San Jose Iconic Landmark Project
Biological Constraints Analysis

Project #4279

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Executive Summary

The San Jose Light Tower Corporation proposes to construct an iconic landmark within the 14.3-acre Arena Green (i.e., study area) in San Jose, California. The primary goal of the project is to create a new, distinctive, world-class public landmark in downtown San Jose. The ultimate design of the structure is to be determined through a proposed international design competition (Ideas Competition); for the purpose of this constraints analysis, we have assumed that the landmark could be a tower, a monument, a bridge, or any number of other structures. The purpose of this report is to provide San Jose Light Tower Corporation with the opportunity to avoid potential biological constraints to construction of this landmark by incorporating design restrictions into the Ideas Competition and integrating avoidance and minimization measures, if necessary, into the project design. This report provides a summary of the sensitive biological resources present, or potentially present, in the study area, including those that could be impacted significantly under the California Environmental Quality Act (CEQA) by future development, those for which impacts would require regulatory agency approvals, and/or those for which implementation of mitigation measures (including avoidance and minimization measures) may be otherwise warranted. Because the study area falls within the boundaries of the Santa Clara Valley Habitat Plan (VHP or Plan), and the project may be considered a covered project under the Plan, potential biological constraints are also addressed in the context of VHP conditions.

The study area is situated at the confluence of the Guadalupe River and Los Gatos Creek, which converge just north of Santa Clara Street and east of the SAP Center in San Jose, California. For the purpose of this analysis, we have assumed that no work would occur below the top of bank of the Guadalupe River or Los Gatos Creek. Two general biotic habitat/land use types, as defined by the VHP, are present in the study area: urban-suburban and willow riparian forest and scrub. Willow riparian forest and scrub is considered a sensitive habitat by the California Department of Fish and Wildlife (CDFW) and is protected under Section 1602 of the Fish and Game Code. Measures to protect the riparian habitat are also included in the City’s Riparian Corridor Policy Study; the Zoning Code (Title 20 of the San Jose Municipal Code); and the City Council-adopted VHP. Further, the aquatic habitat within the Guadalupe River and Los Gatos Creek channels is considered jurisdictional waters of the U.S./State.

No special-status plants are expected to be present in the study area; however, suitable habitat for three special-status animals is present. The reaches of the Guadalupe River and Los Gatos Creek within the study area provide suitable habitat for the Central California Coast (CCC) steelhead (Oncorhynchus mykiss), federally listed as threatened, and Central Valley Fall-Run Chinook salmon (Oncorhynchus tshawytscha), a California species of special concern. Neither species is expected to spawn or rear in the study area due to the low quality of the habitat, but both species occur in the study area during migration between upstream spawning/rearing habitat.

1 Due to the study area’s proximity to the Norman Y. Mineta San Jose International Airport and Federal Aviation Administration (FAA) height restrictions, the maximum allowable height for any landmark constructed on the site varies from 230-250 feet above ground in a general northwest to southeast direction across the site.
and estuarine/marine habitats downstream. Similarly, the stream channels provide suitable aquatic habitat for the western pond turtle (*Actinemys marmorata*), a California species of special concern, and individual turtles may disperse through or forage in the study area. No bird species listed as threatened or endangered under the Federal Endangered Species Act (FESA) or California Endangered Species Act (CESA) are expected to nest in the study area. Similarly, no birds designated by the CDFW as species of special concern when nesting are expected to nest in the study area. However, all native bird species that nest within the study area are protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code, and due to the relatively high quality of habitat along these two streams (i.e., compared to habitats in surrounding urban areas), songbirds that migrate along the Pacific Flyway disperse and forage along these creeks in relatively large numbers. In addition, resident birds that are present in the vicinity year-round are attracted to this riparian habitat in relatively large numbers (relative to regional populations) for foraging and nesting opportunities. Common species of bats may also roost and forage in the study area. However, neither the trees in the study area nor the adjacent bridges provide suitable roosting habitat for large colonies of bats.

Because the willow riparian forest and scrub habitat in the study area is considered a sensitive habitat subject to the jurisdiction of the Regional Water Quality Control Board (RWQCB) and CDFW, and because it provides important ecological values for wildlife, the temporary or permanent disturbance of this habitat in the study area would likely be considered significant under CEQA. However, the project would be required to comply with the City’s Riparian Corridor Policy Study, which requires all development, with the exception of bridge crossings, to be setback from the riparian corridor. For the proposed project, the required setback is expected to be 100 feet from the outer edge of the riparian corridor. Thus, unless the project design ultimately chosen for construction is a bridge, the project is not expected to result in the loss of any riparian habitat. In the event that the final project design incorporates a bridge crossing of the Guadalupe River or Los Gatos Creek, the loss of riparian habitat as a result of the project would likely be considered significant under CEQA and mitigation would be warranted due to the sensitivity of the habitat and the species it supports. Mitigation measures for such impacts typically include measures to avoid and minimize impacts on the riparian habitat both during project construction and in the long-term, as well as compensatory mitigation (typically at a ratio of 2:1 to 3:1) for any loss of woody riparian habitat. If the project were permitted under the VHP, the project proponent would be required to compensate for the loss of willow riparian forest and scrub habitat through the payment of VHP willow riparian forest and scrub specialty fees ($160,273 per acre of impact).

Vegetated buffers around riparian corridors play an important role in protecting sensitive riparian habitats and, as described above, the project would be subject to City policies and regulations requiring project disturbance to be setback from riparian habitat. The City would consider a reduction in the required riparian setback requirement under certain circumstances. However, if the project proponent is unable to obtain a reduction in the required riparian setback from the City or under the VHP process, the project would have to be redesigned to avoid all impacts on the required riparian setback as specified by the City and/or the VHP.

Although the project would not result in the temporary or permanent loss of aquatic habitat, project construction may result in adverse effects on water quality in the Guadalupe River and/or Los Gatos Creek.
due to increased erosion and sedimentation, increased runoff, and/or spills of anthropogenic contaminants (e.g., petroleum products) during construction. Mitigation for water quality impacts typically takes the form of implementation of best management practices (BMPs) performance standards, and control measures to minimize increases of peak discharge of storm drain water and to reduce runoff of pollutants to protect water quality, including during construction.

As described above, the study area provides suitable habitat for three special-status animals (i.e., the CCC steelhead, fall-run Chinook salmon, and western pond turtle). In addition, a relatively large variety and number of birds are expected to use the riparian habitat in the study area as a dispersal corridor and/or as nesting and foraging habitat. Thus, depending on the ultimate design of the project, specifically the amount and type of lighting incorporated, the impacts of artificial lighting due to the project may be considered significant under CEQA and/or warrant mitigation as a result of adverse effects on special-status animals and/or on a large enough number of common bird species that it would result in a substantial adverse effect on local bird populations. Such impacts may occur not only due to the effects of increased illumination of habitats supporting sensitive species, but also because very high-intensity light projected outward or upward can disorient or even attract nocturnal migrant birds, potentially increasing their risk of collision with artificial structures (discussed in the next paragraph). Measures to avoid and minimize impacts of lighting may include, but are not limited to, orientation or shielding of lights so they do not project upward or toward sensitive habitat, use of glare shielded and/or dimmable lights, alteration of the intensity and/or spectral composition of the lighting, restriction of hours of operation for lighting components, incorporation of changing patterns of color rather than a static image, and construction of walls or planting of vegetation to shield sensitive areas against light.

It has been estimated that hundreds of millions of birds are killed annually in the United States due to collisions with human-made structures such as buildings, communication towers, power lines, and wind turbines, and collision with glass is second only to domestic cats as a source of mortality linked directly to human action. Attraction of nocturnal migrant birds to high-intensity lighting can increase the likelihood of collisions with lighted structures. Thus, depending on the ultimate design of the project, specifically its location relative to the riparian corridor, height, intensity and orientation of lighting, and the amount and type of glazing incorporated, the construction of an iconic landmark within the study area could result in the mortality of large numbers of birds relative to the size of regional populations, and enough individuals of common bird species could potentially strike the structure over the long term to result in a significant impact under CEQA. Measures to avoid and minimize impacts of bird strikes typically include, but are not limited to, modification of the project design to reduce the use of glass or other reflective materials; replacement of clear or reflective glass with patterned glass (e.g., etched, stained, or frosted); elimination of unnecessary lighting; elimination of bright spotlights or other lighting that would be pointed upward or outward and that may serve to attract or confuse birds; and use of screens, latticework, grilles, netting or other devices to increase the visibility of glazed surfaces to birds.

Heavy ground disturbance, noise, and vibrations caused by construction of an iconic landmark in the study area could disturb nesting birds and cause them to move away from work areas. Although adult birds are not
expected to be killed or injured, as they could easily fly from the work site prior to such effects occurring, eggs or young in nests could be destroyed. In addition, project activities causing a substantial increase in noise, movement of equipment, or human presence near active nests could result in the abandonment of nests, and possibly the loss of eggs or young as a result. All native bird species that occur in the study area are protected by the MBTA as well as the California Fish and Game Code. Therefore, the project should implement measures to avoid and minimize impacts of noise on active bird nests during constructions. To the extent feasible, construction activities should be scheduled to avoid the nesting season. If it is not possible to schedule construction activities between September 1 and January 31, preconstruction surveys for nesting birds should be conducted by a qualified ornithologist and non-disturbance buffers established around active nests to ensure that no nests would be disturbed during project implementation.

Finally, trees protected under the City’s Municipal Code Sections 13.28, 13.32 (tree removal controls), and 13.44.220 (damaging park property), are present in the study area. Typical mitigation measures related to impacts on protected trees include implementation of tree protection zones (i.e., protecting trees that are intended to remain on the site from incidental project disturbance) and development of a tree protection plan by a certified arborist. In addition, the project proponent would be required to comply with the City of San Jose Municipal Code and submit permit applications for removal or damage of all trees covered by the ordinance. Any street trees, ordinance-sized trees, or any tree removed on commercial property to be removed may require replacement according to the discretion of the City Director of Planning.
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Section 1. Introduction

1.1 Purpose of this Constraints Analysis

The San Jose Light Tower Corporation proposes to construct an iconic landmark within the 14.3-acre Arena Green (i.e., study area) in San Jose, California (Figure 1). The primary goal of the project is to create a new, distinctive, world-class public landmark in downtown San Jose. The ultimate design of the structure is to be determined through a proposed international design competition (Ideas Competition), and for the purpose of this constraints analysis, we have assumed that the landmark could be a tower\(^1\), a monument, a bridge, or any number of other structures. Any potential future project would undergo some form of California Environmental Quality Act (CEQA) review by the City of San Jose. That CEQA review will determine whether impacts on various biological resources are “significant”, and for significant impacts, it will identify the measures that are necessary to mitigate (i.e., avoid, minimize, and compensate for) impacts to less-than-significant levels. In addition, if the project would impact features such as wetlands for which resource agency permits are necessary, additional project conditions (involving avoidance/minimization of such impacts and/or compensatory mitigation) may be necessary. Those CEQA mitigation measures and permit conditions could potentially constrain future development by dictating where project activities could and could not occur, prolonging the timeline for project approval, and increasing costs. Thus, the purpose of this biological constraints analysis is to identify and discuss sensitive biological resources present, or potentially present, in the study area, including those that could be impacted significantly under CEQA, those for which impacts would require regulatory agency approvals, and/or those for which implementation of mitigation measures (including avoidance and minimization measures) may be warranted in order to provide San Jose Light Tower Corporation with the opportunity to avoid potential constraints during the design process and to incorporate avoidance and minimization measures, if necessary, into the project design.

Examples of biological resources that we considered as part of this analysis include the following:

- Species listed as threatened or endangered under the Federal Endangered Species Act (FESA); “take” of individuals of these species, which can include modification of occupied habitat, would require approval from the U.S. Fish and Wildlife Service (USFWS) and/or National Marine Fisheries Service (NMFS)

- Species listed as threatened or endangered under the California Endangered Species Act (CESA); “take” of individuals of these species would require approval from the California Department of Fish and Wildlife (CDFW)

\(^1\) Due to the study area’s proximity to the Norman Y. Mineta San Jose International Airport and Federal Aviation Administration (FAA) height restrictions, the maximum allowable height for any landmark constructed on the site varies from 230-250 feet above ground in a general northwest to southeast direction across the site.
• California species of special concern or species listed on California Native Plant Society (CNPS) lists of rare plants

• Migratory birds or other non-special-status species that could be impacted by a project, and for which impacts would be considered during the CEQA review process

• Wetlands or Other Waters of the U.S.; work within these features could require a permit from the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA) and/or Section 10 of the Rivers and Harbors Act (for certain features), and a water quality certification from the Regional Water Quality Control Board (RWQCB) under Section 401 of the CWA

• Wetlands or Other Waters of the State; fill of these features would require a water quality certification from the RWQCB under Section 401 of the CWA if these features are also considered Waters of the U.S. by the USACE, or would require Waste Discharge Requirements from the RWQCB under the Porter-Cologne Water Quality Control Act if the USACE does not claim jurisdiction over these features

• Waterways, such as creeks or canals, that could potentially be regulated by the CDFW under Section 1600 of the California Fish and Game Code; impacts on these features could require a Lake and Streambed Alteration Agreement (LSAA) from the CDFW

This report provides a summary of our methods and of our findings with respect to biological resources that represent potential constraints on development of the study area in the context of applicable laws and regulations. Please note that whereas we provide our opinions (e.g., regarding CEQA significance) below, the City of San Jose would be the CEQA lead agency for any future development project, and the ultimate decision regarding the significance of these impacts under CEQA (and therefore whether mitigation would be required) rests with the City.

Further, because the study area falls within the boundaries of the Santa Clara Valley Habitat Plan (VHP or Plan) and may be considered a covered project under the Plan², we also address potential biological constraints in the context of VHP regulations. The VHP (ICF International 2012) was developed by the County of Santa Clara, the Santa Clara Valley Water District, the Santa Clara Valley Transportation Authority, and the cities of San Jose, Gilroy, and Morgan Hill (collectively, the Local Partners or Permittees) in association with the USFWS and CDFW and in consultation with stakeholder groups and the general public. It was developed to provide a long-term, coordinated program for habitat restoration and conservation throughout the Santa Clara Valley while improving and streamlining the permit process for endangered species and wetland regulations. In addition to strengthening local control over land use and species protection, the VHP provides a more efficient process for protecting natural resources by creating new habitat reserves that will be larger in scale, more ecologically valuable, and easier to manage than individual mitigation sites created on a project-by-project basis.

²The upland portions of the study area are mapped by the Santa Clara Valley Habitat Agency as Private Development Area 4. Therefore, if the size of the area permanently disturbed by the propose project is less than 2 acres, it would not be a covered project under the VHP.
Projects covered under the Plan are required to pay VHP fees for land impacts in accordance with the types and acreage of habitat impacted and to implement conservation measures specified by VHP conditions. Fees are used by the Valley Habitat Agency to restore, enhance, preserve, and manage in perpetuity numerous habitat types (e.g., riparian, riverine, wetland, grassland, chaparral, northern coastal scrub, and oak and conifer woodland) throughout the VHP area, providing benefits not only to covered species, but to many non-covered special-status and non-special-status species.
Figure 1. Vicinity Map

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Section 2. Methods

Prior to conducting a site visit, H. T. Harvey & Associates biologists reviewed background information on the sensitive biological resources potentially present in the study area. The information reviewed included records of species occurrences and land use maps in the VHP (ICF International 2012), as well as records from the California Natural Diversity Database (CNDDB 2019) and the CNPS's Online Rare Plant Inventory (2019). Our searches focused on the distribution and habitats of vascular plants designated as California Rare Plant Rank (CRPR) 1A, 1B, 2A, 2B, or 3. We also reviewed CNDDB records for special-status animals and natural communities of concern in the vicinity. For the purposes of this report, the project vicinity is defined as the area within a 5-mile radius of the study area. A map of CNDDB plant and animal records in the study area's vicinity is shown as Figure 2. This generalized map shows areas where special-status species are known to occur or have occurred historically. Additionally, the Natural Resources Conservation Service Web Soil Survey was used to identify soils that underlay the study area (NRCS 2019), and the USFWS's National Wetland Inventory Wetlands Mapper was consulted to review pre-existing mapping of aquatic features, including wetlands, streams, and sloughs, that may be present in the study area (NWI 2019). Other information reviewed included various technical publications available through the USFWS and CDFW, the Breeding Bird Atlas of Santa Clara County (Bousman 2007); California Bird Species of Special Concern (Shuford and Gardali 2008); reports by birders available from eBird (Cornel Lab of Ornithology 2019) or the South-Bay-Birds electronic mailing list (https://groups.io/g/southbaybirds); and other sources.

H. T. Harvey & Associates senior wildlife ecologist Ginger Bolen, Ph.D., and plant and wetland ecologist Mark Bibbo, M.S., conducted a reconnaissance-level survey of the study area on January 2 and January 10, respectively. The purpose of this survey was to (1) assess existing biotic habitats and plant and animal communities in the study area, (2) assess the site for its potential to support special-status species and their habitats, and (3) identify potential jurisdictional habitats (such as Waters of the U.S./State), although a formal wetland delineation was not conducted. Mr. Bibbo also conducted a focused evaluation of the quality of the riparian habitat within and adjacent to the study area and mapped the limits of the riparian corridor (defined as the stream channel up to the top of bank, as well as all riparian [streamside] vegetation in contiguous adjacent uplands) along the Guadalupe River and Los Gatos Creek by collecting GPS data along the landward extent of riparian vegetation associated with the waterways. In addition, on February 14, 2019, H. T. Harvey & Associates senior wildlife ecologist Kim Briones, M.S., conducted a focused survey of the study area for suitable bat roosting habitat.

H. T. Harvey & Associates mapped biotic habitats within the study area using a combination of field observations (recorded via the Apple iPad GIS Kit Pro application) and aerial imagery signatures. Because the study area falls within the boundaries of the VHP and may be considered a covered project, land cover types were mapped based on VHP mapping with modifications based upon site conditions observed during the field survey.
Section 3. Results

3.1 General Site Conditions

The approximately 14.3-acre study area is bound by West Santa Clara Street to the south, North Autumn Street to the west, West St. John Street to the north, and State Route 87 (Guadalupe Parkway) to the east. It is situated at the confluence of the Guadalupe River and Los Gatos Creek, which converge just north of Santa Clara Street and east of the SAP Center. Land uses surrounding the study area are dominated by urban commercial (e.g., SAP Center) and residential uses, with the exception of the Guadalupe River Park & Gardens which extends beyond the study area to the northwest.

The reconnaissance-level field survey identified two general biotic habitat/land use types, as defined by the VHP, in the study area; willow riparian forest and scrub (3.71 acres) and urban-suburban (10.96 acres) (Figure 3). Dominant trees in the riparian overstory along the Guadalupe River and Lost Gatos Creek include red willow (*Salix laevigata*), cottonwood (*Populus fremontii*), box elder (*Acer negundo*), and coast live oak (*Quercus agrifolia*) while the understory includes arroyo willow (*Salix lasiolepis*), California grape (*Vitis californica*), English ivy (*Hedera helix*), and California bay (*Umbellularia californica*). Both the Guadalupe River and Los Gatos Creek are designated as Category 1 streams by the VHP. Outside of the riparian corridor, the study area is mapped as urban-suburban. It includes landscaped areas with trees such as the Mexican fan palm (*Washingtonia robusta*) and Lombardy poplar (*Populus nigra*) and infrastructure (e.g., carousel and playground, public art pieces, war memorial, tennis courts, public restrooms, lawns, and paved trails) associated with Arena Green, part of the Guadalupe River Park & Gardens.
Figure 3. Habitat Map

Legend
- Study Area
- Top of Bank
- Edge of Riparian
- 100-ft Riparian Setback

VHP Land Cover
- Urban - Suburban (10.96 ac)
- Willow Riparian Forest and Scrub (3.71 ac)
3.2 Sensitive Biological Resources

3.2.1 Sensitive/Regulated Habitats

The CDFW ranks certain rare or threatened plant communities, such as wetlands, meadows, and riparian forest and scrub, as ‘threatened’ or ‘very threatened’. These communities are tracked in the CNDDB. Impacts on CDFW sensitive plant communities, or any such community identified in local or regional plans, policies, and regulations, must be considered and evaluated under CEQA (California Code of Regulations: Title 14, Div. 6, Chap. 3, Appendix G). In addition, aquatic, wetland and riparian habitats are also afforded protection under applicable federal, state, or local regulations, and are generally subject to regulation, protection, or consideration by the USACE under Section 401 of the CWA (waters of the U.S.), the RWQCB under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act (waters of the state), the CDFW under Sections 1601–1603 of the Fish and Game Code. Further, City policies and regulations, including the Envision San Jose 2040 General Plan (City of San Jose 2011); the Zoning Code (Title 20 of the San Jose Municipal Code); and the City Council-adopted VHP, specifically Condition 11, include measures meant to limit development and protect sensitive riparian resources.

Waters of the U.S./State. The study area contains two features, the Guadalupe River and Los Gatos Creek, that meet the physical criteria of waters of the U.S./State (i.e., jurisdictional waters). The aquatic habitat (extending up to the ordinary high water mark of both stream channels) is considered waters of the U.S. under the CWA. The aquatic and riparian habitat (extending up to the top of bank or outer edge of riparian canopy) associated with each channel is also considered waters of the State under the Porter-Cologne Water Quality Control Act.

CDFW Sensitive Habitats. A query of sensitive habitats in the CNDDB (2019) identified no communities of special concern as occurring in the study area (Figure 3). The CDFW also maintains a list of vegetation alliances and associations within the state of California (CDFW 2019). This list includes global (G) and state (S) rarity ranks for associations and alliances. Alliances and associations currently ranked as S1-S3 are considered highly imperiled. Urban-suburban land uses, such as those present in the study area, do not conform to a defined, native-dominated CDFW alliance or association, nor do they have an associated rarity rank. However, the willow riparian forest and scrub habitat in the study area is considered a CDFW sensitive habitat. Impacts on riparian habitats along stream and drainage corridors are typically regulated by CDFW because these habitats offer such valuable resources for wildlife. Section 1602 of the Fish and Game Code establishes jurisdiction over the bed, channel, or bank of any river, stream, or lake. For the two streams in the study area, CDFW riparian jurisdiction extends from the channel to top of bank or the outer extent of riparian tree or shrub canopy, whichever is greater.

Riparian Corridors. Riparian habitats in California generally support exceptionally rich animal communities and contribute a disproportionately high amount to landscape-level wildlife species diversity. The presence of
year-round water and abundant invertebrate fauna provide foraging opportunities for many species, and the diverse habitat structure provides cover and nesting opportunities. Accordingly, measures to protect riparian corridors are provided in the City’s Riparian Corridor Policy Study (City of San Jose 1999), which was incorporated into the City’s Envision San Jose 2040 General Plan (City of San Jose 2012); the Zoning Code (Title 20 of the San Jose Municipal Code); and the City Council-adopted VHP, specifically Condition 11.

Riparian habitat quality can be quantified based upon wildlife habitat values such as the presence/absence and density of the overstory vegetation, the presence/absence of native species, and the complexity of vegetation structure (e.g., presence of tree, shrub, and herbaceous layers). The riparian habitat on site is a mixture of mature native species and includes red willow, cottonwood, box elder, and coast live oak, and is considered to be of moderately high quality. The heavily urbanized context of the study area limits the value of this habitat somewhat due to the long history of human disturbance, including at least one human encampment and a feral cat feeding station in the area at the time of the survey, which has restricted the riparian community to narrow corridors along the Guadalupe River and Los Gatos Creek. Nonetheless, the riparian habitats in the study area provide important habitat for many wildlife species in the region and support the most diverse bird communities in the study area (Rottenborn 1997).

3.2.2 Sensitive Plants

For purposes of this analysis, “sensitive” plants are considered plant species that are (1) listed under the FESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species; listed under the CESA as threatened, endangered, rare, or a candidate species; or (3) listed by the CNPS as California Rare Plant Rank (CRPR) 1A, 1B, 2, 3, or 4.

A list of 71 special-status plant species thought to have some potential for occurrence in the study area vicinity was compiled using CNPS lists (CNPS 2019) and CNDDB records (CNDDB 2019). Analysis of the documented habitat requirements and occurrence records associated with each of these species allowed us to conclude that none of the 71 species considered have a reasonable potential to occur in or immediately adjacent to the study area for at least one of the following reasons: (1) lack of suitable habitat types; (2) absence of specific microhabitat or edaphic requirements, such as serpentine soils; (3) the elevation range of the species is outside of the range on the study area; and/or (4) the species is presumed extirpated. In addition, the VHP does not indicate that any covered plant species potentially occur in the study area and does not require special-status plant surveys for the site (SCVHA 2019). Therefore, no special-status plant species are expected to occur in the study area.

3.2.3 Sensitive Animals

For purposes of this analysis, “sensitive” animals are considered animal species that are (1) listed under the FESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species; (2) listed under the CESA as threatened, endangered, or a candidate threatened or endangered species; (3) designated by the CDFW as a California species of special concern; (4) listed in the California Fish and Game Code as fully
protected species (fully protected birds are provided in Section 3511, mammals in Section 4700, reptiles and amphibians in Section 5050, and fish in Section 5515); or (5) nesting birds and roosting bats, which could potentially occur in the study area in high numbers. The vast majority of sensitive animals that occur in the region are absent from the study area owing primarily to the lack of suitable habitat. Those sensitive animals that are known to occur, or could potentially occur, in the study area are discussed below.

**Central California Coast Steelhead and Central Valley Fall-Run Chinook Salmon.** The Central California Coast (CCC) steelhead (Oncorhyncus mykiss) distinct population segment (DPS) was listed as a threatened species on August 18, 1997 (NMFS 1997), and the threatened status was reaffirmed on January 5, 2006 (NMFS 2006). Critical habitat was designated for the CCC steelhead on September 2, 2005 (NMFS 2005) and includes a portion of the Guadalupe River from approximately the West Hedding Street crossing downstream to the Bay. Thus, critical habitat for the CCC steelhead is not present in the study area. Nevertheless, the stream channels in the study area are accessible to steelhead, and NMFS would consider these reaches to be as important to CCC steelhead as those downstream reaches that were designated as critical habitat. The Central Valley Fall-Run Chinook salmon (Oncorhynchus tshawytscha) is designated as a species of special concern by the CDFW.

Although studies conducted by the Santa Clara Valley Water District and others have documented steelhead use of specific reaches of Guadalupe River (e.g., for spawning or rearing), there is no comprehensive dataset indicating suitable spawning or rearing locations. CCC steelhead are expected to occur in any reach of the Guadalupe River or Los Gatos Creek offering suitable habitat and lacking downstream barriers to dispersal. They typically spawn and rear in the upstream-most reaches of these streams that offer suitable spawning conditions, but they occur in more downstream areas during migration between the ocean and upstream spawning and rearing areas. Within the Guadalupe River system, steelhead have access to the mainstem of the Guadalupe River up to Guadalupe Dam, as well as access to Arroyo Calero and Alamitos Creek (tributaries of the Guadalupe River) upstream to Calero Dam and Almaden Dam, respectively. In Los Gatos Creek, steelhead occur upstream as far as drop structures near San Tomas Expressway. The quality of potential spawning and rearing habitat for CCC steelhead in the study area is poor due to the absence of suitable spawning gravel and relatively warm-water conditions, and steelhead spawning and rearing likely occurs predominantly upstream of the study area (Smith 2013). Nevertheless, CCC steelhead are expected to use the reach of the Guadalupe River and Los Gatos Creek located in the study area during migration.

Chinook salmon did not historically spawn in streams flowing into South San Francisco Bay. Since the mid-1980s, however, small numbers of fall-run Chinook salmon have been found in several such streams, including the Guadalupe River and Los Gatos River within the study area (Leidy et al. 2003). Genetic analysis, timing of spawning, and the detection of coded, wire-tagged hatchery fish in the South Bay suggest that these fish are derived from Central Valley fall-run stock (Garcia-Rossi and Hedgecock 2002), possibly hatchery releases. Conditions for successful spawning in South Bay streams are poor because these fish spawn during fall when streamflow is at its lowest, making it difficult for up-migrating adults to access spawning areas. Nevertheless, Chinook salmon have been documented spawning in and around the downtown San Jose area between October and December (City of San Jose 2002). Chinook spawn in reaches with suitable gravels, and use downstream
reaches for migration between the ocean and spawning and rearing areas. High-quality spawning habitat is not expected to occur in the study area, but Chinook salmon may use the reaches of the Guadalupe River and Los Gatos Creek in this area during migration and may attempt spawning if they are unable to reach higher-quality habitat upstream due to seasonally low flows.

**Western Pond Turtle.** The western pond turtle (*Actinemys marmorata*) is a California species of special concern. Pond turtles occur in ponds, streams, and other wetland habitats. Ponds or slack-water pools with suitable basking sites (such as logs, rocks, mats of floating vegetation, or open mud banks) are an important habitat component for this species. Females lay eggs in upland habitats, in clay or silty soils in unshaded (often south-facing) areas up to 0.25 mile from aquatic habitat (Jennings and Hayes 1994). Western pond turtles have been observed in the vicinity of the study area (Figure 2), including a recorded observation in the Guadalupe River approximately 3.6 miles downstream and 3.8 miles upstream of the study area (CNDDB 2019). In addition, both stream channels in the study area provide suitable aquatic habitat for this species. Thus, individuals could use the stream channels for dispersal and/or foraging. Western pond turtles are not expected to nest in the study area due to a lack of suitable habitat.

**Nesting and Migratory Birds.** No bird species listed as threatened or endangered under FESA or CESA are expected to nest in the study area. Similarly, no birds designated by the CDFW as species of special concern when nesting, or designated as fully protected species, are expected to nest here. However, all native bird species that nest within the study area are protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code.

Due to the relatively high quality of habitat along the Guadalupe River and Los Gatos Creek (i.e., compared to habitats in surrounding urban areas), songbirds that migrate along the Pacific Flyway disperse and forage along these streams in relatively large numbers (Cornell Lab of Ornithology 2019, South-Bay-Birds List Serve 2019). Resident birds that are present in the vicinity year-round are similarly attracted to this riparian habitat in relatively large numbers for foraging and nesting opportunities compared to regional populations (Cornell Lab of Ornithology 2019, South-Bay-Birds electronic mailing list [https://groups.io/g/southbaybirds]).

Within the study area, the riparian corridors provide suitable foraging and breeding habitat for several functional groups of birds including insectivores (e.g., warblers, flycatchers), seed-eaters (e.g., finches), raptors (hawks, owls), waterbirds (e.g., ducks, herons), and cavity-nesters (e.g., swallows and woodpeckers). Among the numerous species of birds that are expected to use the riparian habitat in the study area for breeding are the Pacific-slope flycatcher (*Empidonax difficilii*), black-chinned hummingbird (*Archilochus alexandri*), belted kingfisher (*Megaceryle alcyon*), downy woodpecker (*Picoides pubescens*), and Bullock’s oriole (*Icterus bullockii*). Riparian habitats are also used heavily by migrants and wintering birds, and raptors such as red-shouldered hawks (*Buteo lineatus*) and Cooper’s hawks (*Accipiter cooperii*) commonly nest within riparian corridors and forage in adjacent habitats.
Roosting Bats. Individual bats may forage in the study area and roost in riparian trees on the site, but an examination of the trees along the banks of the Guadalupe River and Los Gatos Creek as well as bridges adjacent to the study area detected no large cavities that might provide suitable habitat for a moderate or large roosting or maternity colony of bats. Further, no known extant population of the Townsend’s bat (*Corynorhinus townsendii*), a California species of special concern, occurs on the Santa Clara Valley floor, and suitable breeding habitat is not present in the study area. Similarly, the pallid bat (*Antrozous pallidus*), a California species of special concern, was likely present historically in a number of locations in the vicinity, but its populations have declined in recent decades and the species has been extirpated as a breeder from urban areas close to the Bay.
Section 4. Potential Biological Impacts and Constraints

The following section describes the potential biological impacts and constraints related to development of an iconic landmark in the study area. For each potential constraint, we describe potential CEQA and regulatory considerations associated with the constraint and measures typically required to mitigate significant impacts to a less-than-significant level, if any. In the absence of a conceptual design plan, we have assumed that no work would occur below the top of bank of the Guadalupe River or Los Gatos Creek owing to regulatory restrictions on impacts to these creeks.

4.1 Disturbance/Loss of Riparian Habitat

As described above, willow riparian forest and scrub subject to the jurisdiction of the RWQCB and CDFW (and the USACE below the ordinary high water mark) is present in the study area. This community provides habitat for the CCC steelhead, federally listed as threatened, and the fall-run Chinook salmon and western pond turtle, both California species of special concern, as well as a wide variety of nesting and migrant birds. Although project development is not expected to result in direct impacts on the Guadalupe River or Los Gatos Creek channels, riparian vegetation may be impacted. In addition to providing habitat for a variety of animal species, the riparian vegetation in the study area plays a significant role in determining the quality of the aquatic habitat in the stream channels for CCC steelhead and fall-run Chinook salmon. Shade from the riparian vegetation moderates stream temperatures in the Guadalupe River and Los Gatos Creek, often preventing excessive summer temperatures that may be lethal to invertebrates and fish. Shading also affects the rate of chemical reactions and concentrations, metabolic rates of stream invertebrates, cues for life cycle events of aquatic organisms, and the activities of primary producers such as algae and aquatic plants (Knight and Bottorff 1984). Conversely, riffle-type habitats within the creek may benefit from canopy openings (i.e., more sunlight), as higher primary productivity by algae in riffles can support higher invertebrate productivity, thereby increasing food for fish.

CEQA and Regulatory Considerations. The project would be required to comply with the City’s Riparian Corridor Policy Study (City of San Jose 1999), which requires all development, with the exception of bridge crossings and trails, to be set back from the riparian corridor. Thus, unless the project design ultimately chosen for construction is a bridge, the project is not expected to result in the loss of any riparian vegetation. In the event that the final project design incorporates a bridge crossing of the Guadalupe River or Los Gatos Creek, removal of riparian vegetation, including trees, may be required for construction.

The willow riparian forest and scrub habitat in the study area is considered a sensitive habitat by the CDFW and is subject to the jurisdiction of the RWQCB and CDFW. In addition, it provides important ecological values for common and rare wildlife species. Thus, the temporary or permanent disturbance of this habitat in the study area would likely be considered significant under CEQA.
**Typical Mitigation Requirements.** Mitigation measures would typically include measures to avoid and minimize impacts on jurisdictional habitat, both during project construction and in the long-term, as well as compensatory mitigation if the project results in the temporary or permanent loss of jurisdictional riparian habitat. In addition, any impacts on jurisdictional riparian habitat would require permits from the applicable resource agencies. As stated above, for the purposes of this analysis, we have assumed that no project disturbance would occur below the top of bank of the Guadalupe River or Los Gatos Creek. Thus, no permit would be needed from the USACE for the proposed project. However, within the study area the jurisdiction of the RWQCB and CDFW extends beyond the top of bank to the outer edge of the riparian trees and shrubs. Thus, project construction may result in impacts on jurisdictional riparian habitat. Any loss of jurisdictional riparian vegetation would necessitate permits from the RWQCB and/or CDFW, and those permits would likely have conditions that include compensatory mitigation.

If the project were permitted under the VHP, the project proponent would compensate for the loss of willow riparian forest and scrub habitat through the payment of VHP willow riparian forest and scrub specialty fees ($160,273 per acre of impact), which are intended to fund the restoration, creation, or protection and enhancement of this habitat type within the VHP preserve system. However, the RWQCB decides on a project-by-project basis whether to accept payment of VHP fees as adequate compensatory mitigation for impacts on jurisdictional Waters of the State. Thus, additional mitigation, similar to that described for a non-VHP-covered project, may be required by the RWQCB.

If the project is not considered a VHP-covered project, and woody riparian habitat is impacted, then project-specific mitigation would need to be provided in the form of riparian restoration or enhancement. If sufficient opportunity exists within the study area (as determined by a qualified restoration ecologist), compensatory riparian mitigation may be completed on-site through the planting of native riparian vegetation along the Guadalupe River and Los Gatos Creek and/or enhancing and restoring habitats within these features by actions such as invasive species removal. If suitable habitat for mitigation is not present on site, riparian restoration and enhancement efforts may be implemented elsewhere within the watershed. The typical mitigation ratio for loss of woody riparian vegetation is 2:1 to 3:1 (planted/restored area to impact area). Applicant-designed mitigation sites must include monitoring and maintenance plans with success criteria, and the restored areas must be preserved in perpetuity, often through a conservation easement or deed restriction.

### 4.2 Encroachment on the Riparian Setback

Vegetated buffers around riparian corridors play an important role in protecting sensitive riparian habitats. They help to protect water quality within the riparian corridor by filtering pollutants and reducing erosion and sedimentation. Vegetated buffers also help to slow the velocity of stormwater runoff, allowing water to soak into the soil and recharge the groundwater supply, thereby helping to control. They also provide wildlife migration corridors during periods when water levels within the riparian corridor itself are high, and provide additional cover and foraging habitat for animal species moving between the riparian corridor and upland areas.
CEQA and Regulatory Considerations. As described above, the project would be subject to City policies and regulations, including the Envision San Jose 2040 General Plan (City of San Jose 2012); the Zoning Code (Title 20 of the San Jose Municipal Code); and the City Council-adopted VHP, specifically Condition 11, which include measures (e.g., required setbacks from riparian habitat) meant to limit development and protect sensitive riparian resources. Council Policy 6-34 (issued August 23, 2016) provides guidance on the implementation of riparian corridor protection consistent with all City policies and requirements that provide for riparian protection. The policy indicates that the riparian setback within the study area should be measured from the outside edges of riparian habitat or the top of bank, whichever is greater, and that development of new buildings and roads generally should be set back 100 feet from the riparian corridor defined by the outer edge of riparian vegetation (see Figure 3). The setback is applicable to all proposed development with the exception of bridge crossings, which are required to cross the riparian corridor, and trails. Encroachment of the project into the riparian setback for any other purpose would be considered a violation of the City’s riparian policy and possibly the VHP and would thus be considered a significant impact under CEQA.

Typical Mitigation Requirements. According to Council Policy 6-34, the City would consider a reduction in the required riparian setback requirement under the following circumstances:

- Developments located within the boundaries of the Downtown area, as those boundaries are defined in the General Plan.
- Urban infill locations where most properties are developed and are located on parcels that are equal to or less than 1 acre.
- Sites adjacent to small lower order tributaries whose riparian influences do not extend to the 100-foot setback.
- Sites with unique geometric characteristics and/or disproportionately long riparian frontages in relation to the width of the minimum Riparian Corridor setback.
- Pre-existing one- or two-family residential lots, or typical yard area, but only where a frontage road is infeasible to buffer Riparian Corridors from these and the Building Setbacks are consistent with all Riparian Corridor setback requirements.
- Sites that are being redeveloped with uses that are similar to the existing uses or are more compatible with the Riparian Corridor than the existing use, and where the intensity of the new development will have significantly less environmental impacts on the Riparian Corridor than the existing development.
- Instances where implementation of the project includes measures that can protect and enhance the riparian value more than the minimum setback.
- Recreational facilities deemed to be a critical need and for which alternative site locations are limited.
- Utility or equipment installations or replacements that involve no significant disturbance to the Riparian Corridor during construction and operation, and generate only incidental human activity.
- The existence of legal uses within the minimum setback.
- The extent to which meeting the required setback would result in demonstrable hardship (i.e. denies an owner any economically viable use of the land or adversely affects recognized real property interest).
- The extent to which meeting the minimum setback would require deviations from, exception to or variances from other established policies, legal requirements, or standards.

If the project proponent is unable to obtain a reduction in the required riparian setback from the City or under the VHP process, the project would have to be redesigned to avoid all impacts on the required riparian setback as specified by the City and/or the VHP.

If the project is granted a riparian setback reduction by the City, or as part of the VHP review process, it is possible that some compensatory mitigation would be required to compensate for the lost functions and values associated with the reduced setback. Such mitigation typically takes the form of riparian habitat enhancement or restoration, either on-site or off-site, as described in Section 4.1.

4.3 Adverse Effects on Water Quality

The project would not result in the temporary or permanent loss of aquatic habitat. However, aquatic habitat may be indirectly affected due to increased hardscape in upland habitats that can lead to an increase in runoff, a decrease in infiltration and groundwater recharge, and possible introduction of anthropogenic contaminants such as petrochemicals into regulated habitat. In addition, project construction activities such as grading, paving, vegetation removal, and other soil disturbances could increase the potential for soil erosion on site. These construction activities could increase the amount of soil and sediments entering waterways, resulting in a substantial impact on water quality. Further, spills may occur during vehicle and equipment refueling or because of leaks, that may also adversely affect water quality.

CEQA and Regulatory Considerations. Because the aquatic habitats in the study area are considered to be sensitive for the reasons described in Section 3.2.1 above, project activities resulting in adverse effects on water quality would be potentially significant under CEQA.

Typical Mitigation Requirements. Potential impacts on water quality are typically mitigated through the implementation of avoidance and minimization measures and best management practices (BMPs) including, but not limited to preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) and spill prevention plan; restriction of all grading adjacent to the riparian corridor to the dry season to the extent feasible; implementation of measures to reduce erosion into the bed and banks of the creek (e.g., perimeter silt fences, erosion control wattles/blankets, watering for dust control); and restriction of equipment maintenance, refueling, and staging areas to locations at least 60 feet from any aquatic habitat.

In the event the project is covered under the VHP, it would be required to comply with all VHP conditions, including Conditions 3 and 12. Condition 3 requires implementation of design phase, construction phase, and post-construction phase measures, including programmatic BMPs, performance standards, and control measures, to minimize increases of peak discharge of storm drain water and to reduce runoff of pollutants to protect water quality, including during construction. VHP Condition 12 requires the implementation of design phase and construction phase measures to avoid and minimize impacts on wetlands and ponds, including
erosion control measures, fencing of avoided wetlands during construction, establishment of buffers between wetlands and refueling areas, and measures to minimize the spread of invasive species.

### 4.4 Increased Artificial Lighting

**Effects of Illuminance of Adjacent Areas.** The intensity, spectral quality (i.e., the distribution of blue, green, red, and other portions of the light spectrum emitted by a light source), duration, and periodicity of exposure to light affect the biochemistry, physiology, and behavior of organisms (The Royal Commission on Environmental Pollution 2009). Many animals are extremely sensitive to light cues, having evolved behavioral and/or physiological responses to natural variations in light levels resulting from the day–night cycle, the cycle of the moon, and the seasonal light cycle. Responses can affect processes as diverse as growth, metabolism, patterns of movement (e.g., migration), feeding, breeding behavior, molting, and hibernation (Ringer 1972, de Molenaar et al. 2006). This holds true for birds (Longcore and Rich 2004, Miller 2006, de Molenaar et al. 2006, Da Silva et al. 2015), mammals (Beier 2006, De Molenaar et al. 2003 as cited in Longcore et al. 2016, Voigt et al. 2017), and other taxa as well, suggesting that increases in ambient light may interfere with these processes across a wide range of species, resulting in impacts on wildlife populations.

Artificial lighting may also indirectly affect birds and mammals. For example, artificial lighting has been shown to increase the nocturnal activity of predators like owls, hawks, and mammalian predators (Negro et al 2000, Longcore and Rich 2004, DeCandido and Allen 2006, Beier 2006), thus potentially leading to greater predation risk by their prey species. In addition, it has been found to affect the composition of the invertebrate community present in the area (Davies et al. 2012), and some bat species have been found to congregate around artificial light sources because of the high numbers of flying insects they attract (Frank 1988, Eisenbeis 2006). The presence of artificial light may also influence habitat use by rodents such as the salt marsh harvest mouse (Beier 2006) and by breeding birds (Rogers et al. 2006, de Molenaar et al. 2006), by causing avoidance of well-lit areas, resulting in a net loss of habitat availability and quality.

Artificial lighting can also affect fish in multiple ways, including altering behavior related to foraging, predator avoidance, reproduction, and migration. Evidence that fish, including salmonids, are attracted to artificial light sources is abundant (Tabor et al. 2015), and in laboratory experiments, artificial lighting equivalent to that produced by broad spectrum street lamps has been found to alter the timing of migration in Atlantic salmon (*Salmo salar*) (Riley et al. 2012). In addition, annual photoperiod is considered the key environmental variable responsible for synchronizing the reproductive cycle of salmonids, and aquaculturists use specific light frequencies to strategically alter the timing of sexual maturation in farmed salmon (Leclercq 2010) and to alter their nighttime swimming behavior (Stien et al. 2014). Further, a study of predation on sockeye salmon (*Oncorhynchus nerka*) fry under different light conditions found that predation by sculpins (*Cottus* spp.) increased when the fish were exposed to artificial lights (Tabor et al. 2004).

As described above, riparian habitat is present along both the Guadalupe River and Los Gatos Creek within the study area. Riparian habitats in California generally support exceptionally rich animal communities and...
contribute a disproportionately high amount to landscape-level wildlife species diversity. The presence of year-round water and abundant invertebrate fauna provide foraging opportunities for many species, and the diverse habitat structure provides cover and nesting opportunities. Due to the relatively high quality of habitat along the stream channels in the study area compared to habitats in surrounding urban areas, songbirds that migrate along the Pacific Flyway disperse and forage along the Guadalupe River in relatively large numbers (Cornell Lab of Ornithology 2019, South-Bay-Birds electronic mailing list [https://groups.io/g/southbaybirds]). Resident birds that are present in the vicinity year-round are similarly attracted to this riparian habitat in relatively large numbers for foraging and nesting opportunities compared to regional populations (Cornell Lab of Ornithology 2019, South-Bay-Birds electronic mailing list [https://groups.io/g/southbaybirds]). Thus, spillover of artificial lighting into the riparian habitat in the study area could have substantial adverse effects on a variety of bird species.

**Effects of Luminance on Avian Flight Behavior.** The primary way in which the luminance from a lighted structure might affect birds in the project area is through the disorientation of nocturnally migrating birds. Hundreds of bird species migrate nocturnally in order to avoid diurnal predators and to minimize energy expenditures. Evidence that migrating birds are attracted to artificial light sources is abundant in the literature as early as the late 1800s (Gauthreaux and Belser 2006). Although the mechanism causing the attraction is unknown, the attraction is well documented (Longcore and Rich 2004, Gauthreaux and Belser 2006). Migrating birds may alter their orientation upon sighting an artificial light source, such as a billboard or lights on a tower, and become drawn toward it. Once a bird is within a lighted zone at night, it may become “trapped” and not leave the lighted area (Herbert 1970, Longcore and Rich 2004). The disorienting effects of artificial lights directly affect migratory birds by causing collisions with light structures, buildings, communication and power structures, or even the ground (Gauthreaux and Belser 2006). Indirect effects might include orientation mistakes and increased length of migration due to light-driven detours. Migrating birds are much more likely to be impacted by an artificial light source during foggy or rainy weather, when visibility is poor (Longcore and Rich 2004, Gauthreaux and Belser 2006). Research also suggests that the color of the light may play a significant role in determining whether birds become disoriented. Birds are able to orient to the Earth’s magnetic field under monochromatic blue or green light, but apparently cannot do so under red or white light (van de Laar 2007, Poot et al. 2008, and Longcore et al. 2016).

**Potential CEQA and Regulatory Considerations.** As described above, the study area provides suitable habitat for three special-status animals (i.e., the CCC steelhead, fall-run Chinook salmon, and western pond turtle). In addition, a relatively large variety and number of birds are expected to use the riparian habitat in the study area as a migratory corridor and/or as nesting and foraging habitat. Thus, depending on the ultimate design of the iconic landmark, specifically the amount and type of lighting incorporated into it, artificial lighting due to the project may be considered significant under CEQA and/or warrant mitigation as a result of adverse effects on special-status animals and/or on a large enough number of common bird species that it would result in a substantial adverse effect on local bird populations. Similarly, impacts of artificial lighting on nocturnal migrant birds may be considered significant under CEQA if the project design results in a high risk of disorientation (especially when coupled with increased collision risk, as discussed in Section 4.5).
**Typical Mitigation Requirements.** Mitigation typically include measures to avoid and minimize impacts of lighting on sensitive habitat (e.g., willow riparian forest and scrub) and animal species. Such measures may include, but are not limited to, orientation or shielding of lights so they do not project upward or toward sensitive habitat, use of glare shielded and/or dimmable lights, alteration of the intensity and/or spectral composition of the lighting, restriction of hours of operation for lighting components, incorporation of changing patterns of color rather than a static image, and construction of walls or planting of vegetation to shield sensitive areas against light.

### 4.5 Increased Bird Strikes

It has been estimated that over 500 million birds are killed annually in the United States due to collisions with human-made structures such as buildings, communication towers, power lines, and wind turbines (Erickson et al. 2005), and collision with glass is second only to domestic cats as a source of mortality linked directly to human action (Loss et al. 2014). Because birds do not perceive glass as an obstruction the way humans do, they may collide with glass when the sky or vegetation is reflected in it (e.g., they see the glass as sky or vegetated areas) and when transparent glass allow birds to perceive an unobstructed flight route through the glass (such as at corners). The greatest risk of avian collisions with artificial structures occurs in the area within 60 feet of the ground, because this is the area in which most bird activity occurs (San Francisco Planning Department 2011). However, very tall buildings (e.g., buildings 500 feet or higher) may pose a threat to birds that are migrating through the area, particularly to nocturnal migrants that may not see the buildings or that may be attracted to lights on the buildings. The majority of collisions with buildings happen during the day, as birds fly around looking for food. Nevertheless, there is also some potential for bird strikes to occur at night, when birds may be less able to perceive the presence of a structure (especially in bad weather). Within the study area, this would particularly be true if the structure to be constructed was taller than existing trees on the site or adjacent structures and/or was located within the riparian corridor, which serves as a movement corridor for a relatively large number of birds. The presence of high-intensity lighting, especially lighting directed outward or upward, could increase collision risk by disorienting and/or attracting birds that are migrating at night.

Considering the quality of the riparian habitat in the study area, relatively large numbers of birds may potentially be attracted to the study area over the long term compared to other areas in the vicinity. Most birds that would be vulnerable to collisions with the proposed structure are migrants that move through the study area during the spring and fall. Certain groups of birds are more vulnerable to collisions, including hummingbirds, swifts, waxwings, warblers, nuthatches, tits, and creepers (Loss et al. 2014); all these species occur in the riparian habitat in the study area either as migrants or year-round residents.

**Potential CEQA and Regulatory Considerations.** Depending on the ultimate design of the project, specifically its location relative to the riparian corridor, height, intensity and orientation of lighting, and the amount and type of glazing incorporated, the construction of an iconic landmark within the study area could potentially result in the mortality of large numbers of birds relative to the size of regional populations, and enough individuals of common bird species could potentially strike the structure over the long term to result
in a significant impact under CEQA. If the tower is not well lit, is not made of reflective material, is not very tall, and is not very broad (i.e., it occupies a small portion of the sky), then bird collisions are likely to be low.

**Typical Mitigation Requirements.** Mitigation typically includes measures to avoid and minimize the potential for bird strikes. Such measures may include, but are not limited to, modification of the project design to reduce the use of glass or other reflective materials; replacement of clear or reflective glass with patterned glass (e.g., etched, stained, or frosted); elimination of unnecessary lighting; elimination of bright spotlights or other lighting that would be pointed upward or outward and that may serve to attract or confuse birds; and use of screens, latticework, grilles, netting or other devices to increase the visibility of glazed surfaces to birds.

### 4.6 Increased Noise during Construction

Heavy ground disturbance, noise, and vibrations caused by construction of an iconic landmark in the study area could disturb nesting birds and cause them to move away from work areas. Although adult birds are not expected to be killed or injured, as they could easily fly from the work site prior to such effects occurring, eggs or young in nests could be destroyed. In addition, project activities causing a substantial increase in noise, movement of equipment, or human presence near active nests could result in the abandonment of nests, and possibly the loss of eggs or young as a result.

**Potential CEQA and Regulatory Considerations.** Construction of an iconic landmark during the breeding season (generally February 1 through August 31 in the study area) could result in the direct destruction of nests of common bird species or in disturbance that results in the abandonment of active nests. Although a relatively large number of birds is expected to nest in the riparian corridor in the study area, implementation of the required riparian setback is expected to reduce the number of active nests that could be adversely affected by construction noise. Further, birds nesting in the study area are likely to be habituated to relatively high levels of noise due to the proximity of the site to the SAP center and Guadalupe Freeway, as well as on-going recreational activities within the study area.

Thus, it is our opinion that the proportion of the regional bird population that could potentially be impacted would be so low that impacts would be considered less than significant under CEQA. Nevertheless, all native bird species that occur in the study area are protected by the MBTA, which prohibits killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior, as well as the California Fish and Game Code, which protects native birds, including their nests and eggs, from all forms of take. In addition, construction disturbance during the avian breeding season that resulted in the loss of eggs or nestlings would conflict with Condition 1 of the VHP, which requires VHP-covered projects to comply with the MBTA and Fish and Game Code. Thus, we recommend that the project implement measures to avoid impacts on nesting birds.

**Typical Mitigation Requirements.** To the extent feasible, construction activities should be scheduled to avoid the nesting season. If construction activities are scheduled to take place outside the nesting season, all
impacts on nesting birds protected under the MBTA and California Fish and Game Code would be avoided. The nesting season for most birds in San Jose extends from February 1 through August 31. If it is not possible to schedule construction activities between September 1 and January 31, then preconstruction surveys for nesting birds should be conducted by a qualified ornithologist to ensure that no nests would be disturbed during project implementation. We recommend that these surveys be conducted no more than seven days prior to the initiation of construction activities. During this survey, the ornithologist should inspect all trees and other potential nesting habitats (e.g., trees, shrubs, ruderal grasslands, buildings) in and immediately adjacent to the impact areas for nests. If an active nest is found sufficiently close to work areas to be disturbed by these activities, the ornithologist should determine the extent of a construction-free buffer zone to be established around the nest (typically 300 feet for raptors and 100 feet for other species), to ensure that no nests of species protected by the MBTA and California Fish and Game Code would be disturbed during project implementation.

4.7 Loss of Protected Trees

Potential CEQA and Regulatory Considerations. The City of San Jose promotes the health, safety, and welfare of the city by regulating the planting, removal, and maintenance of trees in the city. The city provides tree protection under the Municipal Code Section 13.28 (street trees, hedges, and shrubs), 13.32 (tree removal controls), and 13.44.220 (damaging park property). The Municipal Code details permit requirements for tree related work, including removal, pruning, and planting. Removal of trees within the street right-of-way are subject to tree removal permitting by the City of San Jose. Street trees are located in the public right-of-way between the curb and the sidewalk. Pruning or removal of street trees is illegal without a permit issued by the City. Replacement trees are required for the removal of ordinance-size street trees. A single trunk tree qualifies as an ordinance-size tree if it measures 38 inches or more in circumference at 4.5 feet above ground. A multi-trunk tree qualifies as ordinance-size if the combined measurement of each trunk circumference (at 4.5 feet above ground) adds up to 38 inches or more. As part of the permit application it is required to contact the planning division with regard to the replacement of ordinance-size trees.

Typical Mitigation Requirements. Mitigation measures would typically include implementation of tree protection zones (i.e., protecting trees that are intended to remain on the site from incidental project disturbance) and development of a tree protection plan by a certified arborist. In addition, the project proponent would be required to comply with the City of San Jose Municipal Code and submit permit applications for removal or damage of all trees covered by the ordinance. Any street trees, ordinance-sized trees, or any tree removed on commercial property to be removed may require replacement according to the discretion of the City Director of Planning.
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