July 20, 2021

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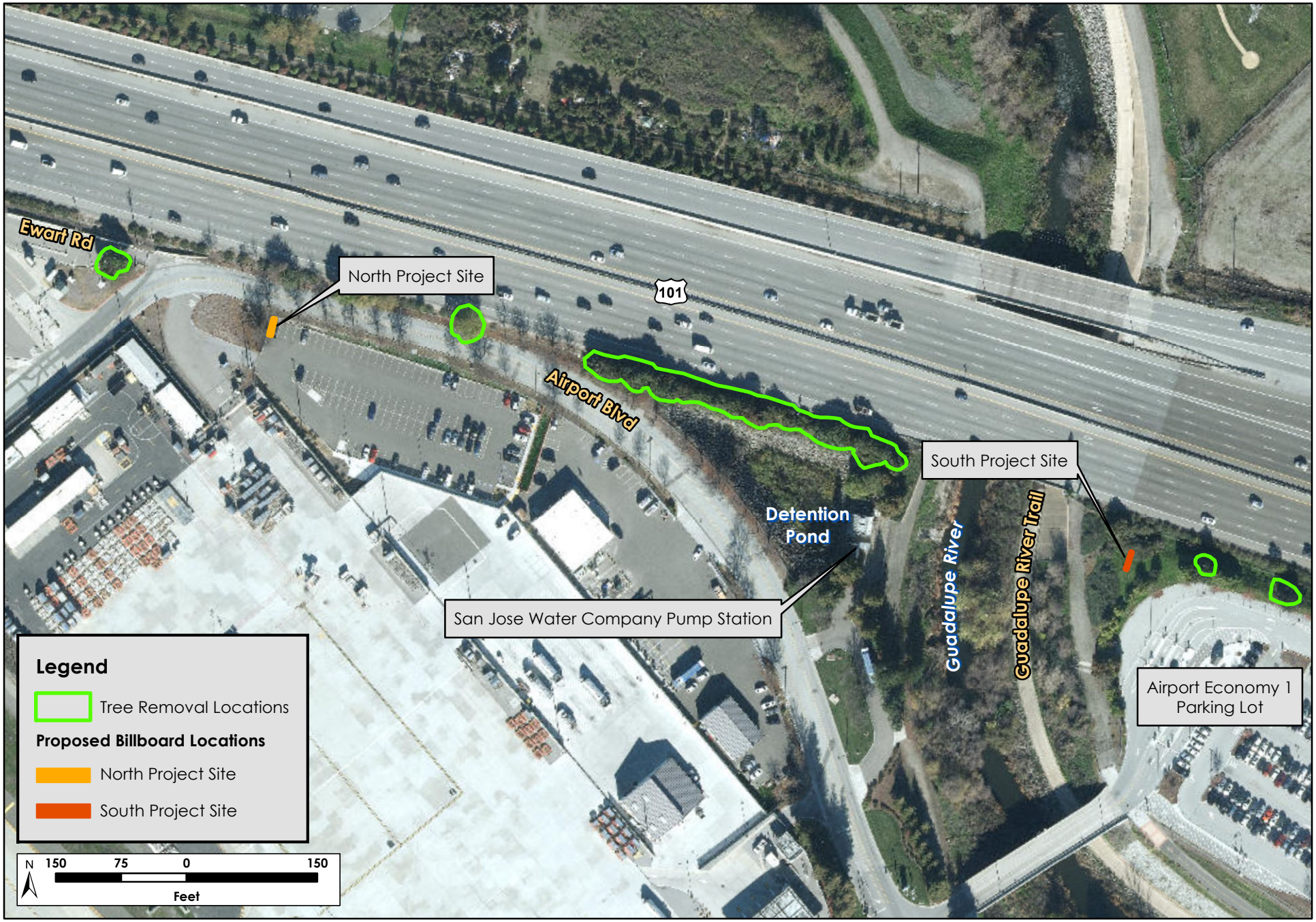
Subject: San José Airport Clear Channel Billboards Project – Biological Impacts Assessment (HTH #4458-01)

Dear Ms. Dei Rossi:

Per your request, H. T. Harvey & Associates has performed a biological impacts assessment for the construction of four new Clear Channel light-emitting diode (LED) billboards located south of U.S. Highway (Hwy) 101 on the Norman Y. Mineta San José International Airport (San José Airport) property. The proposed billboards are located within the airport sign zone. The two north billboards will be located inside of the northwest corner chain-link fence line of the San José Police Department surface parking lot adjacent to the southeast corner of Airport Boulevard and Ewart Road. The two south billboards will be located northwest of the airport's Economy Lot 1 and approximately 105 feet (ft) east of the Guadalupe River Trail (Figure 1). In addition, we surveyed 43 trees that are proposed to be removed as part of the billboard project; 40 trees were located between the north and south billboard project locations, along the southern edge of Hwy 101; one tree was located directly west of the north billboard location; and two trees were located directly east of the south billboard location (Figure 1). The *Tree Survey Report* is provided as *Appendix A* to this report.

The proposed east and west facing billboards at the north project site, and the proposed east facing billboard at the south project site, will be Media Resources Inc. (MRI) LED digital displays that feature a horizontal light mitigation technology called SITELINE®. This technology limits light emission into nearby areas that are not intended to view, or receive light from, the billboards, employing a mechanical baffle system similar to luminaire baffles to eliminate all projection of light from the LEDs into protected regions. The proposed west facing billboard at the south project site will be a Formetco static back-lit display covered by translucent vinyl to ensure that no illumination occurs above or below the face of the billboard, thus minimizing light spill-over into nearby areas (Clear Channel 2021). All billboards will be V-shaped, freestanding, and oriented to be visible to vehicles traveling north and south on Hwy 101. The tops of both signs will be 55 ft above ground, which includes the additional height of the architectural element above the actual sign panel. The message displays on the north sign will be offset-mounted on a supporting column, and the south sign message displays will be center-mounted on a supporting column. The above-ground, supporting columns will consist of aluminum composite and be approximately 33 ft tall and 9.5 ft in diameter. Both supporting columns will include a non-illuminated San José Airport logo. Each display will be approximately



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H. T. HARVEY & ASSOCIATES
Ecological Consultants

Figure 1. Vicinity Map, Proposed Billboards, and Tree Removal Locations

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60 ft wide by 20 ft high, resulting in a message surface of approximately 1,200 square ft. An internally lit, "Clear Channel Outdoor" nameplate approximately one ft tall and 8.5 ft wide will be affixed to the bottom right corner of each display. A metal concealing screen will be included at both the apex[1] and antipex[2] of the signs. The message displays will be internally lit with LED lights.

Methods

Prior to conducting a project site visit, we reviewed a number of resources providing information on biological resources in the study area. These resources included the San José Airport Master Plan Environmental Impact Report (EIR) (City of San José 2020), other planning documents for projects in the vicinity, the California Natural Diversity Database (CNDDB 2020), and the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2020). We used these resources to determine whether there were known occurrences of special-status species in the vicinity of either project site, to help determine which species might be impacted by billboard construction and operation. I then conducted a site visit on November 4, 2020 to provide a basis for determining the potential direct and indirect effects of the billboard's lighting on wildlife. The site visit was conducted in the predawn hours to observe qualitatively the existing ambient lighting in the project vicinity. I remained on site until after sunrise, at which time I inspected habitat conditions in areas immediately surrounding both proposed project locations and in adjacent areas. Following the completion of the survey, we determined the potential for installation and operation of new billboards to impact biological resources, such as special-status species and sensitive/regulated habitats, based on the conditions at both proposed project locations. In addition, H. T. Harvey & Associates plant ecologist Jill Pastick, M.S., conducted a survey of all trees proposed for removal on November 4, 2020. Per your direction and as requested by the City of San José, Ms. Pastick identified the species of all 43 trees proposed for removal and measured each trees' diameter at breast height, estimated their height, assessed the general condition and health, and took a photo of each tree. The tree survey summary report is provided as Appendix A.

Existing Site Conditions

Overall existing site conditions in the study area along Hwy 101 consist primarily of highly developed industrial, commercial, and airport facility land uses, where multiple street signs, roadway lighting fixtures, parking lots, and roadways are currently located. The Guadalupe River and an associated detention pond on the west side of the river support willow forest riparian habitats. Below, we describe both proposed project locations individually, and address the probability of special-status species or sensitive/regulated habitats occurring on or near either proposed project location.

[1] The apex is where the screen will be placed at the point of the V shape of the structure.
[2] The antipex is where the screen will be placed at the widest part of the V shape of the structure.

North Project Site

The proposed north project site is located at 2341 Airport Boulevard, inside of the northwest corner chain-link fence line of the San José Police Department surface parking lot adjacent to the southeast corner of Airport Boulevard and Ewart Road (Photo 1). It is bordered to the north by Hwy 101, and to the south and west by San José Airport facilities, infrastructure and parking lots (Photo 2). The proposed billboard base would be constructed inside of the chain-link fence line of the San José Airport Security and Police Department Complex parking lot. The proposed north project site footprint itself is completely devoid of vegetation and is located on asphalt, where two to three parking stalls would be removed for the placement of the billboards' base. The area immediately surrounding the project footprint is characterized by developed and landscaped habitat features, hardscaped roads, sidewalks, parking lots, street signs, numerous utility, security, police, and airport facility structures, chain-link fencing, and streetlight posts. Vegetation that does occur in this developed/landscaped habitat consists of ornamental shrubs and trees such as Brazilian pepper trees.

Photo 1. Looking southeast towards the proposed north project site. The project footprint is inside of the fence line just behind the sod area shown in the foreground.

Photo 2. Looking west from the proposed north project site towards San José Airport facilities and parking lots.

Another chain-link fence separates Ewart Road from Hwy 101, where an approximately 12-foot wide strip of ruderal (i.e., disturbance-associated) vegetation is located. This is the area where 40 of 43 trees scheduled for removal are located; nearly all these trees are non-native, ornamental species that are not associated with the willow riparian forest habitat that surrounds the detention pond, located south of this area. All trees scheduled to be removed are described in detail in *Appendix A* (Figure A1). Dominant vegetation within this ruderal habitat includes nonnative species such as fennel (*Foeniculum vulgare*), bristly ox-tongue (*Helminthotheca echioides*), wild oat (*Avena fatua*), and Brazilian pepper trees (*Schinus terebinthifolia*). Native species include panicled willow herb (*Epilobium brachycarpum*) and Canada horseweed (*Erigeron canadensis*), both

of which are common in disturbed ruderal habitats. The vast majority of wildlife species occurring on or immediately adjacent to the north project site are very common species associated with urban, developed, and ruderal conditions throughout the Bay Area, and are tolerant of high levels of human disturbance. These species include the nonnative European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), house mouse (*Mus musculus*), and black rat (*Rattus rattus*), as well as the native western fence lizard (*Sceloporus occidentalis*), raccoon (*Procyon lotor*), and a variety of birds, including the Anna's hummingbird (*Calypte anna*), house finch (*Haemorhous mexicanus*), mourning dove (*Zenaida macroura*), and northern mockingbird (*Mimus polyglottos*). The buildings in the project area may be attractive to certain nesting bird species in the area that nest on buildings, such as the black phoebe (*Sayornis nigricans*) and house finch.

Photo 3. Looking east from the east-side of the south project site towards the airport's Economy Parking Lot 1 parking garage under construction.

South Project Site

The proposed south project site is located on the south side of Hwy 101 with the airport's Economy Parking Lot 1 located directly east of the project site, where a new parking garage structure is currently being constructed (Photo 3). The south project site's immediate footprint consists of a small patch of ruderal grassland at an elevation of approximately 35 ft above sea level (ASL; Google, Inc. 2020). The footprint is surrounded by native shrubs and trees such as toyon (*Heteromeles arbutifolia*) and coyote brush (*Baccharis pilularis*), and non-native trees including Chinese pistache (*Pistacia chinensis*), Brazilian pepper tree, and holly oak (*Quercus ilex*) (Photo 4). Two trees that are scheduled for removal are located approximately 84 and 164 ft east, respectively, of the south project site and share the same habitat conditions as described above. The south project site is bounded to the west by a Santa Clara Valley Water District (Valley Water) gravel service road that sits atop a concrete-paved slope that drops down approximately 19 ft to the Guadalupe River Trail (Photos 5 and 6). The Guadalupe River itself is located approximately 175 ft west, below the south project site at an elevation of approximately 13 ft

ASL (Google, Inc. 2020), and is bordered on both sides by willow riparian habitat, with overstory vegetation consisting of native Fremont cottonwood (*Populus fremontii*), red willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*), and non-native trees such as weeping willow (*Salix babylonica*). Understory vegetation along this riparian corridor is a mix of native species such as California blackberry (*Rubus ursinus*) and cattails (*Typha* sp.) at the river's edge, and non-native species such as curly dock (*Rumex crispus*), English ivy (*Hedera helix*), Himalayan blackberry (*Rubus armeniacus*), Italian ryegrass (*Festuca perennis*), fennel, and bristly ox-tongue (Photos 7 and 8). Immediately west of the Guadalupe River and west levee road is a San José Water Company pump station (seen in Photo 5 at the top of the west levee road) that connects with a culvert located on the upper west bank of the Guadalupe River.

Photo 5. Looking west towards Valley Water gravel service road from south project site, with the Guadalupe River Trail below the chain link fence.

Photo 6. Looking west down to the Guadalupe River Trail at the bottom of a concrete-paved slope, from the Valley Water gravel service road, west of the south project site. Hwy 101 is shown crossing over the Guadalupe River.

This pump station is used to move water into a small detention pond, west of the pump station, from the river during high water and flood events. The detention pond is surrounded by rock riprap, a landscaped coast redwood (*Sequoia sempervirens*), Brazilian pepper trees, some smaller cottonwood and willow saplings, as well as dense stands of cattails and curly dock at the pond's edge (Photos 9 and 10). Common wildlife species expected to occur immediately on and adjacent to the south project site in ruderal and developed habitats, which provide relatively low-quality habitat for most species, include those species as described above under the north project site description. In addition, a few California ground squirrels (*Otospermophilus beecheyi*) and their burrows occur along the edges of the Valley Water gravel service road, which is located immediately west of the south project site. The presence of year-round water and abundant

invertebrate fauna along the Guadalupe River and in the San José Water Company detention pond provides foraging opportunities for many bird species that are expected to move through portions of the south project site area, when flying along the Guadalupe River.

Photo 7. Looking east from the west levee road above the Guadalupe River towards the south project site, just past the concrete-paved slope and Valley Water gravel service road. Economy Lot 1 parking garage construction is seen in the distance.

The riparian habitats and dense vegetation surrounding these aquatic habitats provide attractive nesting and roosting areas for many common native bird species, such as the lesser goldfinch (*Spinus psaltria*), Bewick's wren (*Thryomanes bewickii*), California scrub-jay (*Aphelocoma californica*), California towhee (*Melozone crissalis*), and bushtit (*Psaltriparus minimus*), just to name a few. Raptors such as the red-shouldered hawk (*Buteo lineatus*) and great horned owl (*Bubo virginianus*) may forage along the banks of the river. Small numbers of waterbirds such as the great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), and great egret (*Ardea alba*) forage along the banks of the river and in the detention pond. The heavily vegetated ground cover along the riparian habitat and at the edges of the detention pond provides suitable nesting cover for waterfowl species such as the mallard (*Anas platyrhynchos*). Other bird species such as the black phoebe, barn swallow (*Hirundo rustica*), and cliff swallow (*Petrochelidon pyrrhonota*) are expected to forage across the south project site and adjacent areas, and may use the underside of the Hwy 101 overpass as nesting locations. Other common wildlife species are expected to occur along the river and in the detention pond area, including the native raccoon, as well as the non-native Virginia opossum (*Didelphis virginiana*), and eastern gray squirrel (*Sciurus carolinensis*), all of which may use the abundant cover and trees for roosting and breeding sites. Common amphibian and reptile species expected to occur in the riparian and aquatic habitats include the Pacific tree frog (*Pseudacris regilla*), arboreal salamander (*Aneides lugubris*), gopher snake (*Pituophis catenifer*), coast garter snake (*Thamnophis elegans terrestris*), and western fence lizard.

Photo 8. Edge of willow riparian habitat on the west side of the Guadalupe River Trail, approximately 123 ft west and below the south project site.

The riparian and aquatic habitats, which are found approximately 123 ft and 175 ft west of the south project site, respectively, are not only expected to provide suitable foraging, roosting, and nesting habitat for a variety of bird species, but may also be used as a migratory stop-over for other bird species flying along the Guadalupe River. The numbers of these birds moving through the site will vary by time of year and by species. Many birds, such as waterfowl, often tend to move in large groups, while other species, such as migrating landbirds, will move through individually. Local bird numbers also vary by time of year, as many birds form small to large flocks during winter and migration, and occur in more widely spaced pairs during the breeding season. Nevertheless, disturbance and noise associated with Hwy 101 and the surrounding airport uses reduce the abundance of birds and other wildlife using the riparian habitat immediately adjacent to the south project site to some extent, as proximity to bridges and roads reduces bird use of riparian habitats in the South Bay (Rottenborn 1999).

Photo 9. Looking north towards the west-side of the San José Water Company pump station; detention pond is located left of the building and inside the chain link fence.

Photo 10. Looking west towards the detention pond where a culvert can be seen on the right side, which comes from within the San Jose Water Company pump station.

Special-Status Species and Sensitive Habitats

We collected and reviewed information from several sources, including the CNDDB (2020) and the CNPS (2020), regarding known occurrences of special-status species in the vicinity of the north and south project sites. In addition, for plants, we reviewed all species currently ranked by the CNPS as California Rare Plant Rank (CRPR) rank 1A, 1B, 2, or 3 occurring in the *San José West* and *Milpitas*, California quadrangles and ten surrounding quadrangles (*Newark, Niles, La Costa Valley, Mountain View, Calaveras Reservoir, Cupertino, San José East, Castle Rock Ridge, Los Gatos, and Santa Teresa Hills*, California). We also considered the CNPS plant list for Santa Clara County, as the CNPS does not maintain quadrangle-level records for CRPR 4 species. In addition, we queried the CNDDB (2020) for natural communities of special concern that occur within the airport region, and we perused records of birds reported in nearby areas, such as along the Guadalupe River, on eBird (Cornell Lab of Ornithology 2020).

Special-Status Plant Species

The CNPS (2020) and CNDDB (2020) identify 78 special-status plant species as potentially occurring in at least one of the 11 USGS quadrangles containing or surrounding the area of the north and south project sites for CRPR 1 or 2 species, or in Santa Clara County for CRPR 3 and 4 species. Based on an analysis of the documented habitat requirements and occurrence records associated with these species, all were determined to be absent from the north and south project site areas due to at least one of the following reasons: (1) lack of suitable habitat types; (2) absence of specific microhabitat or edaphic requirements; (3) the species is presumed extirpated or is not expected to occur in the project vicinity due to range; and/or (4) the project site and study area are too disturbed to be expected to support the species.

Special-Status Animal Species

A number of special-status animal species are known to occur in the vicinity of the north and south project sites (CNDDB 2020). The following special-status animal species that are present in less urbanized settings in the South Bay, or in specialized habitats in the South Bay, are absent from the study area due to a lack of suitable habitat and/or isolation of the site from populations by urbanization: the California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana draytonii*), foothill yellow-legged frog (*Rana boylii*), bald eagle (*Haliaeetus leucocephalus*), San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), and American badger (*Taxidea taxus*).

A number of special-status bird species can occasionally occur in the vicinity of the north and south project sites as nonbreeding foragers (i.e., they do not nest in the study area vicinity). These are the Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*), a California species of special concern; and two raptor species, the peregrine falcon (*Falcon peregrinus anatum*), and golden eagle (*Aquila chrysaetos*), both of which are state fully protected species. The pallid bat (*Antrozous pallidus*), a California species of special concern, may also forage aerially over habitats in the vicinity of both project site areas. However, no high-quality habitat for any of these species is present within the project footprint itself, and these species are not expected to nest, roost, or breed

in or immediately adjacent to the project sites. Therefore, we do not expect that these species will be affected by proposed billboard installation and operation activities.

Tricolored blackbirds (*Agelaius tricolor*) have not been recorded nesting in the vicinity of the project sites, and although the detention pond may provide ostensibly suitable nesting habitat for tricolored blackbirds, given its small size and isolation from other suitable nesting and foraging habitat for the species, the tricolored blackbird is not expected to breed within or immediately adjacent to the project areas. At best it occurs as an uncommon and irregular forager on the sites during the nonbreeding period.

The burrowing owl (*Athene cunicularia*), a California species of special concern, has been known to nest, roost, and forage within the grassland portions of the San José Airport's airfield for decades (Albion Environmental, Inc. 1997), and the species continues to be present in these areas year-round (USDA 2018, City of San José 2020). Burrowing owls require short vegetation, wide-open spaces, and an abundance of burrows created by California ground squirrels, for nesting and roosting. Numerous sod areas on the airfield are currently managed and maintained for burrowing owls, and are located approximately 0.13 miles (mi) and 0.25 mi south of the north and south project sites, respectively. Additionally, an area located northwest of the airport, known as the very high frequency omni-directional range (VOR) site, which is located approximately 0.4 mi and 0.6 mi west of the north and south project sites, respectively, supports 23.6 acres of grassland habitat, and a total of 99 artificial burrows have been installed in the portion of the site currently considered a burrowing owl management area. However, burrowing owls are not known to occur at the site as of 2019, and vegetation management in that area is not optimal for burrowing owls (Campos 2019, USDA 2018). Further, no owls or burrows of California ground squirrels to provide suitable nesting and roosting habitat for owls were observed at the VOR site during a January 2019 site visit by H. T. Harvey & Associates wildlife ecologists in support of the preparation of the Norman Y. Mineta San José International Airport 2019 Master Plan Amendment Biological Resources Report (HTH 2019). Although a few isolated California ground squirrel burrows were detected along the Valley Water gravel service road, west of the south project site, no burrows of ground squirrels were detected at the north project site during our site visit on November 4, 2020, and the small ruderal habitat areas, where the footprint of each billboard will be located, do not contain any burrows, are regularly disturbed, and are surrounded by trees, thus, not providing suitable nesting, roosting, or foraging habitat. Therefore, the burrowing owl is not expected to nest, roost, or breed on or immediately adjacent to the project sites. Because these sites also do not provide high-quality foraging habitat for the burrowing owl, we do not expect this species to be affected by proposed billboard installation and operation activities.

The yellow warbler (*Setophaga petechia*) and San Francisco common yellowthroat (*Geothlypis trichas sinuosa*), both California species of special concern, and the white-tailed kite (*Elanus leucurus*), a state fully protected species, can potentially nest in riparian habitats along the Guadalupe River, located west of the south project site.

No aquatic habitats to support special-status fish species are present on either project site; however, the south project site is located approximately 175 ft east of the Guadalupe River, which provides habitat for the federally threatened Central California Coast steelhead (*Oncorhynchus mykiss*) and the Central Valley Fall-run Chinook

salmon (*Oncorhynchus tshawytscha*), a California species of special concern. Further, the Pacific Fisheries Management Council has designated Essential Fish Habitat (EFH) for the Pacific Coast Salmon Fisheries Management Plan within the Guadalupe River due to the presence of the Chinook salmon.

In addition, the southwestern pond turtle (*Emys pallida*) occurs in the Guadalupe River, and may occur in the San José water company detention pond; there is some potential for this species to disperse into the south project site.

These species are discussed in greater detail below.

Federally Listed Species

Central California Coast Steelhead (*Oncorhynchus mykiss*). Federal Listing Status: Threatened; State Listing Status: None. The Central California Coast Distinct Population Segment (DPS) of steelhead consists of all runs from the Russian River in Sonoma County south to Aptos Creek in Santa Cruz County, including all steelhead spawning in streams that flow into the San Francisco Bay. In 1998, the National Marine Fisheries Service (NMFS) published a final rule to list the Central California Coast DPS as threatened under FESA (NMFS 1997). Critical habitat for this DPS was designated on September 2, 2005 and includes a portion of the Guadalupe River from approximately the West Hedding Street, located at the south end of the airport, crossing downstream to the Bay (NMFS 2005).

The steelhead is an anadromous form of rainbow trout that migrates upstream from the ocean to spawn in late fall or early winter, when flows are sufficient to allow them to reach suitable habitat in far upstream areas. In the South Bay, adults typically migrate to spawning areas from late December through early April, and both adults and smolts migrate downstream from February through May. Steelhead typically spawn in gravel substrates located in clear, cool, perennial sections of relatively undisturbed streams, with dense canopy cover that provides shade, woody debris, and organic matter. Steelhead usually cannot survive long in pools or streams with water temperatures above 21°C; however, they can use warmer habitats if adequate food is available. Steelhead populations have declined due to degradation of spawning and rearing habitat, the introduction of barriers to upstream migration, over-harvesting by recreational fisheries, and reduction in winter flows due to damming and spring flows due to water diversion.

Steelhead are known to occur in the Guadalupe River (Leidy et al. 2005, NMFS 2005, Smith 2013). Although studies conducted by Valley Water and others have documented steelhead use of specific reaches of the Guadalupe River (e.g., for spawning or rearing), there is no comprehensive dataset indicating suitable spawning or rearing locations. Steelhead are expected to occur in any reach of the Guadalupe River 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, and they occur in more downstream areas during migration the ocean and upstream spawning and rearing areas. The quality of potential spawning and rearing habitat for steelhead in the lower portion of the Guadalupe River is poor.

Within the Guadalupe River system, steelhead have access to the mainstem of the Guadalupe River up to Guadalupe Dam, as well as Arroyo Calero and Alamitos Creek (tributaries of the Guadalupe River) upstream to Calero Dam and Almaden Dam, respectively. Steelhead spawning and rearing likely occurs farther upstream of the study area south of Blossom Hill Road, where more natural habitat is present (Smith 2013). High volumes of storm water flowing into the river during rain events likely result in the destruction of any redds present along the reach adjacent to the study area in winter. Further, homeless camps create high levels of disturbance within the bed and banks of the Guadalupe River, and result in increased pollution, obstructions to stream flow, and fish mortality caused by poaching (Smith 2013). These factors combine to create low-quality habitat for steelhead adjacent to the project study area in the Guadalupe River. Thus, although marginal spawning and rearing habitat for steelhead may be present in the segment of river near the south project site, there is a low probability that steelhead breed or rear in this reach of the Guadalupe River. Rather, this portion of the Guadalupe River functions as a migration corridor for individuals traveling between the San Francisco Bay and higher-quality spawning habitat farther upstream, and steelhead are therefore expected to occur near the project site only for brief periods during upstream and downstream migration.

California Species of Special Concern

Central Valley Fall-run Chinook Salmon (*Oncorhynchus tshawytscha*). Federal Listing Status: None; State Listing Status: Species of Special Concern. Like the steelhead, the Chinook salmon is an anadromous salmonid. Populations of Pacific salmon have been categorized into Evolutionarily Significant Units (ESUs) by the NMFS; an ESU represents a population of Pacific salmon that is reproductively isolated from other conspecific populations, and is recognized as a distinct evolutionary component of the species (Waples 1991). The Central Valley Fall-run ESU represents a population of Chinook salmon that migrates from the ocean to spawning streams in late fall and begin spawning in beds of coarse river gravels between October and December. Populations of fall-run Chinook salmon have suffered the effects of over-fishing by commercial fisheries, degradation of spawning and rearing habitat, added barriers to upstream migration, and reductions in winter flows due to damming. Approximately 40 to 50% of the spawning and rearing habitats in Central Valley streams have been lost or degraded. Chinook salmon generally spawn in cool waters providing incubation temperatures no warmer than 55°F. Compared to steelhead, Chinook salmon are more likely to spawn in coarse gravels located lower in the watershed.

Chinook salmon did not historically spawn in streams flowing into the South San Francisco Bay. This species was first observed in South Bay streams in the mid-1980s, including in the Guadalupe River, coinciding with a large groundwater pumping operation that resulted in high flows in the Guadalupe River, even during summer and fall (SWRCB 1988, U.S. Environmental Protection Agency 2005). These artificially high summer and fall flows apparently attracted Chinook salmon into South Bay streams. 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. Nevertheless, Chinook salmon have been documented spawning within the Guadalupe River in and around the downtown San José area between October and December (City of San José 2002).

Chinook salmon spawn in reaches with suitable gravels, and use downstream reaches for migration between the ocean and spawning and rearing areas. 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. High-quality spawning habitat is not expected to be present in the reach of the Guadalupe River west of the south project site, but Chinook salmon may use this reach of the Guadalupe River during migration and may attempt spawning if they are unable to reach higher-quality habitat upstream due to seasonally low flows.

Southwestern Pond Turtle (*Emys palida*). Federal Listing Status: None; State Listing Status: Species of Special Concern. The southwestern pond turtle occurs in ponds, streams, and other wetland habitats in the Pacific slope drainages of California and northern Baja California, Mexico (Bury and Germano 2008). The central California population was historically present in most drainages on the Pacific slope (Jennings and Hayes 1994), but streambed alterations and other sources of habitat destruction, exacerbated by frequent drought events, have caused substantial population declines throughout most of the species' range (Stebbins 2003). Ponds or slack-water pools with suitable basking sites (such as logs) are an important habitat component for this species, and southwestern pond turtles do not occur commonly along high-gradient streams. 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). Juveniles feed and grow in shallow aquatic habitats (often creeks) with emergent vegetation and ample invertebrate prey. Nesting habitat is typically found within 600 ft of aquatic habitat (Jennings and Hayes 1994), but if no suitable nesting habitat can be found close by, adults may travel overland considerable distances to nest. Threats to the southwestern pond turtle include impacts to nesting habitat from agricultural and grazing activities, human development of habitat, and increased predation pressure from native and non-native predators as a result of human-induced landscape changes.

Although breeding populations of southwestern pond turtles have been extirpated from most agricultural and urbanized areas in the region, individuals of this long-lived species still occur in urban streams and ponds in the Santa Clara Valley. Nevertheless, southwestern pond turtles may occur in aquatic habitat along the Guadalupe River and in the detention pond, west of the river. The likelihood that pond turtles would occur within upland portions of the project sites is as follows:

- Although the perimeter of the detention pond is completely fenced, there are gaps – most specifically at the northwest corner of the area, where pond turtles, if they were to occur in the detention pond, could move through. However, we would not expect pond turtles from the detention pond to disperse to the west, towards the north project site, due to the lack of suitable upland nesting habitat as well as the presence of high volumes of traffic on Airport Boulevard. We would also not expect pond turtles to disperse to the north, from the detention pond into tree removal locations, located in the vegetated margin of Hwy 101, because of the lack of suitable upland nesting habitat and the presence of high volumes of traffic on Hwy 101, which serves as a barrier to dispersal (Figure 1). Therefore, we do not expect southwestern pond turtles to occur within the north project site or within tree removal locations north of the detention pond.

- Small numbers of southwestern pond turtles are expected to occur in the Guadalupe River and could potentially disperse from the river towards the south project site area. We would expect pond turtles to primarily move along the corridor of the river and nest along the banks of the river. Nonetheless, we cannot rule out the possibility that individual pond turtles could potentially disperse into the south project site area on occasion, although they are expected to do so in extremely small numbers, if at all.

Yellow Warbler (*Setophaga petechia*). Federal Listing Status: None; State Listing Status: Species of Special Concern (Nesting). The yellow warbler is a widespread neotropical migrant that inhabits wet deciduous forests throughout North America (Lowther et al. 1999). In California, yellow warblers occupy wooded riparian habitats along the coast, on both eastern and western slopes of the Sierra Nevada, and throughout the northern portion of the state (Heath 2008). Their range has remained relatively stable over time, but populations have declined substantially in many localities due to habitat loss (Cain et al. 2003, Heath 2008) and expansion of the brood-parasitic brown-headed cowbird. As a result, nesting yellow warblers have been largely extirpated from the Santa Clara Valley (Heath 2008). However, small numbers of yellow warblers still nest in riparian habitats within Santa Clara County (Bousman 2007a). Ideal nesting habitat for yellow warblers consists of riparian corridors with dense, shrubby understory and open canopy (Lowther et al. 1999, Cain et al. 2003, Heath 2008). Yellow warblers nest from early May through early August and construct open cup nests in upright forks of shrubs or trees in dense willow thickets or other dense vegetation (Lowther et al. 1999).

Suitable nesting habitat for yellow warblers occurs in the riparian corridor along the Guadalupe River west of the south project site, and within the detention pond area, west of the Guadalupe River. If this species is present, one or two pairs could potentially nest in this habitat adjacent to the study area. In addition, yellow warblers are an abundant migrant throughout the project area region, and the species could forage throughout the project area during the spring and fall.

San Francisco Common Yellowthroat (*Geothlypis trichas sinuosa*). Federal Listing Status: None; State Listing Status: Species of Special Concern. The San Francisco common yellowthroat inhabits emergent vegetation and nests in fresh and brackish marshes and moist floodplain vegetation around the San Francisco Bay. Common yellowthroats will use small and isolated patches of habitat as long as groundwater is close enough to the surface to encourage the establishment of dense stands of rushes, cattails, willows, and other emergent vegetation (Nur et al. 1997, Gardali and Evens 2008). Ideal habitat, however, is composed of extensive, thick riparian, marsh, or herbaceous floodplain vegetation in perpetually moist areas, where populations of brown-headed cowbirds are low (Menges 1998). San Francisco common yellowthroats nest primarily in fresh and brackish marshes, although they nest in salt marsh habitats that support tall vegetation (Guzy and Ritchison 1999). This subspecies builds open-cup nests low in the vegetation, and nests from mid-March through late July (Guzy and Ritchison 1999, Gardali and Evens 2008). The San Francisco common yellowthroat is one of approximately 12 subspecies of common yellowthroat recognized in North America, two of which occur in the South Bay region. Because subspecies cannot be reliably distinguished in the field, determination of the presence of San Francisco common yellowthroat can be achieved only by locating birds

that are actively nesting within the nesting range known for the subspecies. Common yellowthroats nesting in the study area are of the special-status *sinuosa* subspecies (San Francisco Bay Bird Observatory 2012).

Within the study area region, the greatest proportion of nesting records of San Francisco common yellowthroat occur within brackish and freshwater marshes near the edge of the Bay, and in early-successional riparian habitat in broader floodplains (Bousman 2007b). Nests are typically located in extensive stands of bulrushes in brackish marshes and dense cattail beds in freshwater marshes, but the species also nests in forbs in riparian habitats. The herbaceous riparian habitat along the Guadalupe River and around the detention pond west of the south project site provides potential nesting and foraging habitat for this species. One or two pairs of common yellowthroats could potentially nest in these areas, and this species forages in this habitat year-round.

State Fully Protected Species

White-tailed Kite (*Elanus leucurus*). Federal Listing Status: None; State Listing Status: Fully Protected. In California, white-tailed kites can be found in the Central Valley and along the coast in grasslands, agricultural fields, cismontane woodlands, and other open habitats (Zeiner et al. 1990, Dunk 1995, Erichsen et al. 1996). White-tailed kites are year-round residents of the state, establishing nesting territories that encompass open areas with healthy prey populations and snags, shrubs, trees, or other substrates for nesting (Dunk 1995). Nonbreeding birds typically remain in the same area over the winter, although some movements do occur (Polite 1990). The presence of white-tailed kites is closely tied to the presence of prey species, particularly voles, and prey base may be the most important factor in determining habitat quality for white-tailed kites (Dunk and Cooper 1994, Skonieczny and Dunk 1997). Although the species recovered after population declines during the early 20th century, its populations may be exhibiting new declines because of recent increases in habitat loss and disturbance (Dunk 1995, Erichsen et al. 1996).

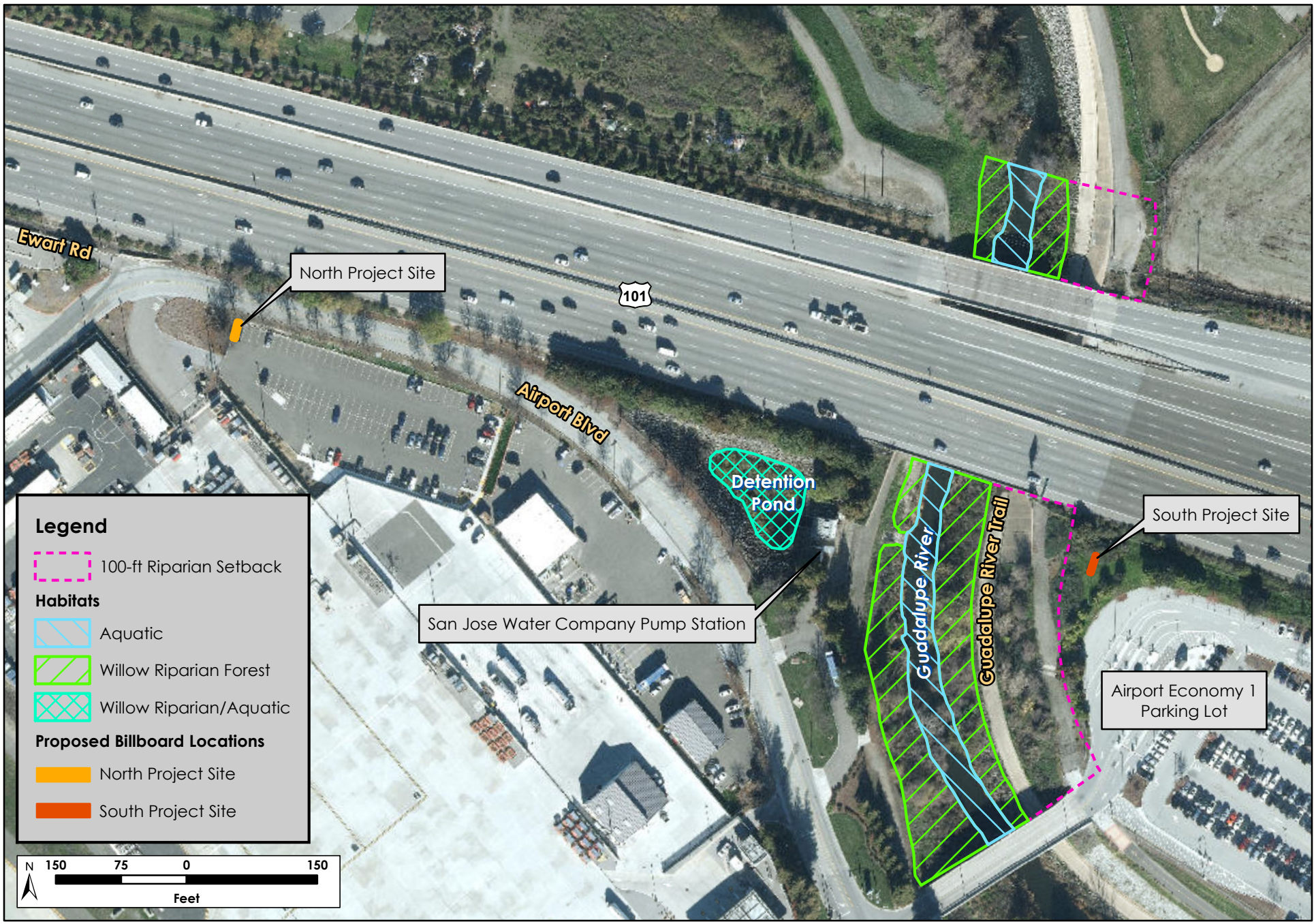
White-tailed kites are common residents in less-developed portions of the project area region where open grassland, ruderal, or agricultural habitats are present. Both project sites do not support large open areas used for foraging by the species. However, large trees immediately adjacent to the south project site along the Guadalupe River provide suitable sites for nesting by up to one pair of white-tailed kites. The open habitats found south of both the north and south project sites (e.g., ruderal grasslands and developed areas) provide foraging opportunities for this species.

Sensitive/Regulated Habitats

Measures to protect riparian corridors are provided in the City of San José's Riparian Corridor Policy Study (City of San José 1999), which was incorporated into the City's Envision San José 2040 General Plan (City of San José 2011); the Zoning Code (Title 20 of the San José Municipal Code); and the City Council-adopted Santa Clara Valley Habitat Plan, specifically Condition 11. The term *riparian corridor* as defined by the City means any defined stream channel, including the area up to the bank full-flow line, as well as all characteristic streamside vegetation in contiguous adjacent uplands.

In 2016, the City of San José released Council Policy 6-34 to provide guidance on the implementation of riparian corridor protection consistent with all City policies and requirements that provide for riparian protection. Council Policy 6-34 defines any development or activity that is located within 300 ft of a riparian corridor's top of bank or vegetative edge, whichever is greater (in the case of the south project site, it is the vegetative edge of the willow riparian habitat adjacent to the river), as a "Riparian Project", which requires approval of a Development Permit as defined in Chapter 20.200 of Title 20 of the San José Municipal Code. Further, Council Policy 6-34 indicates that riparian setbacks 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. However, Council Policy 6-34 also indicates that a reduced setback may be considered under limited circumstances, including the existence of legal uses within the minimum setback, and utility or equipment installations or replacements that involve no significant disturbance to the riparian corridor during construction and operation and that generate only incidental human activity.

No sensitive or regulated habitats (i.e., riparian, wetland or other waters of the U.S./State) occur on either project site footprint where they may be directly or indirectly impacted by billboard construction activities or operation. The nearest sensitive habitat to the north project site is the detention pond, which is located approximately 605 ft east of the north billboard. Thus, under definition of Council Policy 6-34, the north project site would not be considered a "Riparian Project". However, sensitive aquatic and riparian habitats (i.e., the Guadalupe River and willow riparian forest edge) are located approximately 175 and 123 ft, respectively, west of the south project site (as shown in Figure 2), which would be considered a "Riparian Project", and thus, warrant consideration from the perspective of potential impacts from billboard construction and lighting. In addition, sensitive aquatic and willow riparian forest habitats occur within the detention pond area, which is located approximately 50 ft south of the vegetated margin of Hwy 101 where tree removal would occur (Figures 2 and A1).



N:\Projects4400\4458-01\Reports\Bio Impact Assmnt\Fig 2 Location of Sensitive Regulated Habitats Near Proposed Project Sites.mxd

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Figure 2. Location of Willow Riparian Forest and Aquatic Habitats Near Proposed Project Sites

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The Guadalupe River aquatic and the edge of riparian habitats that abut the western side of the Guadalupe River trail are located approximately 175 and 123 ft west of the south project site, respectively. The Guadalupe River would be considered waters of the U.S./State and thus would be regulated by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act and by the San Francisco Bay Regional Water Quality Control Board (RWQCB) under Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act.

The riparian banks and the habitat they support west of the south project site, along the Guadalupe River, would be considered jurisdictional by the California Department of Fish and Wildlife (CDFW) and the RWQCB. Riparian habitat extends to the top of the levee slope on the west side of the Guadalupe River, and from the banks of the river up to the western edge of the Guadalupe River Trail or to the edge of the dripline of any trees rooted below the top of the levee or the trail, and which extend further outboard than the top of the levee and trail. The nearest edge of contiguous riparian habitat is approximately 123 ft west of the south project site; therefore, the south project site is outside of the 100 ft riparian corridor setback limit as shown on Figure 2, and is thus in compliance with Council Policy 6-34, as described above.

The riparian habitat that is found west of the south project site is best described as a willow riparian forest (*Populus fremontii–Salix* [*laevigata, lasiolepis, lucida* ssp. *lasiandra*]) Alliance. This alliance is ranked as G4/S3, meaning there are greater than 100 viable occurrences worldwide and/or more than 12,950 hectares, and there are 21–100 viable occurrences statewide and/or more than 2,590–12,950 hectares. As a G4 alliance, the vegetation is considered "secure, but factors and threats exist to cause some concern." Thus the willow riparian forest adjacent to the south project site qualifies as a sensitive vegetation alliance (CDFW 2020).

Biological Impacts Assessment

Potential project impacts on biological resources were evaluated from three different perspectives:

- the direct and indirect effects of the installation of the LED billboards on biological resources (e.g., habitat impacts or disturbance during construction);
- the indirect effects of illuminance from the LED billboards (i.e., the amount of light from the billboard that lands on a certain area) on sensitive habitats and/or species in adjacent areas; and
- the potential effects of the LED billboard's luminance (i.e., the amount of light leaving the billboard's surface in a particular direction, or brightness of the digital billboard's surface as seen by the eye) on the behavior of fish in the Guadalupe River and birds flying in the site vicinity.

In each case, the standards against which we measured the significance of potential impacts were the California Environmental Quality Act (CEQA) significance criteria.

Direct and Indirect Effects of Billboard Construction

All activity associated with the construction of both new LED billboard locations at the proposed north and south project sites is to take place within the areas shown on Figure 1. The limits of ground disturbance at the north project site (2341 Airport Boulevard) will be 50.3 square ft of asphalt, and the limits of ground disturbance at the south project site (2200 Airport Boulevard) will be 28.3 square ft of ruderal grassland habitat. No sensitive or regulated habitats are present or would be impacted by the construction of billboards within the construction footprint (as described above) at either project site.

Impacts on Trees (Less than Significant)

The City of San José 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 José. 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 ft above ground. A multi-trunk tree qualifies as ordinance-size if the combined measurement of each trunk circumference (at 4.5 ft 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.

Removal of trees on private property, commercial, and industrial properties are also subject to tree removal permitting by the City of San José. A permit is required to remove a tree of "any size" from a commercial and industrial property. A separate "permit adjustment application" is required to be filed for non-ordinance-sized trees that will be removed from commercial and industrial property. As part of the permit application it is required to contact the City's planning division with regard to the replacement of trees on private, commercial and industrial properties.

Forty-three trees (27 of which are of ordinance size) have been scheduled for removal, as part of the overall scope of the project. They are all located outside of the north and south project site footprints where billboards are to be constructed, and will be removed to open views of the billboards from traffic on Hwy 101. As described in the attached *Tree Survey Report* in *Appendix A*, the tree survey areas occur primarily in the vegetated margins adjacent to Hwy 101, and consist primarily of highly developed/ornamental woodland habitat types. This area is densely vegetated with Brazilian pepper trees, including hundreds of smaller saplings with a circumference of 6 inches or less. Due to the high density of Brazilian pepper trees, the canopy is closed, shading out the understory. The understory is dominated by leaf litter, with occasional ruderal grass species. The area of the tree to be removed approximately 116 ft west of the north project site, is entirely developed with the exception of a small, landscaped patch of grass, where the tree stands. There are no other plant species

associated with this area. The area directly east of the south project site, where two trees to be removed are located, is dominated by holm oaks, Chinese pistache, and other nonnative, ornamental tree species. Similar to the vegetated margins adjacent to Hwy 101, the understory is relatively bare, containing primarily leaf litter, tree saplings and ruderal grass species. All trees to be removed, with the exception of one (a raywood ash [*Fraxinus oxycarpa*]), are non-native species, which provide little ecological value, and no important plant or wildlife habitat. The ecological value of these trees is further reduced by their very close proximity to the noise and vehicular activity associated with Hwy 101. For these reasons, ecological impacts of tree removal will be less than significant.

The project will comply with the City of San José tree removal requirements, as described above. As a result, impacts on ordinance-sized trees will also be less than significant from the perspective of compliance with local regulations.

Impacts on Special-Status Plant Species (No Impact)

As described above, no special-status plant species are expected to occur within or immediately adjacent to any portion of either project site or tree removal locations. Therefore, there will be no impacts on special-status species plants.

Impacts on Upland Habitats and Associated Common Plant and Wildlife Species (Less than Significant)

The proposed billboard construction activities will alter and/or remove 28.3 square ft of existing ruderal vegetation within the south project site. It is expected that understory ruderal grass species and non-native tree saplings will be altered and/or removed in tree removal locations. Both the developed/landscaped and ruderal grassland habitats are relatively abundant and widespread regionally, and are not particularly sensitive or valuable, from the perspective of providing important plant or wildlife habitat. Therefore, impacts on these habitats would not be considered significant under CEQA.

As discussed previously, both project sites and tree removal locations support a number of common wildlife species, although due to their largely developed and/or ruderal nature, these specific locations provide relatively low-quality habitat for most species, as opposed to the nearby attractive riparian and aquatic habitats, and thus support relatively small numbers of individuals of any one species. The common wildlife species that occur in upland habitats found in the south project site area are regionally abundant, are present in widely available habitats in the region, and will continue to be present in some portions of the south project site following billboard construction. Additionally, tree removal and the billboard construction would impact only a small proportion of their regional populations, and the number of individuals likely to be displaced by habitat disturbance and loss would be quite small with respect to the amount of suitable habitat available in the area. Thus, impacts on common wildlife species, such as those described under the *Existing Site Conditions* section above, and their habitats resulting from the removal of trees and construction of billboards at both project sites would not meet the threshold of having a substantial adverse effect, and would not be considered significant under CEQA.

Impacts on Nesting Birds (Less than Significant)

All native bird species, including special-status species that occur within both project sites are protected from take by the federal Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code. The federal MBTA, 16 U.S.C. Section 703, prohibits killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. The MBTA protects whole birds, parts of birds, and bird eggs and nests, and it prohibits the possession of all nests of protected bird species whether they are active or inactive. An active nest is defined as having eggs or young, as described by the USFWS in its June 14, 2018 memorandum "Destruction and Relocation of Migratory Bird Nest Contents". Nest starts (nests that are under construction and do not yet contain eggs) and inactive nests are not protected from destruction. In its June 14, 2018 memorandum, the USFWS clarified that the destruction of an active nest "while conducting any activity where the intent of the action is not to kill migratory birds or destroy their nests or contents" is not prohibited by the MBTA. However, direct destruction of an active nest would violate the California Fish and Game Code, and abandonment of an active nest because of project construction activities could be considered take under the Fish and Game Code. A small number of regionally common, mostly urban-adapted bird species could potentially nest in tree removal locations, or close enough to billboard construction areas where they may be potentially disturbed by construction activities.. As a result, impacts to small numbers of these species' nests would not result in regional declines in their populations. For this reason, impacts to nesting birds during tree removal and billboard installation activities would not meet the CEQA threshold of a *substantial* adverse effect, and we consider impacts to nesting birds less than significant. However, to comply with the MBTA and Fish and Game Code, we recommend that tree removal and the construction of both billboards take place during the nonbreeding season (September 1 – January 31) if feasible. If construction and tree removal activities during the nonbreeding season is not feasible, preconstruction surveys should be conducted to determine whether nests of protected birds are present in areas where they may be disturbed, and a biologist should determine the buffer around each nest necessary to avoid nest abandonment during tree removal and billboard construction.

Impacts on Riparian/Aquatic Habitats, Water Quality and Special-Status Fish (Less than Significant)

Although sensitive habitats, in the form of willow riparian forest and waters of the U.S./State (i.e., Guadalupe River and detention pond), are present west of the south project site (Figure 2), those habitats would not be impacted directly or indirectly by billboard construction, which would stay entirely out of those habitats. Ground disturbance associated with the billboard construction at the south project site would take place over 175 ft east of the Guadalupe River's aquatic habitat and 123 ft east of its associated riparian habitat, which would be in compliance with setback distances of 100 ft per Council Policy 6-34. The project would not impact these habitats, given the distance (i.e., 175 and 123 ft) that separates the project site from the riparian habitat and river below. In addition, no direct or indirect effects from billboard construction on the south project site would impact the Central California Coast steelhead and Central Valley fall-run Chinook salmon in the Guadalupe River given the lack of any aquatic habitat, the very small footprint of work, and the distance (i.e., 175 ft) of ground disturbance activities from the river. Therefore, billboard construction activities at either project site would not result in any adverse direct or indirect impacts to water quality, riparian habitats, and special-status fish species and would therefore be considered less than significant under CEQA.

Tree removal activities within the vegetated margin along Hwy 101 could potentially affect aquatic habitats indirectly, through the degradation of water quality of the detention pond located approximately 50 ft south of the tree removal area, by unregulated discharge of contaminants, sediments, or debris during tree removal activities. However, implementation of the following proposed minimization measures (which are incorporated into the project) will reduce the potential for and magnitude of tree removal impacts on aquatic habitats of the detention pond and the special-status species (i.e., southwestern pond turtle) they could support. Therefore, impacts on riparian/aquatic habitats and the species they support will be less than significant under CEQA.

Applicant-Proposed Minimization Measures

Applicant-Proposed Measure 1A. Erosion and Sedimentation Control. During tree removal activities, contractors will employ standard construction best management practices (BMPs) to control and minimize runoff of all contaminants, sediments, or debris. Construction BMPs during work may include but are not limited to the following:

- No litter, debris, or sediment shall be dumped into storm drains. Daily trash and debris removal shall occur at the site.
- Vehicles and equipment may only be driven within established roads and crossings. Routes and boundaries will be clearly marked and will be located outside of driplines of willow riparian habitat that surrounds the detention pond.
- Equipment staging and parking of vehicles shall occur on established access roads and flat surfaces (i.e., shoulder of Hwy 101).
- No heavy equipment shall operate in any portion of the willow riparian habitat surrounding the detention pond.
- The integrity and effectiveness of construction fencing and erosion control measures shall be inspected on a daily basis. Corrective actions and repairs shall be carried out immediately for fence breaches and ineffective BMPs.
- Fueling and maintenance of all equipment will be conducted away from the willow riparian habitat and detention pond. Equipment shall be regularly maintained to avoid fluid leaks. Any leaks will be captured in containers until equipment is moved to a repair location. Hazardous materials will be stored only within developed habitat areas. Containment and cleanup plans will be prepared and put in place for immediate cleanup of fluid or hazardous materials spills.
- At no time shall sediment-laden water be allowed to enter the detention pond.
- All litter and removed tree debris will be disposed of off-site in accordance with state and local regulations. All trash and debris within the work area will be placed in containers with secure lids before the end of work each day in order to reduce the likelihood of predators being attracted to the site by discarded food wrappers and other rubbish that may be left on-site. If containers meeting these criteria are not available, all rubbish will be removed from the project site at the end of each work day.
- Absorbent materials designated for spill containment and clean-up activities shall be available on site for use in an accidental spill.

Impacts on the Southwestern Pond Turtle (Less than Significant)

Southwestern pond turtles may occasionally disperse into the south project site area on occasion, although they are expected to do so infrequently. At most, we would not expect more than one individual to be present in the project area when construction occurs, and even that is highly unlikely given that this species spends most of its life in aquatic habitats. Neither the billboard project sites nor the tree removal locations provide important or extensive habitat that is used regularly or by large numbers of southwestern pond turtles, and is not relied upon by breeding individuals of this species. The tree removal locations east of the south project site and in the vegetated margin along Hwy 101, north of the detention pond, are both heavily shaded by the abundant overstory of mature trees and saplings, and do not provide suitable terrestrial nesting habitat for the species. We do not expect pond turtles to disperse from the aquatic habitats of the detention pond, where they may occur, to the north and into the tree removal area, given that the area is unsuitable nesting habitat and Hwy 101 serves as a barrier to the dispersal of this species. If pond turtles were to disperse to the north, they are most likely to do so via the Guadalupe River underpass. However, southwestern pond turtles may occur within the aquatic habitats of the detention pond, and could be indirectly impacted, through the degradation of water quality from debris runoff from tree removal activities in the vegetated margin located approximately 50 ft north of the detention pond.

Although the construction of billboards on both project sites and tree removal activities would not result in impacts to any habitat that is useful to southwestern pond turtles as nesting, foraging, or dispersal habitat, project activities could potentially result in the injury or mortality of individual pond turtles due to worker foot traffic, equipment use, or vehicle traffic, in particular in the south project site vicinity. Petrochemicals, hydraulic fluids, and solvents that are spilled or leaked from construction vehicles or equipment may kill individuals. Additionally, increases in human presence and activity in the vicinity of marginally suitable habitat in the south project site vicinity during construction may result in an increase in native and non-native predators that would be attracted to trash left at the work site. For example, raccoons, American crows (*Corvus brachyrhynchos*), and common ravens (*Corvus corax*) are attracted to trash and may prey opportunistically on southwestern pond turtles.

The above potential impacts notwithstanding, due to the small number of pond turtles that occur along the Guadalupe River, and the very low potential for any individuals to disperse into the south project site area or the nearby tree removal locations, we do not expect southwestern pond turtles to be impacted by billboard construction activities. Further, given that we do not expect pond turtles to disperse from aquatic habitats found in the detention pond into tree removal locations, located approximately 50 ft north, we do not expect southwestern pond turtles to be directly impacted by tree removal activities; and by implementing the proposed minimization measures as described above in the *Impacts on Riparian/Aquatic Habitats, Water Quality and Special-Status Fish* section, indirect impacts from tree removal activities on the southwestern pond turtle would be considered less than significant.

Impacts on Breeding Special-Status Birds (Less than Significant)

The yellow warbler and San Francisco common yellowthroat (California species of special concern) could potentially nest west of the south project site, as well as south and east of the tree removal location in the vegetated margin along Hwy 101, in the willow riparian habitat surrounding the detention pond. The yellow warbler may nest in riparian trees along the Guadalupe River, and the San Francisco common yellowthroat may nest in herbaceous riparian vegetation along the Guadalupe River or around the detention pond. The white-tailed kite (a state fully protected species) may nest in the taller trees found in the riparian area along the Guadalupe River, west of the south project site. These three species are assessed together because the potential impacts of the proposed billboard construction projects and the tree removal activities on these species would be similar.

Billboard construction and tree removal activities that occur during the nesting season could potentially cause an increase in noise or human activity near active nests. This could result in the abandonment of active nests (i.e., nests with eggs or young). In addition, heavy ground disturbance, noise, and vibrations caused by project activities could potentially disturb nesting and foraging individuals and cause them to move away from work areas.

No more than 1-2 pairs of both the yellow warbler and San Francisco common yellowthroat could potentially nest west of the south project site, as well as south and east of the tree removal location in the vegetated margin along Hwy 101. The billboard construction and tree removal would not result in the loss of suitable nesting or foraging habitat for either species, as no activities are proposed within the bed and banks of the Guadalupe River, or within the willow riparian habitat surrounding the detention pond. No more than one pair of the white-tailed kite could potentially nest in the taller trees found along the riparian corridor of the Guadalupe River, located west of the south project site. However, billboard construction and tree removal activities would not result in the loss of suitable nesting habitat for this species.

Because the number of nesting pairs that could be disturbed is very small (i.e., 1–2 pairs of each species), the impacts of billboard construction and tree removal activities would represent a very small fraction of the regional population of these species. Therefore, neither the potential loss of individual yellow warblers and common yellowthroats nor the disturbance of nesting and foraging habitat would rise to the CEQA standard of having a *substantial* adverse effect, and these impacts would thus not constitute a significant impact on these species or their habitat under CEQA.

However, in order to comply with the MBTA and Fish and Game Code, we recommend that construction of both billboards and tree removal take place during the nonbreeding season (September 1 – January 31) if feasible. If construction or tree removal during the nonbreeding season is not feasible, preconstruction surveys should be conducted to determine whether nests of the yellow warbler, San Francisco common yellowthroat, and white-tailed kite are present in areas where they may be disturbed, and a biologist should determine the buffer around each nest necessary to avoid nest abandonment during project activities.

Indirect Effects of Illuminance of Adjacent Areas (Less than Significant)

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). 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 (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 may also indirectly affect fish species that are present in the Guadalupe River, in a variety of ways. For example, an increase in illuminance at night can alter the nighttime activities of predators and prey, such as disturbing the seasonal and diel light cycles of freshwater invertebrates that fish feed on in riverine systems, by disrupting their nocturnal drift periods, which is timed with lower predation risk periods (Flecker 1992, Miyasaka and Nakano 2001, Hernandez and Peckarsky 2014). This can reduce the nocturnal drift activity by freshwater invertebrates and potentially reduce the availability of prey for foraging fish species in the river. In addition, an increase in nighttime illuminance can disrupt the temporal and spatial movement patterns of young (fry) fish that typically disperse and migrate at night to decrease their risk of predation (Scheuerell and Schindler 2003, Stich et al. 2015, Zapata et al 2019). Numerous studies have shown that an increase in nighttime illuminance on bodies of water can inhibit foraging activity, increase predation risk on fish, as well as significantly change the composition of fish communities that occur across a day-night period (Riley et al. 2013, Zapata et al. 2014).

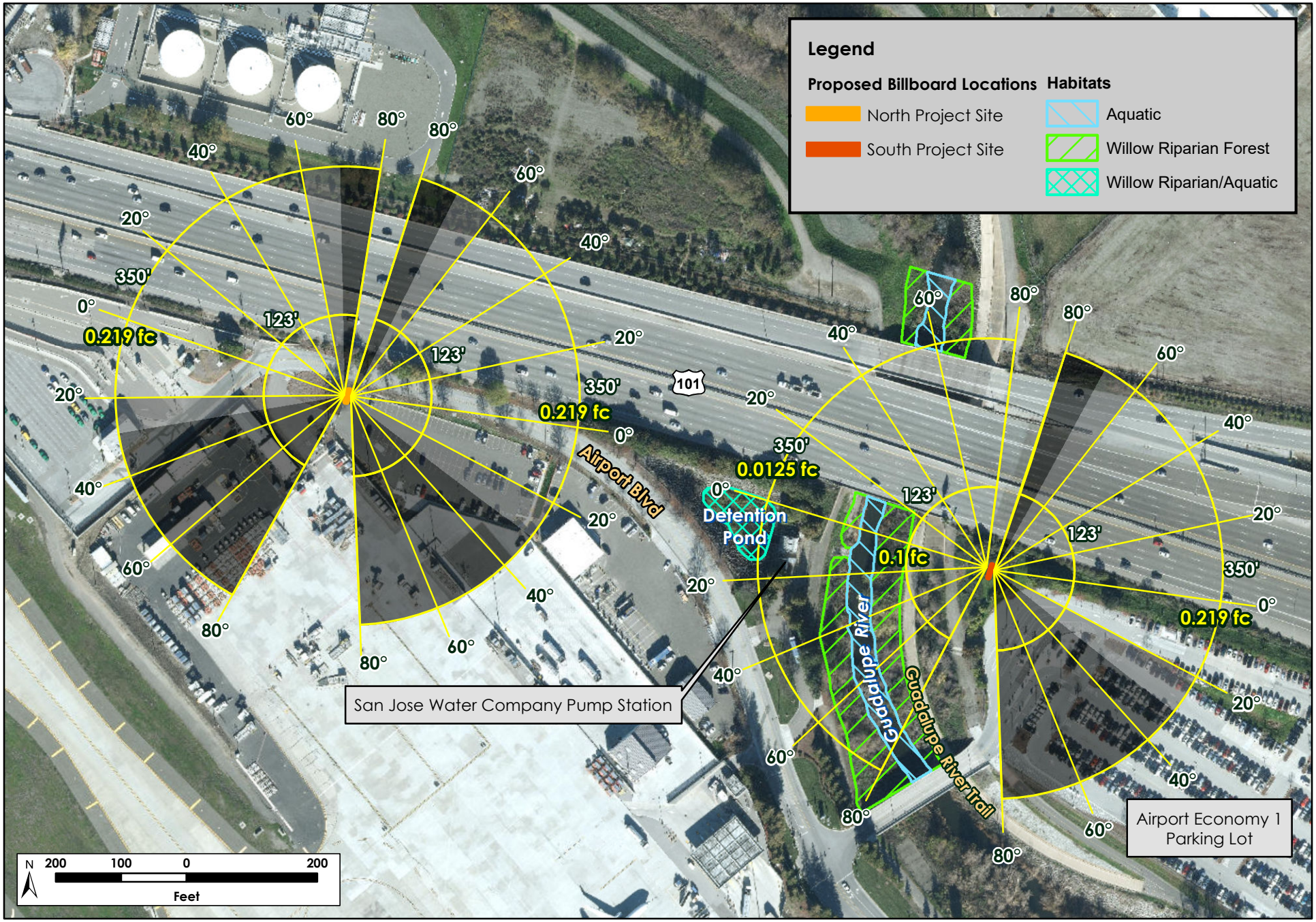
Although the literature has shown how an increase in artificial lighting may indirectly affect birds, mammals, fish, and nesting sea turtles, little is known about potential effects of artificial lighting on many species of amphibians and reptiles, including freshwater turtles (Perry et al. 2008). Southwestern pond turtles most likely exhibit physiological and behavioral responses in the presence of novel artificial light sources. However, few

studies have revealed any conclusive data on what the impacts may be from artificial lighting in urban environments on adjacent habitats where freshwater turtles may occur (Perry et al 2008). To our knowledge, no specific studies have been conducted that have attempted to elucidate pond turtle responses to an increase in artificial lighting conditions in their natural aquatic habitats. Southwestern pond turtles are primarily active during the day, spending the majority of their time basking on haul-out structures, such as patches of floating vegetation and logs near the edges or in the middle of their aquatic habitats, where they can quickly escape if threatened (Jennings and Hayes 1994). Some crepuscular and nocturnal movements have been observed by the species, but pond turtles typically take refuge at the bottom of aquatic habitats, burying themselves in muddy bottoms or dense vegetation during the night, and thus, in our opinion, would not be significantly affected by an increase in artificial light conditions.

Based upon observations from my project site visit on November 4, 2020, light from currently existing sources illuminates areas adjacent to both project sites to some extent. Thus, our assessment of the impact of illuminance of adjacent areas, most specifically the Guadalupe River, its associated riparian habitat, and the detention pond by the proposed LED billboards took into account the existing conditions as well as any expected changes in illuminance that would result from the construction of the LED billboards. Numerous down-facing street lights are located along Airport Boulevard, Ewarts Road, and Hwy 101. The airport's Economy Parking Lot A, located east of the south project site also has numerous downward-facing parking lot lights. Surrounding the north project site to the south and west are downward-facing parking lot light fixtures, as well as smaller outdoor lights on buildings and other structures. All these lights currently illuminate the habitats around them.

North Project Site

Neither side of the north project site's LED billboard will increase illuminance in any sensitive habitats (Figure 3). An evaluation of the proposed billboard's illuminance was provided by lighting specialist Zeiger Engineers, Inc. (2020) based on information provided by Clear Channel Outdoor, and the billboard manufacturer, MRI. Zeiger's evaluation determined that illuminance from the north project site's west and east-facing billboards will have a maximum illuminance value of 0.219 foot candles (fc) over ambient light conditions when viewed from the center of the viewing angle at 350 ft, as illustrated in Figure 3; for reference, a 100 watt light bulb produces 137 fc at 1 ft away, approximately 0.05 fc at 50 ft and 0.01 fc at 100 ft (Watchfire Signs 2017). This maximum illuminance is within the operational parameters as set forth by the California Department of Transportation (Caltrans), the City of San José Municipal Code regulations, and Council Policy 6-4, that states in part, that signs shall utilize automatic dimming technology to adjust the brightness of the sign relative to ambient light so that at no time shall a sign exceed a brightness level of 0.3 fc above ambient light. The nearest sensitive habitat to the north project site is the detention pond, which is located approximately 605 ft. Because illuminance declines with increasing distance, that habitat is far enough away that the east-facing billboard from the north project site would have no substantive effect on this sensitive habitat or the species using it.



N:\Projects4400\4458-01\Reports\Bio Impact Assmnt\Fig 3 Area of Illumination.mxd

H. T. HARVEY & ASSOCIATES
Ecological Consultants

Figure 3. Proposed Billboard Area of Illumination

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South Project Site

The east-facing side of the south project site's LED billboard will have a maximum illuminance value of 0.219 fc over ambient light conditions when viewed from the center of the viewing angle at 350 ft (Zeiger Engineers, Inc. 2020). No sensitive habitats are present east of the south project site, and therefore the east-facing side of the billboard would have no effect on any sensitive habitats (Figure 3). However, the west-facing side of the south billboard will face the Guadalupe River and its sensitive habitats and species. These sensitive habitats include the riparian bank associated with the river, whose furthest eastern edge is located approximately 123 ft from the south billboard; the river itself is located approximately 175 ft from the south billboard project site. Due to the ecological importance of the riparian and aquatic habitats of the Guadalupe River and the fish and wildlife communities they support, substantial increases in illuminance of the Guadalupe River and its associated riparian, and aquatic habitats could result in a potentially significant impact under CEQA by disrupting the natural behaviors of the species using the aquatic and riparian habitats along the river. Although there is agreement throughout the literature that increases in illuminance can affect wildlife behavior, as described above, there is no quantitative level of illuminance increase (above ambient light) that is agreed upon as a threshold for significant impacts to animals. Our assessment of the potential indirect effects of an increase in illumination from the new billboards is based upon our observations of ambient light conditions during the pre-dawn hours in the project study area, and our own experience observing wildlife, specifically birds, under existing and increased levels of illuminance for a billboard project near the edge of McNabney Marsh in Martinez, California (HTH 2018). During that project, we monitored the response of birds using the marsh to an increase in ambient light conditions. Pre- and post-illumination readings were taken at two separate monitoring stations by turning the billboard lighting on and off as necessary. Pre-illumination readings were 0.0 fc, with the exception of one area where 0.04 fc was recorded, and was likely due to the presence of a California Department of Transportation message board located nearby to the marsh. Although an increase of 0.02 fc was recorded from the illumination of the billboard, spilling over the marsh, we observed no behavioral change by birds using the marsh. In addition, we have consulted with other applicants and lighting engineers on other billboard lighting assessments and have reached a conclusion that increases in illuminance up to 0.1 fc would not be harmful to wildlife. For reference, a 100 watt light bulb produces 0.01 fc at 100 ft (Watchfire Signs 2017).

Thus, it is our professional opinion that increases in illuminance up to 0.1 fc would not result in substantial adverse effects on the species inhabiting the sensitive habitats on the project site, as the species using these habitats (including small numbers of special-status birds) are already habituated to the existing artificial illuminance from a variety of urban and natural light sources that are found along Hwy 101, Airport Boulevard, Ewart Road, and the parking lot areas. However, in our professional opinion, increases in illuminance of these sensitive habitats of more than 0.1 fc are potentially significant, as such increases could be great enough to affect the behavior of animals using these habitats and/or their willingness to continue to use these habitats. Therefore, the south project site is being specifically planned so that the west-facing billboard (which is directed towards the Guadalupe River) on the south project site will use a static LED backlighted display with dimming controls to limit light spill-over towards the Guadalupe River and associated riparian habitat. The west-facing billboard on the south project site will be operated so that the maximum increase in illuminance (vs. ambient

conditions) at approximately 123 ft (i.e., the distance between the south project site's west-facing billboard and the furthest edge of the riparian habitat of the Guadalupe River) will not exceed 0.1 fc as shown on Figure 3, given the dimming controls being used on the west-facing billboard, as described above.

Other sensitive aquatic and riparian habitats are present west of the Guadalupe River, around the detention pond, located approximately 50 ft south of the vegetated margin of Hwy 101. However, these habitats are located 350 ft west of the west-facing billboard on the south project site. Illuminance would dissipate with an increase in distance from the west-facing billboard, so that at 350 ft, we do not expect any measurable increase in illuminance above existing ambient light conditions from the west-facing billboard on the sensitive habitats found in the detention pond area.

All proposed billboards will have built-in programmable controllers, allowing both time of day and intensity programming. The digital LED display billboard illuminance at the north project site, and the east-facing billboard at the south project site, will be measured with a handheld photometer held 5 ft above ground level at a distance of 350 ft. Illuminance readings of the west-facing billboard (i.e., static LED backlighted display) at the south project site will be made with a handheld photometer held approximately 3 ft above ground level, at locations along the embankment of the Guadalupe River and at the elevation of the river's surface. Although we expect illuminance levels to dissipate to negligible levels at 350 ft (0.0125fc), at the edge of the detention pond, illuminance readings of the west-facing billboard will be taken from this position as well. The field test of sign brightness (i.e., illuminance) is done in practice not with a "white" color, but with the programmed advertising. Should brightness levels be found above a particular maximum (i.e., 0.1 fc at the banks/edge of riparian habitat along the Guadalupe River, or 0.3 fc elsewhere) over ambient light levels, then technicians will make the necessary field adjustments.

All billboards will be angled in such a way as to maximize the amount of visibility from specific portions of Hwy 101, so the area of brightest night illuminance projected by the proposed billboards will be directed at oncoming traffic (Figures 3 and 4). As the view angle from the north project site billboards and the east-facing billboard of the south project site moves in 20° increments to either side, the illuminance from the billboard decreases (the dark shaded radii segments in Figure 3), due to the horizontal light mitigation technology, SITELINE®, that is employed in the LED digital display, according to the information provided by the billboard manufacturer, MRI. The west-facing billboard of the south project site does not incorporate the same light mitigation technology as the other three billboards. However, the backlit design and dimming controls of this billboard will effectively limit light spill-over to 0.1 fc at the edge of the riparian habitat of the Guadalupe River. Further, this billboard will be covered by translucent vinyl to ensure that no illumination occurs above or below the face of the billboard (Clear Channel 2021).

Thus, illuminance from both the west and east-facing billboards at the north project site, and the east-facing billboard at the south project site, will have no impacts on any sensitive habitats or the species they support, including any special-status bird species. In addition, by using a static LED backlighted display for the west-facing billboard at the south project site, which will be held at a maximum illuminance value of no more than

0.1 fc above ambient light conditions, from sunset to sunrise, through the use of built-in programmable controllers and field-testing, the indirect impacts of illuminance on the Guadalupe River, the detention pond, their associated riparian habitats, and the sensitive species they support will be less than significant.

Potential Effects of LED Billboard's Luminance on Avian Flight Behavior (Less than Significant)

Migrating Birds. The primary way in which the luminance of an LED billboard might affect the movements of 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, and become drawn toward it. Once a bird is within a lighted zone at night (i.e., the hours between sunset and sunrise), 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 a billboard's luminance 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, Longcore and DelBusso 2016).

Local Birds. We consider the riparian habitat along the reach of the Guadalupe River found west of the south project site to be of moderately high quality for birds. The mature trees and presence of dense understory vegetation in some areas contribute positively to the value of this habitat for birds. However, this riparian habitat is also somewhat fragmented due to the surrounding high-density urban development and the presence of bridges, road crossings, and channelization along nearby portions of the river, and therefore lacks connectivity to higher-quality riparian habitats in the region. In addition, the proximity of this riparian habitat to existing roads and bridges reduces its quality and the abundance of birds using it.

Songbirds that migrate along the Pacific Flyway and travel through the south project site vicinity are expected to be attracted to this reach of the Guadalupe River, but we would not expect a large number or diversity of passerine birds. Nonetheless, some common, urban-adapted, local species are expected to occur in the project vicinity, as described above, and small numbers of special-status species, such as the yellow warbler, San Francisco common yellowthroat, and white-tailed kite, may occur here as well. Passerine birds have been documented responding to increased illumination in their habitats with nocturnal foraging and territorial defense behaviors (Longcore and Rich 2004, Miller 2006, de Molenaar et al 2006), but absent significant

illumination, they typically do not forage at night, leaving them less susceptible to the attraction and disorientation caused by luminance when they are not migrating.

Effects of LED Billboards on Flight Behavior. The visibility of the proposed LED billboards to birds in flight, and thus the risk they pose to flying birds, including special-status species, depends primarily on the beam angles of the sign relative to the flight lines of birds and on the luminance (brightness) of the sign as perceived by the birds. The projected vertical viewing angle of the proposed LED billboards at the north project site and the east-facing billboard at the south project site loses luminance (and visibility) above 18°, which suggests that coupled with a horizontal viewing angle of ±40° the viewing angle of the sign will be narrow enough to preclude attracting migrating birds on clear nights, when they fly high enough to be outside the viewing angle of the sign. The proposed LED billboards at the north project site and the east-facing billboard at the south project site are designed with horizontal shading louvers (i.e., narrow matt black horizontal shields over and under the arrays) that reduce the available upward view angle, shading the LED lights which assists in preventing light from projecting upward into the sky. As a result, birds flying more than 18° above the center of the sign's beam angle (i.e., east and west) will not be able to see light from the sign at all.

The proposed billboards at the north project site and the east-facing billboard at the south project site could produce a peak value of approximately 256 candelas[3] (cd)/ft^2 of luminance in the center of the beam angle (using a maximum of 0.3 fc) at 350 ft, and a peak value of approximately 27 cd/ft^2 of luminance in the center of the beam angle (using a maximum of 0.1 fc) at 123 ft from the static LED backlighted display of the west-facing billboard at the south project site (LSI 2006, Zeiger Engineers, Inc. 2020). However, the LED billboards will utilize automatic dimming technology to adjust the brightness of the sign relative to ambient light, as described in *Indirect Effects of Illuminance of Adjacent Areas* above. Thus, the proposed billboards could produce peak values of approximately 27 and 256 cd/ft^2 at 123 and 350 ft, respectively. For comparison, a full moon at its brightest point produces approximately 232 cd/ft^2 (LRC 2006). The peak luminosity for an LED billboard cited above assumes that the display on the billboard is solid white. In practice, the display on the planned LED billboards will contain a variety of colors, which will substantially reduce the amount of luminance produced and reduce the potential for the light to disorient birds, including special-status species.

Additionally, all proposed LED billboards will: 1) use LED optics with asymmetrical downward beams, rather than conventional symmetrical vertical beams, which will reduce unwanted upward light; 2) not display animated messages, including flashing, blinking, fading, rolling, shading, dissolving, or any other effect that gives the appearance of movement; 3) no sign message will be displayed for a period of time less than eight seconds; 4) transitions from one message to another message will appear instantaneous as perceived by the human eye; and 5) the signs will contain a default mechanism that will cause the sign to revert immediately to a black screen if the sign malfunctions. Colors and patterns of color on the billboards will thus be changing,

[3] The 'candela' is a unit of luminous intensity in the International System of Units, defined as the luminous intensity in a given direction of a source that emits monochromatic radiation of frequency 540 × 1012 hertz and has a radiant intensity in that same direction of 1/683 watt per steradian (unit solid angle). The candela has replaced the standard candle as a unit of luminous intensity in calculations involving artificial light.

and birds flying near the sign would not perceive it as a fixed, unchanging light, the type of light that appears to be most attractive to birds (Jones and Francis 2003, Gauthreaux and Belser 2006, Gehring et al. 2009).

Further, the proposed west-facing billboard will be completely covered by translucent vinyl to ensure no unwanted light occurs above or below the face of the billboard. The backlit design avoids the use of conventional lighting, which is typically mounted below the sign face oriented upward. Therefore, the backlit design prevents any upward lighting (Clear Channel 2021).

As described above, the light beams from the proposed billboards will be angled in such a way as to maximize the amount of visibility from specific portions of Hwy 101. Because the area immediately surrounding the project sites are heavily developed, we do not expect large numbers of birds to be flying through the project site areas in locations, and at altitudes, where they would be at risk of confusion by or attraction to the luminance of the billboards.

It is possible that some birds that find themselves near the center of a sign's beam angle may be attracted to the sign. This includes birds that may be found in nearby riparian habitats at night, specifically the riparian corridor found approximately 123 ft west of the south project site. However, movement by birds during the night through the canopy and understory of this riparian habitat would be infrequent and limited, given that most local bird species (e.g., bushtit, lesser goldfinch, Bewick's wren, and California scrub-jay) that use these habitats are primarily diurnal, and not frequently active at night. In addition, most of the riparian vegetation that is 123 ft west of the south project site is low in stature (5-10 ft tall), with a few trees no more than 15-20 ft tall. The flight path of local bird species, and thus, their line of sight, through this corridor at any time of the day or night would typically be at these lower elevations, and would infrequently rise to the height of the center of the west-facing sign's central beam angle, which would be at approximately 80 ft ASL. As described above in the *Existing Site Conditions* section and billboard descriptions, the ground level of the south project site is at 35 ft ASL (Google, Inc. 2020); the top of the billboard would be at 55 ft above this point; and the billboard itself is 20 ft high. Thus, the approximate center of the beam angle would be at 80 ft ASL (35 ft + 55 ft – 10 ft [half of the height of the billboard face] = 80 ft). The Guadalupe River is approximately 13 ft ASL (Google, Inc. 2020), with the edge of the riparian habitat, adjacent to the Guadalupe River Trail, a bit higher, at 17-20 ft ASL (Google, Inc. 2020). Therefore, even if birds were to be moving at night through the uppermost part of the riparian canopy, which would be at a maximum of 40 ft ASL, their flight paths and line of sight would not reach the central beam angle's height of 80 ft ASL. Thus, we do not expect local or migrating birds, including special-status species, flying at night to occur near the centers of the sign's beam frequently. We do not expect this effect to result in long-term consequences or exceed a threshold where local, regional, or migratory bird species populations are adversely affected due to bird-strike mortality or interference with movement patterns that the potential attractant of the sign's beam may cause.

Further, we do not expect the operation of the LED billboards to have a significant impact on substantial numbers of roosting birds because the developed habitat on and immediately adjacent to the north and south project sites do not provide high quality roosting habitat. Given the configuration of bird habitats in the vicinity

of both project sites (which does not lend itself to directed bird flights toward the sign), the changing images that will be displayed on three of the four LED billboards, the narrow viewing angle, and the use of overhead louvers and concealment screens to prevent light from projecting upward into the sky and out to the west and east, we expect the sign's impacts on avian flight behavior and avian roosting behavior, including special-status species, to be less than significant under CEQA.

Potential Effects of LED Billboard's Luminance on the Southwestern Pond Turtle (Less than Significant)

As described above in the *Indirect Effects of Illuminance of Adjacent Areas* section, we do not expect the increased illuminance of any of the billboards, and specifically the west-facing billboard of the south project site, to have an impact on individual southwestern pond turtles or their habitat, nor an increase in luminance levels of their habitat. It is our professional opinion that the luminance increase of 27 cd/ft² (0.1 fc) from the operation of the west-facing billboard from the south project site onto the Guadalupe River – the most likely area that pond turtles may occur – would have a less than significant impact on the species, both because of the very low increase in luminance and because pond turtles would be taking cover in dense vegetation or mud at night and would therefore not be subjected to luminance from the billboard.

Potential Effects of LED Billboard's Luminance on Special-Status Fish (Less than Significant)

As described above in *Indirect Effects of Illuminance of Adjacent Areas*, artificial lighting may indirectly affect fish species that are present in the Guadalupe River. However, the luminance of the west-facing billboard at the south project site, as viewed in the center of the beam angle at 123 ft (the distance from the billboard to the edge of the riparian banks of the Guadalupe River), will be approximately 27 cd/ft² (using a maximum of 0.1 fc). This value is very low, and is therefore not expected to adversely affect the behavior of fish in the river. In addition, any steelhead or Chinook salmon using the limited segment of the river subjected to lighting from the billboard are expected to be migrating, during which time they would be moving quickly through this reach. As a result, the potential impacts of luminosity from the west-facing billboard at the south project site on special-status fish species in the Guadalupe River would be less than significant.

In summary, based on the information provided by Zeiger Engineers, Inc. (2020) and materials provided by the manufacturer MRI (Dei Rossi 2020) concerning the LED billboard, our review of literature concerning lighting effects on wildlife, our reconnaissance-level surveys of the project sites, and our knowledge of likely avian flight lines in the vicinity of the project sites, we do not expect the construction of new LED billboards to result in significant impacts on wildlife as a result of increased illuminance or luminance above ambient light conditions.

If the assumptions made in our analysis concerning the LED billboard's characteristics (e.g., illuminance, luminance, or beam angle) differ from actual characteristics of the billboard, additional analysis may be necessary to determine whether impacts are significant.

Please feel free to contact me at speterson@harveyecology.com or (408) 300-8690 if you have any questions regarding our report. Thank you very much for contacting H. T. Harvey & Associates regarding this project.

Sincerely,

Stephen L. Peterson, M.S.
Project Manager, Senior Wildlife Ecologist

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Appendix A: Tree Survey Report

December 3, 2020

Desiree Dei Rossi | Assistant Project Manager
David J. Powers & Associates, Inc.
1736 Franklin Street, Suite 300
Oakland, CA 94612

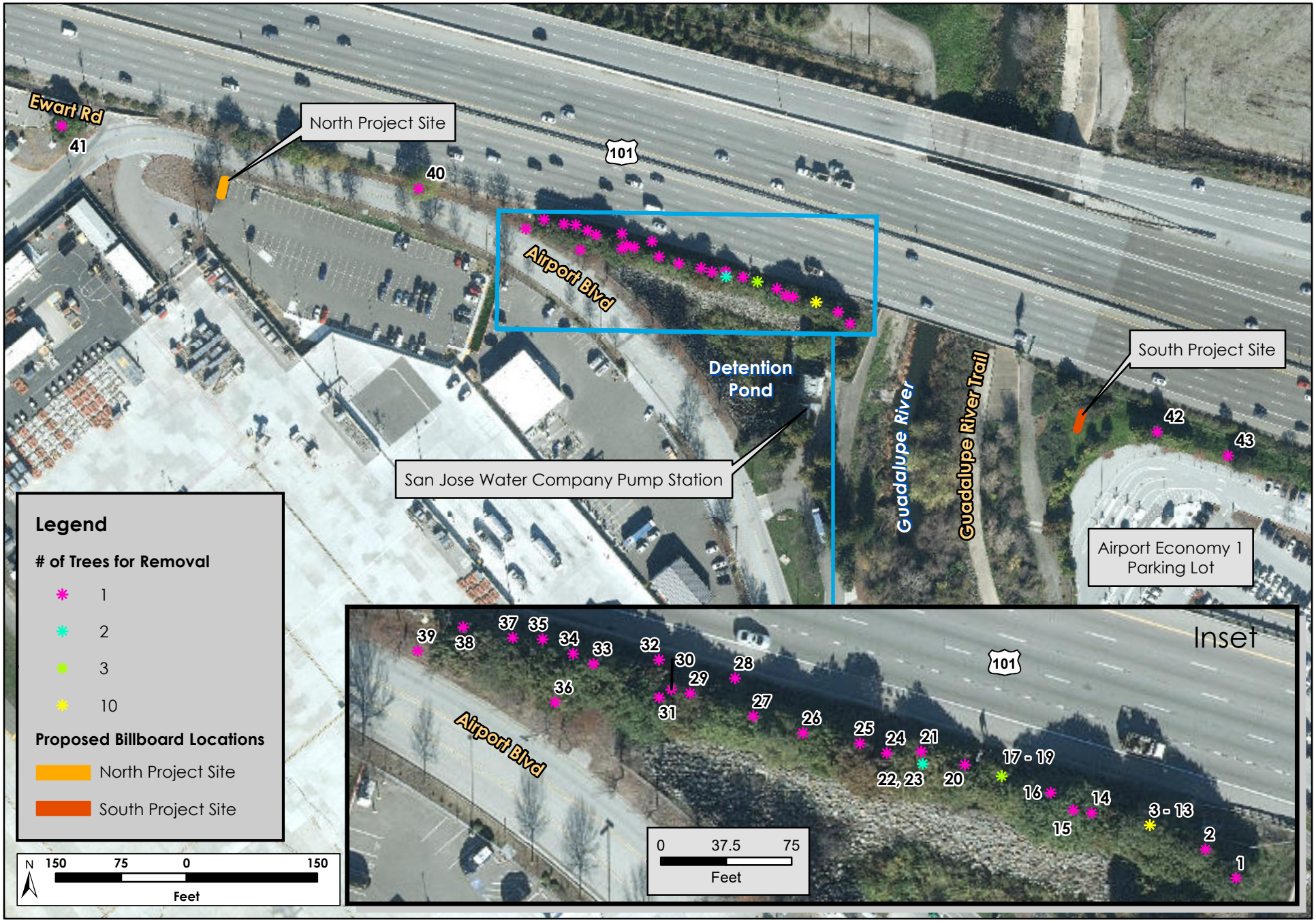
Subject: San José Airport Clear Channel Billboards Project – Tree Survey Report (HTH #4458-01)

Dear Ms. Dei Rossi:

As requested, H. T. Harvey & Associates has surveyed and described 43 trees that are proposed to be removed as part of the San José Airport Clear Channel Billboards project located in San José, California. Most trees were located between the north and south billboard project locations, along the southern edge of U.S. Highway 101 (Hwy 101), though one tree was located directly west of the north billboard location, and two trees were located directly east of the south billboard location (Figure A1). This report provides an inventory of all trees proposed for removal and includes the following information about each tree: 1) mapped location (Figure A1), 2) species, 3) circumference, 4) height, 5) a health assessment score, and 6) a photograph.

Methods

The tree survey was completed on November 4, 2020 by H. T. Harvey & Associates plant ecologist Jill Pastick, M.S. Each tree surveyed was photographed, mapped using a Trimble Geo 7X GPS, and identified to species (scientific and common name), and each tree's height was estimated. The circumference of each tree was also measured; for trees with multiple trunks, the circumference of each stem was measured at 4.5 feet (ft) above ground, and the circumferences of all stems were summed to produce the circumference for the tree. A total of 28 ordinance-sized trees, with a circumference of 38 inches or more at 4.5 ft above ground, as defined by the City of San José tree removal permit guidelines, were surveyed and measured by Ms. Pastick. Ms. Pastick also surveyed and measured an additional 15 trees with a circumference of at least 18 inches that were located in close proximity to ordinance-sized trees within the dense patch of trees proposed for removal, along the south edge of Hwy 101, in order to completely assess the conditions of all trees proposed for removal. Tree saplings with a circumference less than 18 inches were excluded from the survey, as the collection of data on the additional 15 trees (circumference of at least 18 inches) was adequate to assess the dense patch of trees located along the south side of Hwy 101, and also because the smaller saplings were growing in shrub form in the survey location (see Biotic Habitat section below).



N:\Projects4400\4458-01\Reports\Bio Impact Assmnt\Fig A1 Location of Trees Proposed for Removal.mxd

H. T. HARVEY & ASSOCIATES
Ecological Consultants

Figure A1. Location of Trees Proposed for Removal

San Jose Airport Clear Channel Billboards Project — Biological Impacts Assessment (4458-01)

July 2021

Tree health assessments were made using ground-level visual observations. Each tree's health and structural conditions were given a score from 0–5 based on the criteria shown in Table 1 on the following page. Tree condition ratings were based on the combined health and structural scores as follows:

- ***Dead*** if the summed scores were equal to 0
- ***Poor*** if the summed scores were equal to or between 1 and 4
- ***Fair*** if the summed scores were equal to or between 5 and 7
- ***Good*** if the summed scores were equal to or between 8 and 10

Table 1. Tree Health and Structural Condition Evaluation Criteria

Condition Score	Tree Health	Tree Structure
5	A healthy, vigorous tree with a well-balanced crown. Normal to exceeding shoot length on new growth. Normal leaf size and color. No apparent pest problems or symptoms of disease. Exceptional life expectancy for the species.	Root plate undisturbed and clear of any obstructions. Root flare has normal shape. Trunk is sound and solid. No visible trunk defects or cavities. Balanced and even branch spacing, structure, and attachments.
4	Tree with slight decline in health. May have twig dieback in few parts of the tree. May have less than normal growth rate and minor deficiency in leaf development. Few pest problems or symptoms of disease. Typical life expectancy for the species.	Root plate appears normal with only superficial damage, if any. Possible signs of root dysfunction in and around trunk flare. May have minor trunk defects from previous injury with good closure. Less than 10% of bark missing. Good branch spacing, structure, and attachments.
3	Tree with moderate health. Crown decline and dieback up to 25% of the canopy. Stunted shoot length on new growth. Leafs may be small and somewhat chlorotic. May have signs of pest problems and/or disease. Some decay may be present in main stem and branches. Below average life expectancy.	Root plate may have previous damage or disturbance and dysfunctional roots may be visible around main stem. Evidence of trunk damage or cavities with decay or defects may be present. Less than 25% of bark sections may be missing on trunk. Co-dominant stems may be present. Moderate branch spacing, structure, and attachments that may indicate poor pruning or damage.
2	Tree in decline. May have epicormic growth. Crown may have up to 50% dieback that may affect larger branches. May have little or no new growth on young stems. Leaf size may be small and color may indicate stress. Pest and/or disease problems may be severe. Decay may be present in main stem and branches. May be overmature. Life expectancy is low.	Root plate disturbance and defects may indicate major damage and/or girdling roots around the trunk flare. More than 25% of bark section missing. May have multiple dominant stems and/or included bark. May have poor branch spacing, structure, and attachments, and dead or broken branches. Canopy may have signs of severe damage or topping. May have extensive decay or be hollow.
1	Tree in severe decline. May have epicormic growth. Crown may have severe dieback affecting the majority of the tree. May have little or no new growth on young stems. Leaf size may be small and color may indicate severe stress. Pest and/or disease problems may be severe. Decay may be present in main stem and branches. May be overmature. Life expectancy is extremely low.	Root plate may have major structural problems that present an unacceptable risk. Tree structure may be irregular, unbalanced, and/or have multiple dominant stems. May have irregular and poor branch spacing, structure, and attachments. Dead or broken main branches may be present.
0	Dead	Dead

Biotic Habitat

The tree survey areas occur primarily in the vegetated margins adjacent to Hwy 101, and consist primarily of highly developed/ornamental woodland habitat types. These habitat types primarily include paved roadways and sidewalks, landscaped ornamental tree and shrub species. Industrial, commercial, and airport facility land uses occur in the surrounding area.

The most heavily vegetated locations within the tree survey areas occur between the north and south billboard project locations, along the southern edge of Hwy 101, where tree numbers 1 through 40 are located (Figure A1). This portion of the project site was densely vegetated with Brazilian pepper trees (*Schinus terebinthifolius*), including hundreds of smaller saplings with a circumference of 6 inches or less. Many of the surveyed trees consisted of multiple stems (i.e., trunks). Due to the high density of Brazilian pepper trees, the canopy was closed, shading out the understory. The understory was dominated by leaf litter, with occasional ruderal grass species.

The tree survey area located directly west of the north billboard location, where tree number 41 is located (Figure A1), was entirely developed with the exception of a small, landscaped patch of grass. There were no other plant species associated with this survey location.

The area directly to the east of the south billboard location, where tree numbers 42 and 43 are located (Figure A1), was dominated by holm oaks (*Quercus ilex*), Chinese pistache (*Pistacia chinensis*), and other ornamental tree species. Similar to the other billboard locations, the understory was relatively bare, containing primarily leaf litter, tree saplings and ruderal grass species.

Survey Results

Forty-three (43) trees of six species were surveyed on the site (Figure A1, Table 2). Of these species, Brazilian peppertree was the most abundant species observed, making up 38 of the 43 trees surveyed. Of the 43 trees surveyed, none were found to be dead. Forty (40) trees were located between the north and south billboard project locations, along the southern edge of Hwy 101; one tree was located directly west of the north billboard location; and two trees were located directly east of the south billboard location (Figure A1). No trees were tagged; however, each mapped tree was marked with pink flagging.

The majority of trees were in fair condition (see Table 1 above for evaluation criteria). A description of each tree, including its scientific name, common name, number of stems, circumference, health score, estimated height, and designated photo number is presented in Table 2 below. Photos of each surveyed tree are shown below under the Tree Survey Photo Documentation section.

Table 2. Tree Survey Data

Tree Number	Scientific Name	Common Name	Stems	Circumference (inches)*	Condition/ Health	Estimated Height (ft)	Photo Number
1	*Schinus terebinthifolius*	Brazilian peppertree	1	28.3	4	17	Photos 1 and 2
2	*Schinus terebinthifolius*	Brazilian peppertree	1	44	5	22	Photos 3 and 4
3	*Schinus terebinthifolius*	Brazilian peppertree	6	79	4	26	Photo 5
4	*Schinus terebinthifolius*	Brazilian peppertree	1	19	3	22	Photo 5
5	*Schinus terebinthifolius*	Brazilian peppertree	1	22	4	22	Photo 5
6	*Schinus terebinthifolius*	Brazilian peppertree	1	31.4	4	25	Photo 5
7	*Schinus terebinthifolius*	Brazilian peppertree	2	30	4	20	Photo 5
8	*Schinus terebinthifolius*	Brazilian peppertree	1	11	4	18	Photo 5
9	*Schinus terebinthifolius*	Brazilian peppertree	1	28.3	4	18	Photo 5
10	*Schinus terebinthifolius*	Brazilian peppertree	2	24	3	15	Photo 5
11	*Schinus terebinthifolius*	Brazilian peppertree	2	36.1	4	18	Photo 5
12	*Schinus terebinthifolius*	Brazilian peppertree	1	22	2	20	Photo 5
13	*Schinus terebinthifolius*	Brazilian peppertree	2	24	3	15	Photo 5
14	*Schinus terebinthifolius*	Brazilian peppertree	7	97.3	3	22	Photo 6
15	*Schinus terebinthifolius*	Brazilian peppertree	7	242	3	30	Photo 7
16	*Schinus terebinthifolius*	Brazilian peppertree	6	105.2	3	20	Photo 8
17	*Schinus terebinthifolius*	Brazilian peppertree	4	39.3	4	18	Photo 9
18	*Schinus terebinthifolius*	Brazilian peppertree	4	52	4	18	Photo 9
19	*Schinus terebinthifolius*	Brazilian peppertree	6	53.4	4	16	Photo 9
20	*Schinus terebinthifolius*	Brazilian peppertree	7	190	3	25	Photo 10
21	*terebinthifolius*	Brazilian peppertree	5	113	5	35	Photo 11

Tree Number	Scientific Name	Common Name	Stems	Circumference (inches)*	Condition/ Health	Estimated Height (ft)	Photo Number
22	*Schinus terebinthifolius*	Brazilian peppertree	4	50.2	4	25	Photo 12
23	*Schinus terebinthifolius*	Brazilian peppertree	7	63	4	18	Photo 12
24	*Schinus terebinthifolius*	Brazilian peppertree	6	148	4	30	Photo 13
25	*Schinus terebinthifolius*	Brazilian peppertree	11	214	4	35	Photo 14
26	*Schinus terebinthifolius*	Brazilian peppertree	14	201	4	18	Photo 15
27	*Schinus terebinthifolius*	Brazilian peppertree	7	110	3	25	Photo 16
28	*Schinus terebinthifolius*	Brazilian peppertree	2	57	3	22	Photo 17
29	*Schinus terebinthifolius*	Brazilian peppertree	3	50	3	28	Photo 18
30	*Schinus terebinthifolius*	Brazilian peppertree	5	66	4	30	Photo 19
31	*Schinus terebinthifolius*	Brazilian peppertree	4	44	4	28	Photo 20
32	*Schinus terebinthifolius*	Brazilian peppertree	1	30	4	22	Photo 21
33	*Schinus terebinthifolius*	Brazilian peppertree	3	119.3	4	35	Photo 22
34	*Schinus terebinthifolius*	Brazilian peppertree	4	129	4	38	Photo 23
35	*terebinthifolius*	Brazilian peppertree	5	132	5	38	Photo 24
36	*Fraxinus oxycarpa*	Raywood ash	1	42.4	5	30	Photo 25
37	*Schinus terebinthifolius*	Brazilian peppertree	2	66	4	30	Photo 26
38	*Schinus terebinthifolius*	Brazilian peppertree	9	323.4	5	32	Photo 27
39	*terebinthifolius*	Brazilian peppertree	1	35	5	28	Photo 28
40	*Fraxinus uhdei*	Shamel ash	1	85	5	25	Photo 29
41	*Jacaranda sp.*	Jacaranda sp.	1	44	5	28	Photo 30
42	*Pistacia chinensis*	Chinese pistache	1	19	4	20	Photo 31
43	*Quercus ilex*	Holly oak	1	35	4	22	Photo 32

* For trees with multiple trunks, the circumference of each stem was measured at 4.5 ft above ground, and the circumferences of all stems were summed to produce the circumference for the tree.

Tree Survey Photo Documentation

Photo 1. Tree 1

Photo 2. Tree 1

Photo 3. Tree 2

Photo 4. Tree 2

Photo 5. Trees 3 through 13

Photo 6. Tree 14

Photo 7. Tree 15

Photo 8. Tree 16

Photo 9. Trees 17 through 19

Photo 10. Tree 20

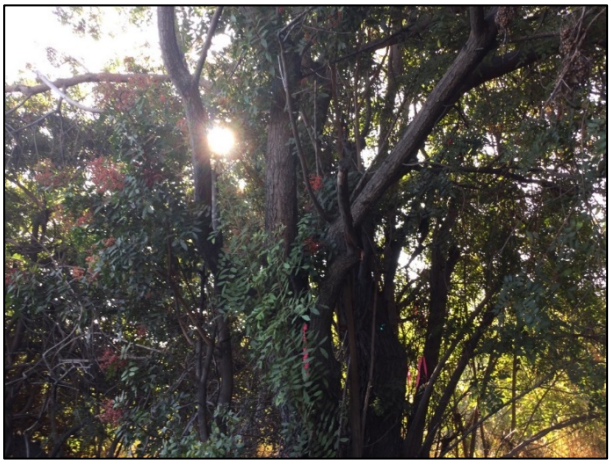


Photo 11. Tree 21

Photo 12. Trees 22 and 23

Photo 13. Tree 24

Photo 14. Tree 25

Photo 15. Tree 26

Photo 16. Tree 27

Photo 17. Tree 28

Photo 18. Tree 29

Photo 19. Tree 30

Photo 20. Tree 31

Photo 21. Tree 32

Photo 22. Tree 33

Photo 23. Tree 34

Photo 24. Tree 35

Photo 25. Tree 36

Photo 26. Tree 37

Photo 27. Tree 38

Photo 28. Tree 39

Photo 29. Tree 40

Photo 30. Tree 41

Photo 31. Tree 42

Photo 32. Tree 43

Please feel free to contact me at speterson@harveyecology.com or (408) 300-8690 if you have any questions regarding this survey.

Sincerely,

Stephen L. Peterson, M.S.
Project Manager, Senior Wildlife Ecologist