically existed within the Lake.
- A new pump house would be constructed near the southeastern shore of the Lake, as well as a water recirculation piping system. This new recirculation system would allow for water to be drawn from the southern end of the Lake and distributed to the new wetland areas, as well as to the lotus bed, in order to reduce nutrients, bacteria, and other pollutants in the Lake.
- The existing storm drains inletting on the northeastern side of the Lake would be modified to divert low-flow urban runoff into the Lake to reduce the usage of municipal potable water to fill the Lake.
- A storm drain extension would occur along the east side of the Lake south towards the existing tennis courts located south of US 101. This extension would convey flood waters away from the site.
- Aquatic emergent plants would be planted at various points within the Lake's littoral zone for nutrient control, habitat availability, biological diversity, and aesthetic improvements.
- Various improvements to the Lake's edge and adjacent areas would occur. The existing storm water overflow structure along the western edge of the Lake would be modified to create an overlook area including railings, steps, benches, and interpretive signage. In addition, a new boardwalk area with similar features would be constructed along the northeastern lobe of the Lake, as a result of modifications to the existing concrete outfall structures and concrete ramps. Additional interpretive signage would be provided at approximately five other locations near the

2.0 Project Description

Lake edge. Other Lake edge improvements include the installation of rip-rap (i.e., rock material) and wall repair and replacement.

- A majority of the existing asphalt pathway along the Lake perimeter would be replaced with pervious materials, such as stabilized decomposed granite or similar materials, in order to reduce surface runoff. Traditional concrete would likely be used in a few areas.
- Hydrodynamic separators would be installed in the existing storm drain systems at the northeast corner of the Park to remove trash and debris from the storm water before it is discharged to the Lake.
- Rain gardens would be constructed at various points along and near the Lake edge to provide temporary runoff control from the Park and hardscape areas, as well as to promote infiltration and pollutant removal. Rain gardens would be used to catch surface runoff and filter the runoff through planting, sand, and/or gravel before it infiltrates into the ground or is released into the storm drains.
- The existing irrigation system would be upgraded with smart technology to improve efficiency.
- Portions of the existing storm drains that flow into and around the Lake would be modified with a pump system to divert approximately 110,000 gallons of dry season flow (urban runoff) into the Lake, first passing through the hydrodynamic separators and the wetlands in the northeastern lobe of the Lake in order to maintain the water level and for water treatment purposes.
- An aeration device would be installed at or near the new pump station to ensure adequate oxygenation of Lake water.

In-lake improvements would be installed to enhance the recreational fishery of the Lake. These improvements would include artificial structures such as portions of pipe (providing shelter for fish), the deepening of the Lake bottom up to 12 inches in some locations (providing cooler temperatures for the fish), and wetland vegetation (which provides habitat, food, and cooler water temperatures). Additionally, many features of the project site would remain in place or be relocated with the implementation of the proposed project. The existing pump house located on the northern peninsula, directly east of the lotus bed area, would be removed and a new pump house would be constructed near the southern edge of the Lake. The new pump house would be approximately 15 feet in height and 15 feet in depth. However, unlike the existing pump house, the new structure would be constructed to be partially below-grade, resulting in a visible height of approximately 7.5 feet. In addition, the approximately 20-foot-tall light poles, which currently exists adjacent to the Lake and in other areas of the Park, would be replaced with one of the two lighting options under consideration: 1) 20-foot-tall poled lighting of a traditional design to be consistent with the visual character of the Park, or 2) 20-foot-tall poled light poles including efficient solar lighting. The proposed project would preserve the Lady of the Lake statue and relocate the statue to its original location on the northern peninsula at the current location of the pump house. The bronze bust sculpture of José Martí has remained in the northwestern corner of the Park since 1976 and the proposed project would preserve the sculpture of José Martí at its current location. In addition, the existing bridge,

man-made island, boathouse, fountain, landscaped stone terraces, and maintenance yard and related buildings would remain in place with the proposed project. Figure 2-4 shows the conceptual Park landscape, and Lake edge and wetland improvements of the proposed project.

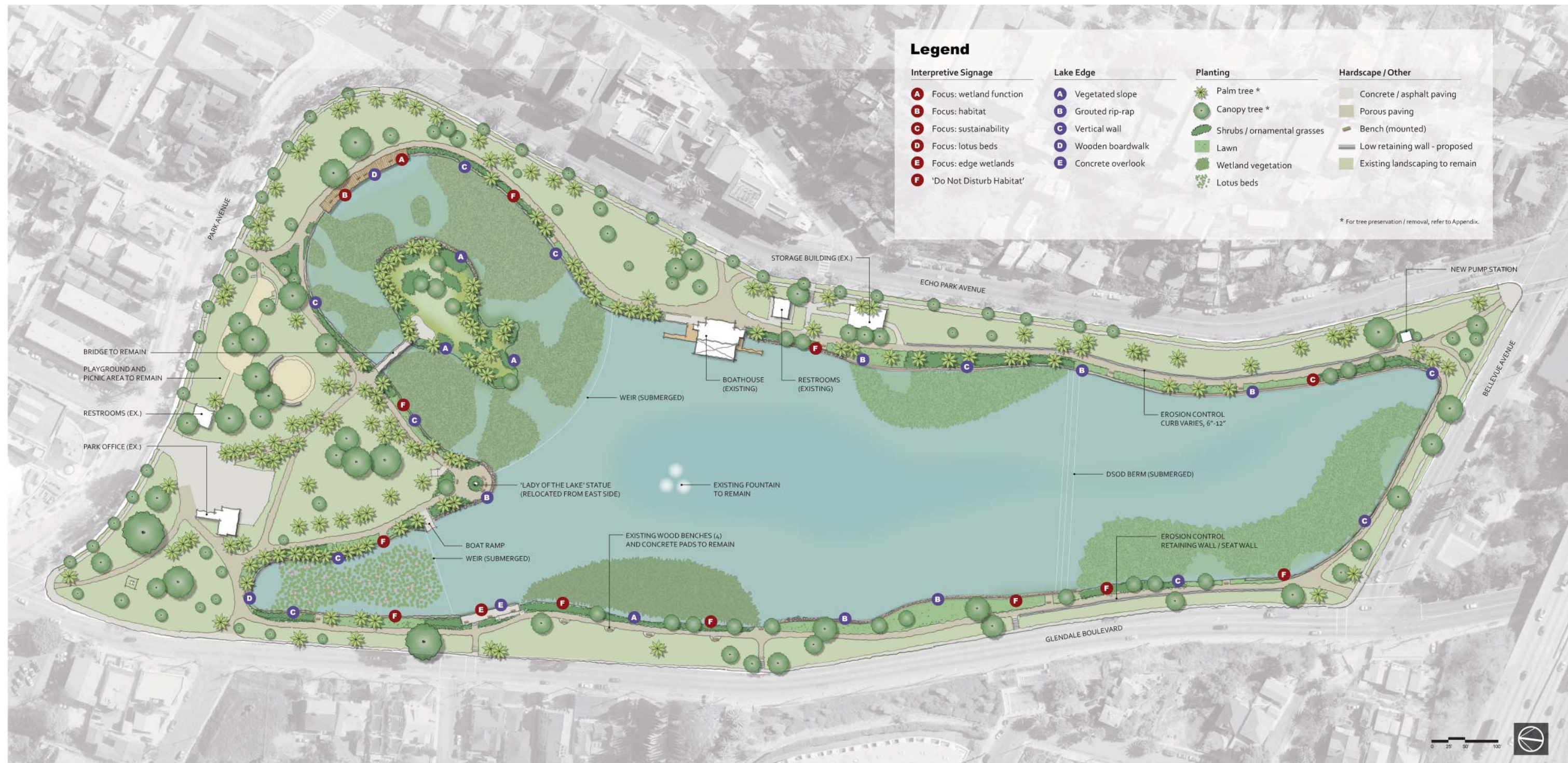
The proposed project would include the removal of approximately 54 trees, the relocation of three trees, and the protection of numerous existing palm and canopy trees. Of the approximately 54 trees to be removed, three are City street trees located within the public rights-of-way near the northeast and southeast corners of the Park, and one is a designated Heritage Tree located in the northwestern portion of the Park. The City street trees are Gold Medallion Trees (*cassia leptophylla*) and the designated Heritage Tree, a Caucasian Wingnut (*pterocarya fraxinifolia*). The Caucasian Wingnut is currently in poor condition. Many of the trees to be removed have been identified as having various tree diseases, requiring eventual removal regardless of the proposed project. In addition, some of the trees to be removed are designated as being unstable and unsafe considering that they are located directly adjacent to the Lake edge and/or pathway. The location of these trees negatively impacts their root systems and the health of the trees. Also, a few of the trees may be hanging over the pathway adjacent to the Lake at unstable angles, resulting in potentially unsafe conditions for Park patrons using the pathway.¹⁰ A landscape plan has been prepared for the proposed project providing the locations and species of all potentially affected trees and identifying the species types and locations of trees that would be relocated or newly planted. The landscape plan provides details regarding the types and arrangement of plants proposed to be planted within and adjacent to the Lake.

It is currently anticipated that the proposed project would be jointly maintained by RAP and the BOS. In addition, the vehicular and pedestrian access points to the project site would not be altered with the proposed project and the operations of the Park would not change.

PROJECT COMPLIANCE WITH REGULATIONS AND POLICIES

The proposed project would be designed, constructed and operated following all applicable laws, regulations, ordinances and formally adopted City standards (e.g., Los Angeles Municipal Code and Bureau of Engineering Standard Plans). Construction will follow the uniform practices established by the Southern California Chapter of the American Public Works Association (e.g., Standard Specifications for Public Works Construction and the Work Area Traffic Control Handbook) as specifically adapted by the City of Los Angeles (e.g., The City of Los Angeles Department of Public Works Additions and Amendments to the Standard Specifications For Public Works Construction [also known as "The Brown Book," formerly Standard Plan S-610]).

¹⁰ Dane S. Shota & Associates – Arborist and Nursery Service, Certified Arborist. *Tree Assessments and Recommendations – Echo Park Lake*. November 2009.



March 2010

Figure 2-4
Proposed Project Landscape Components

2.5 CONSTRUCTION SCENARIO

The estimated duration of the construction phase of the proposed project is 26 months, from January 2011 through February 2013. It is anticipated that the project site would be fenced off and closed to the public during this time. However, the other recreational facilities of Echo Park located on the south side of Bellevue Avenue and south of US 101 would not be closed during the project construction activities.

The construction activities would include draining the entire Lake. An approximately four-foot-tall by six-foot-wide partition berm would be constructed near the southern portion of the Lake (with an east-west orientation), to comply with DSOD standards. The berm would subdivide the Lake into two basins (north and south). Construction activities would occur in the north basin first to ensure flood protection during this phase of the proposed project. After construction activities, including Lake bottom excavation, are completed in the north basin, the south basin would be excavated prior to the installation of the Lake edging and liner. A majority of the removed sediment would require drying, handling and hauling by trucks from the project site to a specified disposal facility. However, any existing soil or sediment that is determined to be useable will be re-used within the Lake bed. The Lake bed would be lined with bentonite-enhanced clay. The existing soil within the Lake bed includes some natural soft and moist clay. The bentonite would be transported from the specified commercial facility to the project site by truck and then mixed with the existing soil within the bed using low-bearing pressure tracked vehicles. It is anticipated that the majority of staging and storage for the Lake bed improvements would occur within the bed itself. It is anticipated that the Lake bed improvements would occur concurrently with the improvements in the adjacent parkland areas. This would ultimately depend on the amount of available staging space within or near the Park.

Construction and staging areas may be located in the northwestern portion of the project site, which is a relatively flat area that contains the RAP maintenance yard and is accessible off of Park Avenue. Other areas being considered include off-site private parcels. Temporary site offices during the construction phase may be located on-site. In addition, construction worker parking is anticipated to be located off-site at sites to be determined, but within walking distance of the project site. Ingress and egress of construction trucks would occur at two locations: along Echo Park and Bellevue Avenues. The construction truck access point located along Echo Park Avenue would be just north of the boathouse. The construction truck access point located along Bellevue Avenue would be just west of its intersection with Echo Park Avenue. Both of these access points are at locations that currently serve as pedestrian access points. A maximum of 170 truck trips (85 in and 85 out) are anticipated per day. Any truck staging areas required would be located along Echo Park Avenue, or, if feasible, within the project site itself.

During construction, four temporary small ponds would be maintained on the project site, but outside the of Lake footprint, to provide a water source for migratory birds that may stop at the Lake in spite of the on-going construction activities. The ponds would be built above-ground with no excavation and are expected to be approximately 2,000 to 3,000 square feet each, depending on the site constraints.

2.0 Project Description

2.6 INTENDED USES OF THE EIR

An EIR is a public document used by a public agency to analyze the significant environmental effects of a proposed project, to identify alternatives, and to disclose possible ways to reduce or avoid environmental damage (CEQA Guidelines, Section 15121). As an informational document, an EIR does not recommend for or against approving a project. The main purpose of an EIR is to inform governmental decision makers and the public about potential environmental impacts of the project.

This EIR will be used by the City of Los Angeles, Department of Public Works, Bureau of Engineering (BOE), as the lead agency under CEQA, in making decisions with regard to the adoption of the proposed project and the subsequent construction and development of the proposed project described above.

2.7 PROJECT APPROVALS REQUIRED

The BOE is the lead agency pursuant to CEQA Guidelines Section 15367. The proposed project and environmental documentation, including this EIR, would require approval by the following City of Los Angeles decision-making bodies: Board of Public Works and the City Council. Additional anticipated approvals or permits for the proposed project include, but are not limited to the following:

- Clean Water Act Section 404 Permit
- United States Army Corps of Engineers (USACE) Preliminary Jurisdictional (JD) Form and Nationwide Permit
- Los Angeles Regional Water Quality Control Board (RWQCB) permits including Clean Water Act Section 401 Water Quality Certification Permit and Waste Discharge Requirement
- California Department of Fish and Game (CDFG) permits including CDFG Code Section 1600 Lake or Streambed Alteration Permit
- DSOD approvals
- Storm Water Pollution Prevention Plan approval
- City of Los Angeles Department of Recreation and Parks, project and design review
- City of Los Angeles permits for disposal of materials and haul routes
- City of Los Angeles, Department of Building and Safety Building Permit, Electrical Permit, and Grading Permit
- City of Los Angeles Cultural Affairs Commission approval
- City of Los Angeles Cultural Heritage Commission approval

3.0 ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION

The following sections include an analysis, by issue area, of the proposed project's potential effects on the environment. Each environmental issue area includes the following subsections:

- Environmental Setting
- Regulatory Setting
- Environmental Impacts
- Mitigation Measures
- Significance after Mitigation

The mitigation measures provided in Chapter 3.0 are proposed by the City, unless otherwise noted. The environmental issue areas analyzed in this section are as follows:

- Aesthetics (Chapter 3.1)
- Air Quality (including Greenhouse Gases; Chapter 3.2)
- Biological Resources (Chapter 3.3)
- Cultural Resources (Chapter 3.4)
- Hazards and Hazardous Materials (Chapter 3.5)
- Hydrology and Water Quality (Chapter 3.6)
- Noise (Chapter 3.7)
- Recreation (Chapter 3.8)
- Transportation and Traffic (Chapter 3.9)

As identified in the Initial Study (see Appendix A) prepared in September 2009, the following are the environmental issue areas that were not found to be significantly impacted or potentially impacted by the proposed project:

- Agriculture and Forest Resources
- Geology and Soils
- Land Use and Planning
- Mineral Resources
- Population and Housing
- Public Services
- Utilities and Services Systems

Therefore, no further evaluation of these environmental issue areas is necessary in this chapter. Chapter 4.0 includes a brief discussion of impacts that were not found to be significant.

3.0 Environmental Setting, Impacts and Mitigation

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3.1 AESTHETICS

The purpose of this chapter is to identify and evaluate key visual and aesthetic resources in the vicinity of the project site and to determine the degree of visual and aesthetic impacts that would be attributable to the proposed project.

The character of the existing visual environment was documented through field reconnaissance, photographic records, and aerial photograph interpretation. The description of the visual environment of the project site provides a baseline against which the effects of the proposed project on key views are assessed. Descriptors used to assess the visual environment include visual character, visual quality, visual resources, viewer groups and their sensitivity, and view duration. The analysis describes the potential aesthetic effects of the proposed project on the existing landscape and built environment, focusing on the compatibility of the proposed project with existing conditions and its potential effects on visual resources. Several visual simulations have been prepared and are presented in this chapter. The visual simulations presented illustrate the conceptual design of the proposed project and are not necessarily representative of the project final design.

3.1.1 ENVIRONMENTAL SETTING

VISUAL CHARACTER

The visual character of urban environments can be defined as the overall physical image of the urban environment. Several factors contribute to this image, including: (1) nature and quality of building architecture and the landscape; (2) cohesion of the area's collective architecture and landscape; (3) compatibility between uses and activities with the built environment; (4) quality of the streetscape, including roadways, sidewalks, plazas, parks, and street furniture; and (5) quality and nature of private property landscaping that is visible to the general public.

Project Site

The project site is located in a highly urbanized area of Los Angeles within the Echo Park/Silver Lake community, approximately 0.1 mile south of Sunset Boulevard and 0.05 mile (250 feet) north of US 101. The project site includes an approximately 24-acre portion of Echo Park, an open-space recreational facility. The Lake occupies 14.14 acres and is surrounded by 10 acres of developed parkland. The project site is generally lower in elevation than the surrounding roadways and other land uses in the project area.

The open recreational space that surrounds the Lake includes landscaping such as grass, shrubs, bushes, various types of palm trees and mature canopy trees, which are visible from the roadways and public sidewalks on each of the four sides of the project site. The existing trees on the project site range in height from approximately 15 to 50 feet. Sloped areas of grass, bushes, palm trees, and other mature canopy trees are located within the open recreational space east and west of the Lake. In addition to the

3.1 Aesthetics

one-story RAP maintenance building and small surface parking lot, sloped and relatively flat areas of grass, dense areas of palm trees, and other canopy trees are located within the open recreational space north of the Lake. Two levels of landscaped stone terraces are located in the open recreational space south of the Lake. The stone terraces include areas of densely planted bushes and shrubs, as well as small and mature canopy trees.

Key features in the Park include a footbridge, boathouse, lotus bed, man-made island, a fountain, the Lady of the Lake statue, and a perimeter pathway. The perimeter pathway located directly adjacent to and surrounding the Lake, is regularly used for jogging and walking. Approximately four pedestrian access points to the Park from Glendale Boulevard are located along the west side of the Park. A large concrete storm water overflow area is currently located directly adjacent to the west side of the Lake. Approximately three pedestrian access points to the Park from Park Avenue are located along the north side of the Park. Two, small one-story maintenance buildings are located in the northern portion of the Park, along with a small surface parking area, playground, and picnic tables. An approximately 73-foot-long footbridge connects the northern portion of the Park to a man-made island within the northern portion of the Lake. Numerous palm trees stand on the man-made island. Approximately four pedestrian access points to the Park from Echo Park Avenue are located along the east side of the Park. A one-story boathouse is located directly on the eastern Lake edge to facilitate the use of paddle boat recreational activities within the Lake. A one-story restroom building and the existing Lady of the Lake statue are also located within the eastern portion of the Park. In addition, approximately three pedestrian access points from Bellevue Avenue exist along the south side of the Park. As previously mentioned, the landscaped stone terraces are located along the south side of the Lake, adjacent and south of the perimeter pathway. An approximately 312-foot-long, four-foot-tall chain-linked fence borders the southeastern edge of the Lake, separating the Lake edge from the perimeter pathway. Figures 3.1-2 through 3.1-5 shows the existing visual character and features of the project site. A guide to the location from which the existing views can be seen is shown on Figure 3.1-1.

Under existing conditions, numerous 20-foot-tall light poles with two lighting fixtures per pole are located on the project site primarily to illuminate the pathway that directly surrounds the Lake, as well as the recreational open space that surrounds the Lake. The light poles and fixtures on the project site are consistent with the visual character of standard park lighting systems and do not possess any unique or ornamental visual features.

In 2006, the City designated the Park as HCM No. 836. Features contributing to this designation were the Spanish Colonial Revival-style architecture in the Park, English-style landscaping, and defining characteristics including the Lake itself, the footbridge, perimeter paths, boathouse, recreation building, the lotus bed, and the Park's unusual trees.



Source: Google Imagery 2009, DigitalGlobe 2009



Figure 3.1-1
Location of Existing Views

3.1 Aesthetics



FIGURE 3.1-2: VIEW 1 - EXISTING PROJECT SITE LOOKING SOUTH



FIGURE 3.1-3: VIEW 2 - EXISTING PROJECT SITE LOOKING WEST



FIGURE 3.1-4: VIEW 3 - EXISTING PROJECT SITE LOOKING NORTH



FIGURE 3.1-5: VIEW 4 - EXISTING PROJECT SITE LOOKING EAST

3.1 Aesthetics

Surrounding Setting

The project site is surrounded by commercial, public facility and multi-family residential uses. Sunset Boulevard is located approximately 0.1 mile north of the project site. Additional recreational facilities associated with the Park, including a playground, swimming pool, and childcare center, are located south of the project site, on the south side of Bellevue Avenue. The US 101 is located directly south of these recreational uses. One- to four-story multi-family residential buildings are located west of the project site, on the west side of Glendale Boulevard. One- to two-story multi-family residential buildings and a large two- to five-story church are located north of the project site, on the north side of Park Avenue. The church includes Angelus Temple, which is a designated National Historic Landmark (No. 92001875).¹

One- to four-story multi-family residential buildings and a large two- to four-story church are located east of the project site, on the east side of Echo Park Avenue. Existing views from the project site on clear days include north-facing views of the Santa Monica Mountains and south-facing views of the Downtown Los Angeles skyline. However, both of these existing views from the project site are interrupted by existing buildings surrounding the project site, as well as vegetation. North-facing views of the historic Angeles Temple are also available from the project site. Due to the higher elevation, some of the existing residential uses located east and west of the project site, on the east side of Echo Park Avenue and on the west side of Glendale Boulevard, currently have views looking down into the sunken Park. Figures 3.1-6 through 3.1-9 shows the existing visual character of the project site and surrounding areas. As previously mentioned, a guide to the location from which the existing views can be seen is shown on Figure 3.1-1.

3.1.2 REGULATORY SETTING

CITY OF LOS ANGELES GENERAL PLAN

The project site is located within the City of Los Angeles and, therefore, is subject to the requirements of the City's General Plan. There are no elements in the City of Los Angeles General Plan that specifically refer to aesthetics or visual quality; however, the Framework Element of the General Plan contains Chapter 5, Urban Form and Neighborhood Design, which helps to define the visual form and character of new development within the City. This chapter of the Framework Element defines "urban form" as the general pattern of building height and development intensity, as well as the structural elements that define the City physically, including natural features, transportation corridors (including the planned fixed rail transit system), open space, public facilities, activity centers, and focal elements. Neighborhood design includes the physical character of neighborhoods and communities within the City.² Listed below are the policies presented within Chapter 5, Urban Form and Neighborhood Design that may be applicable to the proposed project:

¹ National Park Service, National Historic Landmark Program – Angelus Temple. Available:

<http://tps.cr.nps.gov/nhl/detail.cfm?ResourceId=2136&ResourceType=Building>. Accessed: October 22, 2009.

² City of Los Angeles, Department of City Planning. Framework Element of the General Plan, Chapter 5 Urban Form and Neighborhood Design. Re-Adopted by City Council on August 8, 2001.



FIGURE 3.1-6: VIEW 5 - EXISTING PROJECT AREA LOOKING WEST ON PARK AVENUE



FIGURE 3.1-7: VIEW 6 - EXISTING PROJECT AREA LOOKING NORTH ON ECHO PARK AVENUE

3.1 Aesthetics



FIGURE 3.1-8: VIEW 7 - EXISTING PROJECT AREA LOOKING EAST ON BELLEVUE AVENUE



FIGURE 3.1-9: VIEW 8 - EXISTING PROJECT AREA LOOKING NORTH ON GLENDALE BOULEVARD

- Policy 5.5.4: Determine the appropriate urban design at the neighborhood level, such as sidewalk width and materials, street lights and trees, bus shelters and benches, and other street furniture.
- Policy 5.8.4: Encourage that signage be designed to be integrated with the architectural character of the buildings and convey a visually attractive character.
- Policy 5.9.1: Facilitate observation and natural surveillance through improved development standards which provide for common areas, adequate lighting, clear definition of outdoor spaces, attractive fencing, use of landscaping as a natural barrier, secure storage areas, good visual connections between residential, commercial, or public environments and grouping activity functions such as child care or recreation areas.³

The project site is located within the Silver Lake-Echo Park-Elysian Valley Community Plan area in the central area of the City. The Silver Lake-Echo Park-Elysian Valley Community Plan along with 34 other community plans, comprising the Land Use Element of the City of Los Angeles General Plan. A distinguishing feature of the Silver Lake-Echo Park-Elysian Valley Community Plan area is its fairly dense, hillside neighborhoods which are often characterized by steep slopes and narrow streets. Residential neighborhoods within the Plan area tend to contain a mix of single-family and multi-family structures, particularly in older neighborhoods such as Angelino Heights. Listed below are the policies presented within the Silver Lake-Echo Park-Elysian Valley Community Plan that may be applicable to the proposed project:

- Policy 1-3.1: Seek a higher degree of architectural compatibility and landscaping for new infill development to protect the character and scale of existing residential neighborhoods.
- Policy 1-3.2: Preserve existing views in hillside areas.
- Policy 1-5.1: Protect and enhance the historic and architectural legacy of the Plan area's neighborhoods.
- Policy 1-5.2: Encourage reuse of historic resources in a manner that maintains and enhances the historic character of structures and neighborhoods.
- Policy 2-2.1: Preserve existing pedestrian-oriented areas.
- Policy 2-3.1: Proposed developments should be designed to enhance and be compatible with existing adjacent development.
- Policy 2-3.4: Preserve community character, scale and architectural diversity.

³ Ibid.

3.1 Aesthetics

- Policy 4-1.1: Preserve the existing recreational facilities and park space.
- Policy 4-1.2: Preserve and encourage acquisition, development and funding of new recreational facilities and park space with the goal of creating greenways and trail systems.
- Policy 4-1.3: Preserve and maintain public staircases in the Plan area and other public rights-of-way that could provide or enhance linkages for greenways and trail systems.
- Policy 5-1.1: Encourage the retention of passive and visual open space which provides a balance to the urban development of the Plan area.

According to the Plan, both Silver Lake (located approximately 1.2 miles north of the project site) and Echo Park “have a network of public staircases that were originally built in lieu of streets, typically because of steep terrain, to provide public access from hillside neighborhoods to main streets and the electric cars serving them. This unique network of staircases found throughout the Plan area also potentially supplement greenway systems and provide linkages to existing and future open space, recreational paths and parks. As a result, they should be identified, maintained and, in cases where they have been barricaded by adjacent private property owners, reclaimed as public rights-of-way for public use.”⁴

3.1.3 ENVIRONMENTAL IMPACTS

THRESHOLDS OF SIGNIFICANCE

As part of the Initial Study (see Appendix A), it was determined that the proposed project would not have a substantial adverse effect on a scenic vista and would not substantially damage scenic resources within a state scenic highway. Accordingly, these issues are not further analyzed in the EIR. The Initial Study determined that the proposed project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. However, since the preparation of the Initial Study, the proposed lighting elements have been altered for the proposed project. As such, this issue is analyzed below.

Pursuant to the CEQA Guidelines, the proposed project would have a significant effect on aesthetic resources if it would:

- Substantially degrade the existing visual character or quality of the site and its surroundings; and/or

⁴ City of Los Angeles, Department of City Planning. *Silver Lake-Echo Park-Elysian Valley Community Plan*. Last updated August 11, 2004.

- Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

METHODOLOGY FOR ASSESSING VISUAL IMPACT

The extent of the potential impact from a particular visual change is subjective and depends upon the degree of alteration, the scenic quality of the area disturbed, and the sensitivity of the viewers. The degree of alteration refers to the extent of visual change, including changes to landscaping, structure height, and setback length. Scenic quality is often indicated by special zoning and planning overlay zones, but can also be assessed based on the vividness or memorability of the view, and intactness and unity of the elements within the view. These terms are defined as follows:

Vividness	The memorability of the visual impression received from contrasting landscape elements as they combine to form a striking distinctive visual pattern.
Intactness	The integrity of visual order in the natural and man-built landscape, and the extent to which the landscape is free from visual encroachment.
Unity	The degree to which the visual resources of the landscape join together to form a coherent, harmonious visual pattern. Unity refers to the compositional harmony or inter-compatibility between landscape elements. ⁵

Because of the nature and location of the project site, the proposed project would be visible to several different groups of people. To assess their potential response to the proposed project, it is important to identify and categorize different types of viewers depending on their sensitivity to change in the landscape. Viewer groups who currently experience the project site include local residents, Park patrons, Park employees, patrons and employees of commercial and other land uses in the project area, and motorists passing the project site. Viewer sensitivity varies depending on the location of the viewer at the time the view is experienced, the duration of that view, the typical activities being undertaken while the view is experienced, and the number of viewers in the sensitive viewer group. A description of each viewer group follows, in order from the most to least sensitive viewer groups.

- **Local Multi-Family Residents:** Private views of the proposed project would be experienced from the windows, frontyards, backyards, and balconies of the multi-family residential uses located along Echo Park Avenue, Park Avenue, and Glendale Boulevard in the project area. Some of these residential uses are located on the elevated hillside locations, particularly those residences located along the east side of Echo Park Avenue and along the west side of Glendale Boulevard, thereby, resulting in private residential views downward into the relatively sunken project site. The private views experienced by the multi-family residences located along Park Avenue, north

⁵ U.S. Department of Transportation, Federal Highway Administration (FHWA). *Visual Impact Assessment for Highway Projects*. 1988.

3.1 Aesthetics

of the project site, are comparatively level views. There are currently no residential uses located along the south side of Bellevue Avenue that have private or background views of the project site. Because numerous multi-family residential uses directly face the project site, the sensitivity of these residential viewers would be considered high.

- **Patrons and Employees of the Park:** Patrons and employees of the Park are considered to be less sensitive as compared to the residential viewers. Patrons of the Park would typically continue to visit the project site despite the aesthetics of the buildings, landscaping, and Lake edge treatments within the Park. Although the employees of the Park, and particularly the patrons of the Park, have a strong interest in the visual appearance of the project site, they would have less of a personal investment. For these reasons, Park patrons and employees would be moderately sensitive to changes at the project site.
- **Patrons and Employees of Commercial and Other Land Uses in the Project Area:** Patrons of the commercial, church, and other land uses in the project area would primarily experience views of the proposed project as they approach and leave their destinations. These employees are likely to be indoors throughout the day, except for the time spent commuting to work – by vehicle, on foot, by bicycle, or public transportation – thus they would experience moderate sensitivity to visual changes. Similarly, employees of the commercial, church, and other land uses in the project area would primarily experience views of the project site as they approach and leave work, as the majority of their time as patrons/customers is likely spent indoors. However, these viewers would have less personal investment in the visual appearance of the project site and surrounding areas. These viewers would be moderately sensitive to changes at the project site.
- **Passing Motorists:** The proposed project would be visible to motorists traveling along Echo Park Avenue, Park Avenue, Glendale Boulevard, and Bellevue Avenue, particularly as they idle at the various traffic signals surrounding the project site. In addition, indirect or fleeting views of the proposed project would be available from motorists traveling along the various residential side streets located north, east, and west of the project site (e.g., Laguna Avenue, Logan, Santa Ynez, and Montrose Streets, etc.). The sensitivity of motorists passing the proposed project would vary depending on the purpose of their trip. Motorists driving for pleasure may be more sensitive to their views, while commuting motorists may pay little or no attention to views outside the roadway. As a park improvement project, motorists would be very aware of and sensitive to the proposed project during construction; however, in terms of the long-term operational impact, based upon their travel speed and focus on driving activity, motorist sensitivity is considered low.

It is possible to acknowledge a visual change as potentially adverse, but not significant, because either viewers are not sensitive or the scenic quality of the surrounding area is not high.

IMPACT ANALYSIS

VIS-1 *The proposed project would substantially degrade the existing visual character or quality of the site and its surroundings with implementation of the solar lighting option. The impact would be significant.*

CONSTRUCTION

The construction phase of the proposed project would be temporary in nature; lasting approximately 26 months from 2011 to 2013. The construction activities would include fencing off and closing the project site to the public; draining the Lake; construction equipment storage and staging within the project site; drying, handling and hauling of sediment; stockpiling within the project site; various grading activities; Lake edge and pathway treatments; the installation of wetlands and the new lotus bed; the removal and planting of trees and other landscaping; and various other water quality-related infrastructure and Park improvements as described in Chapter 2.0, Project Description. The proposed project would not include the demolition of existing buildings on the project site. However, the existing pump house located on the peninsula at the northern end of the Lake would be demolished and a new pump house would be constructed on the southeastern portion of the project site, and the Lady of the Lake statue would be relocated from the east side of the Lake to the current location of the pump house on the northern peninsula.

During the construction phase, the visual character of the project site would change temporarily but substantially from existing conditions. The project site would be fenced off with a chain-linked fence and the Lake would be empty for a majority of the construction phase, resulting in a contrast and change in visual character from the existing open project site and visible water surface. In addition, the visual character of the project site associated with the open grassy areas, trees, and other landscaping which currently contributes to the character of the project site, would vary visually as the proposed landscaping plan, which addresses tree removals and replacements, is put into place. The designated construction areas, including the RAP maintenance yard at the northeast corner of the project site, the Lake bed itself, and the construction truck ingress/egress area along the east side of the project site (south of the boathouse) would be busier than under existing conditions, with trucks moving carrying materials on- and off-site, and work crews and construction equipment moving around the project site.

The construction activities would be visible from the multi-family residences located along Echo Park Avenue, Park Avenue, and Glendale Boulevard. The multi-family residences located on the hillside areas along the east side of Echo Park Avenue and the west side of Glendale Boulevard would have downward-looking or bird's-eye views of the construction site. This would result in a substantial change in the visual character of the site, as the views of the Lake surface and surrounding green landscaping would temporarily be characterized as a fenced construction site including an empty Lake bed. Residences currently located along Echo Park Avenue would view the construction trucks entering and exiting the project site on the west side of Echo Park Avenue. In addition, the construction activities would be

3.1 Aesthetics

visible from the multi-family residential uses located along Park Avenue, north of the project site. However, because of the relatively level topography along this section of Park Avenue, these residences would have a horizontal view of the construction activities, but would experience the temporary change in visual character. The residences along Park Avenue would also have a direct view of the construction storage and staging area at the RAP maintenance yard within the northwest corner of the project site. However, as previously mentioned the construction phase would be temporary in nature. This short-term condition would create a temporary change in visual character typically associated with construction activities. A temporary impact to the visual character would result because the residences that surround the project site would have a high sensitivity and personal investment in these visual changes, due primarily to their daily views from their place of residence.

The construction activities would also result in a change in visual character with respect to the patrons and employees of the Park as the project site would be fenced off and closed to the public during the construction phase. Patrons that regularly use the Park for various recreational activities would be temporarily required to travel to other nearby parks if they desired to continue their recreational activities during the temporary construction phase. In addition, the RAP employees that regularly work at the project site would have a limited need to access the project site because restrooms and other public facilities would be closed during the construction phase. A temporary impact would result related to the visual experience of Park patrons and employees, a viewer group that would be moderately sensitive to visual changes and have less of a personal investment in the visual appearance of the project site.

The patrons and employees of commercial and other land uses in the project area would primarily experience views of the construction activities on the project site as they approach and leave their commercial destination or place of work. Therefore, their views of the construction activities would primarily take place while enroute to and from these locations in the project area. The employees of project area land uses would not be highly sensitive to visual changes occurring on the project site during the construction phase. In addition, patrons of project area land uses may be more sensitive than the employees, but nevertheless would not likely change their patronage due to visual changes taking place on the project site during the construction phase. A temporary impact to the visual character would result for project area patrons and employees, a viewer group that would be moderately sensitive to visual changes but have less of a personal investment in the visual appearance of the project site.

Passing motorists would primarily experience views of construction activities while driving along the roadways adjacent to the project site, as well as the various residential side streets. In addition, motorists would have prolonged views while idling at the various traffic signals surrounding the project site. The change in the visual character of the project site during the construction phase would be noticed by passing motorists. However, passing motorists are considered to have a low sensitivity to any visual changes on the project site as they are likely passing through the project area to reach their destinations and do not necessarily have a personal investment in the visual character of the project site.

Overall, the construction phase would represent a temporary change in the visual quality and character of the project site. Because of the fencing off of the project site and the relative uniqueness of the construction process (i.e., the draining and lining of a lake) the site would not appear similar to other construction sites throughout the City and in nearby urban areas. During construction, the project site may potentially stand out as a memorable or remarkable feature in the landscape due to its temporary negative impact on the visual character and quality of the site and its surroundings. However, the construction impact would be temporary and reversible would have a less than significant impact on the visual character of the project site and surroundings.

OPERATIONS

In order to assess the potential visual changes that would result from the operation of the proposed project, eight key views were selected for the proposed project as shown below. Visual simulations from these key views were prepared to provide a before and after comparison of the visual effects that would result from the proposed project. A guide to the location from which the key views can be seen is shown on Figure 3.1-10, while the key views and simulations are shown in Figures 3.1-11 through 3.1-19.

The key views are representative of direct views within the project site and area; simulations from the same locations show how these views would change as a result of the proposed project. The simulated Lake edge improvements, vegetation, and other project details are based on the types of materials that may potentially be used in the construction of the proposed project, and are not intended to represent the final project design. Similarly, all of the simulations presented in this chapter represent the conceptual design of the proposed project. The simulations are included in this chapter in order to conceptually illustrate the general visual changes that would be expected to occur with the proposed project. However, the simulations do not include all of the design elements discussed in the text of this chapter and not represent the final design of the proposed project.

The proposed project would rehabilitate the project site and would not construct any new large buildings or add new land uses to the project site. Following the draining and the excavation of the Lake bottom, wetland areas would be constructed within various areas near the Lake lobes and edge. The four existing floating wetlands near the center of the Lake would be removed. Aquatic emergent vegetation and rain gardens would be placed at various points along or near the Lake edge and would be clearly visible. The new wetlands, aquatic emergent vegetation, and rain gardens would all be visible at the water surface and along or near the Lake edge. The existing approximately 12-foot-tall pump house located on the northern peninsula of the Lake would be demolished and a new pump house would be constructed near the southern edge of the Lake. As shown in the “before” view on Figure 3.1-14, the existing pump house is approximately 250 square feet in area and does not possess any visually or architecturally unique features. The new pump house would be approximately 15 feet in height and 15 feet in depth. However, unlike the existing pump house, which is entirely above-grade, the new pump house would be constructed to be partially below- and above-grade, resulting in a reduced visible height of approximately 7.5 feet.



Source: Google Imagery 2009, DigitalGlobe 2009



Figure 3.1-10
Location of Key Views

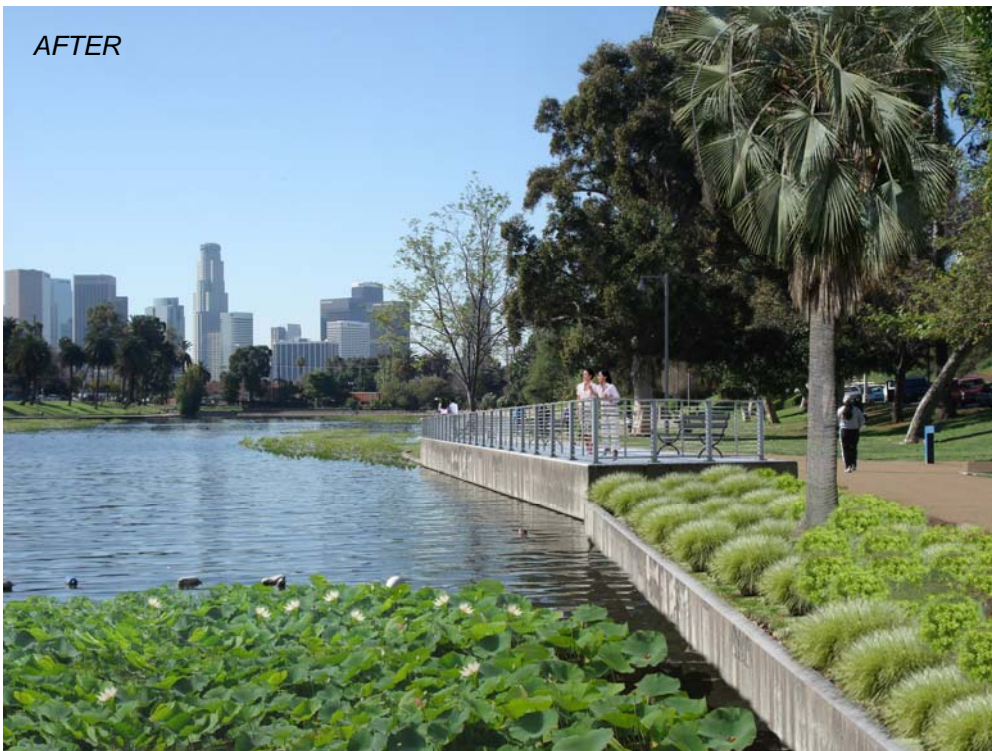
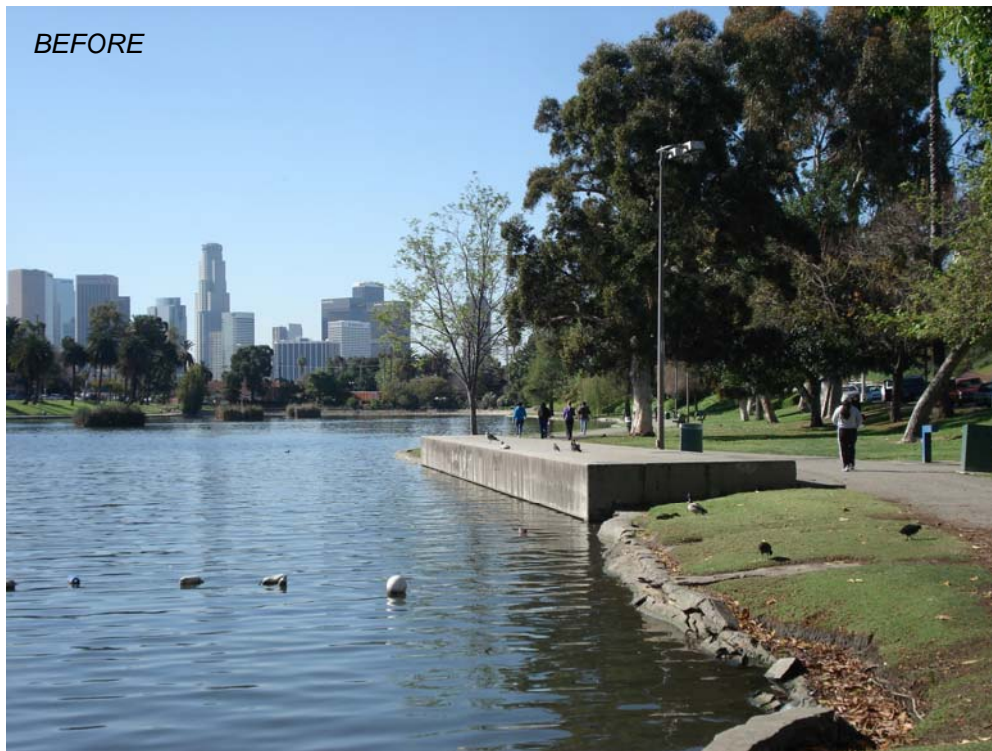


FIGURE 3.1-11: KEY VIEW 1 - BEFORE AND AFTER SIMULATION LOOKING SOUTH AT LOTUS BED AND PROPOSED OVERLOOK AREA

3.1 Aesthetics



FIGURE 3.1-12: KEY VIEW 2 - BEFORE AND AFTER SIMULATION LOOKING SOUTH ALONG EAST SIDE OF LAKE



FIGURE 3.1-13: KEY VIEW 3 - BEFORE AND AFTER SIMULATION LOOKING NORTHWEST AT PROPOSED BOARDWALK AND WETLANDS AREA

3.1 Aesthetics



FIGURE 3.1-14: KEY VIEW 4 - BEFORE AND AFTER SIMULATION LOOKING SOUTH AT THE PROPOSED LOCATION OF LADY OF THE LAKE STATUE



FIGURE 3.1-15: KEY VIEW 5 - BEFORE AND AFTER SIMULATION LOOKING NORTHWEST FROM SOUTH OF THE BOATHOUSE

3.1 Aesthetics



FIGURE 3.1-16: KEY VIEW 6 - BEFORE AND AFTER SIMULATION LOOKING NORTHWEST FROM SOUTHERN END OF THE LAKE



**FIGURE 3.1-17: KEY VIEW 7 - BEFORE AND AFTER SIMULATION RESIDENTIAL VIEW
LOOKING NORTHEAST AT THE PROJECT SITE**

3.1 Aesthetics



**FIGURE 3.1-18: KEY VIEW 8 - BEFORE AND AFTER SIMULATION VIEW
LOOKING SOUTH OF THE PATHWAY AND TRADITIONAL LIGHTING**



**FIGURE 3.1-19: KEY VIEW 8 - BEFORE AND AFTER SIMULATION VIEW
LOOKING SOUTH OF THE PATHWAY AND SOLAR LIGHTING**

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Various other improvements to the Lake's edge and adjacent areas would occur with the proposed project. As shown in Figure 3.1-11, the storm water overflow concrete structure located along the western edge of the Lake would be modified to create an overlook area, including railings, steps, benches, and interpretive signage. As shown in Figure 3.1-13, a boardwalk area with similar features would be constructed along the Lake edge within the northeastern lobe of the Lake. Additional interpretive signage would be provided at approximately five other locations near the Lake edge. A majority of the existing asphalt pathway around the Lake perimeter would be replaced with new permeable material.

In addition, the approximately 20-foot-tall light poles, most of which are in a deteriorating visual condition and located adjacent to the Lake and within open areas of the Park, would be replaced with new light poles and fixtures. Two lighting options are being considered for the proposed project: 1) 20-foot-tall poled lighting of a traditional design, and 2) 20-foot-tall poled efficient solar lighting of a modern design. Key View 8 is provided below in order to show the simulations of the visual character of the two proposed lighting options. As such, Figure 3.1-18 shows a before and after simulation of Key View 8 with the proposed traditional lighting, and Figure 3.1-19 shows a before and after simulation of Key View 8 with the proposed solar lighting.

Many other features or elements of the existing project site would remain in place or be relocated with the implementation of the proposed project. As shown in Figure 3.1-14, the Lady of the Lake statue would be relocated to its original location at the current location of the existing pump house on the northern peninsula. The bronze bust sculpture of José Martí would be preserved in place in the northwestern corner of the Park. In addition, the existing footbridge, man-made island, boathouse, fountain, landscaped stone terraces, RAP maintenance yard and related buildings would remain in place.

The proposed project would include the removal of approximately 54 trees, the relocation of three trees, and the protection of numerous existing palm and canopy trees. Of the approximately 54 trees to be removed, one is a City-designated Heritage Tree: a Caucasian Wingnut (*pterocarya fraxinifolia*), which is in poor condition. The proposed project includes a landscape plan that details the protection, removal, and replacement of various trees and the planting of other vegetation on the project site. The proposed project would plant more trees than are removed.

Key View 1 shows the project site looking south from the northwestern portion of the Lake (see Figure 3.1-11). This is a view that is typically seen by patrons and employees of the Park near the northwestern lobe of the Lake. The Downtown Los Angeles skyline is shown in the background of this view. In addition, this view shows the location of the former lotus bed, which is not visible in this view because they have failed to survive in recent years. As shown in Figure 3.1-11, with the restoration of the lotus bed, modification of the storm water overflow structure to an overlook area, Lake edge treatments, lighting, and landscaping, the proposed project would result in an improvement in the visual character from this view. The primary change in this view would be the addition of lotus plants, the overlook railings, new edge landscaping and trees, as well as other Lake edge treatments. Although the new lotus bed would cover some of the water surface, resulting in reduced views of open water from this portion of

the project site, the restored lotus bed would be placed at a location where they have historically existed within the Lake. The proposed overlook railings would not contribute to a decline in the visual character of this view and would be designed to be consistent with the colors and materials used in the Park. The eroding and deteriorating Lake edge would be rehabilitated, improving the visual character of this view. From Key View 1, the proposed project would represent a visual change, although not substantial, characterized by an improvement in the visual character of the project site. However, the final design, types, and colors of the overlook railings and interpretive signage would be in coordination with the appropriate City departments, City committees/commissions, and with the local residents through on-going project meetings in order to ensure that the visual character of the proposed project would be consistent with the existing visual character of the Park. As such, less than significant impacts are anticipated.

Key View 2 shows the project site looking south from the northeastern portion of the Lake (see Figure 3.1-12). This is a view that is typically seen by patrons and employees of the Park at the northeastern lobe of the Lake. A white multi-family residential building located along Glendale Boulevard is shown in the background, while the boathouse on the east side of the Lake is shown in the middleground of this view. As shown in Figure 3.1-12, with new wetlands, Lake edge treatments, new hardscape and lighting, and landscaping, the proposed project would result in an improvement in the visual character from this view. The primary change in this view would be the addition of a new constructed wetlands area and the Lake edge treatments. The wetlands would cover some of the water surface, resulting in reduced views of open water from this portion of the project site. However, the wetlands would be located in the lobes of the Lake and along some portions of the Lake edge, and not in the center of the Lake where the historic views of open water have existed. The eroding and deteriorating Lake edge would be rehabilitated, improving the visual character of this view. In addition, the sloped grassy area of the eastern portion of the Park which contributes to the Park's visual character, would remain and not be substantially graded. The fountain within the Lake would also remain in place. From Key View 2, the proposed project would represent a visual change, although not substantial, characterized by an improvement in the visual character of the project site. Additionally, the final design, types, and colors of the external materials used would be in coordination with the appropriate City departments, City committees/commissions, and with the local residents through on-going project meetings in order to ensure that the visual character of the proposed project would be consistent with the existing visual character of the Park. As such, less than significant impacts are anticipated.

Key View 3 shows the project site looking northwest from towards the existing outfall structures and concrete ramps at the northeastern portion of the Lake (see Figure 3.1-13). This is a view that is typically seen by patrons and employees of the Park at the northeastern lobe of the Lake. Existing multi-story commercial buildings and one- to two-story multi-family residential buildings are shown in the background of this view. As shown in Figure 3.1-13, with new wetlands, the modification of the existing outfall structures and concrete ramps to a new boardwalk area, Lake edge treatments, new hardscape and lighting, and landscaping, the proposed project would result in an improvement in the visual character from this view. The primary change in this view would be the addition of new constructed wetlands and

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the modification of the outfall structures and concrete ramps to a boardwalk. As mentioned above, the wetlands would cover some of the water surface, resulting in reduced views of open water from this portion of the project site. However, the wetlands would be located in the lobes of the Lake and along some portions of the Lake edge, and not in the center of the Lake where the historic views of open water have existed. The proposed boardwalk railings, benches, and signage would not contribute to a decline in the visual character of this view and would be designed to be consistent with the colors and materials used in the Park. From Key View 3, the proposed project would represent a visual change, although not substantial, characterized by an improvement in the visual character of the project site. Additionally, the final design, types, and colors of the boardwalk railings and interpretive signage would be in coordination with the appropriate City departments, City committees/commissions, and with the local residents through on-going project meetings in order to ensure that the visual character of the proposed project would be consistent with the existing visual character of the Park. As such, less than significant impacts are anticipated.

Key View 4 shows the project site looking south, towards the existing pump house, from the northwestern portion of the site at the peninsula (see Figure 3.1-14). This is a view that is typically seen by patrons and employees of the Park at the northern peninsula of the Lake. The boathouse and fountain located on the project site are shown in the middleground and the Downtown Los Angeles skyline is shown in the background of this view. As shown in Figure 3.1-14, with new Lake edge treatments, new hardscape and lighting, landscaping, and relocation of the Lady of the Lake statue to its original location, the proposed project would result in an improvement in the visual character from this view. The primary change in this view would be the addition of new landscaping, the statue, and the light pole. The boathouse would remain in place and the floating wetlands would be removed with the proposed project. The proposed view would be characteristic of the traditional views in the Park that included the Lady of the Lake statue and the boathouse located on the east side of the Lake. From Key View 4, the proposed project would represent a visual change characterized by an improvement in the visual character of the project site. The final design, types, and colors of the external materials used (i.e., Lake edge treatments and lighting) would be in coordination with the appropriate City departments, City committees/commissions, and with the local residents through on-going project meetings in order to ensure that the visual character of the proposed project would be consistent with the existing visual character of the Park. As such, less than significant impacts are anticipated.

Key View 5 shows the project site looking northwest from just south of the boathouse towards the existing pump house and the northwestern portion of the Lake (see Figure 3.1-15). This is a view that is typically seen by patrons and employees of the Park along the east side of the Lake. Existing one- to two-story multi-family residential buildings are shown in the background of this view. As shown in Figure 3.1-15, with new wetlands on the northern portion of the Lake, the Lake edge treatments, and new landscaping, the proposed project would result in an improvement in the visual character from this view. The primary change in this view would be the addition of new constructed wetlands on the northern portion of the Lake and the new landscaping along the Lake edge. As mentioned above, the wetlands would cover some of the water surface, resulting in reduced views of open water from certain portions of

the project site. However, in this view the proposed wetlands would not reduce the views of open water in the center of the Lake, where the historic views of open water have existed. The proposed wetlands, Lake edge treatments, and landscaping would not contribute to a decline in the visual character of this view and, as applicable, would be designed to be consistent with the colors and materials used in the Park. From Key View 5, the proposed project would represent a visual change, although not substantial, characterized by an improvement in the visual character of the project site. Additionally, the final design of the proposed project would be in coordination with the appropriate City departments, City committees/commissions, and with the local residents through on-going project meetings in order to ensure that the visual character of the proposed project would be consistent with the existing visual character of the Park. As such, less than significant impacts are anticipated.

Key View 6 shows the project site looking northwest from the southern portion of the site (see Figure 3.1-16). This is a view that is typically seen by patrons and employees of the Park at the southern end of the Lake. A view of the existing multi-story commercial buildings is shown in the background of this view. In addition, a background view of the Santa Monica Mountains is substantially interrupted by intervening development and tall trees. As shown in Figure 3.1-16, with new wetlands, new fencing, and the removal of the existing floating islands, the proposed project would result in an improvement in the visual character from this view. The primary change in this view would be the addition of constructed wetlands in the foreground and to the north, as well as the replacement of the existing chain-linked fence at the southern edge of the Lake with a new fence. As previously mentioned, the wetlands would cover some of the water surface, resulting in reduced views of open water from this portion of the project site. The wetlands would be located in the lobes of the Lake, along some portions of the Lake edge, and in the southern portion of the Lake, and not in the center of the Lake where the historic views of open water have existed. The new fence would not contribute to a decline in the visual character of this view and would be designed to be consistent with the colors and materials used in the Park. From Key View 6, the proposed project would represent a visual change, although not substantial, characterized by an improvement in the visual character of the project site. Additionally, the final design, type, and color of the new fencing would be in coordination with the appropriate City departments, City committees/commissions, and with the local residents through on-going project meetings in order to ensure that the visual character of the proposed project would be consistent with the existing visual character of the Park. As such, less than significant impacts are anticipated.

Key View 7 shows the project site and surrounding area looking northeast from the residential neighborhood located west of the project site (see Figure 3.1-17). This is a view that is typically seen by residents on the west side of Glendale Boulevard, directly across the street from the project site. This neighborhood is located on a hillside area and is substantially higher in elevation than the project site. The neighborhood located east of the project site, on the east side of Echo Park Avenue, is similarly elevated. A view of the existing hillside neighborhood located east and northeast of the project site is shown in the background of this view. In addition, a background view of the Santa Monica Mountains is substantially interrupted by intervening development on the hillside, as well as tall trees and other vegetation. As shown in Figure 3.1-17, with the new wetlands, new landscaping, pathway hardscape, and

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the removal of the existing floating islands, the proposed project would result in an improvement in the visual character from this view. The primary change in this view would be the addition of constructed wetlands along the western edge of the Lake and within the northeastern lobe. As previously mentioned, the wetlands would cover some of the water surface, resulting in reduced views of open water from this portion of the project site. However, the wetlands would be located in the lobes of the Lake, along some portions of the Lake edge, and in the southern portion of the Lake, and not in the center of the Lake where the historic views of open water have existed. The proposed wetlands and landscaping would not contribute to a decline in the visual character of this view and, as applicable, would be designed to be consistent with the colors and materials used in the Park. From Key View 7, the proposed project would represent a visual change, although not substantial, characterized by an improvement in the visual character of the project site. Additionally, the final design, types, and colors of the new landscaping and pathway hardscape would be in coordination with the appropriate City departments, City committees/commissions, and with the local residents through on-going project meetings in order to ensure that the visual character of the proposed project would be consistent with the existing visual character of the Park. As such, less than significant impacts are anticipated.

Key View 8 shows the project site looking south from the western portion of the site. This key view is provided in order to show simulations of the visual character of the two proposed lighting options for the proposed project, including traditional and solar lighting. As such, Figures 3.1-18 shows a simulation of Key View 8 with the traditional lighting option, while Figure 3.1-19 shows a simulation of Key View 8 with the solar lighting option. Key View 8 is a view that is typically seen by patrons and employees of the Park near the east side of the Lake, from just south of the existing storm water overflow area. On the left side of the view, the Downtown Los Angeles skyline is shown in the background of this view. On the right side of the view, vehicular traffic on Glendale Boulevard is also shown in the background.

As shown in Figure 3.1-18, with the proposed Lake edge treatments, new landscaping, and new pathway hardscape would result in an improvement in the visual character of the western portion of the project site in this view. However, the primary change would be the replacement of the existing light poles and fixtures with new light poles and fixtures of a traditional design, as well as the addition of constructed wetlands along the western edge of the Lake. The proposed traditional lighting option would result in a visual improvement in the character of project site lighting because the traditional design would be consistent with historic character of the Park. In addition, it would be a visual improvement as compared to the existing deteriorating Park lighting poles and fixtures. As previously mentioned, the wetlands would cover some of the water surface, resulting in reduced views of open water from this portion of the project site. However, the wetlands would be located in the lobes of the Lake, along some portions of the Lake edge, and in the southern portion of the Lake, and not in the center of the Lake where the historic views of open water have existed. The traditional lighting option and wetlands would not contribute to a decline in the visual character of this view and would be designed, as applicable, to be consistent with the colors and materials used in the Park. The deteriorating pathway would be rehabilitated, improving the visual character of this view. The final design, types, and colors of the landscaping, pathway, and light poles and fixtures would be in coordination with the appropriate City departments, City

committees/commissions, and with the local residents through on-going project meetings in order to ensure that the visual character of the proposed project would be consistent with the existing visual character of the Park. From Key View 8, with the traditional lighting option, the proposed project would represent a visual change, although not substantial, characterized by an improvement in the visual character of the site. As such, less than significant impacts are anticipated with the traditional lighting option.

As shown in Figure 3.1-19, the primary change in this view would be the replacement of the existing light poles and fixtures with new light poles and fixtures, including efficient solar lighting. The solar lighting option would result in a visual contrast with the character of project site because the modern aesthetic of the solar lighting. As a result of this visual contrast, the solar lighting option would contribute to a decline in the visual character of this view. The design of the solar lighting option would be visually intrusive as compared to existing conditions and would not be consistent with the visual character of the site and surroundings. As such, the solar lighting option would substantially degrade the existing visual character of the site. From Key View 8, with the solar lighting option, the proposed project would represent a substantial visual change on the project site. The final design, types, and colors of the solar light poles and fixtures would be in coordination with the appropriate City departments, City committees/commissions, and with the local residents through on-going project meetings. Specifically, the solar lighting option would be required to be approved by the City of Los Angeles Cultural Heritage Commission during the project approval process. It is anticipated that the project review and approval process may potentially minimize or reduce the visual intrusion of the solar lighting option. However, it is not certain whether the project review and approval process would in fact result in a solar lighting design that is more consistent with the visual character of the Park. No feasible mitigation measures are available to reduce this significant impact. As such, a significant impact is anticipated with the solar lighting option.

Overall, the proposed project would represent an improvement in visual character as compared to the existing project site. The proposed project would replace the existing algae-dominated ecosystem of the Lake with a plant-dominated ecosystem. The restored lotus bed would represent an improvement in visual character as compared to the existing algae, which is particularly visible in the summer months in the northwestern lobe and other portions of the Lake. In addition, the implementation of mitigation measures provided in Chapter 3.4, Cultural Resources would assist in reducing visual character impacts. However, with the solar lighting option, no feasible mitigation measures are available to reduce or avoid significant impacts. As such, the proposed project would result in significant impacts related to visual character.

VIS-2 *The proposed project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. Impacts would be less than significant.*

The project site is located in an urban area near US 101 and 0.01 mile south of the Sunset Boulevard commercial corridor, an area that currently has a high level of ambient lighting. The project site currently

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includes nighttime building lighting, security lighting, Park and pathway lighting, and maintenance yard (parking lot) lighting. With the proposed project, nighttime building lighting, security lighting, and maintenance yard lighting would remain on the project site. As previously mentioned, traditional and solar lighting options are being considered with the proposed project. New light poles and fixtures, either traditional or solar, would be installed adjacent to the new pathway circling the Lake and in the open parkland on the project site. All lighting fixtures would be installed in accordance with the applicable specifications and City standards, and would be aimed downward as appropriate to ensure that the light does not spillover onto nearby residential uses. With the implementation of applicable lighting specifications and City standards, the proposed project would result in less than significant impacts related to lighting.

Glare is produced when any visible light source is brighter than the surroundings in the line of vision. Reflections from smooth, polished reflective surfaces can also be a cause of glare. The proposed project would not include any new major sources of glare and no reflective surfaces would be introduced to the project site. No buildings or structures including glass or metal would be included with the proposed project. The proposed project would result in less than significant impacts related to glare.

3.1.4 MITIGATION MEASURES

No feasible mitigation measures are available to reduce significant visual character impacts related to the solar lighting option. For all other aesthetic impact areas, no mitigation measures are required.

3.1.5 Significance After Mitigation

The final design, types, and colors of the all exterior materials used, including overlook/boardwalk railings, interpretive signage, pump house building, and outlet structure, would be in coordination with the appropriate City departments, City committees/commissions, and with the local residents through on-going project meetings in order to ensure that the visual character of the proposed project would be consistent with the existing visual character of the Park. In addition, the implementation of mitigation measures provided in Chapter 3.4, Cultural Resources would assist in reducing visual character impacts. However, with the solar lighting option, no feasible mitigation measures are available to reduce or avoid significant impacts. As such, the proposed project would result in significant and unavoidable impacts related to visual character.

The proposed project would result in less than significant impacts related to light and glare. As such, no mitigation measures were required.

3.2 AIR QUALITY

This section examines the degree to which the proposed project may result in significant adverse changes in air quality and is based on a technical air quality (Appendix B) and health risk assessment (Appendix C) studies prepared for the proposed project. Both short-term construction emissions occurring from activities, such as site grading and haul truck trips, and long-term effects related to the on-going operation of the proposed project are discussed in this section. This analysis focuses on air pollution from two perspectives: daily emissions and pollutant concentrations. “Emissions” refer to the quantity of pollutant released into the air, measured in pounds per day. “Concentrations” refer to the amount of pollutant material per volumetric unit of air, measured in parts per million (ppm) or micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). In addition, an analysis of greenhouse gas emissions is included in this chapter.

3.2.1 ENVIRONMENTAL SETTING

POLLUTANTS AND EFFECTS

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards for outdoor concentrations to protect public health. The federal and state standards have been set at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive persons from illness or discomfort. Pollutants of concern include carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter 2.5 microns or less in diameter ($\text{PM}_{2.5}$), particulate matter 10 microns or less in diameter (PM_{10}), and lead (Pb). These pollutants are discussed below.

Carbon Monoxide. CO is a colorless and odorless gas formed by the incomplete combustion of fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas such as the project area, automobile exhaust accounts for the majority of CO emissions. CO is a non-reactive air pollutant that dissipates relatively quickly, so ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions, primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, a typical situation at dusk in urban areas between November and February.¹ The highest levels of CO typically occur during the colder months of the year when inversion conditions are more frequent. In terms of health, CO competes with oxygen, often replacing it in the blood, thus reducing the blood’s ability to transport oxygen to vital organs. The results of excess CO exposure can be dizziness, fatigue, and impairment of central nervous system functions.

¹Inversion is an atmospheric condition in which a layer of warm air traps cooler air near the surface of the earth, preventing the normal rising of surface air.

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Ozone. O₃ is a colorless gas that is formed in the atmosphere when reactive organic gases (ROG), which includes volatile organic compounds (VOC), and nitrogen oxides (NO_x) react in the presence of ultraviolet sunlight. O₃ is not a primary pollutant; it is a secondary pollutant formed by complex interactions of two pollutants directly emitted into the atmosphere. The primary sources of ROG and NO_x, the components of O₃, are automobile exhaust and industrial sources. Meteorology and terrain play major roles in O₃ formation. Ideal conditions occur during summer and early autumn, on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. The greatest source of smog-producing gases is the automobile. Short-term exposure (lasting for a few hours) to O₃ at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes.

Nitrogen Dioxide. NO₂, like O₃, is not directly emitted into the atmosphere but is formed by an atmospheric chemical reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO₂ are collectively referred to as NO_x and are major contributors to O₃ formation. NO₂ also contributes to the formation of PM₁₀. High concentrations of NO₂ can cause breathing difficulties and result in a brownish-red cast to the atmosphere with reduced visibility. There is some indication of a relationship between NO₂ and chronic pulmonary fibrosis. Some increase of bronchitis in children (two and three years old) has also been observed at concentrations below 0.3 ppm.

Sulfur Dioxide. SO₂ is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Main sources of SO₂ are coal and oil used in power plants and industries. Generally, the highest levels of SO₂ are found near large industrial complexes. In recent years, SO₂ concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO₂ and limits on the sulfur content of fuels. SO₂ is an irritant gas that attacks the throat and lungs. It can cause acute respiratory symptoms and diminished ventilator function in children. SO₂ can also harm plant leaves and erode iron and steel.

Particulate Matter. Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter also forms when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. PM_{2.5} and PM₁₀ represent fractions of particulate matter. Fine particulate matter, or PM_{2.5}, is approximately 1/28 the diameter of a human hair. PM_{2.5} results from fuel combustion (e.g. motor vehicles, power generation, and industrial facilities), residential fireplaces, and wood stoves. In addition, PM_{2.5} can be formed in the atmosphere from gases such as SO₂, NO_x, and VOC. Inhalable particulate matter, or PM₁₀, is approximately 1/7 the thickness of a human hair. Major sources of PM₁₀ include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions.

PM_{2.5} and PM₁₀ pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. PM_{2.5}

and PM₁₀ can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances, such as lead, sulfates, and nitrates can cause lung damage directly. These substances can be absorbed into the blood stream and cause damage elsewhere in the body. These substances can transport absorbed gases, such as chlorides or ammonium, into the lungs and cause injury. Whereas PM₁₀ tends to collect in the upper portion of the respiratory system, PM_{2.5} is so tiny that it can penetrate deeper into the lungs and damage lung tissues. Suspended particulates also damage and discolor surfaces on which they settle, as well as produce haze and reduce regional visibility.

Lead. Pb in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline; the manufacturers of batteries, paint, ink, ceramics, and ammunition; and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phase-out of leaded gasoline reduced the overall inventory of airborne lead by nearly 95 percent. With the phase-out of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities have become lead-emission sources of greater concern.

Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and in severe cases, neuromuscular and neurological dysfunction. Of particular concern are low-level lead exposures during infancy and childhood. Such exposures are associated with decrements in neurobehavioral performance, including intelligence quotient performance, psychomotor performance, reaction time, and growth.

Toxic Air Contaminants. A substance is considered toxic if it has the potential to cause adverse health effects in humans. A toxic substance released into the air is considered a toxic air contaminant (TAC). TACs are identified by State and federal agencies based on a review of available scientific evidence. In the State of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of risk identification and risk management was designed to protect residents from the health effects of toxic substances in the air.

Greenhouse Gases. Greenhouse gas (GHG) emissions refer to a group of emissions that are generally believed to affect global climate conditions. The greenhouse effect compares the Earth and the atmosphere surrounding it to a greenhouse with glass panes. The glass panes in a greenhouse let heat from sunlight in and reduce the amount of heat that escapes. GHGs, such as carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O), keep the average surface temperature of the Earth close to 60 degrees Fahrenheit (°F). Without the greenhouse effect, the Earth would be a frozen globe with an average surface temperature of about 5°F.

In addition to CO₂, CH₄, and N₂O, GHGs include hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and water vapor. Of all the GHGs, CO₂ is the most abundant pollutant that contributes to climate change through fossil fuel combustion. CO₂ comprised 83.3 percent of the total GHG emissions

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in California in 2002.² The other GHGs are less abundant but have higher global warming potential than CO₂. To account for this higher potential, emissions of other GHGs are frequently expressed in the equivalent mass of CO₂, denoted as CO₂e. The CO₂e of CH₄ and N₂O represented 6.4 and 6.8 percent, respectively, of the 2002 California GHG emissions. Other high global warming potential gases represented 3.5 percent of these emissions.³ In addition, there are a number of human-made pollutants, such as CO, NO_x, non-methane VOC, and SO₂, that have indirect effects on terrestrial or solar radiation absorption by influencing the formation or destruction of other climate change emissions.

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Air Pollution Climatology

The project site is located within the Los Angeles County portion of the South Coast Air Basin (Basin). Ambient pollution concentrations recorded in Los Angeles County are among the highest in the four counties comprising the Basin.

The Basin is in an area of high air pollution potential due to its climate and topography. The general region lies in the semi-permanent high pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light to average wind speeds. The Basin experiences warm summers, mild winters, infrequent rainfalls, light winds, and moderate humidity. This usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The Basin is a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean to the west and high mountains around the rest of its perimeter. The mountains and hills within the area contribute to the variation of rainfall, temperature, and winds throughout the region.

The Basin experiences frequent temperature inversions. Temperature typically decreases with height. However, under inversion conditions, temperature increases as altitude increases, thereby preventing air close to the ground from mixing with the air above it. As a result, air pollutants are trapped near the ground. During the summer, air quality problems are created due to the interaction between the ocean surface and the lower layer of the atmosphere. This interaction creates a moist marine layer. An upper layer of warm air mass forms over the cool marine layer, preventing air pollutants from dispersing upward. Additionally, hydrocarbons and NO₂ react under strong sunlight, creating smog. Light, daytime winds, predominantly from the west, further aggravate the condition by driving air pollutants inland, toward the mountains. During the fall and winter, air quality problems are created due to CO and NO₂ emissions. CO concentrations are generally worse in the morning and late evening (around 10:00 p.m.). In the morning, CO levels are relatively high due to cold temperatures and the large number of cars traveling. High CO levels during the late evenings are a result of stagnant atmospheric conditions trapping CO in the area. Since CO emissions are produced almost entirely from automobiles, the highest

²California Environmental Protection Agency, Climate Action Team Report to Governor Schwarzenegger and the Legislature, March 2006, p. 11.

³Ibid.

CO concentrations in the Basin are associated with heavy traffic. NO₂ concentrations are also generally higher during fall and winter days.

Local Climate

The mountains and hills within the Basin contribute to the variation of rainfall, temperature, and winds throughout the region. Within the project site and its vicinity, the average wind speed, as recorded at the Downtown Los Angeles Wind Monitoring Station, is approximately five miles per hour. Wind in the vicinity of the project site predominately blows from the southwest.⁴

The annual average temperature in the project area is 64.9°F. The project area experiences an average winter temperature of approximately 58.0°F and an average summer temperature of approximately 71.5°F. Total precipitation in the project area averages approximately 15 inches annually. Precipitation occurs primarily during the winter and relatively infrequently during the summer. Precipitation averages approximately nine inches during the winter, four inches during the spring, two inches during the fall, and less than one inch during the summer.⁵

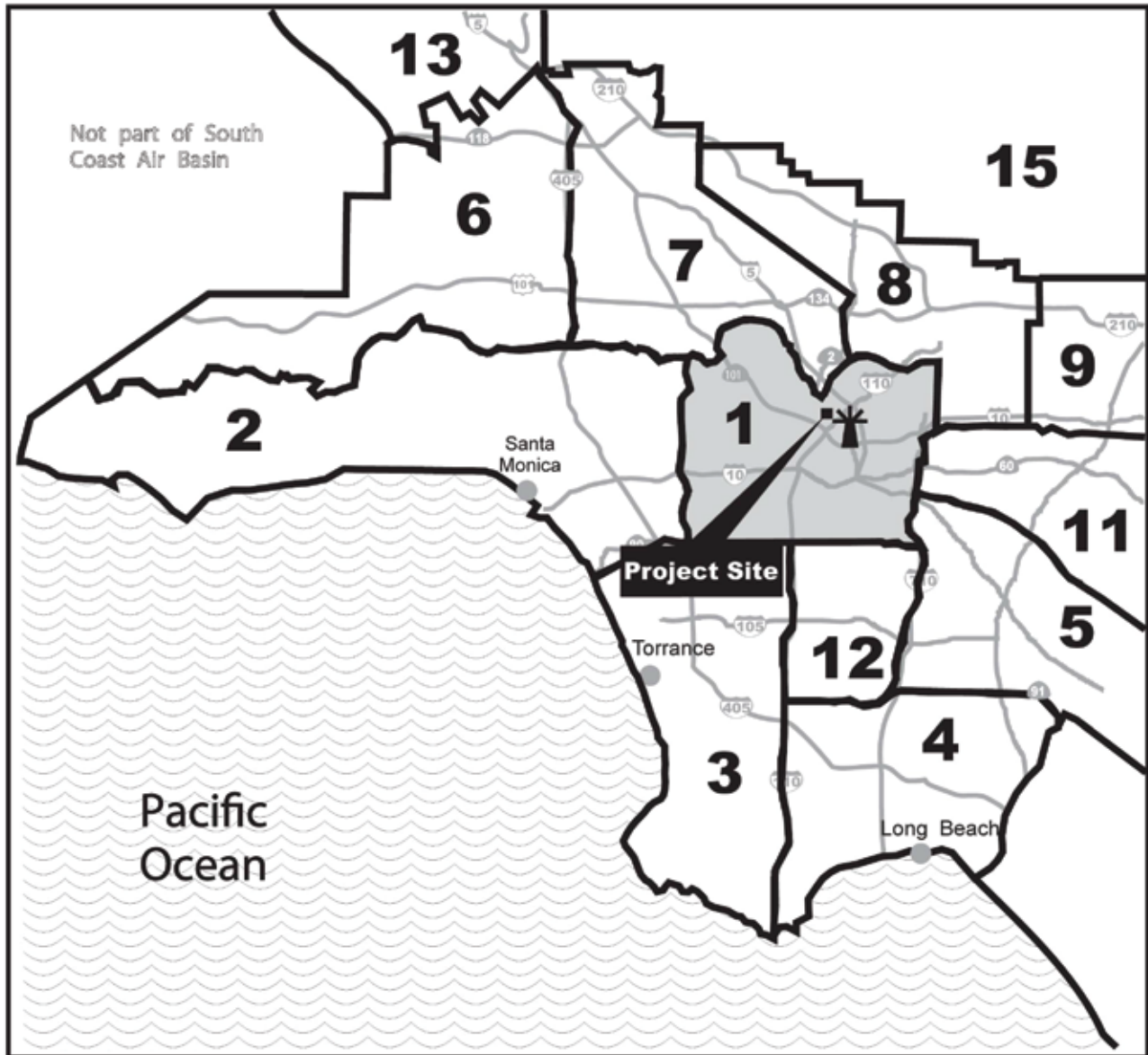
Air Monitoring Data


The Southern California Air Quality Management District (SCAQMD) monitors air quality conditions at 38 locations throughout the Basin. The project site is located in SCAQMD's Central Los Angeles County Air Monitoring Subregion, which is served by the Downtown Los Angeles Monitoring Station, is located approximately two miles east of the project site located at 1630 North Main Street in the City of Los Angeles (Figure 3.2-1). Historical data from the Downtown Los Angeles Monitoring Station were used to characterize existing conditions in the vicinity of the project site. Criteria pollutants monitored at the Downtown Los Angeles Monitoring Station include O₃, CO, and NO₂, SO₂, PM_{2.5} and PM₁₀.

Table 3.2-1 shows pollutant levels, the state and federal standards, and the number of exceedances recorded at the Downtown Los Angeles Monitoring Station compared to the Metropolitan General Forecast Area (Forecast Area) from 2006 to 2008.

⁴SCAQMD, Meteorological Data, available at <http://www.aqmd.gov/smog/metdata/MeteorologicalData.html>, accessed October 27, 2009. See Appendix B.

⁵Western Regional Climate Center, Historical Climate Information, available at <http://www.wrcc.dri.edu>, accessed October 27, 2009.



LEGEND:  Downtown Los Angeles Monitoring Station

Air Monitoring Areas in Los Angeles County:

- | | |
|---------------------------------|--------------------------------------|
| 1. Central Los Angeles | 9. East San Gabriel Valley |
| 2. Northwest Coastal | 10. Pomona/Walnut Valley (not shown) |
| 3. Southwest Coastal | 11. South San Gabriel Valley |
| 4. South Coastal | 12. South Central Los Angeles |
| 5. Southeast Los Angeles County | 13. Santa Clarita Valley |
| 6. West San Fernando Valley | 15. San Gabriel Mountains |
| 7. East San Fernando Valley | |
| 8. West San Gabriel Valley | |



Source: South Coast Air Quality Management District Air Monitoring Areas Map, 1999



Figure 3.2-1
Air Monitoring Areas

3.2 Air Quality

The CAAQS for the criteria pollutants are also shown in the table. As Table 3.2-1 indicates, criteria pollutants CO, NO₂, and SO₂ did not exceed the CAAQS during the 2006 to 2008 period. The one-hour state standard for O₃ was exceeded three to eight times during this period, and the eight-hour state standard for O₃ was exceeded four to seven times. The 24-hour state standard for PM₁₀ was exceeded three to five times during this period. The annual state standard for PM_{2.5} was exceeded during the year 2006 to 2008 period. When compared to the Forecast area the Downtown Los Angeles Monitoring Station recorded concentrations of averages of the O₃, NO₂, SO₂, PM_{2.5} and PM₁₀ that were similar to the average concentrations of the Forecast Area's monitoring areas.

TABLE 3.2-1 2006-2008 AMBIENT AIR QUALITY DATA IN PROJECT VICINITY

Pollutant	Pollutant Concentration & Standards	Downtown Los Angeles Monitoring Station			Metropolitan General Forecast Area ^{1,2}		
		Number of Days Above State Standard					
		2006	2007	2008	2006	2007	2008
Ozone	Maximum 1-hr Concentration (ppm)	0.11	0.12	0.11	0.12	0.12	0.10
	Days > 0.09 ppm (State 1-hr standard)	8	3	3	1	1	3
	Days > 0.12 ppm (Federal 1-hr standard)	0	0	0	0	0	0
Carbon Monoxide	Maximum 1-hr concentration (ppm)	3	3	3	6	6	5
	Days > 20 ppm (State 1-hr standard)	0	0	0	0	0	0
	Maximum 8-hr concentration (ppm)	2.6	2.2	2.1	4.0	3.5	3.1
	Days > 9.0 ppm (State 8-hr standard)	0	0	0	0	0	0
Nitrogen Dioxide	Maximum 1-hr Concentration (ppm)	0.11	0.10	0.12	0.11	0.09	0.11
	Days > 0.18 ppm (State 1-hr standard)	0	0	0	0	0	0
PM ₁₀	Maximum 24-hr concentration (µg/m ³)	59	78	66	59	78	66
	Days > 50 µg/m ³ (State 24-hr standard)	3	5	3	4	4	3
PM _{2.5}	Annual Arithmetic Mean (µg/m ³)	16	17	16	16	16	16
	Exceed State Standard (12 µg/m ³)?	Yes	Yes	Yes	Yes	Yes	Yes
Sulfur Dioxide	Maximum 24-hr Concentration (ppm)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Days > 0.04 ppm (State 24-hr standard)	0	0	0	0	0	0

¹ The Metropolitan General Forecast Area includes the Central Los Angeles County, South Central Los Angeles County, Southeast Los Angeles County, and North Orange County air monitoring areas of the SCAQMD. Data is no longer available from the Southeast Los Angeles County subregion.

² An average of the maximum concentration of each criteria pollutant of the air monitoring areas of the Metropolitan General Forecast Area was used to represent maximum concentrations in the Metropolitan General Forecast Area.

Source: SCAQMD, Historical Data by Year, available at <http://www.aqmd.gov/smog/historicaldata.htm>, accessed October 27, 2009.

3.2 Air Quality

SENSITIVE RECEPTORS

Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. The California Air Resources Board (CARB) has identified the following typical groups who are most likely to be affected by air pollution: children under 14, the elderly over 65 years of age, athletes, and people with cardiovascular and chronic respiratory diseases. According to the SCAQMD, sensitive receptors include residences, schools, playgrounds, child care centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. Churches are not listed by the SCAQMD as a sensitive receptor. However, they are considered to be sensitive to air pollution in this analysis because they typically function as a gathering location for adults and children. The churches included as part of this analysis are not known to have school/daycare facilities.

As shown in Figure 3.2-2 sensitive receptors within one-quarter mile (1,320 feet) of the project site include the following:

- Single- and multi-family residences located approximately 70 feet west of the project site
- Single- and multi-family residences located approximately 70 feet east of the project site
- Single- and multi-family residences located approximately 70 feet north of the project site
- Angelus Temple located approximately 70 feet north of the project site
- Saint Athanasius Episcopal Church located approximately 70 feet east of the project site
- Echo Park Recreation Center located approximately 95 feet south of the project site
- Echo Park Child Care Center located approximately 550 feet southeast of the project site

The above sensitive receptors represent the nearest sensitive receptors to the project site with the potential to be impacted by any air emissions associated with the proposed project. Additional sensitive receptors are located in the surrounding community and may be impacted by any potential air emissions.



LEGEND:

■ Project Site

Sensitive Receptors

- 1. Angelus Temple
- 2. Single- and Multi-Family Residences
- 3. Saint Athanasius Episcopal Church
- 4. Echo Park Recreation Center
- 5. Echo Park Child Care Center

Source: Terry A. Hayes Associates, LLC 2010



Figure 3.2-2
Sensitive Receptor Locations

3.2 Air Quality

3.2.2 REGULATORY SETTING

FEDERAL

United States Environmental Protection Agency

The Federal Clean Air Act (CAA) governs air quality in the United States. The United States Environmental Protection Agency (USEPA) is responsible for enforcing the CAA. USEPA is also responsible for establishing the National Ambient Air Quality Standards (NAAQS). NAAQS are required under the 1977 CAA and subsequent amendments. USEPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain types of locomotives. USEPA has jurisdiction over emission sources outside state waters (e.g., beyond the outer continental shelf) and establishes various emission standards, including those for vehicles sold in states other than California. Automobiles sold in California must meet stricter emission standards established by the California Air Resources Board.

As required by the CAA, NAAQS have been established for seven major air pollutants: CO, NO₂, O₃, PM_{2.5}, PM₁₀, SO₂, and Pb. The CAA requires USEPA to designate areas as attainment, nonattainment, or maintenance (previously nonattainment and currently attainment) for each criteria pollutant based on whether the NAAQS have been achieved. The federal standards are summarized in Table 3.2-2. The USEPA has classified the South Coast Air Basin (Basin) as maintenance for CO and nonattainment for O₃, PM_{2.5}, and PM₁₀.

STATE

California Air Resources Board

In addition to being subject to the requirements of CAA, air quality in California is also governed by more stringent regulations under the California Clean Air Act (CCAA). In California, the CCAA is administered by the California Air Resources Board (CARB) at the state level, and by the air quality management districts and air pollution control districts at the regional and local levels. The CARB, which became part of the California Environmental Protection Agency in 1991, is responsible for meeting the state requirements of the CAA, administering the CCAA, and establishing the California Ambient Air Quality Standards (CAAQS). The CCAA, as amended in 1992, requires all air districts in the state to endeavor to achieve and maintain the CAAQS. CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. CARB regulates mobile air pollution sources, such as motor vehicles. CARB is responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. CARB established passenger vehicle fuel specifications, which became effective in March 1996. CARB oversees the functions of local air pollution control districts and air quality management districts, which, in turn

administer air quality activities at the regional and county levels. The state standards are summarized in Table 3.2-2.

TABLE 3.2-2 NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Period	California		Federal	
		Standards	Attainment Status	Standards	Attainment Status
Ozone (O ₃)	1-hour	0.09 ppm (180 µg/m ³)	Nonattainment	--	--
	8-hour	0.070 ppm (137 µg/m ³)	n/a	0.075 ppm (147 µg/m ³)	Nonattainment
Respirable Particulate Matter (PM ₁₀)	24-hour	50 µg/m ³	Nonattainment	150 µg/m ³	Nonattainment
	Annual Arithmetic Mean	20 µg/m ³	Nonattainment	--	--
Fine Particulate Matter (PM _{2.5})	24-hour	--	--	35 µg/m ³	Nonattainment
	Annual Arithmetic Mean	12 µg/m ³	Nonattainment	15.0 µg/m ³	Nonattainment
Carbon Monoxide (CO)	8-hour	9.0 ppm (10 mg/m ³)	Attainment	9 ppm (10 mg/m ³)	Maintenance
	1-hour	20 ppm (23 mg/m ³)	Attainment	35 ppm (40 mg/m ³)	Maintenance
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	Attainment	0.053 ppm (100 µg/m ³)	Attainment
	1-hour	0.18 ppm (338 µg/m ³)	Attainment	--	--
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	--	--	0.030 ppm (80 µg/m ³)	Attainment
	24-hour	0.04 ppm (105 µg/m ³)	Attainment	0.14 ppm (365 µg/m ³)	Attainment
	3-hour	--	--	--	--
	1-hour	0.25 ppm (655 µg/m ³)	Attainment	--	--
Lead (Pb)	30-day average	1.5 µg/m ³	Attainment	--	--
	Calendar Quarter	--	--	0.15 µg/m ³	Attainment

n/a = not available

Source: CARB, *Ambient Air Quality Standards*, November 17, 2008.

3.2 Air Quality

The CCAA requires CARB to designate areas within California as either attainment or nonattainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as nonattainment for a pollutant if air quality data shows that a state standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a state standard and are not used as a basis for designating areas as nonattainment. Under the CCAA, the Los Angeles County portion of the Basin is designated as a nonattainment area for O₃, PM_{2.5}, and PM₁₀.⁶

LOCAL

South Coast Air Quality Management District

The 1977 Lewis Air Quality Management Act created the South Coast Air Quality Management District (SCAQMD) to coordinate air quality planning efforts throughout Southern California. This Act merged four county air pollution control agencies into one regional district to better address the issue of improving air quality in Southern California. Under the Act, renamed the Lewis-Presley Air Quality Management Act in 1988, the SCAQMD is the agency principally responsible for comprehensive air pollution control in the region. Specifically, the SCAQMD is responsible for monitoring air quality, as well as planning, implementing, and enforcing programs designed to attain and maintain state and federal ambient air quality standards in the district. Programs that were developed include air quality rules and regulations that regulate stationary sources, area sources, point sources, and certain mobile source emissions. The SCAQMD is also responsible for establishing stationary source permitting requirements and for ensuring that new, modified, or relocated stationary sources do not create net emission increases.

The SCAQMD monitors air quality within the project area. The SCAQMD has jurisdiction over an area of 10,743 square miles, consisting of Orange County; the non-desert portions of Los Angeles, Riverside, and San Bernardino counties; and the Riverside County portion of the Salton Sea Air Basin and Mojave Desert Air Basin. South Coast Air Basin (Basin) is a subregion of the SCAQMD and covers an area of 6,745 square miles. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The Basin is bounded by the Pacific Ocean to the west; the San Gabriel, San Bernardino and San Jacinto mountains to the north and east; and the San Diego County line to the south.

Air Quality Management Plan

All areas designated as nonattainment under the CCAA are required to prepare plans showing how the area would meet the State air quality standards by its attainment dates. The Air Quality Management Plan (AQMP) is the region's plan for improving air quality in the region. It addresses CAA and CCAA requirements and demonstrates attainment with state and federal ambient air quality standards. The AQMP is prepared by SCAQMD and the Southern California Association of Governments (SCAG). The

⁶CARB, Area Designation Maps, available at <http://www.arb.ca.gov/degis/adm/adm.htm>, accessed October 27, 2009.

AQMP provides policies and control measures that reduce emissions to attain both state and federal ambient air quality standards by their applicable deadlines. Environmental review of individual projects within the Basin must demonstrate that daily construction and operational emissions thresholds, as established by the SCAQMD, would not be exceeded. The environmental review must also demonstrate that individual projects would not increase the number or severity of existing air quality violations.

The 2007 AQMP was adopted by the SCAQMD on June 1, 2007. The 2007 AQMP proposes attainment demonstration of the federal PM_{2.5} standards through a more focused control of SO_x, directly-emitted PM_{2.5}, and NO_x supplemented with VOC by 2015. The eight-hour ozone control strategy builds upon the PM_{2.5} strategy, augmented with additional NO_x and VOC reductions to meet the standard by 2024. The 2007 AQMP also addresses several federal planning requirements and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. The 2007 AQMP is consistent with and builds upon the approaches taken in the 2003 AQMP. However, the 2007 AQMP highlights the significant amount of reductions needed and the urgent need to identify additional strategies, especially in the area of mobile sources, to meet all federal criteria pollutant standards within the time frames allowed under the CAA.

Toxic Air Contaminants

The SCAQMD has a long and successful history of reducing air toxics and criteria emissions in the Basin. SCAQMD has an extensive control program, including traditional and innovative rules and policies. These policies can be viewed in the SCAQMD's *Air Toxics Control Plan for the Next Ten Years* (March 2000). To date, the most comprehensive study on air toxics in the Basin is the Multiple Air Toxics Exposure Study (MATES-III), conducted by the SCAQMD. The monitoring program measured more than 30 air pollutants, including both gases and particulates. The monitoring study was accompanied by a computer modeling study in which SCAQMD estimated the risk of cancer from breathing toxic air pollution throughout the region based on emissions and weather data. MATES-III found that the cancer risk in the region from carcinogenic air pollutants ranges from about 870 in a million to 1,400 in a million, with an average regional risk of about 1,200 in a million.

Greenhouse Gases

In response to growing scientific and political concern with global climate change, California has recently adopted a series of laws to reduce emissions of GHGs into the atmosphere. In September 2002, Assembly Bill (AB) 1493 was enacted, requiring the development and adoption of regulations to achieve “the maximum feasible reduction of greenhouse gases” emitted by noncommercial passenger vehicles, light-duty trucks, and other vehicles used primarily for personal transportation in the state. California Governor Arnold Schwarzenegger announced, on June 1, 2005, through Executive Order S-3-05, the

3.2 Air Quality

following GHG emission reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels.

In response to the Executive Order, the Secretary of the California Environmental Protection Agency created the Climate Action Team (CAT), which, in March 2006, published the *Climate Action Team Report to Governor Schwarzenegger and the Legislature* (2006 CAT Report). The 2006 CAT Report identifies a recommended list of strategies that the state could pursue to reduce climate change GHG emissions. These are strategies that could be implemented by various state agencies to ensure that the Governor's targets are met and can be met with existing authority of the state agencies.

Assembly Bill 32. In September 2006, Governor Arnold Schwarzenegger signed the California Global Warming Solutions Act of 2006, also known as AB 32, into law. AB 32 focuses on reducing GHG emissions in California, and requires the CARB to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020. To achieve this goal, AB 32 mandates that the CARB establish a quantified emissions cap, institute a schedule to meet the cap, implement regulations to reduce statewide GHG emissions from stationary sources, and develop tracking, reporting, and enforcement mechanisms to ensure that reductions are achieved. Because the intent of AB 32 is to limit 2020 emissions to the equivalent of 1990, and the present year (2009) is near the midpoint of this timeframe, it is expected that the regulations would affect many existing sources of GHG emissions and not just new general development projects. Senate Bill (SB) 1368, a companion bill to AB 32, requires the California Public Utilities Commission and the California Energy Commission to establish GHG emission performance standards for the generation of electricity. These standards will also apply to power that is generated outside of California and imported into the state.

AB 32 charges the CARB with the responsibility to monitor and regulate sources of GHG emissions in order to reduce those emissions. On June 1, 2007, the CARB adopted three discrete early action measures to reduce GHG emissions. These measures involved complying with a low carbon fuel standard, reducing refrigerant loss from motor vehicle air conditioning maintenance, and increasing methane capture from landfills.⁷ On October 25, 2007, the CARB tripled the set of previously approved early action measures. The approved measures include improving truck efficiency (i.e., reducing aerodynamic drag), electrifying port equipment, reducing perfluorocarbons from the semiconductor industry, reducing propellants in consumer products, promoting proper tire inflation in vehicles, and reducing sulfur hexafluoride emissions from the non-electricity sector. The CARB has determined that the total statewide aggregated greenhouse gas 1990 emissions level and 2020 emissions limit is 427 million metric tons of CO₂e. The 2020 target reductions are currently estimated to be 174 million metric tons of CO₂e.

The CARB AB 32 Scoping Plan contains the main strategies to achieve the 2020 emissions cap. The Scoping Plan was developed by the CARB with input from the Climate Action Team and proposes a comprehensive set of actions designed to reduce overall carbon emissions in California, improve the

environment, reduce oil dependency, diversify energy sources, and enhance public health while creating new jobs and improving the state economy. The GHG reduction strategies contained in the Scoping Plan include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system. The measures in the Scoping Plan adopted by CARB will be developed and put in place by 2012.

The CARB has also developed the GHG mandatory reporting regulation, which required reporting beginning on January 1, 2008 pursuant to requirements of AB 32. The regulations require reporting for certain types of facilities that make up the bulk of the stationary source emissions in California. The regulation language identifies major facilities as those that generate more than 25,000 metric tons of CO₂ per year. Cement plants, oil refineries, electric generating facilities/providers, co-generation facilities, and hydrogen plants and other stationary combustion sources that emit more than 25,000 metric tons of CO₂ per year, make up 94 percent of the point source CO₂ emissions in California.

CEQA Guideline Amendments. As directed by Senate Bill 97, the Natural Resources Agency adopted amendments to the CEQA Guidelines for greenhouse gas emissions on December 30, 2009. The amendments became effective March 18, 2010. The CEQA Guideline amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. Noteworthy revisions to the CEQA Guidelines include:

- Lead agencies should quantify all relevant GHG emissions and consider the full range of project features that may increase or decrease GHG emissions as compared to the existing setting;
- Consistency with the CARB Scoping Plan is not a sufficient basis to determine that a project's GHG emissions would not be cumulatively considerable;
- A lead agency may appropriately look to thresholds developed by other public agencies, including the CARB's recommended CEQA thresholds;
- To qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project. General compliance with a plan, by itself, is not mitigation;
- The effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impact analysis; and
- Given that impacts resulting from GHG emissions are cumulative, significant advantages may result from analyzing such impacts on a programmatic level. If analyzed properly, later projects may tier, incorporate by reference, or otherwise rely on the programmatic analysis.

⁷California Air Resources Board, Proposed Early Action Measures to Mitigate Climate Change in California, April 20, 2007.

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Senate Bill 375. California SB 375, passed September 30, 2008, provides a means for achieving AB 32 goals through regulation of cars and light trucks. SB 375 aligns three critical policy areas of importance to local government: (1) regional long-range transportation plans and investments; (2) regional allocation of the obligation for cities and counties to zone for housing; and (3) a process to achieve GHG emissions reductions targets for the transportation sector. SB 375 establishes a process for CARB to develop the GHG emissions reductions targets for each region (as opposed to individual local governments or households). CARB must take certain factors into account before setting the targets, such as considering the likely reductions that will result from actions to improve the fuel efficiency of the statewide fleet and regulations related to the carbon content of fuels (low carbon fuels). CARB must also convene a Regional Targets Advisory Committee, which includes representation from the League of California Cities, California State Association of Counties, Metropolitan Planning Organizations (MPOs), developers, planning organizations and other stakeholder groups. Furthermore, before setting the targets for each region, CARB is required to exchange technical information with the MPOs for that region and with the affected air district. SB 375 provides that the MPOs may recommend a target for its region.

SB 375 relies upon regional planning processes already underway in the 17 MPOs in the state to accomplish its objectives. The provisions related to GHG emissions only apply to the MPOs in the state, which includes 37 of the 58 counties. Most notably, the measure requires the MPO to prepare a Sustainable Communities Strategy (SCS) within the Regional Transportation Plan (RTP), which sets forth a vision for growth for the region taking into account the transportation, housing, environmental, and economic needs of the region. The SCS is the blueprint by which the region will meet its GHG emissions reductions target if there is a feasible way to do so.

SB 375 indirectly addresses another long-standing issue: single purpose state agencies. The new law will require the cooperation of CARB, the California Transportation Commission (CTC), the California Department of Transportation (Caltrans) and the State Department of Housing and Community Development (HCD). For example, SB 375 takes a first step to counter this problem by connecting the Regional Housing Needs Allocation (RHNA) to the transportation planning process. While these state agencies will be involved in setting the targets and adopting new guidelines, local governments and the MPOs will not only provide input into setting the targets, but will serve as the lead on implementation. Member cities and counties working through their MPOs are tasked with development of the new integrated regional planning and transportation strategies designed to meet the GHG targets.

SB 375 also includes a provision that applies to all regional transportation planning agencies in the state that recognizes the rural contribution towards reducing GHGs. More specifically, the bill requires regional transportation agencies to consider financial incentives for cities and counties that have resource areas or farmland, for the purposes of, for example, transportation investments for the preservation and safety of the city street or county road system, farm to market, and interconnectivity transportation needs. An MPO or county transportation agency shall also consider financial assistance for counties to address countywide service responsibilities in counties that contribute towards the GHG emissions reductions targets by implementing policies for growth to occur within their cities.

SB 375 uses CEQA streamlining as an incentive to encourage residential projects, which help achieve AB 32 goals to reduce GHG emissions. Cities and counties that find the CEQA streamlining provisions attractive have the opportunity (but not the obligation) to align their planning decisions with the decisions of the region.

SB 375 provides more certainty for local governments and developers by framing how AB 32's reduction goal from transportation for cars and light trucks will be established. It should be noted, however, that SB 375 does not prevent CARB from adopting additional regulations under its AB 32 authority. However, based on the degree of consensus around SB 375 and early indications from CARB, such actions are not anticipated in the foreseeable future.⁸

CARB Guidance. The CARB has published draft guidance for setting interim GHG significance thresholds (October 24, 2008). The guidance is the first step toward developing the recommended statewide interim thresholds of significance for GHG emissions that may be adopted by local agencies for their own use. The guidance does not attempt to address every type of project that may be subject to CEQA, but instead focuses on common project types that are responsible for substantial GHG emissions (i.e., industrial, residential, and commercial projects). The CARB believes that thresholds in these important sectors will advance climate objectives, streamline project review, and encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the state.

SCAQMD Guidance. The SCAQMD has convened a GHG CEQA Significance Threshold Working Group to provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents. Members of the working group include government agencies implementing CEQA and representatives from various stakeholder groups that will provide input to the SCAQMD staff on developing GHG CEQA significance thresholds. On December 5, 2008, the SCAQMD Governing Board adopted the staff proposal for an interim GHG significance threshold for projects where the SCAQMD is lead agency. The SCAQMD has not adopted guidance for CEQA projects under other lead agencies.

Green LA Action Plan. The City of Los Angeles has issued guidance promoting green building to reduce GHG emissions. The goal of the Green LA Action Plan (Plan) is to reduce GHG emissions 35 percent below 1990 levels by 2030.⁹ The Plan identifies objectives and actions designed to make the City a leader in confronting global climate change. The measures would reduce emissions directly from municipal facilities and operations, and create a framework to address City-wide GHG emissions. The Plan lists various focus areas in which to implement GHG reduction strategies. Focus areas listed in the Plan include energy, water, transportation, land use, waste, port, airport, and ensuring that changes to the local climate are incorporated into planning and building decisions. The Plan discusses City goals for each focus area, as follows:

⁸American Planning Association, California Chapter, *Analysis of SB 375*, <http://www.calapa.org/-en/cms/?2841>, accessed October 27, 2009.

⁹City of Los Angeles, *Green LA: An Action Plan to Lead the Nation in Fighting Global Warming*, May 2007.

3.2 Air Quality

Energy

- Increase the generation of renewable energy;
- Encourage the use of mass transit;
- Develop sustainable construction guidelines;
- Increase City-wide energy efficiency; and
- Promote energy conservation.

Water

- Decrease per capita water use to reduce electricity demand associated with water pumping and treatment.

Transportation

- Power the City vehicle fleet with alternative fuels; and
- Promote alternative transportation (e.g., mass transit and rideshare).

Other Goals

- Create a more livable City through land use regulations;
- Increase recycling, reducing emissions generated by activity associated with the Port of Los Angeles and regional airports;
- Create more City parks, promoting the environmental economic sector; and
- Adapt planning and building policies to incorporate climate change policy.

The City adopted an ordinance to establish a green building program in April 2008. The ordinance establishes green building requirements for projects involving 50 or more dwelling units. The Green Building Program was established to reduce the use of natural resources, create healthier living environments, and minimize the negative impacts of development on local, regional, and global ecosystems. The program addresses the following five areas:

- Site: location, site planning, landscaping, storm water management, construction and demolition recycling

- Water Efficiency: efficient fixtures, wastewater reuse, and efficient irrigation
- Energy and Atmosphere: energy efficiency, and clean/renewable energy
- Materials and Resources: materials reuse, efficient building systems, and use of recycled and rapidly renewable materials
- Indoor Environmental Quality: improved indoor air quality, increased natural lighting, and thermal comfort/control

3.2.3 ENVIRONMENTAL IMPACTS

METHODOLOGY

This air quality analysis is consistent with the methods described in the SCAQMD *CEQA Air Quality Handbook* (1993 edition), as well as the updates to the *CEQA Air Quality Handbook*, as provided on the SCAQMD website.¹⁰

Construction Emissions

Regional and localized construction emissions were analyzed to determine impacts. A worst-case scenario was developed based assumptions provided by the project design and engineering team. Construction emissions were calculated using formulas published by the SCAQMD and USEPA. Heavy-duty truck and worker vehicle emission rates were obtained from the EMFAC2007 model. Equipment emission factors were obtained from the OFFROAD2007 model.

The localized construction analysis followed guidelines published by the SCAQMD in the Localized Significance Methodology for CEQA Evaluations (SCAQMD Localized Significance Threshold (LST) Guidance Document).¹¹ In January 2005, the SCAQMD supplemented the SCAQMD LST Guidance Document with Sample Construction Scenarios for Projects Less than Five Acres in Size.

Assumptions used for the construction calculations are as follows:

Construction

- Start Year: 2011
- Maximum Heavy-Duty Equipment to be operated in one day: 10 pieces
- Hours per day of heavy-duty equipment use: 10 hours

¹⁰SCAQMD, <http://www.aqmd.gov/ceqa/hdbk.html>, accessed November 25, 2009.

¹¹SCAQMD, *Localized Significance Methodology*, June 2003, revised July 2008.

3.2 Air Quality

- Maximum acres of land disturbed in one day: 5 acres
- Maximum cubic yards of soil handled in one day: 6,000 cubic yards
- Maximum Haul Trucks per day: 85 trips per day

Health Risk Assessment

A health risk assessment (HRA) was completed using emissions factors from EMFAC2007 and OFFROAD2007 for haul truck and on-site heavy equipment emissions, respectively. ISC-AERMOD dispersion modeling software was used to determine the concentrations of diesel particulate matter generated from haul truck trips and heavy equipment used in and around the project site.

The HRA was prepared based on emissions from haul trucks and diesel-powered construction equipment. The first step was to calculate the mass emissions from these sources. The proposed project would generate 8,858 truck trips during the construction phase. On-road truck emissions were calculated based on the haul route from the project site to US Highway 101 (US 101; Hollywood Freeway) and emission rates from the EMFAC2007 model. It was assumed that each truck would idle on the project site for 15 minutes, and the idle emission rate was also obtained from the EMFAC2007 model. Equipment emissions were obtained from the OFFROAD model. It was assumed that ten pieces of equipment would operate on the project site.

The truck and equipment emission rates were input into the AERMOD dispersion model to obtain annual exposure concentrations. The model is a steady state Gaussian plume model for estimating ground level impacts from point, area, and volume sources in simple and complex terrain. The model offers additional flexibility by allowing the user to assign initial vertical and lateral dispersion parameters for stationary sources. Truck emissions were modeled based on SCAQMD Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis (August 2003). Idle emissions were treated as an area source with a five-meter release height. On-road emissions along the haul route were input as a line source with a release height of five meters.

Construction equipment emissions were modeled based on guidance from the SCAQMD Localized Significance Methodology. Equipment emissions were input as an area source with a release height of five meters. Based on SCAQMD guidance, a 50-meter receptor grid was used to obtain the maximum annual pollutant concentration and the receptor release height was set at 0.0 meters. AERMOD utilized surface meteorological and upper air data from the Downtown Los Angeles station.

THRESHOLDS OF SIGNIFICANCE

The following are the significance criteria SCAQMD has established to determine project construction impacts. The proposed project would have a significant impact on air quality if:

- Daily regional and localized construction emissions were to exceed SCAQMD construction emissions thresholds for VOC, NO_x, CO, SO_x, PM_{2.5}, or PM₁₀ (Table 3.2-3);
- Project-related construction traffic causes CO concentrations at study intersections to violate the CAAQS for either the one- or eight-hour period. The CAAQS for the one- and eight-hour periods are 20 ppm and 9.0 ppm, respectively;
- The proposed project would generate TAC emissions that generate a health risk that exceeds ten persons in one million;
- The proposed project would create an odor nuisance; and/or
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).

TABLE 3.2-3 SCAQMD DAILY CONSTRUCTION EMISSIONS THRESHOLDS

Criteria Pollutant	Regional Emissions (Pounds Per Day)¹	Localized Emissions (Pounds Per Day)¹
Volatile Organic Compounds (VOC)	75	--
Nitrogen Oxides (NO _x)	100	161
Carbon Monoxide (CO)	550	1,861
Sulfur Oxides (SO _x)	150	--
Fine Particulates (PM _{2.5})	55	8
Particulates (PM ₁₀)	150	16

¹ The analysis assumed a five-acre project site and a 25-meter (82-foot) receptor distance.
Source: SCAQMD, 2009.

In addition, the proposed project would have a significant impact on air quality-greenhouse gases if the proposed project would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; and/or
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gas emissions.

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IMPACT ANALYSIS

AIR-1 *During the construction phase, regional NO_x emissions would exceed the SCAQMD significance threshold. In addition, daily construction emissions would exceed the SCAQMD localized significance thresholds for PM_{2.5} and PM₁₀.*

Construction Phase - Regional Emissions

The construction of the proposed project has the potential to create air quality impacts through the use of heavy-duty construction equipment and through vehicle trips generated by construction workers traveling to and from the project site. Fugitive dust emissions would primarily result from site preparation (e.g., excavation) activities. NO_x emissions would primarily result from the use of construction equipment. The assessment of construction air quality impacts considers each of these potential sources. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation and, for dust, the prevailing weather conditions.

It is mandatory for all construction projects in the Basin to comply with SCAQMD Rule 403 for Fugitive Dust. Specific Rule 403 control requirements include, but are not limited to, applying water in sufficient quantities to prevent the generation of visible dust plumes, applying soil binders to uncovered areas, reestablishing ground cover as quickly as possible, utilizing a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the project site, and maintaining effective cover over exposed areas. Compliance with Rule 403 would reduce PM_{2.5} and PM₁₀ emissions associated with construction activities by approximately 61 percent.

Table 3.2-4 shows the estimated daily emissions associated with each construction phase. Regional construction emissions would exceed the SCAQMD regional thresholds for NO_x. The short-term construction air quality impact would be significant. The City would be required to implement Rule 403 measures and mitigation measures AIR-A through AIR-D in order to reduce NO_x emissions produced during construction. However, even with the implementation of these measures, NO_x levels would still exceed the SCAQMD regional emissions thresholds for NO_x. As such, the impact would remain significant and unavoidable.

TABLE 3.2-4 ESTIMATED DAILY CONSTRUCTION EMISSIONS - UMITIGATED

Construction Phase	Pounds per Day					
	VOC	NO _x	CO	SO _x	PM _{2.5} ¹	PM ₁₀ ²
Maximum Daily Construction Emissions	24	229	99	<1	25	87
Regional Significance Threshold	75	100	550	150	55	150
Exceed Threshold?	No	Yes	No	No	No	No
Maximum Daily Construction Emissions	17	151	53	<1	22	84
Localized Significance Threshold /b/	--	161	1,861	--	8	16
Exceed Threshold?	No	No	No	No	Yes	Yes

¹URBEMIS2007 emissions for fugitive dust were adjusted to account for a 61 percent control efficiency associated with SCAQMD Rule 403.

²SCAQMD has not developed localized significance methodology for VOC or SO_x.

Source: Terry A. Hayes Associates LLC, 2009 (Appendix B).

Operational Phase - Regional Emissions

The proposed project focuses on the excavation of the existing Lake bottom, adding a new liner to the Lake, infrastructure improvements, and includes the addition of trees and modifications made to the landscaping. These are seen as beneficial improvements that would not generate additional emissions sources. No new uses would be introduced to the project site, and no additional traffic is anticipated to be generated from the rehabilitation of the Lake. Therefore, upon completion of the project, operation of the Park would not be substantially altered from existing operations. Regional operational impacts would result in a less than significant impact.

Construction Phase - Localized Impacts

Emissions for the localized construction air quality analysis of PM_{2.5}, PM₁₀, CO, and NO₂ were compiled using LST methodology required by the SCAQMD.¹² Localized on-site emissions were calculated using similar methodology to the regional emission calculations. LSTs were developed based upon the size or total area of the emissions source, the ambient air quality in each source receptor area, and the distance to the sensitive receptor. LSTs for CO and NO₂ were derived by using an air quality dispersion model to back-calculate the emissions per day that would cause or contribute to a violation of any ambient air quality standard for a particular source receptor area. Construction PM_{2.5} and PM₁₀ LSTs were derived

¹²The concentrations of SO₂ are not estimated because construction activities would generate a small amount of SO_x emissions. No State standard exists for VOC. As such, concentrations for VOC were not estimated.

3.2 Air Quality

using a dispersion model to back-calculate the emissions necessary to exceed a concentration equivalent to $50 \mu\text{g}/\text{m}^3$ over five hours, which is the SCAQMD Rule 403 control requirement.

Table 3.2-4 shows the estimated daily localized emissions associated with construction activity. Daily construction emissions would exceed the SCAQMD localized significance thresholds for $\text{PM}_{2.5}$ and PM_{10} . The City would be required to implement Rule 403 and mitigation measures AIR-A through AIR-D in order to reduce daily $\text{PM}_{2.5}$ and PM_{10} emissions produced during construction. However, even with implementation of these measures, $\text{PM}_{2.5}$ and PM_{10} emission levels would still exceed the SCAQMD daily emissions thresholds. The impact would remain significant and unavoidable.

Operational Phase - Localized Impacts

No new uses would be introduced to the project site, and no additional traffic is anticipated to be generated from the rehabilitation of the Lake. Therefore, upon completion of the project, operation of the Park would not be substantially altered from existing operations. Localized operational impacts would result in a less than significant impact.

AIR-2 *The proposed project would not expose sensitive receptors to substantial pollutant concentrations from on-site emissions of criteria pollutants, or off-site emissions of CO during construction activities. Specifically, the CO concentrations resulting from the proposed project would not violate the CAAQS for either the one-hour period (20 ppm) or the eight-hour period (9.0 ppm).*

There is a direct relationship between traffic/circulation congestion and CO impacts since exhaust fumes from vehicular traffic are the primary source of CO. CO is a localized gas that dissipates very quickly under normal meteorological conditions. Therefore, CO concentrations decrease substantially as distance from the source (intersection) increases. The highest CO concentrations are typically found in areas directly adjacent to congested roadway intersections.

The state one- and eight-hour CO standards may potentially be exceeded at congested intersections with high traffic volumes. An exceedance of the state CO standards at an intersection is referred to as a CO hotspot. The SCAQMD recommends a CO hotspot evaluation of potential localized CO impacts when the traffic volume-to-capacity (V/C) ratios are increased by two percent at intersections with a traffic level of service (LOS) of D or worse. SCAQMD also recommends a CO hotspot evaluation when an intersection decreases in LOS by one level beginning when LOS changes from C to D.

Baseline and construction-related CO concentrations were modeled at three intersections near the project site. The study intersections were selected to be representative of the project area and were based on V/C

ratio and the LOS as indicated in the traffic analysis.^{13,14} Based on the traffic study, the selected intersections are as follows:

- Glendale Boulevard/Bellevue Avenue – Morning Peak Hour
- Glendale Boulevard/Temple Avenue – Morning Peak Hour
- Glendale Boulevard/Temple Avenue – Evening Peak Hour

The USEPA CAL3QHC micro-scale dispersion model was used to calculate CO concentrations for 2013 “no project” and “project” conditions. CO concentrations at the analyzed intersection are shown for the morning and evening peak hours in Table 3.2-5. One-hour CO concentrations under “project” conditions would be approximately 3 ppm at worst-case sidewalk receptors. Eight-hour CO concentrations under “project” conditions would range from approximately 2.7 to 2.8 ppm. The state one- and eight-hour standards of 20 and 9.0 ppm, respectively, would not be exceeded at the analyzed intersections. Therefore, the proposed project would result in less than significant impacts related to localized CO concentrations.

TABLE 3.2-5 2009 AND 2013 CARBON MONOXIDE CONCENTRATIONS FOR CONSTRUCTION TRAFFIC¹

Intersection	1-hour (parts per million)			8-hour (parts per million)		
	Existing (2009)	No Project (2013)	Project (2013)	Existing (2009)	No Project (2013)	Project (2013)
Glendale Boulevard/Bellevue Avenue (AM)	4	3	3	3.4	2.8	2.8
Glendale Boulevard/Temple Avenue (AM)	4	3	3	3.4	2.7	2.7
Glendale Boulevard/Temple Avenue (PM)	4	3	3	3.4	2.7	2.7
State Standard	20			9.0		

¹ Existing concentrations include year 2009 one- and eight-hour ambient concentrations of 3 and 2.6 ppm, respectively. No Project and Project concentrations include year 2013 one- and eight-hour ambient concentrations of 2 and 2 ppm, respectively.

Source: Terry A. Hayes Associates LLC, 2010 (Appendix B).

AIR-3 *The proposed project would not generate TAC emissions that generate a health risk that exceeds ten persons in one million.*

An HRA was prepared for construction activity associated with the proposed project. The HRA was prepared based on emissions from haul trucks and diesel-powered construction equipment. The first step

¹³Level of service is used to indicate the quality of traffic flow on roadway segments and at intersections. Level of service ranges from LOS A (free flow, little congestion) to LOS F (forced flow, extreme congestion).

¹⁴Fehr & Peers, Transportation Consultants, Traffic Study for the Echo Park Lake Rehabilitation Project, April 2010.

3.2 Air Quality

was to calculate the mass emissions from these sources. The proposed project would generate 8,858 truck trips during the construction phase. On-road truck emissions were calculated based on the haul route from the project site to US 101 and emission rates from the EMFAC2007 model. It was assumed that each truck would idle on the project site for 15 minutes, and the idle emission rate was also obtained from the EMFAC2007 model. Equipment emissions were obtained from the OFFROAD model. It was assumed that 10 pieces of equipment would operate on the project site at one time.

The greatest potential for TAC emissions during construction would be from diesel particulate emissions associated with heavy equipment operations and haul trucks during the import and export of materials to the project site. Although the location of construction material suppliers and deposition sites for excavated materials are currently unknown, it is assumed that all truck deliveries would travel on the regional freeway networks and connect to the construction sites from the adjacent freeway ramps on the Hollywood Freeway and Glendale Freeway. The City of Los Angeles reviews each haul route permit for specific application of its general guidelines. Potential haul routes in the City of Los Angeles for construction of project include of Echo Park Avenue, Bellevue Avenue, Glendale Boulevard, Palo Alto Street, and routes along the US 101 Freeway, all of which are segments adjacent or near to Echo Park. According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of individual cancer risk. "Individual Cancer Risk" is the likelihood that a person continuously exposed to concentrations of TACs over a period of 70 years will contract cancer based on the use of standard risk assessment methodology.

Carcinogenic compounds are not considered to have threshold levels (i.e., dose levels below which there are no risks). Any exposure, therefore, will have some associated risk. As a result, the State of California has established a threshold of one in one hundred thousand (1.0E-05) as a level posing no significant risk for exposures to carcinogens regulated under the Safe Drinking Water and Toxic Enforcement Act (Proposition 65).

Health risks associated with exposure to carcinogenic compounds can be defined in terms of the probability of developing cancer as a result of exposure to a chemical at a given concentration. Under a deterministic approach (i.e., point estimate methodology), the cancer risk probability is determined by multiplying the chemical's annual concentration by its unit risk factor (URF). The URF is a measure of the carcinogenic potential of a chemical when a dose is received through the inhalation pathway. It represents an upper bound estimate of the probability of contracting cancer as a result of continuous exposure to an ambient concentration of one microgram per cubic meter ($\mu\text{g}/\text{m}^3$) over a period of 70 years.

The carcinogenic risk was calculated based on the SCAQMD Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis. According to this document, the cancer risks from diesel particulate matter associated with motor vehicles occur exclusively through the inhalation pathway. Therefore, the cancer risks can be estimated from the following equation:

$$CR_{DPM} = C_{DPM} \times URF_{DPM} \times LEA$$

where,

CR_{DPM} Cancer risks from diesel particulate matter; the probability of an individual developing cancer as a result of exposure to diesel particulate matter.

C_{DPM} Annual average diesel particulate matter concentration in $\mu\text{g}/\text{m}^3$.

URF_{DPM} Unit risk factor for diesel particulate matter; estimated probability that a person will contract cancer as a result of inhalation of a diesel particulate matter concentration of 1 $\mu\text{g}/\text{m}^3$ continuously over a period of 70 years.

LEA Lifetime exposure adjustment.

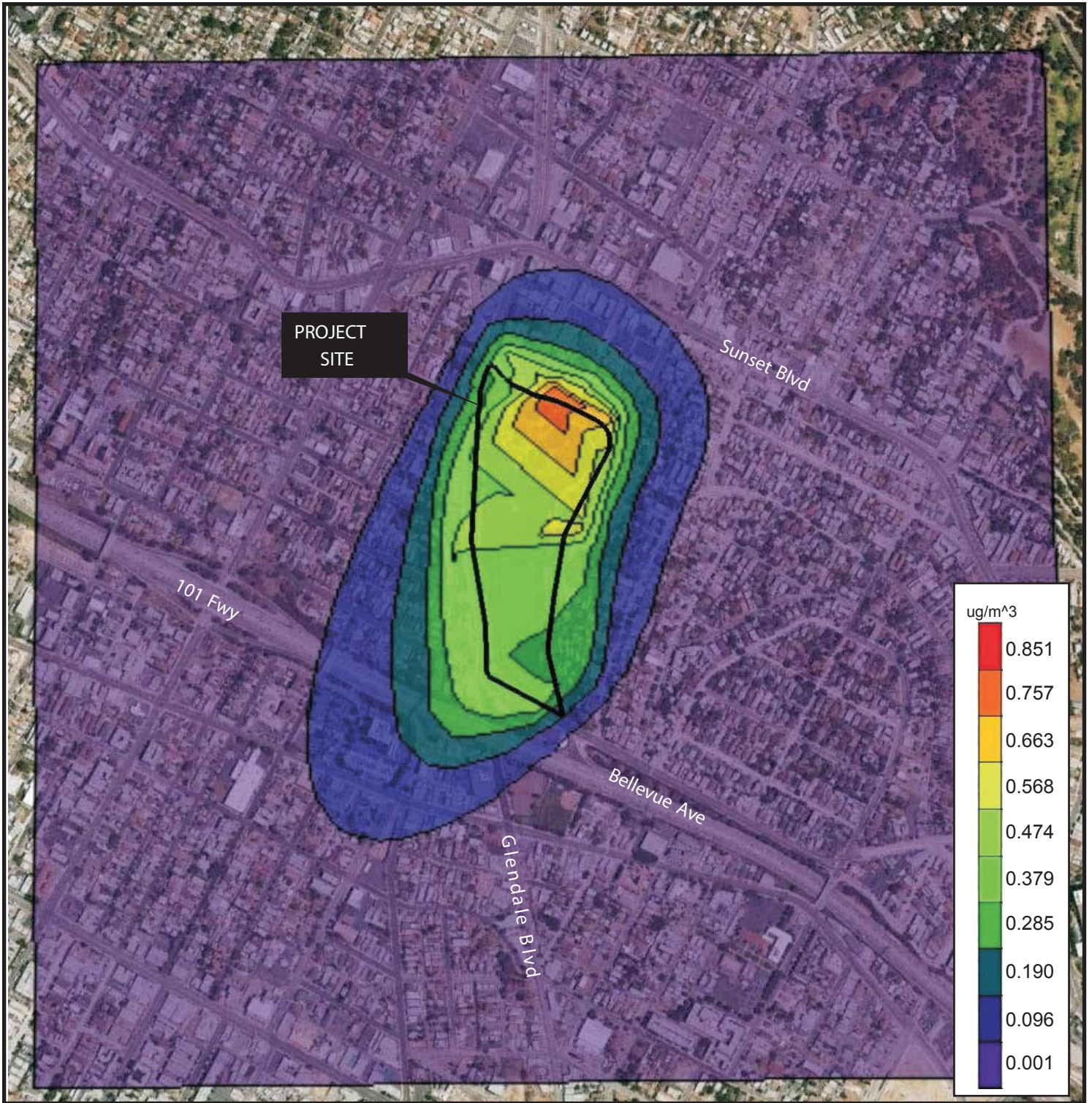
The URF utilized in the assessment and corresponding cancer potency factors was obtained from California Office of Environmental Health Hazard Assessment (OEHHA) guidance. The LEA accounts for the fact that exposure would be less than 70 years. Based on information provided by the project design and engineering team, the exposure level was adjusted to account for 10 hours per day, 5 days per week, 48 weeks per year, and 2 years.

Figure 3.2-3 is a contour map showing exposure concentrations to diesel particulate matter generated during construction activity. The maximum off-site annual concentration would be 0.85 micrograms per cubic meter. This results in a carcinogenic risk of 2.2 persons in one million, which is less than the ten persons in one million significance threshold. Therefore, the proposed project would result in less than significant impacts related to construction-related diesel emissions.

AIR-4 *The proposed project would create a temporary odor nuisance during construction.*

During construction, sources of odor are diesel emissions from construction equipment and volatile organic compounds from sealant applications or paving activities. In the case of the Echo Park Lake Rehabilitation project, these odors would be temporary and localized. Nonetheless, applicable best management practices such as those in SCAQMD Rule 431 (Diesel Equipment) would, in addition to minimizing air quality impacts, also help minimize potential construction odors.

Potential sources that may emit odors during construction activities include equipment exhaust and excavated organic matter from the Lake bottom. Odors from equipment exhaust would be localized and generally confined to the immediate area surrounding the project site. The proposed project would utilize typical construction techniques, and the equipment odors would be typical of most construction sites and temporary in nature. Construction equipment would not cause an odor nuisance.



LEGEND:

 Project Site

Source: Terry A. Hayes Associates, LLC 2009

 0 464 928 FEET



Figure 3.2-3
Diesel Particulate Matter Contour Map

The construction of the proposed project would also involve the removal of sediment and other materials from the Lake bed. A Technical Memorandum on Odor Control Management for Lake Excavation was prepared to assess potential construction odor impacts associated with organic matter from the Lake bottom.¹⁵ Geotechnical borings and sediment samples indicate that there is an accumulated layer of sediment in the Lake bottom that is approximately one foot thick and contains organic matter. Once these materials are removed, they would be required to be piled in the staging areas established on the project site and dried for a period of approximately one to two months. During the drying activities, various odors may be emitted from the sediment piles due to decomposition of organic materials temporarily impacting the sensitive receptors in the project area. As such, construction odors would result in a significant impact without mitigation. Implementation of mitigation measures AIR-E through AIR-G would help ensure that odors emitted during construction activity would be contained and dispersed through a comprehensive odor control plan.

AIR-5 *The proposed project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).*

The related projects include the development of hundreds of thousands of square feet of commercial and residential uses, a number that is many times greater than the proposed project. As the proposed project results in a regionally significant impact during construction relative to NO_x, it is anticipated that related project development would also result in significant regional impacts. While the implementation of Rule 403 measures and mitigation measures AIR-A through AIR-D would reduce air quality impacts, the proposed project would contribute to a cumulatively significant regional NO_x impact.

AIR-6 *The proposed project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. The impact would be less than significant.*

Greenhouse Gases

Generally, an individual project cannot generate enough GHG emissions to influence global climate change because it is the increased accumulation of GHGs which may result in global climate change. However, an individual project may contribute an incremental amount of GHG emissions that could combine with other emission sources to create concentrations of GHG that could influence climate change. For most projects, the main contribution of GHG emissions is from motor vehicles, but how much of those emissions are “new” is uncertain. New projects do not create new drivers, and therefore, do not create a new mobile source of emissions. Rather, new projects only redistribute the existing traffic patterns. Larger projects will certainly affect a larger geographic area, but again, would not necessarily

¹⁵Black & Veatch Corporation, *Echo Lake Park Rehabilitation Project Technical Memorandum on Odor Control Management for Lake Excavation*, April 2010.

3.2 Air Quality

cause the creation of new drivers. Some mixed-use, urban infill, and mass transit projects could actually reduce the number of vehicle miles traveled.

Worldwide population growth and the consequent use of energy is the primary reason for GHG emission increases. The market demand for goods and services and the use of land is directly linked to population changes and economic development trends within large geographies (e.g., regional, national, worldwide). Individual site-specific projects have a negligible effect on these macro population-driven and growth demand factors. Whether an individual site-specific project is constructed or not has little effect on GHG emissions. This is because the demand for goods and services in question would be provided in some other location to satisfy the demands of a growing population if not provided on the project site. The only exception to this basic relationship between population growth, development, energy consumption, and GHG emissions would occur if the site-specific project (1) embodied features that were not typical of urban environment or developing communities, and (2) generated a disproportionate amount of vehicle miles of travel or had other unique and disproportionately high fuel consumption characteristics. The proposed project does not fall within these exceptions.

Construction activity would generate approximately 7,022 tons of GHG emissions over the entire construction period. Operational GHG emissions are not anticipated to change, as there will be no additional sources of mobile and stationary GHG emissions. In addition, a goal of the rehabilitation project is to reduce water use at the project site through improvements to the Lake's infrastructure. California's water infrastructure uses energy to collect, move, and treat water; dispose of wastewater; and power the large pumps that move water throughout the State. California consumers also use energy to heat, cool, and pressurize the water they use in their homes and businesses. Together these water-related energy uses annually account for roughly 20 percent of the State's electricity consumption, one-third of non-power plant natural gas consumption, and about 88 million gallons of diesel fuel consumption. The California Energy Commission has reported that the energy intensity of the water use cycle in Southern California is 12,700 kilowatt-hours per million gallons. Permanently reducing the amount of municipal water required to maintain the water level of the Lake would reduce long-term GHG emissions. For these reasons, the impact of the proposed project on the cumulative effect of global climate change is not cumulatively considerable and considered to be less than significant.

AIR-7 *The proposed project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. The impact would be less than significant.*

As previously mentioned, one of the responsibilities of CARB is the reduction of GHG emissions in California. On June 1, 2007, the CARB adopted three discrete early action measures to reduce GHG emissions. These measures involved complying with a low carbon fuel standard, reducing refrigerant loss from motor vehicle air conditioning maintenance, and increasing methane capture from landfills. On October 25, 2007, the CARB tripled the set of previously approved early action measures. The approved measures include improving truck efficiency (i.e., reducing aerodynamic drag), electrifying port

equipment, reducing perfluorocarbons from the semiconductor industry, reducing propellants in consumer products, promoting proper tire inflation in vehicles, and reducing sulfur hexafluoride emissions from the non-electricity sector. As mentioned above, other guidance for the reduction of GHG emissions in the state is under consideration and has not yet been adopted by CARB. The construction of the proposed project would be in compliance with the applicable adopted plans, policies and regulations adopted by CARB. The proposed project would result in less than significant impacts related to the conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

3.2.4 MITIGATION MEASURES

- AIR-A** Contractors shall maintain equipment and vehicle engines in good condition and in proper tune per manufacturers' specifications.
- AIR-B** Contractors shall utilize electricity from the electrical grid rather than temporary diesel or gasoline generators, as feasible.
- AIR-C** Heavy-duty trucks shall be prohibited from idling in excess of five minutes, both on- and off-site.
- AIR-D** All diesel-powered construction equipment in use shall require control equipment that meets at a minimum Tier III emissions requirements. In the event Tier III equipment is not available, diesel powered construction equipment in use shall require emissions control equipment with a minimum of Tier II diesel standards.
- AIR-E** The construction contractor shall develop an Odor Control Management Plan to meet the limits of 10 parts per billion hydrogen sulfide at the site perimeter. The Plan shall include or consider the following elements:
- A methodology for phased or staged operations to minimize the surface area of sediment exposed during Lake draining and material removal and handling.
 - Monitoring and recording of hydrogen sulfide at the construction site perimeter to ensure compliance and implementation of the Plan.
 - Monitoring with a field olfactometer to establish threshold levels at which additional measures must be incorporated to limit total odors.
 - Utilization of lime stabilization (or similar technology) to speed the dewatering process for the sediment layer which contains organic material. Sufficient lime shall be stockpiled to enable the contractor to raise the pH level to 12 to contain odors and suppress microbiological decay of the organic material to objectionable gas products.

3.2 Air Quality

The quantity of lime would be dependent on the contractors staging plan and how much area is to be uncovered.

- Procurement and local storage of an oxidizing chemical that can be applied in liquid form to treat stock piles of sediment or particularly odorous excavation areas.

AIR-F The bid schedule shall include an allowance of \$50,000 to be used as directed by the City to mitigate odor issues during periods when the contractor is meeting the hydrogen sulfide standard but additional measures are needed because of complaints or olfactometer readings.

AIR-G The City shall establish a neighborhood odor monitoring group to monitor and record odor conditions from the community viewpoint.

3.2.5 SIGNIFICANCE AFTER MITIGATION

Compliance with SCAQMD Rule 403 and implementation of mitigation measures AIR-A through AIR-D would ensure that fugitive dust emissions would be reduced by approximately 61 percent. Consequently, daily PM_{2.5} and PM₁₀ emissions would still be less than the SCAQMD threshold of 150 pounds per day. Implementation of mitigation measure AIR-A would reduce engine emissions by approximately five percent. Implementation of mitigation measures AIR-B through AIR-D, while difficult to quantify, would also reduce construction emissions. Mitigated construction regional emissions would continue to exceed the SCAQMD regional threshold for NO_x. As such, regional construction emissions would result in a significant unavoidable air quality impact for NO_x.

Daily construction emissions would continue to exceed the SCAQMD localized significance thresholds for PM_{2.5} and PM₁₀ emissions even after mitigation. Localized construction emissions would result in a significant unavoidable air quality impact.

Implementation of Mitigation Measures AIR-E through AIR-G would help ensure that odors emitted during construction activity would be contained and dispersed through a comprehensive odor control plan. As a result, construction odors would result in a less than significant impact.

3.3 BIOLOGICAL RESOURCES

This section evaluates existing biological resources at the project site and potential impacts associated with implementation of the proposed project. Information in this section was gathered through literature review, examination of available databases, and field reconnaissance. An initial reconnaissance study, including methods, types of surveys, survey dates, personnel, and all survey results, was prepared for the proposed project in spring of 2008 (Appendix D). Additional documents relating to biological resources prepared in support of this EIR include a Wildlife Relocation Plan, a Preliminary Jurisdictional Determination for Waters of the U.S., and a tree assessment prepared by a certified arborist.

3.3.1 ENVIRONMENTAL SETTING

VEGETATION AND OTHER COVER TYPES

The native vegetation that was once present on this site was completely removed with urbanization of the area. The project site consists of three basic cover types: open water, landscaped, and developed. These cover types are described below.

Open Water

The dominant cover type in the Park is the Lake itself, a man-made storm water detention basin, which is primarily open water. Water depths in the Lake range from three to eight feet. The Lake contains four artificial floating wetland islands (floating islands) that support monotypic stands of emergent cattail (*Typha* spp.). The partially submerged floating islands are anchored to the Lake bottom with a chain. Additionally, the Lake contains a lotus (*Nelumbo nucifera*) bed located in the northwestern corner of the Lake that is maintained by the City of Los Angeles Department of Recreation and Parks (RAP).

Landscaped

Landscaped vegetation consists of horticultural and ornamental plantings usually supported by irrigation. Landscaped cover at the Park consists of regularly mowed grass lawns, ornamental shrubs and ground covers, and mature trees. The Park surrounding the Lake is primarily composed of non-native ornamental plant species. Typical non-native trees include palms (including pindo palm [*Butia capitata*], Canary Island date palm [*Phoenix canariensis*], and Mexican fan palm [*Washingtonia robustus*]), southern magnolia (*Magnolia grandiflora*), eucalyptus species, and pine species (including *Pinus halepensis*, *P. pinea*, and *P. canariensis*). Native species include white alder (*Alnus rhombifolia*), western sycamore (*Platanus racemosa*), and California fan palm (*Washingtonia filifera*).¹ Emergent vegetation is limited and is primarily composed of cattail (*Typha* spp.) found on the four floating islands in the center of the Lake and around the man-made island located in the northeastern lobe of the Lake. The man-made island contains palm and pine trees, grassy areas, and ornamental pampas grass (*Cortaderia jubata*).

¹ O'Brian, M. 2006. Echo Park Tree plan.

3.3 Biological Resources

Developed

Developed areas do not support native vegetation and may be additionally characterized by the presence of man-made structures such as buildings or paved roads. The developed areas at the parkland consist of an asphalt walking path that encircles the Lake; buildings including a boathouse, maintenance building, restrooms, pump house, and Park office; and other structures including retaining walls, monuments, picnic tables/areas, and a children's play area.

COMMON WILDLIFE

Urban park settings provide habitat for common wildlife species typically adapted to disturbed areas and human presence. Habitat quality of the Lake for wildlife species is generally low due to diminished water quality and minimal vegetative cover along the banks. Emergent vegetation is limited and is primarily composed of the cattails found on the four small floating islands in the center of the Lake. The surrounding Lake edge is mostly unvegetated, concrete with adjacent margins characterized by lawn and ornamental vegetation. With the exception of several large trees, low growing grass and bare ground currently characterizes the island on the north end, and there is no understory shrub layer. Native amphibian and reptile species are not recorded from the Park due to a lack of aquatic vegetation and diminished aquatic habitat quality. Game fish species are stocked by the California Department of Fish and Game (CDFG) and other fish in the Lake are likely warm water non-native species. Although habitat quality is generally low, the Park is utilized by native mammals, as well as migratory and resident bird species. Palm, deciduous, and conifer trees within the Park provide suitable habitat for a variety of nesting birds. Additionally, the maintained Lake and floating islands provide roosting and nesting habitat for common waterfowl in the midst of suburbia. Wildlife that may utilize the Park are described in more detail below. A complete list of animal species observed or detected within the Park during biological reconnaissance surveys is included in Appendix D.

Fish

Information regarding fish species inhabiting and likely to inhabit the Lake was obtained from the CDFG. Wild, native fish species with protected status are not expected to occur within the Lake. Currently, the Lake is stocked regularly with rainbow trout (*Oncorhynchus mykiss*) and channel catfish (*Ictalurus punctatus*) by the CDFG's Fishing in the City Program. Other fish species that have potential to be found in the Lake include bluegill (*Lepomis macrochirus*), red-ear sunfish (*Lepomis microlophus*), green sunfish (*Lepomis cyanellus*), blue catfish (*Ictalurus furcatus*), smallmouth bass (*Micropterus dolomieu*), spotted bass (*Micropterus punctulatus*), largemouth bass (*Micropterus salmoides*), white crappie (*Pomoxis annularis*), black crappie (*Pomoxis nigromaculatus*), mosquito fish (*Gambusia affinis*), oscar fish (*Astronotus ocellatus*), and other cichlid species.² Because the Lake is in the center of a large, heavily populated city, numerous other exotic warm water species that are sold in pet/aquarium stores may inhabit

² EDAW. 2008. Memo: Summary of conversation between Jason Phillips of EDAW and Brian Young of CDFG on April 16 and April 17, 2008 regarding the Echo Park Lake Project and associated wildlife relocation plan.

the Lake. These species are non-native and many are considered invasive, with potential to consume and/or out-compete native and game species.

Reptiles

Western fence lizard (*Sceloporus occidentalis*) is the only native lizard species likely to be found near the Lake; it is expected to be common in the terrestrial vegetation surrounding the Lake. The open lake banks and islands provide ample basking opportunities for aquatic turtles, while the fish and aquatic vegetation present in the Lake provide forage. However, much of the existing Lake edge is not suitable for turtle basking due to the vertical banks and disturbance factors. The man-made island is most suitable for turtle basking and where they are primarily observed, as human disturbance is limited and the banks consist of a more gradually sloped aquatic edge. Southwestern pond turtle (*Actinemys marmorata pallida*), a California species of special concern, is the only native turtle species with potential to occur within the Lake, although the nearest recent observation is approximately 120 miles from the Lake.³ Sonoran mud turtle (*Kinossternon sonoriense*), also a California species of special concern, is found in the far southeast portion of the California desert, and is highly unlikely to be present in the Lake. Other aquatic turtle species with higher potential to be found in the Lake, all of which are non-native, include pond slider (*Trachemys scripta elegans*), which was documented in 2008; painted turtle (*Chrysemys picta*); river cooter (*Pseudemys concinna*); common map turtle (*Graptemys geographica*); common cooter (*Pseudemys floridana*); various other sliders, cooters, pond turtles, map turtles, mud turtles, and musk turtles; and other exotic species sold in pet/aquarium stores. In 2007, 13 turtles were found dead at the Park, reportedly from a naturally occurring bacterial infection.⁴

Amphibians

Few amphibians are likely to be present in the Lake due to the presence of predatory fish.⁵ In addition, the majority of the Lake lacks aquatic emergents (an aquatic plant having its stem, leaves, etc., extending above the surface of the water) or overhanging bank vegetation, which amphibians prefer for egg deposition and cover from the elements and predators. However, the northern and floating islands do contain some of these characteristics. Thus, there are numerous common species with some potential to occur in the Lake: Pacific tree frog (*Pseudacris [=Hyla] regilla*), a native species that does well in a wide range of habitats, including urban areas; western toad (*Bufo boreas hadophilus*), a native species requiring shallow water for breeding; American bullfrog (*Rana catesbeiana*), an invasive native of eastern and midwestern United States; and African clawed frog (*Xenopus laevis*), an invasive non-native. These species have not been documented at the Lake to date. No special status amphibian species are likely to

³ California Natural Diversity Data Base (CNDDB). 2008. Results of electronic record search. California Department of Fish and Game, Wildlife and Habitat Data Analysis Branch. Sacramento, CA. May 2008

⁴ Schoch, D. 2008 (March 24). Dead Lotus Stalks in Echo Park Lake Remind Residents of Poor Blooms in Recent Years. The Los Angeles Times.

⁵ EDAW. 2008. Memo: Summary of conversation between Jason Phillips of EDAW and Brian Young of CDFG on April 16 and April 17, 2008 regarding the Echo Park Lake Project and associated wildlife relocation plan.

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occur or breed in the Lake due to the surrounding urbanization isolating the site from natural habitats and known populations, lack of appropriate habitat, and the presence of non-native predatory fish species.

Birds

Most of the birds associated with the project site are those typically found in urban park settings and around permanent urban water sources. The most common species detected near the Lake that are likely to be found year-round and also to breed near the Lake include mallard (*Anas platyrhynchos*), great blue heron (*Ardea herodias*), Canada goose (*Branta canadensis*), yellow-chevroned parakeet (*Brotogeris chiriri*), green heron (*Butorides virescens*), Anna's hummingbird (*Calypte anna*), house finch (*Carpodacus mexicanus*), rock dove (*Columba livia*), American crow (*Corvus brachyrhynchos*), Brewer's blackbird (*Euphagus cyanocephalus*), American coot (*Fulica americana*), northern mockingbird (*Mimus polyglottos*), brown-headed cowbird (*Molothrus ater*), house sparrow (*Passer domesticus*), European starling (*Sturnus vulgaris*), and mourning dove (*Zenaida macroura*).⁶

The existing floating emergent freshwater marsh islands and the man-made island in the northeastern lobe of the Lake provide potential breeding habitat for waterfowl (including mallard and American coot) and songbirds (including red-winged blackbird). Canada geese and mallards are known to nest on the man-made island and Lake margins. They have been observed with broods year round⁷. One of the most noteworthy wildlife resources on the project site is a blue heron rookery located on the northern portion of the island in the northeastern lobe of the Lake. The first heron pair nested there in 2006, and in 2010 four or five pairs were documented nesting in pine trees.⁸ The large trees surrounding the man-made island also provide potential nesting habitat for raptor species that occur in urbanized settings such as American kestrel (*Falco sparverius*), common barn owl (*Tyto alba*), and red-tailed hawk (*Buteo jamaicensis*). In the spring of 2010, a pair of red-tailed hawks were documented nesting in a tree at the northern end of the Park (near Logan Street)⁹.

In addition to a list of the birds observed during reconnaissance surveys, Christmas Bird Counts collected at the Park for the years 2000 through 2007 are provided in Appendix D. Christmas Bird Counts are a census of birds performed annually in early winter by volunteer, often amateur, birders. The purpose of collecting the data is to provide population data for use in conservation biology. The Christmas Bird Counts presents an estimate of the number and diversity of birds that occur at the Park in the winter. The Christmas Bird Count data collected by the Los Angeles Audubon Society at the Park from 2000 through 2009 is summarized in Table 3.3-1.

Based on a review of the bird species detected at the project site during the Christmas Bird Counts, there are several migratory species that have been documented utilizing the project site. Migratory season

⁶ Raskin, J. 2008. Communication with Alfred Mata about Audubon Society Christmas Bird Counts at Echo Park Lake and the great blue heron.

⁷ Raskin, J. 2010. Communication with City of Los Angeles project team about nesting bird activities. April 19th.

⁸ Raskin, J. 2010. Communication with Alfred Mata about Audubon Society Christmas Bird Counts at Echo Park Lake and the great blue heron.

⁹ Raskin, J. 2010. Communication with City of Los Angeles project team about nesting bird activities. April 19th.

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varies by species and location but it is generally referred to in California as the winter, non-breeding season. Since the assemblage of migratory species includes water birds and some passerines, a broad time frame for non-breeding season residency, October through March, is considered. Waterfowl peak in California along the Pacific Flyway is from November to February, but several migratory passerines are observed in Southern California in fall and spring.^{10,11}

Non-breeding season migratory species observed at the project site include:

Pelacaniformes

American white pelican

Passerines

Cedar waxwing

Townsend's warbler

Black-throated gray warbler

White-throated sparrow

Ruby crowned kinglet

Waterfowl

American widgeon

Northern shoveler

Gadwall

Lesser scaup

Greater scaup

Redhead

Ring-necked duck

Ross's goose

Shorebirds

Spotted sandpiper

**TABLE 3.3-1
BIRD SPECIES DETECTED AT PROJECT SITE DURING CHRISTMAS BIRD COUNTS
(DECEMBER 2000-2009)**

Common Name	Scientific Name	Frequency Category ¹	Likelihood of Breeding On-Site	Conservation Status ³
Cooper's hawk	<i>Accipiter cooperi</i>	Low	Low	CWL
Spotted sandpiper	<i>Actitis macularia</i>	Low	Low	-
western grebe ²	<i>Aechmophorus occidentalis</i>	Low	Low	-
white-throated swift	<i>Aeronautes saxatalis</i>	Moderate	Low	-
American widgeon	<i>Anas americana</i>	High	Low	-
northern shoveler	<i>Anas clypeata</i>	Low	Low	-
mallard	<i>Anas platyrhynchos</i>	High	Moderate	-
gadwall	<i>Anas strepera</i>	Moderate	Low	-
graylag (barnyard) goose ²	<i>Anser anser</i>	[unknown]	[unknown]	-
Swan (Chinese) goose ²	<i>Anser cygnoides</i>	[unknown]	[unknown]	-
western scrub-jay	<i>Aphelocoma californica</i>	Low	Moderate	-

¹⁰ Alsop. 2001. Birds of North America. DK Smithsonian. New York, New York. p. 1008

¹¹ Sibley, D.A. 2003. The Sibley Field Guide to Birds of Western North America. Alfred A. Knopf. New York, New York. p.471

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Common Name	Scientific Name	Frequency Category ¹	Likelihood of Breeding On-Site	Conservation Status ³
great egret	<i>Ardea alba</i>	Low	Low	-
great blue heron	<i>Ardea herodias</i>	Moderate	Confirmed	-
lesser scaup	<i>Aythya affinis</i>	Low	Low	-
redhead	<i>Aythya americana</i>	Low	Low	-
ring-necked duck	<i>Aythya collaris</i>	High	Low	-
greater scaup	<i>Aythya marila</i>	Low	Low	-
cedar waxwing	<i>Bombycilla cedrorum</i>	Moderate	Low	-
Canada goose	<i>Branta canadensis</i>	Moderate	High	-
yellow-chevroned parakeet	<i>Brotogeris chiriri</i>	High	Moderate	Non-native
bufflehead ²	<i>Bucephala albeola</i>	Low	Low	-
red-tailed hawk	<i>Buteo jamaicensis</i>	High	Low	-
green heron	<i>Butorides virescens</i>	Moderate	Moderate	-
Anna's hummingbird	<i>Calypete anna</i>	Moderate	High	-
lesser goldfinch	<i>Carduelis psaltria</i>	Low	Moderate	-
American goldfinch ²	<i>Carduelis tristis</i>	Low	Low	-
house finch	<i>Carpodacus mexicanus</i>	High	High	-
purple finch	<i>Carpodacus purpureus</i>	Low	Low	-
belted kingfisher	<i>Ceryle alcyon</i>	Low	Low	-
Vaux's swift	<i>Chaetura vauxi</i>	Low	Low	CSC
Ross's goose	<i>Chen rossii</i>	Moderate	Low	-
northern flicker	<i>Colaptes auratus</i>	Low	Low	-
rock dove [pigeon]	<i>Columba livia</i>	High	High	Non-native, invasive
American crow	<i>Corvus brachyrhynchos</i>	Moderate	Moderate	-
yellow-rumped warbler	<i>Dendroica coronata</i>	High	Low	-
black-throated gray warbler	<i>Dendroica nigrescens</i>	Low	Low	-
Townsend's warbler	<i>Dendroica townsendi</i>	Moderate	Low	-
Snowy egret ²	<i>Egretta thula</i>	Low	Low	-
Brewer's blackbird	<i>Euphagus cyanocephalus</i>	High	Moderate	-
peregrine falcon	<i>Falco peregrinus</i>	Low	Low	CFP
American kestrel	<i>Falco sparverius</i>	Low	Low	-
American coot	<i>Fulica americana</i>	High	Moderate	-

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Common Name	Scientific Name	Frequency Category ¹	Likelihood of Breeding On-Site	Conservation Status ³
common yellowthroat	<i>Geothlypis trichas</i>	Low	Low	-
black-necked stilt ²	<i>Himantopus mexicanus</i>	Low	[unknown]	-
herring gull	<i>Larus argentatus</i>	Low	Low	-
California gull	<i>Larus californicus</i>	Moderate	Low	CWL
ring-billed gull	<i>Larus delawarensis</i>	Moderate	Low	-
glaucous-winged gull	<i>Larus glaucescens</i>	Low	Low	-
western gull	<i>Larus occidentalis</i>	High	Low	-
Thayer's gull	<i>Larus thayeri</i>	Moderate	Low	-
northern mockingbird	<i>Mimus polyglottos</i>	Moderate	High	-
brown-headed cowbird	<i>Molothrus ater</i>	Moderate	High	-
black-crowned night-heron	<i>Nycticorax nycticorax</i>	High	Low	-
ruddy duck	<i>Oxyura jamaicensis</i>	High	Low	-
house sparrow	<i>Passer domesticus</i>	High	High	Non-native, invasive
American white pelican	<i>Pelecanus erythrorhynchos</i>	Low	Low	-
double-crested cormorant	<i>Phalacrocorax auritus</i>	High	Low	CWL
Nuttall's woodpecker	<i>Picoides nuttallii</i>	Low	Low	CNDDDB
California towhee	<i>Pipilo crissalis</i>	Low	Moderate	-
pie-billed grebe	<i>Podilymbus podiceps</i>	High	Low	-
White-faced ibis ²	<i>Plegadis chihi</i>	Low	Low	CWL
great-tailed grackle	<i>Quiscalus mexicanus</i>	Moderate	Low	-
ruby-crowned kinglet	<i>Regulus calendula</i>	Low	Low	-
black phoebe	<i>Sayornis nigricans</i>	Moderate	Low	-
Allen's hummingbird	<i>Selasphorus sasin</i>	Low	Low	CNDDDB
red-breasted sapsucker	<i>Sphyrapicus ruber</i>	Low	Low	CNDDDB
Caspian tern	<i>Sterna caspia</i>	Low	Low	-
spotted dove	<i>Streptopelia chinensis</i>	Low	Low	-
European starling	<i>Sturnus vulgaris</i>	High	High	Non-native, invasive
shelduck	<i>Tadorna sp.</i>	Low	Low	Non-native, probable escapee

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Common Name	Scientific Name	Frequency Category ¹	Likelihood of Breeding On-Site	Conservation Status ³
Cassin's kingbird	<i>Tyrannus vociferans</i>	Low	Low	-
mourning dove	<i>Zenaida macroura</i>	Moderate	High	-
white-throated sparrow	<i>Zonotrichia albicollis</i>	Low	Low	-

1 Low = detected 1-3 counts; moderate = detected during 4-7 counts; high = detected during 8 or more counts.

2 These species were observed outside Christmas Bird Counts (J. Raskin, pers comm.)

3 CWL = California Watch List; CSC = California Species of Special Concern; CNDDDB = tracked in the California Natural Diversity Database, California Department of Fish and Game, CFP = Fully Protected under California Fish and Game Code.

Mammals

Mammals likely to be found around the project site are those species that typically thrive in urban areas and are primarily terrestrial species that are likely to inhabit the parkland surrounding the Lake. Potential species include big brown bat (*Eptesicus fuscus*), Brazilian free-tailed bat (*Tadarida brasiliensis*), California myotis (*Myotis californicus*), raccoon (*Procyon lotor*), western gray squirrel (*Sciurus griseus*), muskrat (*Ondatra zibethicus*), eastern fox squirrel (*Sciurus niger*), California ground squirrel (*Spermophilus beechyii*), striped skunk (*Mephitis mephitis*), opossum (*Didelphis virginiana*), roof rat (*Rattus rattus*), Norway rat (*Rattus norvegicus*), house mouse (*Mus musculus*), Botta's pocket gopher (*Thomomys bottae*), and California vole (*Microtus californicus*). No special status mammal species are likely to be found on the project site.

Other species

The asiatic clam (*Corbicula fluminea*) is also found in the Lake and other non-native or invasive invertebrates may be present as well.¹²

SENSITIVE BIOLOGICAL RESOURCES

Special status plant and wildlife species, commonly referred to as sensitive species, include species that are legally protected under the Federal Endangered Species Act, the California Endangered Species Act, the California Native Plant Protection Act, or local conservation ordinances. Included are plant species listed by the California Native Plant Society (CNPS), wildlife species that are of special concern to CDFG, and bird species protected by the federal Migratory Bird Treaty Act (MBTA) of 1918 and Fish and Game Code. Special status species are also those that are considered by the scientific community to be sufficiently rare to qualify for such protection.

All native bird species, regardless of whether or not they are migratory, fall under the protection of the MBTA and/or Fish and Game Code which prohibit take of individual birds, active nests, eggs, or chicks. In addition, Los Angeles County Municipal Code (Section 53.48) prohibits killing song birds or destruction of their nests. However, these protections do not extend to temporary disturbance of avian

habitat if an active nest is not present, unless a species is listed as threatened or endangered under the federal or state Endangered Species Act(s). Under CEQA, the loss of non-nesting habitat (foraging and wintering) may warrant additional mitigation measures for some species that are considered state species of concern. This is typically the case if there are CDFG guidelines for habitat compensation for that particular species (i.e. burrowing owls) and when permanent habitat impacts are involved.

The CDFG's California Natural Diversity Data Base (CNDDDB) tracks species within California for which there is conservation concern, including many which are not formally listed, and assigns them a CNDDDB Rank. Although California Species of Special Concern, CDFG Watch List species, and species that are tracked by the CNDDDB but not formally listed are afforded no official legal status, they may receive special consideration during the CEQA review process. The CDFG further classifies some species under the following categories: "Fully Protected", "Protected birds", "Protected mammals", "Protected amphibian", "Protected reptile", and "Protected fish". The designation "Protected" indicates that a species may not be taken or possessed except under special permit from CDFG; "Fully Protected" indicates that a species can be taken for scientific purposes by permit only.

Sensitive Plant Species

A CNDDDB query for the Hollywood and Los Angeles U.S. Geological Survey (USGS) quadrangles resulted in 17 sensitive plant species known to occur in the vicinity of the project site; a CNPS query resulted in four additional species from the same quadrangles. No sensitive plant species were observed within the Park during biological reconnaissance surveys, nor are any expected to occur. The Park contains no natural habitat or undisturbed soils to support sensitive plant species. Furthermore, the Park is isolated within an urbanized environment with no natural habitat immediately adjacent or nearby. Sensitive plant species determined to have a potential to occur based on geographic proximity to known occurrences are listed in Table 3.3-2, along with their sensitivity status and comments on their potential to occur at the project site.

¹² EDAW. 2008. Memo: Summary of conversation between Jason Phillips of EDAW and Brian Young of CDFG on April 16 and April 17, 2008 regarding the Echo Park Lake Project and associated wildlife relocation plan.

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**TABLE 3.3-2
SENSITIVE PLANT SPECIES KNOWN TO OCCUR IN THE VICINITY OF PARK**

Common Name Scientific Name	Sensitivity Status¹	General Habitat Description	Probability of Occurrence
marsh sandwort <i>Arenaria paludicola</i>	USFWS: Endangered CDFG: Endangered CNPS: List 1B.1	Marshes and swamps. Known to grow up through dense mats of cattail, rush, and sedge in freshwater marsh. Grows at elevations of 10 to 170 meters. Blooms May–August.	Not expected. Not detected during general surveys. The Park does not contain suitable habitat for this species. The only known occurrence in the vicinity of the Park was in 1900 in a swamp in the community of Cienega.
Braunton’s milk-vetch <i>Astragalus brauntonii</i>	USFWS: Endangered CDFG: None CNPS: List 1B.1	Closed-cone coniferous forest, chaparral, coastal scrub, valley and foothill grassland. Known from recently burned or disturbed areas; prefers stiff gravelly clay soils overlying granite or limestone. Grows at elevations of 4 to 640 meters (13 to 2,100 feet). Blooms January–August.	Not expected. Not detected during general surveys. The Park does not contain suitable habitat for this species. The only known occurrence in the vicinity of the Park was in 1908 in the foothills near Sherman Power Station. CNPS considers occurrences of this species in the Hollywood quadrangle extirpated.
Ventura marsh milk-vetch <i>Astragalus pycnostachyus</i> var. <i>lanosissimus</i>	USFWS: None CDFG: None CNPS: List 1B.1	Coastal salt marsh. Known from within the reach of high tide or areas protected by barrier beaches and rarely near seeps on sandy bluffs. Grows at elevations 1 to 35 meters (3 to 115 feet). Blooms June–October.	Not expected. Not detected during general surveys. Park does not contain suitable habitat for this species. Known from an unspecified occurrence in the Hollywood quadrangle. CNPS considers occurrences of this species in the Hollywood quadrangle extirpated.
coastal dunes milk-vetch <i>Astragalus tener</i> var. <i>titi</i>	USFWS: Endangered CDFG: Endangered CNPS: List 1B.1	Coastal bluff scrub, coastal dunes. Known to occur in moist, sandy depressions of bluffs or dunes along and near the Pacific Ocean (one site on a clay terrace). Grows at elevations 1 to 50 meters (3 to 164 feet). Blooms March–May.	Not expected. Not detected during general surveys. Park does not contain suitable habitat for this species. The only known occurrence in the vicinity of the Park was in 1903 in the general vicinity of Inglewood.

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Common Name <i>Scientific Name</i>	Sensitivity Status ¹	General Habitat Description	Probability of Occurrence
Davidson's saltscale <i>Atriplex serenana</i> var. <i> davidsonii</i>	USFWS: None CDFG: None CNPS: List 1B.2	Coastal bluff scrub, coastal scrub (alkaline soils). Grows at elevations 3 to 250 meters (10 to 820 feet). Blooms April–October.	Not expected. Not detected during general surveys. Park does not contain suitable habitat for this species. The only known occurrences in the vicinity of the Park were in 1902 in the Temple Street area near Highway 101 and Alvarado Street, and in the vicinity of Cienega. CNPS considers occurrences of this species in the Hollywood quadrangle extirpated.
round-leaved filaree <i>California macrophylla</i>	USFWS: None CDFG: None CNPS: List 1B.1	Cismontane woodland, valley and foothill grassland (clay soils). Grows at elevations 15 to 1,200 meters (50 to 3,937 feet). Blooms March–May.	Not expected. Not detected during general surveys. Park does not contain suitable habitat for this species. The only known occurrence in the vicinity of the Park was in 1900 in the vicinity of Hollywood.
Plummer's mariposa lily <i>Calochortus plummerae</i>	USFWS: None CDFG: None CNPS: List 1B.2	Coastal scrub, chaparral, valley and foothill grassland, cismontane woodland, lower montane coniferous forest. Known to occur on rocky and sandy sites (granitic or alluvial material). Can be common after fire. Grows at elevations 90 to 1,610 meters (295 to 5,282 feet). Blooms May–July.	Not expected. Not detected during general surveys. Park does not contain suitable habitat for this species. The only known occurrences in the vicinity of the Park were in 1901 and 1913 in Ammandale and in the hills near Sherman Power Station, respectively. CNPS considers occurrences of this species in the Hollywood and Los Angeles quadrangles extirpated.
Santa Barbara morning-glory <i>Calystegia sepium</i> ssp. <i> binghamiae</i>	USFWS: None CDFG: None CNPS: List 1A	Coastal marshes. Grows at elevations 0 to 30 meters (0 to 100 feet). Blooms April–May.	Not expected. Not detected during general surveys. Park does not contain suitable habitat for this species. The only known occurrence in the vicinity of the Park was in 1899 near Cienega. CNPS considers occurrences of this species in the Hollywood quadrangle extirpated.
Lewis' evening-primrose <i>Camissonia lewisii</i>	USFWS: None CDFG: None CNPS: List 3	Valley and foothill grassland, coastal bluff scrub, cismontane woodland, coastal dunes, and coastal scrub. Grows at elevations 0 to 300 meters (0 to 984 feet). Blooms March–May (rarely June).	Not expected. Not detected during general surveys. Park does not contain suitable habitat for this species. Known from an unspecified occurrence in the Hollywood quadrangle.

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Common Name <i>Scientific Name</i>	Sensitivity Status ¹	General Habitat Description	Probability of Occurrence
southern tarplant <i>Centromadia parryi</i> ssp. <i>australis</i>	USFWS: None CDFG: None CNPS: List 1B.1	Marsh and swamps (margins), valley and foothill grassland. Known to occur in disturbed sites near the coast at marsh edges; also in alkaline soils, sometimes with saltgrass. Grows at elevations 0 to 427 meters (0 to 1,400 feet). Blooms May–November.	Not expected. Not detected during general surveys. Park does not contain suitable habitat for this species. The only known occurrence in the vicinity of the Park was in 1994 between West Adams and Culver City. CNPS considers occurrences of this species in the Hollywood quadrangle extirpated.
many-stemmed dudleya <i>Dudleya multicaulis</i>	USFWS: None CDFG: None CNPS: List 1B.2	Chaparral, coastal scrub, valley and foothill grassland. Known to occur in heavy, often clayey soils or on grassy slopes. Grows at elevations 0 to 790 meters (0 to 2,592 feet). Blooms April–July.	Not expected. Not detected during general surveys. Park does not contain suitable habitat for this species. The only known occurrence in the vicinity of the Park was in 1925 in the foothills north of Los Angeles between Vermont and Western avenues.
Los Angeles sunflower <i>Helianthus nuttallii</i> ssp. <i>parishii</i>	USFWS: None CDFG: None CNPS: List 1A	Marsh and swamps (coastal salt and freshwater). Grows at elevations 5 to 1,675 meters (16 to 5,495 feet). Blooms August–October.	Not expected. Not detected during general surveys. Park does not contain suitable habitat for this species. The only known occurrence in the vicinity of the Park was in 1903 at Oak Knoll in Pasadena. CNPS considers occurrences of this species in the Hollywood and Los Angeles quadrangles extirpated, and presumes the species is extinct in California.
vernal barley <i>Hordeum intercedens</i>	USFWS: None CDFG: None CNPS: List 3.2	Valley and foothill grassland, vernal pools. Known to occur in vernal pools; dry, saline streambeds; and alkaline flats. Grows at elevations 10 to 1,000 meters (33 to 3,280 feet). Blooms March–June.	Not expected. Not detected during general surveys. Park does not contain suitable habitat for this species. Known from an unspecified occurrence in the Los Angeles quadrangle. CNPS considers occurrences of this species in the Los Angeles quadrangle possibly extirpated.

3.3 Biological Resources

Common Name <i>Scientific Name</i>	Sensitivity Status ¹	General Habitat Description	Probability of Occurrence
mesa horkelia <i>Horkelia cuneata</i> ssp. <i>puberula</i>	USFWS: None CDFG: None CNPS: List 1B.1	Chaparral, cismontane woodland. Known to occur in sandy or gravelly sites. Grows at elevations 70 to 810 meters (230 to 2,658 feet). Blooms February–July (rarely September).	Not expected. Not detected during general surveys. Park does not contain suitable habitat for this species. The only known occurrences in the vicinity of the Park were in 1902 and 1918 in Garvanza and Griffith Park, respectively. CNPS considers occurrences of this species in the Hollywood and Los Angeles quadrangles extirpated.
Orcutt’s linanthus <i>Linanthus orcuttii</i>	USFWS: None CDFG: None CNPS: List 1B.3	Chaparral, lower montane coniferous forest. Sometimes known to occur in disturbed areas, often in gravelly clearings. Grows at elevations 1,060 to 2,000 meters (3,478 to 6,562 feet). Blooms May–June.	Not expected. Park does not contain suitable habitat for this species. Not detected during general surveys. The only known occurrence in the vicinity of the Park was in 1925 in the general area of Pasadena.
prostrate navarretia <i>Navarretia prostrata</i>	USFWS: None CDFG: None CNPS: List 1B.1	Coastal scrub, valley and foothill grassland, vernal pools. Known to occur in mesic, alkaline soils in grassland or vernal pools. Grows at elevations 15 to 700 meters (50 to 2,297 feet). Blooms April–July.	Not expected. Park does not contain suitable habitat for this species. Not detected during general surveys. The only possible occurrence was in 1881 in the Los Angeles vicinity. CNPS considers occurrences of this species in the Los Angeles quadrangle as uncertain and possibly extirpated.
white rabbit-tobacco <i>Pseudognaphalium leucocephalum</i>	USFWS: None CDFG: None CNPS: List 2	Riparian woodland, cismontane woodland, coastal scrub, chaparral. Known to occur in sandy, gravelly sites. Grows at elevations 0 to 2,100 meters (0 to 6,900 feet). Blooms (rarely July) August–November (rarely December).	Not expected. Park does not contain suitable habitat for this species. Not detected during general surveys. The only known occurrence was in 1907 in the vicinity of Hollywood. CNPS considers occurrences of this species in the Hollywood quadrangle extirpated.
Parish’s gooseberry <i>Ribes divaricatum</i> var. <i>parishii</i>	USFWS: None CDFG: None CNPS: List 1A	Riparian woodland. Known to occur in willow swales in riparian habitats. Grows at elevations 65 to 100 meters (213 to 328 feet). Blooms February–April.	Not expected. Park does not contain suitable habitat for this species. Not detected during general surveys. The only known occurrence was in 1882 in the general area of Pasadena. CNPS presumes that this species is extinct in California.

3.3 Biological Resources

Common Name <i>Scientific Name</i>	Sensitivity Status ¹	General Habitat Description	Probability of Occurrence
Gambel's water cress <i>Rorippa gambelii</i>	USFWS: Endangered CDFG: Endangered CNPS: List 1B.1	Marshes and swamps. Grows at elevations 5 to 1,305 meters (17 to 4,282 feet). Blooms April–October.	Not expected. Park does not contain suitable habitat for this species. Not detected during general surveys. Known from an unspecified occurrence in the Hollywood quadrangle. CNPS considers occurrences of this species in the Hollywood quadrangle possibly extirpated.
San Bernardino aster <i>Symphotrichum defoliatum</i>	USFWS: None CDFG: None CNPS: List 1B.2	Meadows and seeps, marshes and swamps, coastal scrub, cismontane woodland, lower montane coniferous forest, grassland. Known to occur in vernal mesic grassland or near ditches, streams, and springs; disturbed areas. Grows at elevations 2 to 2,040 meters (7 to 6,693 feet). Blooms July–November.	Not expected. Park does not contain suitable habitat for this species. Not detected during general surveys. The only known occurrence was in 1902 in Cienega.
Greata's aster <i>Symphotrichum greatae</i>	USFWS: None CDFG: None CNPS: List 1B.3	Chaparral, cismontane woodland. Known to occur in mesic canyons. Grows at elevations 800 to 1,500 meters (2,625 to 4,921 feet). Blooms June–October.	Not expected. Not detected during general surveys. Park does not contain suitable habitat for this species. The only known occurrences in the vicinity of the Park were in 1902 and 1932 along the Arroyo Seco near Garvanza and Elysian Park, respectively. CNPS considers occurrences of this species in the Los Angeles quadrangle as uncertain and possibly extirpated.

¹Sensitivity Status Codes

Federal U.S. Fish and Wildlife Service (USFWS)

State California Department of Fish and Game (CDFG)

Other California Native Plant Society (CNPS)

1A: Presumed extinct in California

1B: Plants rare, threatened, or endangered in California and elsewhere

2: Plants rare, threatened, or endangered in California, but more common elsewhere

3: Plants more information is needed for

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)

- Sources: - California Native Plant Society (CNPS). 2008. Inventory of Rare and Endangered Plants (online edition, v7-08b). California Native Plant Society. Sacramento, CA. Available at <http://www.cnps.org/inventory>
 - California Department of Fish and Game (CDFG). 2008b (March 30). RareFind: California Department of Fish and Game Natural Diversity Database (Version 3.1.0). California Department of Fish and Game, Biogeographic Data Branch.

Sensitive Wildlife Species

Sensitive wildlife species are those listed as threatened or endangered, proposed for listing, or candidates for listing by the U.S. Fish and Wildlife Service (USFWS) and CDFG¹³, or considered sensitive by CDFG.¹⁴ A CNDDDB query for the Hollywood and Los Angeles USGS quadrangles resulted in 10 sensitive wildlife species known to occur in the vicinity of the project site. In addition to the 10 species identified by the CNDDDB, southwestern pond turtle, silver-haired bat (*Lasionycteris noctivagans*), and western yellow bat (*Lasiurus xanthinus*) were also identified.

No sensitive animal species were observed within the Park during biological reconnaissance surveys. Palm, deciduous, and conifer trees within the Park may provide roosting habitat for four sensitive bat species known from the region: hoary bat (*Lasiurus cinereus*), western mastiff bat (*Eumops perotis californicus*), pallid bat (*Antrozous pallidus*), and western yellow bat. Southwestern pond turtle, a California Species of Special Concern, is the only native turtle species to occur in the greater Los Angeles area. Multiple non-native turtle species are known to occur in the Lake; however, the likelihood of southwestern pond turtle to occur is low; the nearest recent observation is approximately 120 miles from the Lake.¹⁵

A great blue heron (*Ardea herodias*) rookery was observed on the island within the Lake during the biological reconnaissance surveys. The first pair of great blue herons reported to nest at the Lake occurred in 2006. There was also an active heron nest in 2007, and 2008 marked the first year a rookery (multiple pairs of nesting herons) has occurred at the Park. Three to four pairs of great blue herons were reportedly nesting on the island at the Park in 2008.¹⁶ As of 2010, up to five pairs are present. As discussed above, red-tailed hawks, mallards, and Canada geese are also known to nest in trees and landscaped areas adjacent to the Lake. The great blue heron, red-tailed hawk, mallards, and Canada geese do not currently have a sensitivity listing but they are protected, along with most bird species found within the vicinity of the Park, under the federal MBTA of 1918, Fish and Game Code, and the City of Los Angeles Municipal Code.

None of the bird species observed utilizing the project site are listed under the federal or state Endangered Species Act(s). The only state species of concern that has been observed on-site according to the Christmas Bird Counts and other observations made by the Los Angeles Audubon Society is Vaux's swift (*Chaetura vauxi*). Other sensitive species observed include the recently delisted Peregrine falcon (*Falco*

¹³ California Department of Fish and Game. 2008 (May). State and Federally Listed Endangered and Threatened Animals of California. State of California, The Resources Agency, Department of Fish and Game Resource Management and Planning Division Biogeographic Data Branch, California Natural Diversity Database. Available at <http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/TEAnimals.pdf>

¹⁴ California Department of Fish and Game. 2008 (February). Special Animals (865 taxa). State of California, The Resources Agency, Department of Fish and Game Resource Management and Planning Division Biogeographic Data Branch, California Natural Diversity Database. Available at <http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/SPAnimals.pdf>

¹⁵ EDAW. 2008. Memo: Summary of conversation between Jason Phillips of EDAW and Brian Young of CDFG on April 16 and April 17, 2008 regarding the Echo Park Lake Project and associated wildlife relocation plan.

¹⁶ Raskin, J. 2008. Communication with Alfred Mata about Audubon Society Christmas Bird Counts at Echo Park Lake and the great blue heron.

3.3 Biological Resources

peregrinus) which is fully protected by Fish and Game Code and several species that are either on CDFG's Watch List or are tracked by the CNDDDB (Table 3.3-1). Protection of active nest sites, as with other avian species, is the primary protection requirement. Vaux's swift and Peregrine falcons typically nest on cliff sides or other tall structures and are not likely to nest on-site due to a lack of suitable habitat.

The Park lacks suitable habitat and/or food sources for the other sensitive wildlife species identified during the literature search. All sensitive animal species that have potential to occur in the vicinity of the Park based on a query of the CNDDDB for the Los Angeles and Hollywood USGS quadrangles are listed in Table 3.3-3 along with their sensitivity status and comments on their potential to occur at the Park.

**TABLE 3.3-3
SENSITIVE WILDLIFE SPECIES KNOWN TO OCCUR IN THE VICINITY OF PARK**

Common Name Scientific Name	Sensitivity Status ¹	Habitat Requirements	Probability of Occurrence
Reptiles			
southwestern pond turtle <i>Actinemys marmorata pallida</i>	USFWS: none CDFG: Species of Special Concern	Associated with permanent water or nearly permanent water from sea level to 1,830 meters (6,000 feet). Prefers habitats with basking sites such as floating mats of vegetation, partially submerged logs, rocks, or open mud banks.	Low. Park contains suitable habitat for this species and non-native turtle species are known to occur in the Park; however, the nearest known recent observation of this species is approximately 120 miles from the Lake. As the Park is centrally located in an urban area, it is unlikely for this species to occur in the Park.
coast (San Diego) horned lizard <i>Phrynosoma coronatum (blainvillii population)</i>	USFWS: none CDFG: Species of Special Concern	Inhabits coastal sage scrub and chaparral in arid and semiarid climate conditions. Prefers friable, rocky, or shallow sandy soils.	Not expected. Park does not contain suitable habitat for this species. The only known occurrences of this species in the vicinity of the Park is a fossil record at La Brea Tar Pits in 1953 and a specimen housed at the Whittier Narrows Nature Center in 1974.
Birds			
burrowing owl <i>Athene cunicularia</i>	USFWS: none CDFG: Species of Special Concern	Open, dry annual or perennial grasslands; deserts and scrublands characterized by low-growing vegetation. A subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Not expected. Park does not contain suitable habitat for this species. The only known occurrence of this species in the vicinity of the Park was in 1921 in Hermon Hills, Los Angeles.

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Common Name Scientific Name	Sensitivity Status ¹	Habitat Requirements	Probability of Occurrence
southwestern willow flycatcher <i>Empidonax traillii extimus</i>	USFWS: Endangered CDFG: Endangered	Riparian woodlands in southern California.	Not expected. Park does not contain suitable habitat for this species. The only known occurrences of this species in the vicinity of the Park were in 1894 and 1906 in the general vicinity of Los Angeles and Pasadena, respectively.
coastal California gnatcatcher <i>Poliophtila californica californica</i>	USFWS: Threatened CDFG: Species of Special Concern	Obligate, permanent resident of coastal sage scrub below 2,500 feet in southern California. Known to occur in low, coastal sage scrub in arid washes, on mesas and slopes. Not all areas classified as coastal sage scrub are occupied.	Not expected. Park does not contain suitable habitat for this species. The only known occurrence of this species in the vicinity of the Park was in 1980 in Baldwin Hills.
Mammals			
pallid bat <i>Antrozous pallidus</i>	USFWS: none CDFG: Species of Special Concern WBWG: H	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting; known to roost in trees. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Low. Park does not contain suitable habitat for this species. The only known occurrence of this species in the vicinity of the Park was in 1971 along Hoover Boulevard on the USC campus.
western mastiff bat <i>Eumops perotis californicus</i>	USFWS: none CDFG: Species of Special Concern WBWG: H	Many open, semiarid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral. Primarily a cliff-dwelling species, but also known to roost in high buildings, trees, and tunnels. Roost locations are generally high above the ground, providing a 3-meter minimum clearance below the entrance for flight. Requires large open-water drinking sites.	Low: Trees and palms within Park provide potential, though unlikely, roosting habitat for this species, and the Lake could be utilized as a water source; however, the nearest known occurrences of this species include one in central Alhambra in 1918, one in the general vicinity of Hollywood in 1991, and one in Los Angeles in 1990.

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Common Name Scientific Name	Sensitivity Status ¹	Habitat Requirements	Probability of Occurrence
hoary bat <i>Lasiurus cinereus</i>	USFWS: none CDFG: none WBWG: M	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees and have been found in trees in dense forests, open wooded areas, and urban parks. Feeds primarily on moths. Requires water.	Low: Trees within Park provide potential roosting habitat for this species. The only known occurrences of this species in the vicinity of the Park were in 1894 and 1906 in the general vicinity of Los Angeles and Pasadena, respectively.
south coast marsh vole <i>Microtus californicus stephensi</i>	USFWS: none CDFG: Species of Special Concern	Tidal marshes in Los Angeles, Orange, and southern Ventura counties.	Not expected. Park does not contain suitable habitat for this species. The only known occurrence of this species in the vicinity of the Park was in 1957 in the general vicinity of Culver City and Baldwin Hills.
big free-tailed bat <i>Nyctinomops macrotis</i>	USFWS: none CDFG: Species of Special Concern WBWG: MH	Low-lying arid areas in southern California; need high cliffs or rocky outcrops for roosting sites; feeds principally on large moths.	Not expected. Park does not contain suitable habitat for this species. The only known occurrence of this species is in the vicinity of central Los Angeles in 1985.
silver-haired bat <i>Lasionycteris noctivagans</i>	USFWS: none CDFG: none WBWG: M	Primarily coastal and montane forest dweller; feeds over streams, ponds, and open brushy areas. Roosts in hollow trees beneath exfoliating bark, in abandoned woodpecker holes, and rarely under rocks. Requires water.	Low: Trees within the Park provide potential roosting habitat for this species. The only known occurrences of this species in the vicinity of the Park are from specimens collected in 1985 in the general vicinity of West Los Angeles and Van Nuys and in 1978 in the vicinity of La Cañada.
western yellow bat <i>Lasiurus xanthinus</i>	USFWS: none CDFG: none WBWG: H	Found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats occasionally in urban and suburban areas. Roosts in trees, particularly palms; forages over water and among trees.	Low: Palm trees within the Park provide potential roosting habitat for this species. The only known occurrence of this species in the vicinity of the Park, however, is known from a specimen collected in 1984 in the vicinity of Glendale.

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Common Name Scientific Name	Sensitivity Status ¹	Habitat Requirements	Probability of Occurrence
American badger <i>Taxidea taxus</i>	USFWS: none CDFG: Species of Special Concern	Most abundant in drier open stages of shrub, forest, and herbaceous habitats with friable soils. Requires sufficient food, friable soils, and open uncultivated ground. Preys on burrowing rodents, digs burrows.	Not expected. Park does not contain suitable habitat for this species. The only known occurrence of this species is from a collection from the vicinity of Los Angeles with no specified date.

¹ **Sensitivity Status Key**

Federal:

U.S. Fish and Wildlife Service (USFWS)

State:

California Department of Fish and Game (CDFG)

Other:

Western Bat Working Group (WBWG)

-H: High Priority

-M: Medium Priority

-MH: Medium-High Priority

Sources

- California Department of Fish and Game (CDFG). 2008b (March 30). RareFind: California Department of Fish and Game Natural Diversity Database (Version 3.1.0). California Department of Fish and Game, Biogeographic Data Branch.

- Sibley, D.A. 2001. The Sibley Guide to Bird Life and Behavior. Alfred A. Knopf, New York.

SENSITIVE HABITATS

Sensitive habitats are those that are regulated by USFWS and U.S. Army Corps of Engineers (USACE) and those considered sensitive by CDFG. There are no sensitive natural vegetation communities at the Park.

JURISDICTIONAL WATERS OF THE U.S. AND STATE WATERS

Areas of the project site under the jurisdiction and regulatory administration of CDFG include 14.14 acres of potential jurisdictional waters of the U.S. composed of unvegetated waters, as well as an additional 2.34 acres of non-USACE jurisdictional riparian habitat for a total area of approximately 16.48 acres. Table 3.3-4 shows the potential jurisdictional acreages of the project site.

**TABLE 3.3-4
POTENTIAL JURISDICTIONAL ACREAGES OF ECHO PARK**

Potential Jurisdiction	Acres
Other Waters of the U.S. in the form of unvegetated waters (USACE jurisdiction)	14.14
Riparian habitat (CDFG jurisdiction)	2.34
Total potential jurisdictional waters	16.48

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WILDLIFE CORRIDORS AND HABITAT LINKAGES

In an urban context, a wildlife migration corridor can be defined as a linear landscape feature of sufficient width and buffer to allow animal movement between two patches of comparatively undisturbed habitat, or between a patch of habitat and some vital resources. Regional corridors are defined as those linking two or more large areas of natural open space. Local corridors are defined as those allowing resident animals to access critical resources (food, cover, and water) in a smaller area that might otherwise be isolated by urban development.

Wildlife migration corridors are essential in geographically diverse settings, and especially in urban settings, for the sustenance of healthy and genetically diverse animal communities. At a minimum, they promote colonization of habitat and genetic variability by connecting fragments of like habitat and they help sustain individual species distributed in and among habitat fragments. Habitat fragments, by definition, are separated by otherwise foreign or inhospitable habitats, such as urban/suburban tracts. Isolation of populations can have many harmful effects and may contribute significantly to local species extinction.

A viable wildlife migration corridor consists of more than a path between habitat areas. To provide food and cover for transient species as well as resident populations of less mobile animals, a wildlife migration corridor must also include pockets of vegetation. There are no adjacent large open space areas south of the Park. Topanga State Park, Angeles National Forest, Griffith Park, and Elysian Park contain suitable habitat for a variety of wildlife and are located approximately 15 miles west, 10 miles north, 3 miles northwest, and less than 1 mile east of the Park, respectively. The project site, along with the nearby Los Angeles River and Silverlake Reservoir, approximately 2 miles east and 1 mile north of the Lake, respectively, provides a valuable water resource and suitable nesting habitat for migratory and resident bird populations. However, it is not part of a major contiguous linkage between two or more large areas of open space and thus does not serve as a regional wildlife corridor.

Pacific Flyway

Four major north-south patterns of travel in the Americas for migratory birds have been identified by examining the bands found on the legs of ducks and geese harvested by hunters. The westernmost route of travel for migratory birds in the Americas is referred to as the Pacific Flyway. The Pacific Flyway includes the entire state of California. However coastal bays and inland wetlands and other water bodies provide important stopovers. Within the Pacific Flyway, birds are highly concentrated in the Salton Sea, San Francisco Bay and Suisun Marsh, Monterey Bay, large wetland complexes in the Central Valley such as the Yolo Bypass, and Great Salt Lake during winter migration periods. Urban lakes such as Echo Park Lake provide stopover points, as well and provide aquatic habitat that would not otherwise be present within urban landscapes. The USFWS adopted the flyway structure in 1947 for administrative purposes. In the U.S., the Pacific Flyway includes Alaska, Arizona, California, Idaho, Nevada, Oregon, Utah, Washington, and those portions of Colorado, Montana, New Mexico, and Wyoming west of the Continental Divide. The Pacific Flyway route also extends through the western portions of Canada and

Mexico. The Pacific Flyway Council is an administrative body that forges cooperation among public wildlife agencies for the purpose of protecting and conserving migratory birds in western North America. The Pacific Flyway Council cooperates with the USFWS, the federal government agency responsible for determining when hunting of migratory game birds can take place, to develop regulations for migratory game birds in the United States west of the Continental Divide. When developing regulations, the welfare of migratory game bird populations is the primary consideration, followed by public demands for recreation and subsistence harvest, and other uses. The Pacific Flyway Council has prepared 26 draft or final management plans. Management plans identify common goals, establish priority of management actions and responsibility for them, coordinate collection and analysis of biological data, and emphasize research needed to improve management. None of the management plans address the above-named non-breeding season migratory species observed at the project site.

As demonstrated by migratory species observed at the project site during Christmas Bird Counts, the Lake provides resting and feeding opportunities for migrating birds. The approximately 14-acre Lake represents a very small portion of the overall Pacific Flyway route, as it spans the west coast and inland areas of the entire continent of North America.

Several other water bodies are present within 20 miles of the project site that can be utilized by migratory birds while the proposed project is under construction. The closest of which is the 74-acre Silver Lake Reservoir located approximately one mile to the north of the project site. Figure 3.3-1 depicts these features which provide alternate aquatic habitat to birds that may stop in the Los Angeles area to rest and feed during migration. There are 36 available (uncovered) water bodies located within 20 miles of the project site ranging from 1 to 315 acres in size (Table 3.3-5). All of these water bodies currently contain water based on an evaluation of recent aerial photographs. They range from concrete-lined lakes in urban parks with some trees and shrubs, similar to the project site, to reservoirs in more natural settings with extensive bank vegetation, trees, and shrub cover. Each water body is assumed to be suitable for use by migratory birds (i.e., lack of a bird deterrent such as chlorine and/or bird balls) based on one or more of the following factors: 1) the water body is reported to contain fish or be suitable for fishing, or 2) migratory birds have been observed using the water body. Several sources were reviewed to obtain this information as cited in Table 3.3-5.

REGIONAL RESOURCE PLANNING CONTEXT

The project site is not currently located in an adopted Habitat Conservation or Natural Community Conservation Plan area, or any other local, regional, or state habitat conservation plan area. Therefore, no further analysis of this issue is required.

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**TABLE 3.3-5
WATER BODIES WITHIN 20 MILES OF THE PROJECT SITE**

Name	Acres	Miles to Project Site
Silver Lake Reservoir ¹	74.22	1.23
MacArthur Park Lake ⁹	7.89	1.31
Powena Reservoir	5.73	2.47
Hollenbeck Park Lake ^{5,6}	4.52	3.04
Lincoln Park Lake ^{5,6}	4.65	3.13
Debs Park Lake	0.48	3.88
Hollywood Reservoir ²	75.62	4.87
Belvedere Park Lake ⁶	2.65	6.30
Toluca Lake ³	4.32	6.91
Kenneth Hahn State Recreation Area ^{5,6}	2.87	7.35
Devils Gate Reservoir	120.67	8.96
Upper Franklin Canyon Reservoir ⁴	5.92	9.04
Upper Franklin Canyon Reservoir ⁴	0.18	9.17
Hollywood Park Lake	0.70	9.25
Ervin "Magic" Johnson Park Lake ⁵	14.63	10.25
Stone Canyon Reservoir	136.20	11.06
Legg Lake ^{5,6}	27.94	11.57
Baldwin Lake ⁷	2.53	12.61
Downey Wilderness Park Lake	1.19	12.90
Del Rey Lagoon ⁸	5.13	13.27
Alondra Park Lake	7.51	13.43
Middle Lake	3.16	14.59
Peck Road Park Lake ⁶	260.00	14.70
Hansen Flood Control Basin ^{5,6,9}	315.00	14.75
Encino Reservoir ¹⁰	135.27	14.92
Lake Balboa ⁹	25.16	15.12
Big Tujunga Reservoir	89.68	15.57
Santa Ynez Lake ¹¹	1.02	16.79
Bouton Lake	9.95	17.45
La Mirada Lake	3.08	18.58
Cogswell Reservoir	145.55	19.01

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Name	Acres	Miles to Project Site
Cerritos Park Lake	3.34	19.05
Pacoima Reservoir	61.39	19.44
Harbor Lake ⁹	45.47	19.47
Van Norman Bypass Reservoir	173.00	19.70
El Dorado Park Lake ^{5,6}	17.60	19.84

Notes:

1 Kallick, Rob. June 16, 2009. "13 Facts About the Silver Lake Reservoir." Take Sunset. Accessed April 29, 2010 from <http://takesunset.com/2009/06/fun-facts-about-the-silver-lake-reservoir/>

2 Hollywood Knolls Community Club. February 20, 2010. "Lake Hollywood Reservoir." Accessed April 29, 2010 from http://www.hollywoodknolls.org/hollywood_reservoir.htm

3 Toluca Lake Chamber of Commerce. May 1, 2010. Personal Communication between AECOM (Jeanette Duffels) and Toluca Lake Chamber of Commerce.

4 Santa Monica Mountains Conservancy. 2007. "Franklin Canyon Park." LAMountains.com. <http://www.lamountains.com/parks.asp?parkid=14>

5 California Department of Fish and Game. N.D. "Los Angeles & Orange Counties: Go Fish!" *Fishing in the City*. Accessed April 29, 2010 from <http://www.dfg.ca.gov/fishinginthecity/la/gofish.html>

6 Fish and Game Commission. Fish and Game Calendar / April 2010. Accessed April 29, 2010 from <http://fishandgame.lacountycommissions.info/Calendar.pdf>

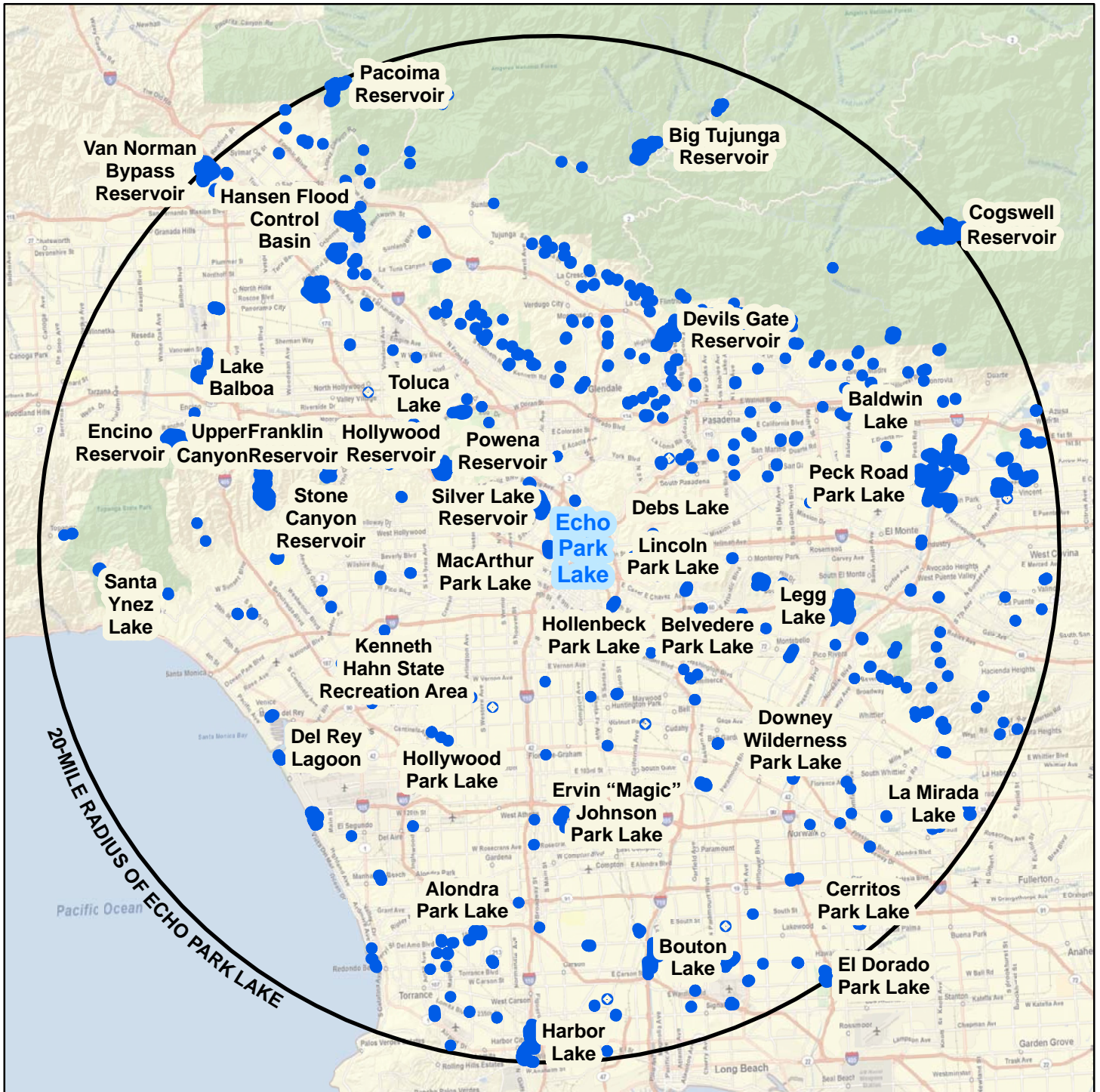
7 Los Angeles County. April 29, 2010. Personal Communication between AECOM (Jeanette Duffels) and Department of Parks and Recreation (Bryan Moscardini) regarding Baldwin Lake at the Los Angeles Arboretum.

8 American Birding Association. March/April 2005. "Birding the Ballona Wetlands." *Winging It*. Accessed April 29, 2010 from http://www.cooperecological.com/Ballona_birding

9 City of Los Angeles. N.D. *Aquatics*. Department of Recreation and Parks, Citywide Aquatics Division. Accessed April 29, 2010 from <http://www.laparks.org/dos/aquatic/pdf/citywideBrochure.pdf>

10 "Encino Reservoir Fishing- California Reservoir near Calabasas." N.D. *Hook and Bullet*. Accessed April 29, 2010 from <http://www.hookandbullet.com/fishing-encino-reservoir-calabasas-ca/>

11 "Santa Ynez Lake Fishing- California Lake near Santa Monica." N.D. *Hook and Bullet*. Accessed April 29, 2010 from <http://www.hookandbullet.com/fishing-santa-ynez-lake-santa-monica-ca/>



Source: ESRI, National Wetlands Inventory, and Google Earth, 2010



Figure 3.3-1
Regional Water Bodies

3.3.2 REGULATORY SETTING

The following provides a general description of the regulations applicable to biological resources. Permits or other authorizations expected to be required for the proposed project under these regulations are also noted where applicable.

SECTIONS 404 AND 401 OF THE CLEAN WATER ACT

The Clean Water Act (CWA) governs pollution control and water quality of waterways throughout the United States. Its intent, in part, is to restore and maintain the biological integrity of the nation's waters. The goals and standards of the CWA are enforced through permit provisions. Sections 401 and 404 of the CWA pertain directly to the proposed project. Section 401 requires certification from the Regional Water Quality Control Board (RWQCB) that the proposed project is in compliance with established water quality standards. Section 404 of the CWA requires an individual or general permit from USACE for discharge into "waters of the U.S." The proposed project would require a CWA Section 401 certification and CWA Section 404 permit.

MIGRATORY BIRD TREATY ACT

Congress passed the MBTA in 1918 to prohibit the kill or transport of native migratory birds, or any part, nest, or egg of any such bird unless allowed by another regulation adopted in accordance with the MBTA. The prohibition applies to birds included in the respective international conventions between the United States and Great Britain, Mexico, Japan, and Russia. Although no permit is issued under the Migratory Bird Treaty Act, if vegetation removal or other construction activities occur during the breeding season for raptors and other native birds, USFWS and CDFG require that surveys be conducted to locate active nests within the construction area. If active raptor or other native bird nests are detected, proposed project activities may be temporarily curtailed or halted within an established buffer zone. The proposed project must comply with the MBTA.

SECTION 1600 OF THE CALIFORNIA FISH AND GAME CODE

Under Sections 1600-1617 of the California Fish and Game Code, CDFG regulates activities that would alter the flow, bed, channel, or bank of streams and lakes. The limits of CDFG jurisdiction are defined in the code as the "bed, channel or bank of any river, stream or lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit." The California Code of Regulations (14 CCR 1.72) defines a stream as:

[A] stream is 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.

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In practice, CDFG usually extends its jurisdictional limit to the top of a stream or lake bank, or outer edge of the riparian vegetation, whichever is wider. Riparian habitats do not always have identifiable hydric soils, or clear evidence of wetland hydrology as defined by USACE. Therefore, CDFG wetland boundaries often extend beyond USACE wetland boundaries, which sometimes include only portions of the riparian habitat adjacent to a river, stream, or lake. Jurisdictional boundaries under Sections 1600–1607 may encompass an area that is greater than that under the jurisdiction of Section 404.¹⁷ The proposed project would require authorization under Sections 1600–1616 of the Fish and Game Code via a Section 1602 Lake and Streambed Alteration Agreement.

SECTION 1802 OF THE CALIFORNIA FISH AND GAME CODE

CDFG regulates fish, wildlife, native plants and habitat necessary for biologically sustainable populations.

SECTIONS 2121 AND 2189 OF THE CALIFORNIA FISH AND GAME CODE

Section 2189 of the Fish and Game Code prohibits unauthorized transport of non-native wild animals into and within California. As defined in this section “non-native wild animal” means any non-native animal species, or hybrid thereof, that is not normally domesticated pursuant to the Fish and Game Code or regulations adopted pursuant thereto and that is not designated as a furbearing, game, nongame, threatened, or endangered animal. The possession of non-native wild animals unless otherwise authorized by Fish and Game Code is prohibited and this section requires them to be destroyed. It also includes provisions for notification to local humane societies of non-native wild animal found at large within the state and if left unclaimed their humane destruction. Section 2121 prohibits the intentional release of wild animals.

SECTION 3503 OF THE CALIFORNIA FISH AND GAME CODE

Section 3503.5 of the Fish and Game Code states that it is “unlawful to take, possess, or destroy any birds-of-prey in the orders Falconiformes or Strigiformes....” These orders include hawks, owls, eagles, and falcons. The loss of an active nest is considered a violation of this code by CDFG. This statute does not provide for the issuance of any type of incidental take permit. Section 3503 prohibits unlawful take, possession or needless destruction of the nest or eggs of any bird.

SECTION 3511 OF THE CALIFORNIA FISH AND GAME CODE

There are several statutes in the Fish and Game Code that prohibit the take or possession of fully protected species and do not provide for authorization of incidental take of fully protected species. Nonfederal agencies and private parties must avoid take of any fully protected species. Only one section

¹⁷ Cylinder, Paul D., Kenneth M. Bogdan, Ellyn M. Davis, and Albert I. Herson. 1995. Wetlands regulation: A complete guide to federal and California programs. Solano Press, Point Arena, California. 363 p.

(3511), fully protected bird species, is relevant to the proposed project. The relevant fully protected bird species is the American peregrine falcon.

SECTION 53.48 OF THE CITY OF LOS ANGELES MUNICIPAL CODE

No person shall kill any song bird or destroy or rob the nest of any such bird.

CITY OF LOS ANGELES TREE ORDINANCE

Section 17.02 of the Los Angeles Municipal Code protects the following Southern California native tree species, which measures 4 inches or more in cumulative diameter, 4.5 feet above the ground level at the base of the tree:

- (a) Oak trees including Valley Oak (*Quercus lobata*) and California Live Oak (*Quercus agrifolia*), or any other tree of the oak genus indigenous to California but excluding Scrub Oak (*Quercus dumosa*)
- (b) Southern California Black Walnut (*Juglans californica* var. *californica*)
- (c) Western Sycamore (*Platanus racemosa*)
- (d) California Bay (*Umbellularia californica*)

Relocation or removal of any protected trees is prohibited without a permit or exemption from the Board of Public Works or its designated officer or employee. A tree survey was completed for the proposed project by Dane S. Shota & Associates Arborist and Nursery Service in August 2009¹⁸. Two individual western sycamore trees in good condition were identified on the project site. These trees are greater than four inches in diameter at breast height and are considered protected under the City tree ordinance. They would be avoided and preserved with the proposed project. None of the other species identified as protected by the City of Los Angeles were documented during the tree assessment. No protected trees are anticipated to be removed as part of the proposed project; therefore, no permits in compliance with this ordinance are required.

CITY OF LOS ANGELES URBAN FOREST PROGRAM TREE CARE POLICY

The Urban Forestry Division of the Bureau of Street Services manages the portion of the urban forest and street trees that grow along the City's public right-of-way. Removal of street trees within the public right-of-way, as well as Park trees requires authorization from the Urban Forestry Division. The proposed project would remove street and Park trees and thus would require such authorization. The City has an Urban Forestry Plan in place with the goal of maintaining the health of the City's urban trees.¹⁹ The proposed project would be required to comply with the Urban Forestry Plan. Chapter 4 of the Urban Forestry Plan describes several measures designed to reduce damage to trees during construction, such as

¹⁸ Dane S. Shota & Associates. 2009. Tree Assessments and Recommendations. Echo Park Lake. August

¹⁹ City of Los Angeles. 2004. Forestry Division. Urban Forestry Plan October.

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maintaining and fencing a tree protection zone. These avoidance and minimization measures would be incorporated into the proposed project and adhered to during construction. The Urban Forestry Plan guidelines for replanting would be followed and plan deviations reviewed with the City as part of the final project design. The proposed project would also be required to comply with RAP's Urban Forestry Program.

3.3.3 ENVIRONMENTAL IMPACTS

THRESHOLDS OF SIGNIFICANCE

As part of the Initial Study (see Appendix A), it was determined that the proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan; Natural Community Conservation Plan; or other approved local, regional, or state habitat conservation plans. Accordingly, these issues are not further analyzed in the EIR.

Pursuant to the CEQA Guidelines, the proposed project would have a significant effect on biological resources 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; or
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

IMPACT ANALYSIS

BIO-1: *The proposed project would cause 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. Mitigation measures are required.*

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No sensitive plant species were detected within the project site during reconnaissance surveys, and the project site is not expected to support sensitive plant species due to lack of suitable habitat. No direct or indirect impacts to sensitive plants are expected as a result of the proposed project.

Eight sensitive animal species, Vaux's swift (CSC), peregrine falcon (CFP), southwestern pond turtle (CSC), pallid bat (CSC), western mastiff bat (CSC), hoary bat (WBWG), western yellow bat (WBWG and CNDDDB tracked), and silver-haired bat (WBWG and CNDDDB tracked), have low potential to be present. Six additional sensitive bird species Cooper's hawk (CWL), California gull (CWL), Allen's hummingbird (CNDDDB tracked), red-breasted sapsucker (CNDDDB tracked), Nuttall's woodpecker (CNDDDB tracked), and white-faced ibis (CWL) have been observed during Christmas Bird Counts and at other times by the Los Angeles Audubon Society. The likelihood of these species nesting on-site is considered to be low. No other sensitive animal species are expected to be present in the Park.

Direct impacts to the southwestern pond turtle would be considered significant. However, the likelihood of southwestern pond turtle to occur is extremely low as the nearest recent observation is approximately 120 miles from the Lake.²⁰ Aquatic species would be captured and relocated according to the recommendations and requirements detailed in the Wildlife Relocation Plan provided in Appendix D of this EIR. The plan includes methods for capture and relocation for fish, turtles, and amphibians, as well as avoidance measures for nesting birds and roosting bats. Aquatic turtles would be captured using basking traps deployed several weeks prior to Lake dewatering. Non-native turtles cannot be returned to the Lake or introduced into other water bodies nearby per Fish and Game Code. The City will work with the Southern California Turtle and Tortoise Club to find foster homes for the non-native turtles. Relocation of any native turtles captured would be coordinated with CDFG according to an approved relocation plan. If native turtles are found they would likely be relocated to a suitable nearby water body with CDFG assistance.

Native or sensitive fish, invertebrate, or amphibian species are not expected to occur within the project site. Game fish stocked by CDFG, channel catfish and rainbow trout, would be captured during lake dewatering and transferred to a CDFG-approved location. Authorization from CDFG would be required. This location may be a CDFG holding facility or another water body in the region following an appropriate quarantine period. CDFG intends to cease stocking the Lake with fish six months prior to the start of construction to reduce the number of game fish that would require relocation. All fish and other aquatic species still present in the Lake would be captured by qualified biologists through standard methods as the Lake is drawn down and dewatered (i.e. using an electro fisher and seine nets). Non-native, non-game fish, non-native invertebrates (i.e. crayfish), and non-native amphibians (i.e. American bullfrogs) cannot be released into other water bodies per Fish and Game Code. Many of these species are invasive and can be detrimental to native plant and animal populations through predation, disease, or direct competition for resources. These animals would be salvaged and humanely disposed. If any native

²⁰ EDAW. 2008. Memo: Summary of conversation between Jason Phillips of EDAW and Brian Young of CDFG on April 16 and April 17, 2008 regarding the Echo Park Lake Project and associated wildlife relocation plan.

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or sensitive aquatic species are encountered they would be handled and relocated as approved by CDFG in the same manner as the game fish.

Discussions regarding the method of capture, temporary holding methods, relocation, and disposition of aquatic species occurred with CDFG staff in the spring of 2008. The Wildlife Relocation Plan was developed based on methods and requirements provided by CDFG. A Final Aquatic Species Salvage and Relocation Plan would be prepared and submitted to CDFG for review and approval prior to implementation of the proposed project. Only qualified biologists with sufficient aquatic species salvage and relocation experience and a valid CDFG collecting permit would carry out the capture, relocation, and disposition of animals. Any holding tanks with live animals would be maintained with proper environmental conditions to reduce animal stress and for maximum survival by the qualified biologists.

Sensitive bats have a low potential to occur in the Park. Direct impacts to sensitive bats would be considered significant. The proposed project would remove existing trees at the Park; therefore, direct impacts to sensitive bats are possible. To reduce potential direct impacts to sensitive bats, mitigation measure BIO-A is provided below. Indirect impacts to sensitive bats would result from noise and construction activities, and would be considered significant. No nighttime construction activities that would generate noise are expected to also occur; therefore, potential indirect impacts associated with wildlife movement during the night and early morning hours would be less than significant.

The existing floating islands and man-made island within the Lake, as well as the surrounding Park landscaping, provide nesting habitat for ground-nesting birds such as Canada geese and mallards. The large trees on the man-made island and in the parkland areas are suitable for tree nesters, such as great blue herons and red-tailed hawks. These species have been observed nesting on-site and other native bird species common to the Park, such as northern mockingbirds and western scrub jays, have the potential to nest in trees and shrubs. If birds were found to be nesting in the floating islands or other landscape vegetation proposed for removal with the proposed project, disturbance during the breeding season would constitute a significant impact to nesting birds under the protection of the MBTA, CDFG Code, and the City of Los Angeles Municipal Code. Potential indirect noise impacts may also occur to native birds from short-term construction noise, including nesting great blue herons on the man-made island. When all aquatic species are removed from the Lake, the herons would lose their year-round food supply. Although potential nesting habitat would still be present, while construction is presumably ongoing, the herons may be deterred from nesting by the lack of food resources and by construction activities. These impacts would be considered significant during the breeding season. Herons have been observed nesting as early as January on the project site and are considered year-round residents²¹. Initial draining of the Lake would be timed in late spring or early summer after the heron colony nesting season is complete and heron chicks have fledged from the nests.

²¹ Raskin, J. 2010. Communication with City of Los Angeles project team about nesting bird activities. April 19th.

Once the proposed project is in operation, on-going vegetation maintenance may potentially result in disturbance of bird nests. Constructed wetland vegetation would require periodic harvesting to maintain the improved water quality of the Lake. This vegetation is likely to become attractive to nesting water fowl and song birds. To reduce potential impacts to nesting birds during construction and operations, mitigation measures BIO-B, BIO-C, and BIO-D are provided below. With implementation of mitigation measures BIO-A, BIO-B, BIO-C, and BIO-D impacts to special status species would be less than significant.

BIO-2: *The proposed project would not cause 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 US Fish and Wildlife Service. Impacts would be less than significant.*

Sensitive natural communities are typically native, vegetated habitats identified in local or regional plans that either occur in aquatic areas, are rare or declining in land area, and/or provide a heightened habitat value to native plants and animals. They are also typically regulated by CDFG if they occur along a stream course or lake (under CDFG Code Section 1600) or are included on the CNDDDB's list of high priority communities. As described above, there are no sensitive natural vegetation communities at the Park. The native vegetation that was once present on the project site was completely removed with urbanization of the area. Existing vegetation consists of non-native landscape trees and ornamental lawn. Two native Sycamore trees were documented during the tree assessment conducted for the proposed project, and although they are protected by the City tree ordinance they do not constitute a riparian habitat or sensitive natural community. No aquatic vegetation is present in the Lake with the exception of the small floating islands. The floating islands are composed of native vegetation typical of freshwater marsh habitats (cattails), although they are not rooted in the Lake bottom, but rather are connected to the Lake bottom and are not naturally occurring. These islands would be removed as part of the proposed project. However, the lotus bed would be restored within the northwestern lobe of the Lake, and several large wetland areas would be installed in the northeastern lobe of the Lake, within the southern portion, and along portions of the eastern and western edges. These wetlands would be planted with freshwater marsh vegetation and would provide greater habitat value and water quality benefits than that currently provided by the floating islands. The remaining vegetation within the Park, some of which would be removed with the proposed project, consists of non-native, ornamental species that are not considered sensitive. Implementation of the proposed project would involve planting of additional shrubs and trees on the man-made island that would improve habitat value. As such, impacts to sensitive natural communities would be less than significant.

BIO-3: *The proposed project would not cause 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. Impacts would be less than significant.*

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Areas of the project site under the jurisdiction and regulatory administration of CDFG include 14.14 acres of potential jurisdictional waters of the U.S. composed of unvegetated waters, as well as an additional 2.34 acres of non-USACE jurisdictional riparian habitat for a total area of approximately 16.48 acres of potential jurisdictional waters. The proposed project is a park rehabilitation project would result in a net ecological benefit including wetland restoration; however, all of these areas would be temporarily impacted by the construction of the proposed project.

The BOE is required to obtain all applicable permits for impacts to 14.4 acres of potential jurisdictional waters of the U.S. and state, prior to the commencement of project construction. Such permits include: a CWA Section 404 permit, CWA Section 401 certification, and a California Fish and Game Code Section 1602 Lake and Streambed Alteration Agreement. Since an equivalent area of jurisdictional waters of a higher function and value would be restored to the project area, the proposed project is considered self-mitigating. As such, impacts to federal and state protected wetlands would be less than significant.

BIO-4: *The proposed project would 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. Mitigation measures are required.*

Although the Park is not part of a major contiguous linkage between areas of open space, direct impacts may occur to local wildlife movement corridors as a result of the proposed project. Temporary loss of open water habitat would have a significant impact on local wildlife such as birds, fish, turtles, and other wildlife that utilize the Lake. To reduce potential impacts to local wildlife a salvage and relocation plan for aquatic species occurring in the Lake would be finalized in coordination with CDFG. A draft Wildlife Relocation Plan has been prepared and is described in detail above.

Implementation of the proposed project would provide improved water quality and habitat for aquatic species through the restoration of the lotus bed and installation of constructed wetlands totaling approximately 4.2 acres in area. Creation of an aquatic vegetation zone would provide structure within the water column to benefit aquatic species including fish, turtles, and amphibians. Stems of vegetation below the water line attract and trap algae, debris, and insects that aquatic animals feed upon. They also enhance the survival of small animals, such as larval frogs and fish by providing areas of refuge and small hiding places that are not easily accessible to larger predators. Many amphibians attach their eggs to the stems of submerged vegetation and are dependent upon these features for successful breeding. Currently, the Lake does not provide adequate habitat for amphibians; however, the introduction of aquatic vegetation would likely attract common species, such as the Pacific tree frog. The aquatic vegetation enhancements proposed would also increase habitat quality for the game fish stocked by CDFG, improving the Fishing in the City Program experience at the project site. The proposed wetlands would provide additional nesting and foraging sites for birds as emergent vegetation offers structure for establishing nests, as well as cover from potential predators. Open water patches maintained between vegetation would also be important for predators, such as herons and turtles that forage on aquatic species

from above and below the water surface, respectively. The mosaic of aquatic habitat types that would be created by the proposed project including open water, emergent vegetation, and floating-leaved plants, is a desirable condition for enhanced wildlife diversity.

During project operations, the value of the Lake to migratory birds would be increased by enhancing aquatic habitat with wetlands and augmenting landscape vegetation with additional shrubs and trees. The additional plantings and wetland areas would provide a higher quality habitat for birds during the migratory and nesting seasons than the existing condition. The man-made island would be enhanced for wildlife, particularly songbirds, with the addition of some smaller trees, a shrub layer, and an understory of grasses and forbs.

During the two-year construction phase, there would be a temporary loss of 14.14 acres of potential aquatic and terrestrial habitat for aquatic species, as well as migratory and resident birds. However, when evaluated in the context of the other available aquatic habitats in the region, as described above and summarized in Table 3.3-5, and the ultimate project benefits to wildlife habitat quality at project site, the potential impact of construction on birds during the migratory season is considered to be less than significant. In addition, the City is considering the option of creating a temporary water source adjacent to the construction site to provide water for birds that may be passing through during the migratory season. The design including dimensions and location of the temporary ponds are under development. Given the overall improvements to aquatic habitat value provided by the proposed project along with implementation of the Wildlife Relocation Plan, the temporary loss of habitat for aquatic species during construction would result in a less than significant impact.

The floating islands and man-made island within the Lake, as well as landscaping in the surrounding parklands provide suitable nesting habitat for several bird species. If birds were found to be nesting on-site, construction activities during the breeding season would constitute a significant impact to nesting birds under the protection of the MBTA, CDFG Code, and City of Los Angeles Municipal Code. Potential indirect noise impacts may also occur to native birds from short-term construction noise, including nesting great blue herons on the man-made island. These impacts would be considered significant during the breeding season. To reduce potential impacts to migratory birds, mitigation measures BIO-B and BIO-C are provided.

No nighttime construction is expected to occur, other than the potential for the discharge of Lake water to the sewer system at night; therefore, potential indirect impacts associated with wildlife movement during the night and early morning hours would be less than significant. The proposed project would remove approximately 54 trees, resulting in a temporary loss of habitat for resident, nesting, and migratory wildlife; however, it would plant approximately 86 new healthy trees at the project site, for an overall gain of habitat biomass and increased habitat value.

Through compliance with the MBTA and with implementation of mitigation measures BIO-A through BIO-C, impacts to migratory wildlife corridors and wildlife nursery sites would be less than significant.

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BIO-5: *The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. Impacts would be less than significant.*

A tree assessment was completed for the project site in August 2009 by certified arborist, Dane S. Shota. Two protected Sycamore trees were identified on-site, which would remain in place with the proposed project. Fifty-four trees would be removed as part of the proposed project. Removal determinations were made based on the recommendations of the certified arborist and based upon findings of the tree survey regarding tree health, safety hazards, and anticipated impacts from construction, as well as the comparison of anticipated preservation efforts and expected life spans. Three of the approximately 54 trees to be removed are street trees of the City of Los Angeles and would require authorization from the City's Urban Forestry Division of the Bureau of Street Services. The trees to be removed are ornamental gold medallion (*Cassia leptophylla*). Prior to removal of any street trees under the protection of the City of Los Angeles, authorization would be obtained from the Urban Forestry Division and any provisions met. In addition, coordination and authorization from RAP's Urban Forestry Division would be required for any Park trees and other vegetation that is removed with the proposed project. Therefore, impacts to protected trees would be less than significant.

3.3.4 MITIGATION MEASURES

BIO-A: A qualified biologist shall conduct preconstruction surveys to identify any bat species on the project site. Preconstruction surveys shall be conducted between two weeks to one month prior to commencement of construction to inventory the bat species on-site (if present). Trees that would be removed during construction shall receive particular attention. The survey area shall include the project footprint (including all portions of the Lake where construction activities would occur, staging areas, and equipment storage areas). The entire project site shall be surveyed for the presence or sign of roosting bats. Any potential bat habitats, such as tree cavities, crevices, burrows, buildings, etc., shall be identified and surveyed for bats or evidence of bat usage. Active maternal colonies and/or roosts shall be mapped and appropriate nondisturbance buffer zones, as determined by the biologist shall be observed. Concurrence from CDFG regarding the appropriate nondisturbance buffers may be necessary. If sensitive species are detected, additional avoidance measures may be necessary and shall be determined in coordination with CDFG. Such measures shall include passive relocation of bats. Passive relocation of bats from roost sites may only be conducted with approval of CDFG.

BIO-B: A preconstruction survey for nesting birds shall be conducted within two weeks of commencement of project construction regardless of the time of year. If unanticipated special status species are observed during preconstruction surveys, CDFG shall be contacted to develop additional avoidance measures.

The preconstruction bird survey shall be performed to detect any protected native birds in the trees to be removed and within other suitable nesting habitat within 100 feet of the construction work area. At least one survey shall be conducted no more than 72 hours prior to the disturbance of suitable nesting habitat by a qualified biologist with experience in conducting nesting bird surveys. If a protected (i.e., nesting) native bird is found, the City, or its contractor, shall halt all clearance/construction disturbance activities within 50 feet of nesting habitat (within 100 feet for raptor nesting habitat) until August 31 or until the nest is no longer active as confirmed by a qualified biologist. If an active nest is located, clearing and construction within 50 feet of the nest (within 100 feet for raptor nests) shall be postponed until the nest is vacated, juveniles have fledged, and there is no evidence of a second attempt at nesting. The nest status shall be monitored by a qualified biologist. Limits of construction to avoid a nest shall be established in the field with flagging and stakes or construction fencing demarcating the nondisturbance buffer zone. Construction personnel shall be instructed on the sensitivity of the area. A biological monitor shall be present during construction activities that occur within 100 feet of any flagged boundaries. Once a flagged nest is determined to be no longer active, the biological monitor shall remove all flagging and allow construction activities to proceed.

The buffer areas described above were determined based on the sensitivity of the species to human disturbance given the urbanized nature and existing high disturbance levels at the Park. Nesting great blue herons, which are known to nest on the island, are presumably more sensitive to disturbance as it is somewhat protected from disturbance in the center of the Lake. Great blue herons may require greater buffer areas than those described above. See mitigation measure BIO-C.

BIO-C: To avoid disturbing nesting great blue herons, dewatering and construction shall begin before herons have the opportunity to nest or immediately after their nesting period is complete. When all aquatic species are removed from the Lake, the herons would lose their year-round food supply. Although potential nesting habitat would still be present the following nest season, while construction is presumably ongoing, the herons may be deterred from nesting by the lack of food resources and by construction activities. The current schedule projects construction to begin in January 2011. A delay in this schedule would infringe on the nesting season. A delay in construction would require installation of a CDFG-approved method of nesting deterrence.

If herons manage to nest, construction activities shall be altered within 100 to 500 feet of the nests; the exact buffer distance shall be determined in consultation with CDFG. A biological monitor shall regularly monitor the nest during the construction phase. If all work is scheduled in the area around the man-made island during the period when herons are not likely to be nesting, the probability of construction delays would be reduced.

3.3 Biological Resources

Contractor education regarding sensitive species present and potentially occurring on-site shall be conducted prior to the start of construction for all personnel working on-site. A qualified biologist shall review the measures established to protect sensitive species, particularly nesting birds. Handouts with photos shall be provided to facilitate identification of a potential nest, as well as procedures that should be implemented if a bird nest or other sensitive species is found.

BIO-D: To avoid disturbance or loss of avian nests sites during on-going maintenance, once the project is in operation, nest survey and avoidance strategies shall be developed and incorporated into the project Maintenance and Operations Plan. The methods employed shall be similar to those outlined above during construction. The optimal time to harvest vegetation is outside of the nesting season (September through December), however, waterfowl may be nesting at the Lake year-round. Waterfowl are likely to nest in wetland vegetation, therefore, surveys and avoidance strategies shall be employed at all times of the year. The project Maintenance and Operations Plan shall include regular training requirements for City maintenance staff that emphasize applicable laws and regulations, identification of nests, what to do if a nest is found, and how to best avoid disturbing nests.

3.3.5 SIGNIFICANCE AFTER MITIGATION

With the implementation of mitigation measure BIO-A, potential direct impacts to sensitive bats during construction would be reduced. The implementation of mitigation measures BIO-A through BIO-D would reduce potential impacts to special status species, as well as nesting birds during construction and operations. The implementation of mitigation measures BIO-A through BIO-C would reduce impacts to migratory wildlife corridors and wildlife nursery sites. Impacts to biological resources would be less than significant.

3.4 CULTURAL RESOURCES

A Cultural Resources Phase I and Cultural Landscape Treatment Plan document was prepared for the proposed project in November 2008. This section summarizes the environmental setting, results, and conclusions presented in this report. A complete copy of this report is included in Appendix E of this EIR.

3.4.1 ENVIRONMENTAL SETTING

PREHISTORIC OVERVIEW

The earliest evidence of occupation in the Los Angeles area dates to at least 9,000 years before present and is associated with a period known as the Millingstone Cultural Horizon.^{1,2} Departing from the subsistence strategies of their nomadic big-game hunting predecessors, Millingstone populations established more permanent settlements. These settlements were located primarily on the coast and in the vicinity of estuaries, lagoons, lakes, streams and marshes where a variety of food resources including seeds, fish, shellfish, small mammals, and birds were exploited.

Although many aspects of the Millingstone culture persisted, by 3,500 years before present, a number of socioeconomic changes had occurred.^{3,4} These changes are associated with the period known as the Intermediate Horizon.⁵ The Intermediate Horizon marks a period in which specialization in labor emerged, trading networks became an increasingly important means by which both utilitarian and non-utilitarian materials were acquired, and travel routes were extended. Archaeological evidence suggests the margins of numerous rivers, marshes, and swamps within the Los Angeles River drainage served as ideal locations for prehistoric settlement during this period. These watered areas contained a rich collection of resources and were likely to have been among the more heavily trafficked travel routes and well-used settlement locations.

The Late Prehistoric period, spanning from approximately 1,500 years before present to the Mission Era, is the period associated with the florescence of the contemporary American Indian group known as the Gabrielino.⁶ Coming ashore near Malibu Lagoon or Mugu Lagoon in October of 1542, Juan Rodriguez Cabrillo was the first European to make contact with the Gabrielino Indians. Occupying the southern Channel Islands and adjacent mainland areas of Los Angeles and Orange counties, the Gabrielino are reported to have been second only to their Chumash neighbors in terms of population size and regional

¹ Wallace, William J.A Suggested Chronology for Southern California Coastal Archaeology. *Southwestern Journal of Anthropology* 11(3):214-230. 1955.

² Warren, Claude N. Cultural Traditions and Ecological Adaptation on the Southern California Coast. In *Archaic Prehistory in the Western United States*, edited by Cynthia Irwin-Williams. Eastern New Mexico University Contributions in Anthropology 1(3):1-14. 1968.

³ Ibid.

⁴ Erlandson, Jon M. *Early Hunter-Gatherers of the California Coast*. Plenum Press, New York. 1994.

⁵ Wallace, William J.A Suggested Chronology for Southern California Coastal Archaeology. *Southwestern Journal of Anthropology* 11(3):214-230. 1955.

⁶ Ibid.

3.4 Cultural Resources

influence.⁷ The Gabrielino are estimated to have numbered around 5,000 in the pre-contact period, and maps produced by early explorers indicate that at least 26 Gabrielino villages were within close proximity to the Los Angeles River, while an additional 18 villages were within reasonably close proximity to the river.^{8,9}

HISTORIC OVERVIEW

The Gabrielino were virtually ignored between the time of Cabrillo's visit and the Spanish Period, which began in 1769 when Gaspar de Portola and a small Spanish contingent began their exploratory journey along the California coast from San Diego to Monterey. Gabrielino villages were reported by early explorers to have been most abundant near the Los Angeles River, in the area north of the present-day downtown area, known as the Glendale Narrows, as well as areas along the river's various outlets into the sea. Among those villages north of the present-day downtown area are Maawnga near Griffith Park; Totongna and Kawengna, in the San Fernando Valley; Hahamongna, northeast of Glendale; and closest to the project site, the village of Yangna, under present day downtown Los Angeles. The exact location of Yangna continues to be debated, although some believe it was located under the present-day Civic Center. This settlement, widely regarded as a precursor of modern Los Angeles, was abandoned by 1836.¹⁰

Missions were established in the years that followed the Portola expedition, the fourth mission being the Mission San Gabriel Arcangel founded in 1771 near the present-day city of Montebello. By the early 1800s, the majority of the surviving Gabrielino population had entered the mission system. The Gabrielino inhabiting Los Angeles County were under the jurisdiction of either Mission San Gabriel or Mission San Fernando. Mission life offered the Indians security in a time when their traditional trade and political alliances were failing and epidemics and subsistence instabilities were increasing.¹¹

On September 4, 1781, El Pueblo de la Reina de los Angeles was established. Watered by the river's ample flow and utilizing the area's rich soils, the original pueblo occupied 28 square miles and consisted of a central square surrounded by houses and a series of agricultural fields occupying 250 acres.¹² An irrigation system that carried water from the river to the fields and the pueblo was the community's first priority and was constructed almost immediately. The main irrigation ditch, or Zanja Madre, was completed by the end of October 1781. It was constructed in the area of present-day Elysian Park, and

⁷ Bean, Lowell John and Charles R. Smith. Gabrielino. In Handbook of North American Indians, vol. 9, pp. 538–562. Robert F. Heizer, editor. Smithsonian Institution, Washington, D.C. 1978.

⁸ Kroeber, A. L. Handbook of Indians of California. Bureau of American Ethnology Bulletin 78, Smithsonian Institution, Washington D.C. 1925.

⁹ Gumprecht, Blake. The Los Angeles River: Its Life, Death and Possible Rebirth. John Hopkins University Press, Baltimore, MD. 1999.

¹⁰ McCawley, W. The First Angelinos: The Gabrielino Indians of Los Angeles. Malki Museum Press, Banning, 1996.

¹¹ Jackson, Robert H. Agriculture, Drought & Chumash Congregation in the California Missions (1782 1834), California Mission Studies Assn. Articles, May Newsletter. 1999.

¹² Gumprecht, Blake. The Los Angeles River: Its Life, Death and Possible Rebirth. John Hopkins University Press, Baltimore, MD. 1999.

carried water south (roughly parallel to what is presently Spring Street) to the agricultural lands situated just east of the pueblo. Over 8,300 acres of land were irrigated by the Zanja Madre during the 1880s.¹³

When the Southern Pacific Railroad extended its line from San Francisco to Los Angeles in 1876, the population in Los Angeles nearly doubled between 1870 and 1880. The completion of the second transcontinental line, the Santa Fe, took place in 1886, and caused fares to drop to an unprecedented low. More settlers continued to head west, and the demand for real estate skyrocketed. As real estate prices soared, land that had been farmed for decades was sold to be developed as residential communities. The subdivision of the large ranchos also took place during this time. The city's population rose from 11,000 in 1880 to 50,000 by 1890.¹⁴

As a result of the growing population and the increasing diversion of water to new residential and agricultural areas, the once plentiful water in the Los Angeles River began to decrease. The extensive flood plain dried up, the abundant lushly forested landscape had been cleared for construction materials and fuel, and tens of thousands of cattle, horses, and sheep owned by ranchers had decimated the local grasses.¹⁵ A number of waterworks projects were constructed during the second half of the 19th century in an effort to increase water flow through the river and to promote water retention. Projects included the construction of the Reservoir No. 4 (present-day Echo Park Lake), the Silverlake Reservoir, and the further expansion of the Zanja Madre irrigation ditches.

Reservoir No. 4 was constructed in approximately 1870 when the City of Los Angeles constructed a 20-foot dam at the southern end of present-day Echo Park Lake. The reservoir was fed by a canal and ditch on its northern side. The Main Ditch Supply, whose source was five miles north of what was then the city limits, turned away from the river at a pass through the hills near the present-day intersection of Riverside Drive and Glendale Blvd (approximately 2.4 miles north-northwest of the project site). From this division point, the east side waters were piped across the river, while the west side supply continued south in the old Canal and Reservoir Ditch to Reservoir No. 4. Reservoir No. 4, built to provide storage for 150 million gallons of water, was never filled with more than 50 million gallons because the dam was deemed unsafe.¹⁶

ECHO PARK HISTORICAL OVERVIEW

The following is a detailed history and chronology of the development of Echo Park (Table 3.4-1). The discussion includes details regarding the project site, as well as other portions of Echo Park Lake on the south side of Bellevue Avenue and south of US Highway 101 (US 101) that are not considered to be a part of the project site. Historical research was conducted at the Los Angeles Public Library and the

¹³ Ibid.

¹⁴ Meyer, L. Los Angeles, 1781–1981. A special bicentennial issue of California history, Spring 1981. California Historical Society, Los Angeles. 1981.

¹⁵ Gumprecht, Blake. The Los Angeles River: Its Life, Death and Possible Rebirth. John Hopkins University Press, Baltimore, MD. 1999.

¹⁶ Ibid.

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information presented has been assembled from historic photographs, aerial photographs, and newspaper and magazine articles.

TABLE 3.4-1 TIMELINE OF THE DEVELOPMENT OF ECHO PARK

Date	Event
1870	Reservoir No. 4 completed in northwestern Los Angeles
1889	Los Angeles Department of Parks established
1889	Joseph Henry Tomlison appointed first superintendent of parks
1891	City of Los Angeles regains control of area known as Reservoir No. 4/Echo Park Lake
1892	The Park was formally established as a public city park
1893	5,000 yards of soil excavated from the Lake to build small island; stone taken from Elysian Park to riprap the island
1895	Original wooden bridge to island constructed
1896	First boathouse opens
1896	10,600 plants installed; watering done by taking buckets of water from the Lake
1899	Several thousand plants added throughout the year
1900	4,300 square feet of new lawn installed; 4,700 new plants added
1901	Law passed requiring permit for fishing
1903	The Park connected to downtown Los Angeles by three streetcar lines
1905	Work to build playground begins (between Bellevue Avenue and Temple Street)
1906	100 rustic benches constructed by F. B. Johnson for three parks, including Echo Park
1907	Playground opens – the second playground in Los Angeles
1908	Echo Park clubhouse constructed between the Lake and playground
1915	Lights added to the Park
1919	Tennis court constructed
1924	New iron fence placed around playground
1924	New two-inch pipe rail fence and sidewalk constructed on embankment along Glendale Boulevard
1924	Section of concrete sidewalk replaced with gravel and oil pavement
1925	New boathouse constructed near previous boathouse location
1928	Lotus plants appear
1932	New Recreation Center replaces old clubhouse at the Park
1935	Lady of the Lake statue installed
1938	All but one of the willow trees removed
1930s/40s	Original bridge replaced with new steel and wooden bridge
1943	Construction of US 101 results in demolition of old playground
1976	Bronze bust of José Martí erected
1977	First Lotus Festival held in Echo Park
1970s	Most of the shrubbery and flowers removed to deter crime and vagrancy
1986	Lady of the Lake statue removed and placed in storage; new pump house built at that location
1999	Lady of the Lake statue moved to present location on east side of the Lake

Source: EDAW 2008.

1850 to 1891: Reservoir No. 4

When Los Angeles was incorporated as an American city in 1850, its boundaries remained the same as those of the original Spanish land grant that first established El Pueblo de la Reina de Los Angeles in 1781. The City's public land holdings included the area which later became known as Echo Park.¹⁷

In 1867, the City of Los Angeles sold the rights to distribute City water to the Los Angeles City Water Company. Also during this time, the City contracted the Los Angeles Canal and Reservoir Company to construct a new canal and water storage system in the western portion of the City. In return, the City conveyed a third of the City's original land grant to the company. The Los Angeles Canal and Reservoir Company completed the new canal system in 1870, diverting water from the Los Angeles River (at a point near present-day Griffith Park) and conveying it through an irrigation ditch in what was then known as the Arroyo de Los Reyes (present-day Echo Park Avenue) and into a new reservoir.

The new reservoir (Reservoir No. 4, present-day Echo Park Lake) was created by erecting a 20-foot dam. The dam was placed across the Arroyo de Los Reyes and a large basin at the location of present-day Bellevue Avenue. Reservoir No. 4 was supplied with water from the diversion of the Los Angeles River and from a spring-fed stream originating at Baxter Avenue (approximately 1 mile north-northeast of Echo Park Lake). The stream flowed down the Arroyo de Los Reyes (present-day Echo Park Avenue).¹⁸

The woolen mill ditch carried water from the reservoir to the Coulter Woolen Mills, located at the corner of Sixth and Pearl Streets (now Figueroa Street). Wastewater was carried through a Zanja to irrigate orchards and vineyards in the area. The population boom of the mid-1880s resulted in the development of new residential subdivisions in outlying areas to the west and northwest of downtown Los Angeles, including the Echo Park area. In 1891, as a response to criticism that Los Angeles had insufficient public park space for its increasing population, the City regained control of the 33-acre tract in northwest Los Angeles, which would become Echo Park. The Park was the City's seventh public park, was formally established one year later in 1892.¹⁹

1892 to 1909: Creation and Early Use of Echo Park

Once the Park was established, Joseph Henry Tomlinson, a landscape architect and Superintendent of the Department of Parks from 1889 to 1909, began the design of the Park. Tomlinson created the Park in the picturesque English style. Aspects of the English style which were evident in the Park's design are "use of the long lake and middle-distance plantings to create appealing vistas and the illusion of great distance,

¹⁷ Historic Resources Group. Los Angeles City Historic-Cultural Monument Application. Unpublished document on file at Los Angeles City Planning Department. 2005.

¹⁸ Ibid.

¹⁹ Ibid.

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and open lawns defined by groves of trees with some set apart to emphasize their features, undulations in ground form, and winding, peripheral paths and drives to create interesting natural settings”.²⁰

Joseph Tomlinson and other Los Angeles landscape designers working during the turn-of-the-century were greatly inspired by the natural environment and Picturesque design theory. Rustic benches, bridges, and gazebos were constructed of natural materials minimally modified.²¹ Plantings were selected for suitability to the Southern Californian climate and included acacia and eucalyptus. Some exotics, such as weeping willows, roses, hydrangea, and spirea required special care.²²

Echo Park reputedly was named after Tomlinson noticed an echo as he shouted across the arroyo. Work on the Park began in 1892 when the reservoir was shut down. The stream at present-day Baxter Avenue was capped and a 16-acre lake formed in the reservoir basin. Eucalyptus trees were planted on top of the dam. Willow trees, shrubs, and blooming annuals were placed around the perimeter of the Lake.²³

In 1893, 5,000 cubic yards of soil was excavated from the Lake bottom to build an island in the northeast corner of the Lake. Approximately 275 loads of stone from Elysian Park were used to riprap the perimeter of the island.²⁴

The original bridge to the island was constructed in 1895 in the same location as the present-day bridge. The bridge had a gradual arch and was made from wood with natural, rustic-style wooden railing. A second bridge was once located at the northwestern lobe of the Lake and was constructed in a similar style to that of the first bridge.²⁵ The first boathouse opened one year later in 1896. The boathouse was constructed of wood in the Victorian style.²⁶

Between 1896 and 1909 improvements to the Park continued steadily, but on a relatively small scale. The lack of an irrigation system and the occasional lowering or draining of the Lake to supply water to local farmers limited the survivability of the Park’s plantings. However, in 1896, 10,600 plants were installed, even though they had to be watered by hand with buckets of water from the Lake.²⁷ Several thousand more plants were installed in 1899.²⁸ In 1900, 4,300 square feet of lawn and 4,700 more plants were added to the Park.²⁹

²⁰ Ibid.

²¹ Emler, Ron. Ghosts of Echo Park. Echo Park Historical Society, Los Angeles, CA. 1999.

²² Laurie, Michael. Changing Propsects: Echo Park, Los Angeles, *Landscape* Vol. 23 (1): 35-41. 1979.

²³ Historic Resources Group. Los Angeles City Historic-Cultural Monument Application. Unpublished document on file at Los Angeles City Planning Department. 2005.

²⁴ Los Angeles Times. The City Parks: Annual Report of Secretary Howard. Dec. 17, 1893, pg. 16. Los Angeles, CA. 1893.

²⁵ Historic Resources Group. Los Angeles City Historic-Cultural Monument Application. Unpublished document on file at Los Angeles City Planning Department. 2005.

²⁶ Ibid.

²⁷ Los Angeles Times. Lungs of Los Angeles. Dec. 11, 1896, pg. 8. Los Angeles, CA. 1896.

²⁸ Los Angeles Times. Park Commission: Superintendent’s Report. Dec. 15, 1899, pg. A1. Los Angeles, CA. 1899.

²⁹ Los Angeles Times. Park Department’s Annual Report. Dec. 14, 1900, pg. II2. Los Angeles, CA. 1900.

As Los Angeles's population expanded, the Echo Park area became less isolated and more developed. By 1903, the Park was connected to downtown Los Angeles by three streetcar lines. New residences dotted the hills surrounding the Park. The local population began to change as working and middle class families moved into the surrounding older and once-affluent neighborhoods. Improvements to the Park began to reflect the needs of this new local demographic.³⁰

In 1907, the Park playground, the second public playground to be built in the City at that time, opened on a triangular piece of land south of the Lake. Previously, the land was a low, muddy lot and a nuisance to the neighbors. The land was filled in and a four-acre playground was installed upon the fill. An outdoor gymnasium, shelter for parents, and a residence for the playground director were later installed.³¹

In 1908, a new clubhouse was added to the Park on a strip of land between the Lake and the playground. The clubhouse was a two-story, rustic-style building constructed of darkly-stained Oregon pine, with a weathered oak finish on the interior. Activities such as dramatic productions, a music program for boys and girls, and an annual Christmas pageant took place in the clubhouse. The clubhouse was also used by organized sports teams.³²

In 1909, the construction of the Los Angeles Aqueduct and the diversion of water from Owens Lake allowed the Park to be greatly improved. Suggested improvements included placing an artesian well at the north end of the Lake to provide a free and constant supply of water. Until this time, the Lake could be under-filled at various times of the year, and the exposed mud resulted in a bad odor.³³

1910s: No Major Changes or Improvements to Echo Park

Minimal changes occurred at the Park in the 1910s. In 1915, the first park lights were installed.³⁴ In 1919, tennis courts were added to the playground. The Park Maintenance Building was constructed prior to 1916.³⁵

1920s to 1940s: Modifications and Improvements to Echo Park

The Park saw significant changes in the 1920s, 1930s, and 1940s. Some of these changes greatly improved the Park, while others were detrimental to the picturesque quality of the Park. In 1910, Frank Shearer was appointed as the new Superintendent of Parks in the City of Los Angeles. By the 1920s the Park had fallen into disrepair. A new City Charter, enacted in 1925, established separate funding for the Department of Parks and Department of Playgrounds and Recreation. This action, along with funds provided to the parks by unemployment relief bonds during the Great Depression, allowed for substantial

³⁰ Historic Resources Group. Los Angeles City Historic-Cultural Monument Application. Unpublished document on file at Los Angeles City Planning Department. 2005.

³¹ Ibid.

³² Los Angeles Times. Clubhouse Like Bungalow. April 19, 1908, pg. V1. Los Angeles, CA. 1908.

³³ Los Angeles Times. Beauty Idea Here Lesson for World. June 6, 1909, pg. III1, Los Angeles, CA. 1909

³⁴ Laurie, Michael. Changing Propsects: Echo Park, Los Angeles, *Landscape* Vol. 23 (1): 35-41. 1979.

³⁵ Historic Resources Group. Los Angeles City Historic-Cultural Monument Application. Unpublished document on file at Los Angeles City Planning Department. 2005.

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improvements to Los Angeles's City parks, including Echo Park. Superintendent Shearer (from 1910 to 1936) recognized that the Park had fallen into disrepair and responded to neighborhood groups' pleas for park improvement, initiating many improvements during his tenure.^{36, 37}

Improvements to the Park included major new plantings (the last of which occurred in 1931), stocking the Lake with fish to control waterweed and algae, and the installation of formal entryways along Glendale Boulevard. Many aspects of the Park's present appearance, including existing vegetation and landscaping, were introduced during this period. The 1908 clubhouse was replaced with the existing Echo Park Lake Recreation Center in 1925, a new boathouse was constructed on the site of the old boathouse in 1932, and the Lady of the Lake (Reina de Los Angeles) statue by Ada May Sharpless was installed in 1935.³⁸

The lotus plants appeared for the first time during this period (by 1928). By the 1940s, the lotus beds, which were located in the northeast and northwest sections of the Lake, had surrounded most of the island.³⁹

Some minor improvements that took place in 1924 included a new iron fence around the playground, a new two-inch diameter pipe rail fence and sidewalk on the embankment along Glendale Boulevard, replacement of 240 feet of concrete sidewalk on the north end of the Park with a new gravel and oil (asphalt) surface.^{40,41,42}

The original arched bridge was replaced in the 1930s or 1940s. The new bridge was a fixed arch bridge with an open spandrel and an angled wooden plank deck. The span consists of riveted steel construction anchored to mortared masonry abutments with a deck of wooden planks.⁴³ During this period, all but one of the weeping willows had to be removed due to disease.⁴⁴

In 1943, the original playground at the Park was demolished prior to construction of the US 101. The US 101 currently separates the clubhouse from the playground.⁴⁵

³⁶ Ibid.

³⁷ Laurie, Michael. Changing Propsects: Echo Park, Los Angeles, *Landscape* Vol. 23 (1): 35-41. 1979.

³⁸ Historic Resources Group. Los Angeles City Historic-Cultural Monument Application. Unpublished document on file at Los Angeles City Planning Department. 2005.

³⁹ Ibid.

⁴⁰ Los Angeles City Clerk. Memo to Superintendent Shearer dated July 24, 1924. 1924a.

⁴¹ Los Angeles City Clerk. Letters from Superintendent Shearer to the Pacific Electric Railway Company dated August 20 and 29. 1924b.

⁴² Los Angeles City Clerk. Report to Superintendent Shearer dated November 12, 1924.

⁴³ Historic Resources Group. Los Angeles City Historic-Cultural Monument Application. Unpublished document on file at Los Angeles City Planning Department. 2005.

⁴⁴ Laurie, Michael. Changing Propsects: Echo Park, Los Angeles, *Landscape* Vol. 23 (1): 40. 1979.

⁴⁵ Historic Resources Group. Los Angeles City Historic-Cultural Monument Application. Unpublished document on file at Los Angeles City Planning Department. 2005.