Appendix 4

Revised Arborist Biological Resources Reports

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4.2 Heritage Tree Removal Application Willow Village

4.3 Heritage Tree Removal Application Hamilton Avenue Parcels

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Appendix 4.1

Willow Village Master Plan Biological Resources Report

H. T. HARVEY & ASSOCIATES
Ecological Consultants
50 years of field notes, exploration, and excellence

Willow Village Master Plan
Biological Resources Report

Project #3375-17

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August 6, 2022

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Section 1. Introduction

This report describes the biological resources present in and adjacent to the area of Meta Platforms, Inc.'s (Meta) proposed Willow Village Master Plan project (project), as well as the potential impacts of the proposed project and measures necessary to reduce impacts to less-than-significant levels under the California Environmental Quality Act (CEQA). This report was prepared to facilitate CEQA review of the Willow Village Master Plan by the City of Menlo Park. In addition, this report contains the information needed to satisfy Mitigation Measure BIO-1 from the ConnectMenlo General Plan Environmental Impact Report (EIR) (Placeworks 2016), which requires preparation of a biological resources assessment containing information specified in that mitigation measure.

1.1 Project Description

The proposed project entails the redevelopment of the former Menlo Science and Technology Park, as well as an adjacent area west of Willow Road, to create a contemporary mixed-use district including housing, community-serving retail, new public parks and landscaped areas, and a new campus district to provide additional workspace for Meta. The approximately 64.0-acre project site (inclusive of the "main project site" east of Willow Road and "Hamilton Avenue Parcels North and South" west of Willow Road) is located within Menlo Park's Bayfront Area and is bounded by Willow Road and commercial development to the west, the Dumbarton Rail Corridor to the north, the Hetch Hetchy right-of-way corridor and Mid-Peninsula High School to the south, and an existing life science complex to the east (Figure 1). To the west are existing commercial and multi-family uses and Menlo Park's Belle Haven neighborhood.

The main project site is currently occupied by 20 office, industrial, and warehouse buildings that compose approximately 1,000,000 square feet (ft^2) of improvements, as well as surface parking (Figure 2). The Hamilton Avenue Parcels North and South portion of the project site is occupied primarily by restaurants and a gas station. Following the approval of the 2014-2016 update of the Land Use and Circulation Elements of the City of Menlo Park General Plan, identified as ConnectMenlo (City of Menlo Park 2016), Meta undertook an extensive planning effort for the Willow Village Master Plan. The project has been carefully designed to conform to the updated zoning requirements, including the provision for "master planned projects" which allows for a single project or phased development project on sites that exceed 15 acres in size and contain different zoning designations to aggregate density and uses across the entire project site. In addition, the project would aim to comply with all other development standards in the office and residential mixed-use zoning districts, including parking, setbacks, open space, paseos, building design (including bird-friendly design), green and sustainable building, and heritage trees.

Willow Village proposes to replace more than 1,000,000 ft^2 of existing industrial, office, and warehouse space in the Menlo Science and Technology Park with a new, mixed-used village that includes up to 1,735 residential units, 200,000 ft^2 of retail uses, a hotel with up to 193 rooms and accessory uses, 1,250,000 ft^2 of office uses,

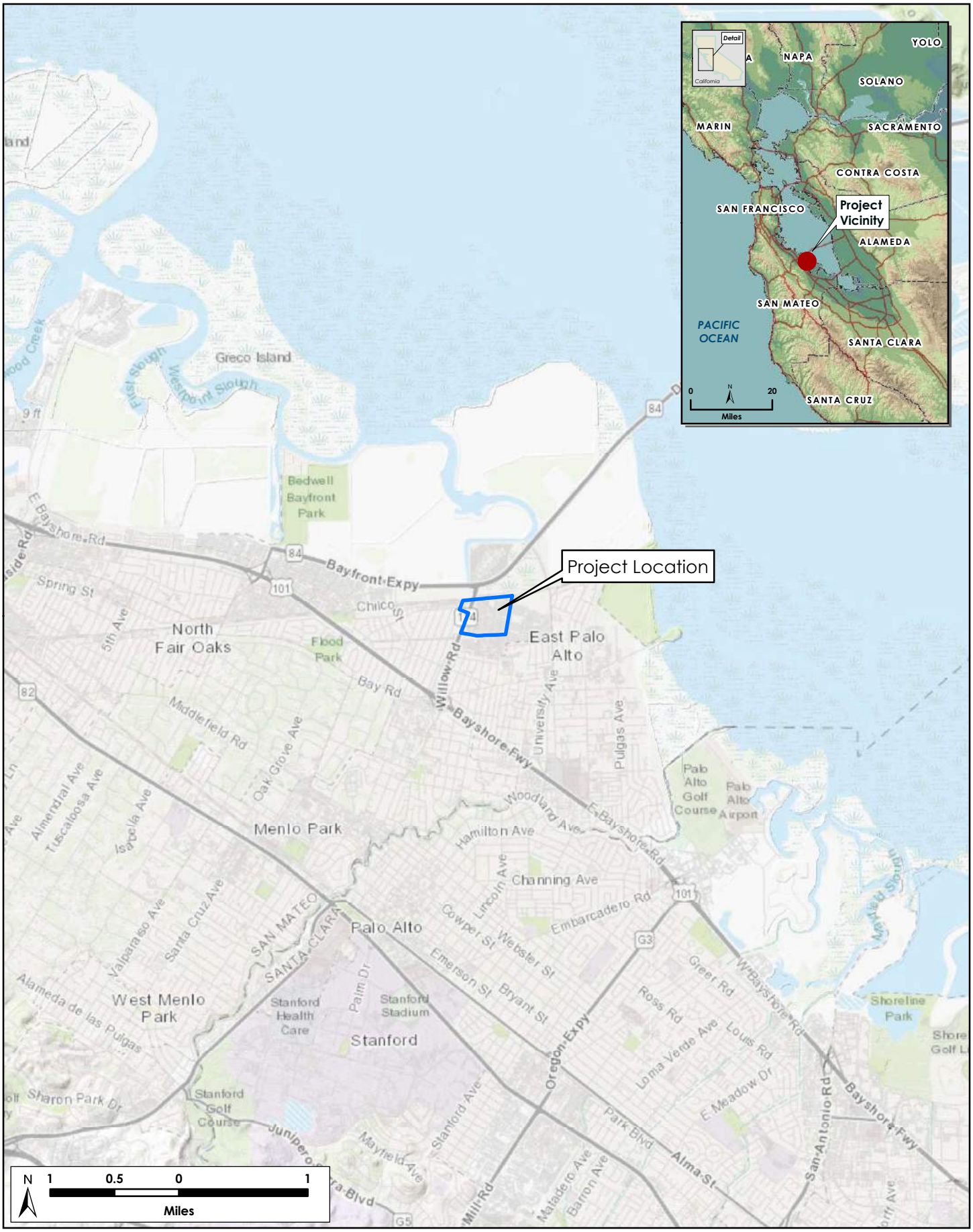

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Figure 1. Vicinity Map
Willow Village Master Plan Biological Resources Report (3375-21)
August 2022

N:\Projects3300\3375-01\21\Reports\BRR\Fig 2 Study Area.mxd

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Figure 2. Study Area

Willow Village Master Plan Biological Resources Report (3375-21)

August 2022

and 500,000 square feet of accessory uses. The plan will require demolition of all existing site improvements consisting of buildings, streets, and utilities. Proposed improvements include site grading to elevate the property above the FEMA base flood elevation and to create buildable pads, construction of new circulation improvements to accommodate vehicles, bicycles, and pedestrians, utilities, park and open space improvements, residential mixed-use buildings, a hotel, and an office campus. Additional improvements will be completed at key connection points at O'Brien Drive, Park Street, Adams Court, and Hamilton Avenue. Mixed-use buildings will range in height from 55–80 ft; office buildings and associated accessory buildings will have a maximum height of 110 ft and would comply with the average heights as established by *ConnectMenlo's* zoning standards.

In order to accommodate the realignment of Hamilton Avenue (to connect to New Hamilton) and to construct the western access (ramp and elevator) to an elevated park, some of the existing development on the block located at the northwest corner and a portion of the block located at the southwest corner of Willow Road and the existing Hamilton Avenue may need to be reconfigured. The block on the northwest corner is approximately 1.83 acres and currently is developed with approximately 16,000 square feet of retail buildings. The portion of the block located at the southwest corner is approximately 1.34 acres and currently is developed with a gas station with approximately 4,500 sf of retail. Both sites are zoned C-2-S Neighborhood Commercial District Special. To accommodate the Hamilton Avenue road realignment, the gas station would be relocated further north in the retail site. In addition, the existing retail may be removed and replaced with new retail buildings in a new site configuration. It is anticipated that the replacement development would be similar to the existing development in size and use potentially adding 5,000 sf in shops, which could include an additional drive through option. Any construction related activities would occur in Phase 2 of the schedule.

The site lighting for Willow Village will comply with Title 24 and Menlo Park's lighting guidelines for both the Residential Mixed-use and Office zoning districts. All fixtures will be energy-efficient, reduce glare and unnecessary light spillage, while providing safe routes of travel for vehicles and pedestrians.

It is anticipated that most of the existing trees on the project site would be removed. Heritage trees, as defined by the City of Menlo Park, would be replaced on site in an amount equivalent to the appraised value of the removed heritage trees in accordance with City policies for commercial applicants[1]. The conceptual landscape plan envisions a combination of native, drought-tolerant, and adapted species from around the world and calls for approximately 1,780 new trees to be planted. Consistent with Menlo Park municipal codes on landscape design, no invasive species or noxious weeds would be used in landscaping for the redeveloped areas.

A chain of publicly accessible open spaces will be located along Main Street, and a new 2.1-acre elevated pedestrian and bike-friendly publicly accessible park is designed to accommodate pedestrian walking trails, bicycle paths, gardens with native drought-tolerant and adapted species, lawn areas, interpretive horticultural exhibits, seating areas, children's play areas, recreation areas, shading canopies, water features, cafés, picnic areas, and public restrooms, as well as security and safety infrastructure. The elevated park would be constructed

[1] https://menlopark.org/DocumentCenter/View/833/Heritage-Tree-Replacement-Procedures

above grade, providing views south over Willow Village and Town Square, north to the Don Edwards San Francisco Bay National Wildlife Refuge, and east towards San Francisco Bay.

Offsite improvements will be made as well. Safe crossing design improvements will be incorporated in the northwest corner of the site to provide safe pedestrian, bicycle, and vehicular movements at Hamilton Avenue and between the two adjoining office campuses. Improvements along Willow Road will include widening of the right-of-way to accommodate additional left turn pockets, installation of new traffic signals, utility points of connections, sidewalk improvements, and landscape improvements. At the southeast corner of the site, in the Residential/Shopping District, a new intersection is proposed at O'Brien Drive, requiring new traffic signals and roadway layout alterations. Along the southern property line, an existing open channel located both on and off-site within the study area directs storm water flows to an existing storm drain main along the east property line. To accommodate site improvements, the drainage flows within this channel will be undergrounded and the channel filled.

It is currently anticipated that Willow Village will be constructed in two primary phases, with Phase 1 being divided into two sub-phases. Construction will commence on the southern portion of the site and move northward. Each construction phase will include the grading of that phase and construction of the circulation (including transit, auto, bicycle, and pedestrian) and utility infrastructure necessary to serve that phase. There may be some overlap in construction phases.

1.2 Bird-Safe Design

In 2014, the City of Menlo Park initiated the process of updating its General Plan Land Use and Circulation Elements as well as its zoning for the M-2 area (also known as the Bayfront Area) in the northern portion of Menlo Park. Collectively, this update to the General Plan and zoning is known as *ConnectMenlo*. On November 29, 2016, the City Council certified the *ConnectMenlo: General Plan Land Use & Circulation Elements and M-2 Area Zoning Update Environmental Impact Report* (ConnectMenlo EIR) and approved the General Plan Land Use and Circulation Elements. The Willow Village project is located within the ConnectMenlo area.

Mitigation Measure BIO-1 of the ConnectMenlo EIR requires measures to ensure that the project reduces bird collisions with new buildings. Pursuant to Mitigation Measure BIO-1, the project must comply with bird-safe design requirements subsequently incorporated into Municipal Code Sections 16.43.150(6) and 16.43.130(6), which include measures to reduce bird collisions. These requirements are as follows:

A. No more than 10% of façade surface area shall have non-bird-friendly glazing.

B. Bird-friendly glazing includes, but is not limited to, opaque glass, covering the outside surface of clear glass with patterns, paned glass with fenestrations, frit or etching patterns, and external screens over nonreflective glass. Highly reflective glass is not permitted.

C. Occupancy sensors or other switch control devices with an astronomic time clock shall be installed on nonemergency lights and shall be programmed to shut off during non-work hours and between 10:00 p.m. and sunrise.

D. Placement of buildings shall avoid the potential funneling of flight paths towards a building façade.

E. Glass skyways or walkways, free-standing (see-through) glass walls and handrails, and transparent building corners shall not be allowed.

F. Transparent glass shall not be allowed at the rooflines of buildings, including in conjunction with roof decks, patios and roofs with landscape vegetation.

G. Use of rodenticides shall not be allowed.

A project may receive a waiver from requirements A through F, subject to the submittal of a site-specific evaluation from a qualified biologist and review and approval by the Planning Commission. A waiver from requirement G is not authorized.

The Willow Village Master Plan incorporates robust bird-safe design measures to minimize bird collisions with project buildings, in accordance with Mitigation Measure BIO-1. H. T. Harvey & Associates (2021a) prepared a *Willow Village Master Plan Bird-Safe Design Assessment* that assessed the potential for bird collisions with various Master Plan components based on the locations of those components and the project's conceptual Conditional Development Permit (CDP) application. For that bird-safe design assessment, H. T. Harvey worked with Meta's design team to identify features of the architecture of project buildings and lighting principles that would reduce the frequency of avian collisions; the components of the City's bird-safe design requirements (from Mitigation Measure BIO-1 of the ConnectMenlo EIR) that Master Plan components could comply with; and proposed waivers from the requirements identified in Municipal Code Sections 16.43.150(6) and 16.43.130(6) and alternative measures that the project would incorporate to meet the intent and effectiveness of any City bird-safe design requirements that the project could not comply with to the letter. In addition, H. T. Harvey also proposed mitigation measures to further minimize impacts related to bird collisions. The *Willow Village Master Plan Bird-Safe Design Assessment* documents that with implementation of these design features, lighting principles, bird-safe design requirements or alternative measures, and mitigation measures, project impacts due to bird collisions with buildings would be reduced to less-than-significant levels under CEQA.

Section 2. Methods

2.1 Background Review

Prior to conducting initial field work, H. T. Harvey & Associates ecologists reviewed the original project plans and description provided by Meta in November 2017; aerial images (Google Inc. 2021); a U.S. Geological Survey (USGS) topographic map; the California Department of Fish and Wildlife's (CDFW's) California Natural Diversity Database (CNDDB 2021); and other relevant scientific literature and technical databases. Previous reports prepared for the project and vicinity were also reviewed, including the arborist report for the main project site (SBCA Tree Consulting 2017); the Final EIRs for the nearby Menlo Park Facebook Campus (Atkins 2012) and the Facebook Campus Expansion Project (ICF International 2016); the Final EIR for the ConnectMenlo: General Plan Land Use & Circulation Elements and M-2 Area Zoning Update for the City of Menlo Park (PlaceWorks 2016); and the Comprehensive Conservation Plan and Environmental Assessment for the Don Edwards San Francisco Bay National Wildlife Refuge (NWR) (USFWS 2012). In addition, for plants, we reviewed all species on current California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) 1A, 1B, 2A, and 2B lists occurring in the *Palo Alto, California* USGS quadrangle and surrounding eight quadrangles (*Woodside, San Mateo, Redwood Point, Newark, Mountain View, Cupertino, Mindego Hill,* and *La Honda, California*). Quadrangle-level results are not maintained for CRPR 3 and 4 species, so we also conducted a search of the CNPS Inventory records for these species occurring in San Mateo County (CNPS 2021). In addition, we queried the CNDDB (2021) for natural communities of special concern that occur in the project region. For the purposes of this report, the "project vicinity" encompasses a 5-mile (mi) radius surrounding the project site.

After the Willow Village design and program were revised in May 2020, we reviewed the updated plans (Peninsula Innovation Partners 2020) and current CNDDB and CNPS information to ensure that our updated assessment of the project's potential impacts on biological resources was based on up-to-date information. We also reviewed the project's heritage tree removal applications (Peninsula Innovation Partners 2022a-e).

In addition, H. T. Harvey & Associates (2021b) performed a delineation of jurisdictional wetlands and other waters of the U.S./State within the study area in 2021. A field visit for that delineation was conducted in August 2021, and a follow-up visit to assess conditions in a drainage ditch was conducted on December 31, 2021.

2.2 Site Visits

The project site discussed in this report includes the area enclosed by the project boundary shown in Figure 2. For the purposes of ensuring evaluation of all potential direct, indirect, and cumulative effects on biological resources, the project's biological resources study area includes the project site (main site and Hamilton Avenue Parcels North and South) and areas within 100 ft beyond the project boundary (Figure 2). Reconnaissance-level field surveys of the main project site, as well as areas within the Dumbarton Rail Corridor both east and west of Willow Road, were initially conducted by H. T. Harvey & Associates senior wildlife ecologist Steve

Rottenborn, Ph.D., on October 26, 2017 and by H. T. Harvey & Associates wildlife ecologist, Stephen L. Peterson, M.S., and plant ecologist Matthew Mosher, B.S., on November 13, 2017, with an additional visit by M. Mosher on November 15, 2017. After the project was redesigned in 2019, S. Rottenborn visited the main project site again on April 22, 2019. After the project was redesigned in 2020, H. T. Harvey & Associates senior wildlife ecologist Robin Carle, M.S., visited the Hamilton Avenue Parcels North and South portion of the site on June 10, 2020 and H. T. Harvey & Associates senior plant ecologist Mark Bibbo, M.S., visited this area on June 12, 2020. The purpose of these surveys was to provide a project-specific impact assessment for the proposed project as described above. Specifically, surveys were conducted to (1) assess existing biotic habitats and general plant and wildlife communities in the study area, (2) assess the potential for the project to impact special-status species or their habitats, and (3) identify potential jurisdictional habitats, such as Waters of the U.S./State and riparian habitat.

In addition, focused surveys for Congdon's tarplant (*Centromadia parryi* var. *congdonii*) were conducted by H. T. Harvey & Associates plant ecologists on November 13, 2017 (main project site) and June 12, 2020 (Hamilton Avenue Parcels North and South). These surveys targeted areas of potential suitable habitat along the Dumbarton Rail Corridor in the northern portion of the study area.

Section 3. Regulatory Setting

Biological resources on the project site are regulated by a number of federal, state, and local laws and ordinances, as described below.

3.1 Federal

3.1.1 Clean Water Act

The Clean Water Act (CWA) functions to maintain and restore the physical, chemical, and biological integrity of Waters of the U.S., which include, but are not limited to, tributaries to traditionally navigable waters currently or historically used for interstate or foreign commerce, and adjacent wetlands. Historically, in non-tidal waters, U.S. Army Corp of Engineers (USACE) jurisdiction extends to the ordinary high water (OHW) mark, which is defined in Title 33, Code of Federal Regulations (CFR), Part 328.3. If there are wetlands adjacent to channelized features, the limits of USACE jurisdiction extend beyond the OHW mark to the outer edges of the wetlands. Wetlands that are not adjacent or tributaries to Waters of the U.S. are termed "isolated wetlands" and, depending on the circumstances, typically are not subject to USACE jurisdiction. In tidal waters, USACE jurisdiction extends to the landward extent of vegetation associated with salt or brackish water or the high tide line. The high tide line is defined in 33 CFR Part 328.3 as "the line of intersection of the land with the water's surface at the maximum height reached by a rising tide."

Construction activities within jurisdictional waters are regulated by the USACE. The placement of fill into such waters must comply with permit requirements of the USACE. No USACE permit will be effective in the absence of Section 401 Water Quality Certification. The State Water Resources Control Board (SWRCB) is the state agency (together with the Regional Water Quality Control Boards [RWQCBs] charged with implementing water quality certification in California.

Project Applicability: The project site itself does not support wetland or aquatic habitats. A small, isolated segment of forested wetland that may be claimed as Waters of the U.S. is located in a drainage ditch along the northern edge of the study area, just outside the project boundary (H. T. Harvey & Associates 2021b). Similarly, a linear area of herbaceous-dominated seasonal wetland is present in the Dumbarton Rail Corridor immediately north of the Hamilton Avenue Parcels North and South portion of the project site. Another herbaceous seasonal wetland is present just outside the northeast corner of the project boundary (H. T. Harvey & Associates 2021b). These seasonal wetlands might also be claimed as Waters of the U.S. The San Francisco office of the USACE would ultimately determine whether or not these features are subject to USACE jurisdiction under Section 404 of the CWA (under either current regulations or any amended regulations). It is our understanding that the project will avoid to the extent feasible placing fill in those features, in which case no permit from the USACE would be needed for activities associated with these features even if determined to be jurisdictional. However, if these features are determined to be jurisdictional and are impacted by project grading, a Section

404 permit from the USACE would be required., and mitigation of impacts would be required as described in Mitigation Measures BIO-11 and 12 in Section 6.2.1.

A ditch located partially on-site and partially within the Hetch Hetchy easement corridor immediately south of the main project site (and within the study area) was dominated by upland (non-wetland) vegetation during our April 2019 site visit (as well as the August 2021 site visit for the delineation of waters of the U.S./State [H. T. Harvey & Associates 2021b]), is concrete-lined in at least some locations, and is excavated in uplands to collect stormwater runoff from the surrounding development. A visit to the site on December 31, 2021, after a prolonged, heavy rain event, revealed evidence of only a very small amount of runoff that had flowed through this ditch during the storm. As such, we do not expect this feature to be claimed as Waters of the U.S. by the USACE.

Brackish marsh habitat is present outside and well to the north and northeast of the study area. We expect that this brackish marsh would be considered Waters of the U.S. under both current and proposed definitions of Waters of the U.S. because it is adjacent to tidal channels that would either be considered navigable or tributaries to navigable waters. This brackish marsh habitat is located well off-site, however, and no impacts to this marsh would result from the proposed project.

3.1.2 Rivers and Harbors Act

Section 10 of the Rivers and Harbors Act of 1899 prohibits the creation of any obstruction to the navigable capacity of Waters of the U.S., including discharge of fill and the building of any wharfs, piers, jetties, and other structures without Congressional approval or authorization by the Chief of Engineers and Secretary of the Army (33 U.S.C. 403).

Navigable Waters of the U.S., which are defined in 33 CFR, Part 329.4, include all waters subject to the ebb and flow of the tide, and those which are presently or have historically been used to transport commerce. The shoreward jurisdictional limit of tidal waters is further defined in 33 CFR, Part 329.12 as "the line on the shore reached by the plane of the mean (average) high water." It is important to understand that the USACE does not regulate wetlands under Section 10, only the aquatic or open waters component of bay habitat, and that there is overlap between Section 10 jurisdiction and Section 404 jurisdiction. According to 33 CFR, Part 329.9, a waterbody that was once navigable in its natural or improved state retains its character as "navigable in law" even though it is not presently used for commerce as a result of changed conditions or the presence of obstructions. Historical Section 10 Waters may occur behind levees in areas that are not currently exposed to tidal or muted-tidal influence, and meet the following criteria: (1) the area is presently at or below the mean high water line; (2) the area was historically at or below mean high water in its "unobstructed, natural state"; and (3) there is no evidence that the area was ever above mean high water.

As mentioned above, Section 404 of the CWA authorizes the USACE to issue permits to regulate the discharge of dredged or fill material into Waters of the U.S. If a project also proposes to discharge of dredged or fill

material or introduce of other potential obstructions in navigable Waters of the U.S., a Letter of Permission authorizing these impacts must be obtained from the USACE under Section 10 of the Rivers and Harbors Act.

Project Applicability: Based on mapping of the historical margins of San Francisco Bay marshes (Nichols and Wright 1971), which depict the margins of baylands being located well north of the project site, no current or historical Section 10 waters are present within the project boundary or elsewhere within the study area (e.g., in the wetlands immediately north and northeast of the project boundary). Therefore, no Section 10 Letter of Permission from the USACE is required for the project.

3.1.3 Federal Endangered Species Act

The Federal Endangered Species Act (FESA) protects federally listed wildlife species from harm or "take", which is broadly defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct." Take can also include habitat modification or degradation that directly results in death or injury of a listed wildlife species. An activity can be defined as "take" even if it is unintentional or accidental. Generally, listed plant species are provided less protection than listed wildlife species. Listed plant species are legally protected from take under the FESA only if they occur on federal lands.

The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) have jurisdiction over federally listed, threatened, and endangered species under FESA. The USFWS also maintains lists of proposed and candidate species. Species on these lists are not legally protected under FESA, but may become listed in the near future and are often included in their review of a project.

Project Applicability: No suitable habitat for any federally listed plant or animal species occurs in the study area. Thus, no federally listed species are reasonably expected to occur in the study area.

3.1.4 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act governs all fishery management activities that occur in federal waters within the United States' 200-nautical-mile limit. The Act establishes eight Regional Fishery Management Councils responsible for the preparation of fishery management plans (FMPs) to achieve the optimum yield from U.S. fisheries in their regions. These councils, with assistance from NMFS, establish Essential Fish Habitat (EFH) in FMPs for all managed species. Federal agencies that fund, permit, or implement activities that may adversely affect EFH are required to consult with NMFS regarding potential adverse effects of their actions on EFH, and respond in writing to recommendations by NMFS.

Project Applicability: No EFH is present in the study area.

3.1.5 Federal Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (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. On February 3, 2020, the USFWS published a proposed rule to codify the scope of the MBTA as it applies to activities resulting in the injury or death of migratory birds (85 FR 5915-5926); the USFWS is currently considering comments on the proposed rule.

Project Applicability: All native bird species that occur in the study area are protected under the MBTA. Mitigation Measures BIO-13, 14, 15, and 16 shall be implemented to ensure that project activities comply with the MBTA as described in Section 6.4.1.

3.2 State

3.2.1 Porter-Cologne Water Quality Control Act

The SWRCB works in coordination with the nine RWQCBs to preserve, protect, enhance, and restore water quality. Each RWQCB makes decisions related to water quality for its region, and may approve, with or without conditions, or deny projects that could affect Waters of the State. Their authority comes from the CWA and the State's Porter-Cologne Water Quality Control Act (Porter-Cologne). Porter-Cologne broadly defines Waters of the State as "any surface water or groundwater, including saline waters, within the boundaries of the state." Because Porter-Cologne applies to any water, whereas the CWA applies only to certain waters, California's jurisdictional reach overlaps and may exceed the boundaries of Waters of the U.S. For example, Water Quality Order No. 2004-0004-DWQ states that "shallow" Waters of the State include headwaters, wetlands, and riparian areas. Moreover, the San Francisco Bay Region RWQCB's Assistant Executive Director has stated that, in practice, the RWQCBs may claim jurisdiction over riparian areas. Where riparian habitat is not present, such as may be the case at headwaters, jurisdiction is taken to the top of bank.

On April 2, 2019, the SWRCB adopted the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. In these new guidelines, riparian habitats are not specifically described as Waters of the State but instead as important buffer habitats to streams that do conform to the State Wetland Definition. The Procedures describe riparian habitat buffers as important resources that may both be included in required mitigation packages for permits for impacts to Waters of the State.

Pursuant to the CWA, projects that are regulated by the USACE must also obtain a Section 401 Water Quality Certification permit from the RWQCB. This certification ensures that the proposed project will uphold state water quality standards. Because California's jurisdiction to regulate its water resources is much broader than

that of the federal government, proposed impacts on Waters of the State may require Waste Discharge Requirements even if the area occurs outside of USACE jurisdiction. Moreover, the RWQCB may impose mitigation requirements even if the USACE does not, for example for riparian habitats which are buffers to Waters of the State. Under the Porter-Cologne, the SWRCB and the nine regional boards also have the responsibility of granting CWA National Pollutant Discharge Elimination System (NPDES) permits and Waste Discharge Requirements for certain point-source and non-point discharges to waters. These regulations limit impacts on aquatic and riparian habitats from a variety of urban sources.

Project Applicability: No aquatic, wetland, or riparian habitats are present within the project boundary. However, as noted above in Section 3.1.1, a small, isolated segment of forested wetland that would likely be claimed as Waters of the State is located in a drainage ditch along the northern edge of and within the study area, just outside the project boundary (H. T. Harvey & Associates 2021b). Similarly, a linear area of herbaceous-dominated seasonal wetland is present in the Dumbarton Rail Corridor immediately north of the Hamilton Avenue Parcels North and South portion of the project site. Another herbaceous seasonal wetland is present just outside the northeast corner of the project boundary (H. T. Harvey & Associates 2021b). These seasonal wetlands might also be claimed as Waters of the State. It is our understanding that the project will avoid to the extent feasible placing fill in those wetlands, in which case no permit from the RWQCB would be needed for activities associated with wetlands even if these features are determined to be jurisdictional. However, if these features are determined to be jurisdictional and are impacted by the project, Section 401 water quality certification or Waste Discharge Requirements from the RWQCB would be required, and mitigation of impacts would be required as described in Mitigation Measures BIO-11 and 12 in Section 6.2.1. A ditch located partially on-site and partially within the Hetch Hetchy easement corridor immediately south of the main project site (but within the study area) was dominated by upland (non-wetland) vegetation during our April 2019 site visit, is concrete lined in at least some locations, and is excavated in uplands to collect stormwater runoff from the surrounding development. As such, we do not expect this feature to be claimed as Waters of the State by the RWQCB (H. T. Harvey & Associates 2021b).

Brackish marsh habitat is present well to the north and northeast of the study area. We expect that this brackish marsh would be considered Waters of the State because it is adjacent to tidal channels that would either be considered navigable or tributaries to navigable waters. This brackish marsh habitat is located well off-site, however, and no impacts to this marsh would result from the proposed project.

3.2.2 California Endangered Species Act

The California Endangered Species Act (CESA; California Fish and Game Code, Chapter 1.5, Sections 2050-2116) prohibits the take of any plant or animal listed as an endangered, threatened, or candidate species. In accordance with the CESA, the CDFW has jurisdiction over state-listed species (Fish and Game Code 2070). The CDFW regulates activities that may result in "take" of individuals (i.e., "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill"). Habitat degradation or modification is not expressly included in the definition of "take" under the California Fish and Game Code. The CDFW, however, has

interpreted "take" to include the "killing of a member of a species which is the proximate result of habitat modification."

Project Applicability: No suitable habitat for any state listed plant or animal species occurs in the study area, and thus no state listed species are expected to occur in the study area.

3.2.3 California Environmental Quality Act

CEQA is a state law that requires state and local agencies to document and consider the environmental implications of their actions and to refrain from approving projects with significant environmental effects if there are feasible alternatives or mitigation measures that can substantially lessen or avoid those effects. CEQA requires the full disclosure of the environmental effects of agency actions, such as approval of a general plan update or the projects covered by that plan, on resources such as air quality, water quality, cultural resources, and biological resources. The State Resources Agency promulgated guidelines for implementing CEQA are known as the State CEQA Guidelines.

Section 15380(b) of the State CEQA Guidelines provides that a species not listed on the federal or state lists of protected species may be considered rare if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definitions in the FESA and the CESA and the section of the California Fish and Game Code dealing with rare or endangered plants and animals. This section was included in the guidelines primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on a species that has not yet been listed by either the USFWS or CDFW or species that are locally or regionally rare.

The CDFW has produced three lists (amphibians and reptiles, birds, and mammals) of "species of special concern" that serve as "watch lists". Species on these lists are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Thus, their populations should be monitored. They may receive special attention during environmental review as potential rare species, but do not have specific statutory protection. All potentially rare or sensitive species, or habitats capable of supporting rare species, are considered for environmental review per the CEQA Section 15380(b).

The CNPS, a non-governmental conservation organization, has developed CRPRs for plant species of concern in California in the Inventory of Rare and Endangered Plants (CNPS 2021). The CRPRs include lichens, vascular, and non-vascular plants, and are defined as follows:

- CRPR 1A Plants considered extinct.
- CRPR 1B Plants rare, threatened, or endangered in California and elsewhere.
- CRPR 2A Plants considered extinct in California but more common elsewhere.
- CRPR 2B Plants rare, threatened, or endangered in California but more common elsewhere.
- CRPR 3 Plants about which more information is needed - review list.

- CRPR 4 Plants of limited distribution-watch list.

The CRPRs are further described by the following threat code extensions:

- .1—seriously endangered in California;
- .2—fairly endangered in California;
- .3—not very endangered in California.

Although the CNPS is not a regulatory agency and plants on these lists have no formal regulatory protection, plants appearing as CRPR 1B or 2 are, in general, considered to meet CEQA's Section 15380 criteria, and adverse effects on these species may be considered significant. Impacts on plants that are listed by the CNPS as CRPR 3 or 4 are also considered during CEQA review, although because these species are typically not as rare as those of CRPR 1B or 2, impacts on them are less frequently considered significant.

Compliance with CEQA Guidelines Section 15065(a) requires consideration of plant or animal natural communities. Vegetation types of "special concern" are tracked in Rarefind (CNDDB 2021). Further, the CDFW ranks sensitive vegetation alliances based on their global (G) and state (S) rankings analogous to those provided in the CNDDB. Global rankings (G1–G5) of natural communities reflect the overall condition (rarity and endangerment) of a habitat throughout its range, whereas S rankings are a reflection of the condition of a habitat within California. If an alliance is marked as a G1–G3, all of the associations within it would also be of high priority. The CDFW provides the Vegetation Classification and Mapping Program's currently accepted list of vegetation alliances and associations (CDFW 2010).

Project Applicability: All potential impacts on biological resources will be considered during CEQA review of the project. This Biological Resources Report assesses these impacts to facilitate CEQA review of the project by the City of Menlo Park. Project impacts are discussed in Section 6 below.

3.2.4 California Fish and Game Code

Ephemeral and intermittent streams, rivers, creeks, dry washes, sloughs, blue line streams on USGS maps, and watercourses with subsurface flows generally fall under CDFW jurisdiction. Canals, aqueducts, irrigation ditches, and other means of water conveyance may also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife. A *stream* is defined in Title 14, California Code of Regulations Section 1.72, as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and that supports fish and other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." Using this definition, CDFW extends its jurisdiction to encompass riparian habitats that function as a part of a watercourse. California Fish and Game Code Section 2786 defines *riparian habitat* as "lands which contain habitat which grows close to and which depends upon soil moisture from a nearby freshwater source." The lateral extent of a stream and associated riparian habitat that would fall under the jurisdiction of CDFW can be measured in several ways, depending on the particular situation and the type of fish or wildlife at risk. At minimum, CDFW would claim jurisdiction

over a stream's bed and bank. In areas that lack a vegetated riparian corridor, CDFW jurisdiction would be the same as USACE jurisdiction. Where riparian habitat is present, the outer edge of riparian vegetation is generally used as the line of demarcation between riparian and upland habitats.

Pursuant to California Fish and Game Code Section 1603, CDFW regulates any project proposed by any person that will "substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds." California Fish and Game Code Section 1602 requires an entity to notify CDFW of any proposed activity that may modify a river, stream, or lake. If CDFW determines that proposed activities may substantially adversely affect fish and wildlife resources, a Lake and Streambed Alteration Agreement (LSAA) must be prepared. The LSAA sets reasonable conditions necessary to protect fish and wildlife, and must comply with CEQA. The applicant may then proceed with the activity in accordance with the final LSAA.

Certain sections of the California Fish and Game Code describe regulations pertaining to protection of certain wildlife species. For example, Code Section 2000 prohibits take of any bird, mammal, fish, reptile, or amphibian except as provided by other sections of the code.

The California Fish and Game Code Sections 3503, 3513, and 3800 (and other sections and subsections) protect native birds, including their nests and eggs, from all forms of take. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by the CDFW. Raptors (i.e., eagles, hawks, and owls) and their nests are specifically protected in California under Code Section 3503.5. Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto."

Bats and other non-game mammals are protected by California Fish and Game Code Section 4150, which states that all non-game mammals or parts thereof may not be taken or possessed except as provided otherwise in the code or in accordance with regulations adopted by the commission. Activities resulting in mortality of non-game mammals (e.g., destruction of an occupied nonbreeding bat roost, resulting in the death of bats), or disturbance that causes the loss of a maternity colony of bats (resulting in the death of young), may be considered "take" by the CDFW.

Project Applicability: The drainage ditches located along the northern and southern edges of the study area are not downstream continuations of terrestrial streams and only collect localized runoff from the surrounding development. Additionally, no flows continue downstream of these features out to the Bay or other stream or slough. As such, these features are not considered rivers or streams and are not regulated by the CDFW under California Fish and Game Code Section 1603 (H. T. Harvey & Associates 2021b).

Most native bird, mammal, and other wildlife species that occur on the project site and in the immediate vicinity are protected by the California Fish and Game Code. Mitigation Measures BIO-13, 14, 15, and 16 shall be

implemented to ensure that project activities comply with the Fish and Game Code with respect to nesting birds, as described in Section 6.4.1.

3.3 Local

3.3.1 Menlo Park Municipal Code

The City of Menlo Park Municipal Code contains all ordinances for Menlo Park. Title 16, Zoning, includes regulations relevant to biological resources on the project site as discussed below.

Bird-Friendly Design. Sections 16.43.140 (6) (with respect to the O District) and 16.45.130(6) (with respect to the RMU District) require all new construction, regardless of size, to implement the following bird-friendly design measures:

- No more than 10% of facade surface area shall have non-bird-friendly glazing.
- Bird-friendly glazing includes, but is not limited to, opaque glass, covering of clear glass surface with patterns, paned glass with fenestration patterns, and external screens over non-reflective glass.
- Placement of buildings shall avoid the potential funneling of flight paths towards a building facade.
- Glass skyways or walkways, freestanding glass walls, and transparent building corners shall not be allowed.
- Transparent glass shall not be allowed at the rooflines of buildings, including in conjunction with green roofs.
- Use of rodenticides shall not be allowed.

A project may receive a waiver from one (1) or more of the items listed in subsections (6)(A) to (F) of this section, subject to the submittal of a site-specific evaluation from a qualified biologist and review and approval by the planning commission. (Ord. 1024 § 3 (part), 2016).

Project Applicability: Bird-friendly design will be incorporated into the project design as required by the City of Menlo Park Municipal Code. The project's incorporation of bird-safe design is discussed in Sections 1.2 and 6.5.2.

Landscape Design Plan. Chapter 12.44.090(a)(1)(G) provides that the use of invasive or noxious plant species is strongly discouraged. Invasive species are defined as those plants not historically found in California that spread outside cultivated areas and can damage environmental or economic resources. A noxious weed refers to any weed designated by the weed control regulations in the Weed Control Act and identified on a regional district noxious weed control list.

Project Applicability: No invasive and/or noxious plant species will be used in the project's landscape design plan.

Heritage Trees. Chapter 13.24, Heritage Trees, establishes regulations for the preservation of heritage trees, defined as:

- Trees of historical significance, special character or community benefit, specifically designated by resolution of the City Council;
- An oak tree (*Quercus* sp.), which is native to California and has a trunk with a circumference of 31.4 inches (diameter of 10 inches) or more, measured at 54 inches above natural grade; and
- All trees other than oaks, which have a trunk with a circumference of 47.1 inches (diameter of 15 inches) or more, measured 54 inches above natural grade, with the exception of trees that are less than 12 ft in height, which will be exempt from this section.

To protect heritage trees, Section 13.24.025 requires that a tree protection plan prepared by a certified arborist be submitted for any work performed within a tree protection zone, which is an area ten times the diameter of the tree. Furthermore, all tree protection plans should be reviewed and approved by the Public Works Director or his or her designee prior to issuance of any permit for grading or construction.

The removal of heritage trees or pruning of more than one-fourth of the branches or roots within a 12-month period requires a permit from the City's Director of Public Works or his or her designee and payment of a fee. The Director of Public Works may issue a permit when the removal or major pruning of a heritage tree is reasonable based on a number of criteria, including condition of the tree, need for removal to accommodate proposed improvements, the ecological and long-term value of the tree, and feasible alternatives that would allow for tree preservation.

Project Applicability: The project site includes 327 trees that qualify as heritage trees under the City ordinance, distributed as follows: 284 on the main Willow Village project site, 13 at 1305 O'Brien Drive, 4 at 1330 O'Brien Drive, 8 in the O'Brien Drive right-of-way, and 18 on Hamilton Avenue Parcels North and South (SBCA Tree Consulting 2017, Peninsula Innovation Partners 2020, 2022a-e). It is anticipated that a total of 295 heritage trees, including 276 on the main Willow Village project site, 7 at 1305 O'Brien Drive, 3 at 1330 O'Brien Drive, 6 in the O'Brien Drive right-of-way, and 3 on the Hamilton Avenue Parcels North and South, would be removed as part of the proposed project. Therefore, a permit from the City would be required.

3.3.2 Menlo Park General Plan

The City of Menlo Park General Plan includes goals, policies, and programs relevant to the environmental factors potentially affected by the proposed project, including the following:

- *Goal LU-4:* Promote the development and retention of business uses that provide goods or services needed by the community that generate benefits to the City, and avoid or minimize potential environmental and traffic impacts.

- *Policy LU-4.5: Business Uses and Environmental Impacts.* Allow modifications to business operations and structures that promote revenue-generating uses for which potential environmental impacts can be mitigated.

- *Goal LU-6:* Preserve open-space lands for recreation; protect natural resources and air and water quality; and protect and enhance scenic qualities.
    - *Policy LU-6.5: Open Space Retention.* Maximize the retention of open space on larger tracts (e.g., portions of the St. Patrick's Seminary site) through means such as rezoning consistent with existing uses, clustered development, acquisition of a permanent open space easement, and/or transfer of development rights.
    - *Policy LU 6.6: Public Bay Access.* Protect and support public access to the Bay for the scenic enjoyment of open water, sloughs, and marshes, including restoration efforts, and completion of the Bay Trail.
    - *Policy LU-6.7: Habitat Preservation.* Collaborate with neighboring jurisdictions to preserve and enhance the Bay, shoreline, San Francisquito Creek, and other wildlife habitat and ecologically fragile areas to the maximum extent possible.
    - *Policy LU-6.8: Landscaping in Development.* Encourage extensive and appropriate landscaping in public and private development to maintain the City's tree canopy and to promote sustainability and healthy living, particularly through increased trees and water-efficient landscaping in large parking areas and in the public right-of-way.
    - *Policy LU-6.11. Baylands Preservation.* Allow development near the Bay only in already developed areas.
        - *Program LU-6.D: Design for Birds.* Require new buildings to employ façade, window, and lighting design features that make them visible to birds as physical barriers and eliminate conditions that create confusing reflections to birds.

- Goal OSC1: Maintain, Protect, and Enhance Open Space and Natural Resources.
    - *Policy OSC1.1: Natural Resources Integration with Other Uses.* Protect Menlo Park's natural environment and integrate creeks, utility corridors, and other significant natural and scenic features into development plans.
    - *Policy OSC1.2: Habitat for Open Space and Conservation Purposes.* Preserve, protect, maintain, and enhance water, water-related areas, plant and wildlife habitat for open space and conservation purposes.
    - *Policy OSC1.3: Sensitive Habitats.* Require new development on or near sensitive habitats to provide baseline assessments prepared by qualified biologists, and specify requirements relative to the baseline assessments.
    - *Policy OSC1.4: Habitat Enhancement.* Require new development to minimize the disturbance of natural habitats and vegetation, and require revegetation of disturbed natural habitat areas with native or non-invasive naturalized species.

- *Policy OSC1.5: Invasive, Non-Native Plant Species*. Avoid the use of invasive, non-native species, as identified on the lists of invasive plants maintained at the California Invasive Plant Inventory and United States Department of Agriculture invasive and noxious weeds database, or other authoritative sources, in landscaping on public property.
- *Policy OSC1.15: Heritage Trees*. Protect Heritage Trees, including during construction activities through enforcement of the Heritage Tree Ordinance (Chapter 13.24of the Municipal Code).

Project Applicability: The project is located within the Menlo Park General Plan area and would conform to all applicable requirements.

Section 4. Environmental Setting

4.1 General Project Area Description

The 81.1-acre study area (including the approximately 64-acre project site) is located in the *Palo Alto*, *California* 7.5-minute USGS quadrangle. The approximately 64-acre project site (inclusive of the "main project site" east of Willow Road and "Hamilton Avenue Parcels North and South" west of Willow Road) is bounded by Willow Road to the west, the Hetch Hetchy easement corridor to the south, an existing life science complex to the east, and a drainage ditch, rail line, and Extra Space Storage self-storage units to the north. A review of historical aerial photographs indicates that the study area was largely agriculture in 1943. By 1991, the project site was developed with numerous buildings and parking lots known as the Menlo Science and Technology Park. Currently, the site is occupied by 21 office, industrial, and warehouse buildings (Figure 2).

The site is generally level, with elevations ranging from approximately 6 to 13 ft (North American Vertical Datum of 1988) above sea level. The site is underlain by one soil type, Urban land-Orthents, reclaimed complex, 0 to 2 percent slopes (NRCS 2021). This soil type has a variable profile to a depth of approximately 40 inches, with silty clay generally occurring from 40 to 60 inches, and is considered a well-drained soil.

4.2 Biotic Habitats

Reconnaissance-level surveys identified four habitat types/land uses in the study area: developed/landscaped (77.16 acres), California annual grassland (3.66 acres), forested wetland (0.07 acre[2]), and herbaceous seasonal wetlands (0.07 acre) (Figure 3). These habitats are described in detail below. Plant species observed during the reconnaissance survey are listed in Appendix A.

4.2.1 Developed/Landscaped

Vegetation. The entire project site, and the vast majority of the study area, are occupied by developed/landscaped land uses (Photo 1) that include office buildings, restaurants, a gas station, parking lots, walking paths, mulched and irrigated areas, and extensive plantings

Photo 1. Developed/Landscaped habitat.

[2] The depression comprising the footprint of the forested wetland is 0.07 acre in size; the canopy of the willows rooted within that wetland comprise an additional 0.13 acre.

N:\Projects3300\3375-01\21\Reports\BRR\Fig 3 Habitats Map.mxd

H. T. HARVEY & ASSOCIATES
Ecological Consultants

Figure 3. Habitats Map

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of ornamental trees and other landscaping species. Species characteristic of this area include Canary Island pine (*Pinus canariensis*), Chinese pistache (*Pistacia chinensis*), London plane (*Platanus* x*hispanica*), eucalyptus (*Eucalyptus* sp.), and crepe myrtle (*Lagerstroemia* sp.). Common understory plants include buckbrush (*Ceanothus* sp.) and rosemary (*Rosmarinus officinalis*). Immediately outside the southern edge of the project boundary (but within an area where off-site improvements will be made), a ditch is located partially on-site and partially within the Hetch Hetchy easement area (Photo 2). This ditch was dominated by upland (non-wetland) vegetation during our April 2019 site visit, as well as during the August 2021 site visit conducted for the delineation of waters of the U.S./State, and is concrete lined in at least some locations (H. T. Harvey & Associates 2021b). The ditch collects some water from the surrounding uplands and flows into a stormdrain. However, a visit to the site on December 31, 2021, after a prolonged, heavy rain event, revealed evidence of only a very small amount of runoff in this ditch during the storm. It is evident that this ditch receives little runoff from surrounding areas.

Photo 2. A drainage ditch in the southeastern part of the site.

Wildlife. The wildlife most often associated with developed/landscaped areas are those that are tolerant of periodic human disturbances, including introduced species such as the European starling (*Sturnus vulgaris*), rock pigeon (*Columba livia*), house mouse (*Mus musculus*), Norway rat (*Rattus norvegicus*), and black rat (*Rattus rattus*). Numerous common, native species are also able to utilize these habitats, especially the landscaped areas, including the western fence lizard (*Sceloporus occidentalis*), striped skunk (*Mephitis mephitis*), and a variety of birds, such as the American crow (*Corvus brachyrhynchos*), Anna's hummingbird (*Calypte anna*), California towhee (*Melozone crissalis*), bushtit (*Psaltriparus minimus*), chestnut-backed chickadee (*Poecile rufescens*), and California scrub-jay (*Aphelocoma californica*), all of which were observed on the project site during the reconnaissance survey. In addition, the eaves of the buildings on the project site may be attractive to other nesting and/or roosting bird species in the area, such as the black phoebe (*Sayornis nigricans*). Further, a number of large eucalyptus trees found in the northern portion of the project site may provide suitable nesting habitat for a pair of raptors, such as the red-tailed hawk (*Buteo jamaicensis*), which was observed in the study area during the reconnaissance survey. However, a focused survey of the study area detected no evidence (i.e., old nests) of raptors having previously nested on the site. Similarly, an examination of trees and structures on the site failed to find any large cavities that might provide suitable bat roosting habitat. Therefore, large roosting or maternity colonies of bats are not expected to occur in the study area. The ditch immediately south of the project boundary provides no aquatic habitat, and therefore no aquatic or wetland-associated wildlife species are associated with this feature.

4.2.2 California Annual Grassland

Photo 3. California annual grassland habitat in the northeast corner of the study area.

Vegetation. California annual grassland habitat occurs in the northern portion of the study area along the Dumbarton Rail Corridor, primarily outside of the project boundary, but with a very small area encroaching into the project boundary in the northeast corner of the main project site (Photo 3). At the time of the reconnaissance survey, this habitat was dominated by non-native grasses and forbs such as wild oat (*Avena* sp.), fennel (*Foeniculum vulgare*), bull mallow (*Malva nicaeensis*), black mustard (*Brassica nigra*), and bristly ox-tongue (*Helminthotheca echioides*). Many of these non-native plant species are ranked as moderately or highly invasive by the California Invasive Plant Council (Cal-IPC 2021). For example, fennel is highly invasive and has severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Moderately invasive species, such as wild oats and black mustard, have substantial and apparent ecological impacts (Cal IPC 2021).

Wildlife. Wildlife use of California annual grasslands in the study area is limited by frequent human disturbance, the abundance of non-native and invasive species, and isolation of the grassland habitat remnants from more xtensive grasslands. As a result, wildlife species associated with more extensive grasslands, such as the grasshopper sparrow (*Ammodramus savannarum*) and western meadowlark (*Sturnella neglecta*), are absent from the small patches of grassland in the study area. Most of the bird species using this habitat during the breeding season nest in nearby landscaped habitats, using the California annual grassland only for foraging. Such species include the mourning dove (*Zenaida macroura*), lesser goldfinch (*Spinus psaltria*), dark-eyed junco (*Junco hyemalis*), American crow, and Brewer's blackbird (*Euphagus cyanocephalus*). Similarly, a few species nesting on nearby buildings, such as the cliff swallow (*Petrochelidon pyrrhonota*), barn swallow (*Hirundo rustica*), rock pigeon (*Columba livia*), black phoebe, and European starling, also forage on or over the California annual grassland habitat. Several other species of birds use the California annual grassland habitat during the nonbreeding season. These species, which include the golden-crowned sparrow (*Zonotrichia atricapilla*), savannah sparrow (*Passerculus sandwichensis*), and white-crowned sparrow (*Zonotrichia leucophrys*), forage on the ground or in herbaceous vegetation, primarily for seeds.

Few species of reptiles and amphibians occur in the California annual grassland in the study area due to its disturbed nature and low habitat heterogeneity. Nevertheless, reptiles such as the western fence lizard and

gopher snake (*Pituophis melanoleucus*) occur in this type of habitat, and amphibians such as the Sierran chorus frog (*Pseudacris sierra*) and western toad (*Anaxyrus boreas*), which breed in freshwater marshes in the area, forage in this habitat. Small mammals expected to be present include the native western harvest mouse (*Reithrodontomys megalotis*) and nonnative house mouse, Norway rat, and black rat. Small burrowing mammals, such as the Botta's pocket gopher (*Thomomys bottae*) and California ground squirrel (*Spermophilus beecheyi*), are also present. Larger mammals, such as the striped skunk, Virginia opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), and black-tailed jackrabbit (*Lepus californicus*) are also likely to occur here.

4.2.3 Forested Wetland

Vegetation. A small, isolated segment of forested wetland occurs in a drainage ditch along the northern edge of the study area, just outside of the project boundary (Photo 4). This segment of the ditch is characterized by a dense overstory of willow (*Salix* sp.), with minimal groundcover predominantly consisting of tall flatsedge (*Cyperus eragrostis*) and poison oak (*Toxicodendron diversilobum*). The wetland hydrology here is supported by localized freshwater runoff from the surrounding area, which pools in or saturates the soils in the lowest portion of the drainage ditch during the wet season. No standing water was observed during the November 2017 site visit, but shallow water was pooled here during the April 2019 visit.

Photo 4. Willow dominated isolated forested wetland located in the northern potions of the study area.

Wildlife. Due to its small size, isolation, and lack of pooled water, wildlife diversity in the isolated forested wetland is fairly low. However, the dense foliage provided by this willow stand is likely to support several species of nesting birds and provide cover and foraging habitat for others. Bird species that may forage in this habitat include many of the same species as described in the habitats above, as well as species such as the Bewick's wren (*Thryomanes bewickii*), northern mockingbird (*Mimus polyglottos*), and the yellow-rumped warbler (*Setophaga coronata*). Amphibians such as the Sierran chorus frog and western toad may also be present in this habitat, and if water ponds long enough in this ditch, these species could potentially breed there.

4.2.4 Herbaceous Seasonal Wetlands

Vegetation. An herbaceous seasonal wetland is located off-site within the Dumbarton Rail Corridor between Willow Street and Chilco Street in the extreme northwest part of the study area, entirely outside the project boundary. Another herbaceous seasonal wetland is located just outside of the northeast corner of the project

boundary. These wetlands are characterized by slight depressions. The northwestern herbaceous seasonal wetland is dominated by Italian rye grass (*Festuca perenne*), Bermuda grass (*Cynodon dactylon*) and bird's foot trefoil (*Lotus corniculatus*), with obligate species such as narrow-leaved cattail (*Typha angustifolia*) and chairmaker's bulrush (*Schoenoplectus americanus*) scattered throughout the feature (Photo 5). The northeastern herbaceous seasonal wetland is dominated by narrow-leaved cattail, with saltmarsh baccharis (*Baccharis glutinosa*) and dallis grass (*Paspalum dilatatum*) also present. Freshwater hydrology in these areas is likely a result of localized runoff and possibly groundwater upwelling that reaches the rooting zone but does not typically cause inundation. At the time of the wetland delineation survey, there was no ponding water observed, but soils were saturated approximately 6 inches below the ground's surface.

Photo 5. Seasonal freshwater wetland located north of the railway between Willow Street and Chilco Street.

Wildlife. The herbaceous seasonal wetlands in the study area provide only marginal habitat for most wildlife species due to their limited extent and limited depth and duration of ponding, if these wetlands even support ponding at all, and wildlife diversity is expected to be low. However, many of the same bird species described in the developed/landscaped and California annual grassland habitats above may forage in the herbaceous seasonal wetlands, such as the dark-eyed junco, white-crowned sparrow, and California towhee, all of which were observed during the reconnaissance survey. Amphibians such as the native Sierran chorus frog and western toad may also be present in this habitat during wet times of the year but are not expected to breed due to the limited depth and duration of ponding.

4.2.5 Nearby Land Uses and Biotic Habitats outside the Study Area

Outside the study area, developed/landscaped land uses dominate surrounding areas to the west and south for miles in each direction. East of the study area, developed lands associated with existing commercial land uses are present, and north of the study area, beyond the inactive Dumbarton Rail Corridor, a storage facility is present. A large brackish marsh is present north of the storage area and on both the north and south sides of the old rail line farther north and northeast. This brackish marsh, which extends north to State Route 84 and east to University Avenue, is dominated by salt marsh and brackish marsh plants and contains several channels. As a result, marsh-associated wildlife species such as the San Francisco common yellowthroat (*Geothlypis trichas sinuosa*), Alameda song sparrow (*Melospiza melodia pusillula*), northern harrier (*Circus hudsonius*), and possibly the

salt marsh harvest mouse (*Reithrodontomys raviventris*) may occur in that brackish marsh. Farther to the north and northeast are former salt ponds, now managed as waterbird habitat, and the waters and marshes of San Francisco Bay.

Section 5. Special-Status Species and Sensitive Habitats

CEQA requires assessment of the effects of a project on species that are protected as "threatened, rare, or endangered"; such species are typically described as "special-status species". For the purpose of the environmental review of the project, special-status species have been defined as described below. Impacts on these species are regulated by some of the federal, state, and local laws and ordinances described in Section 3.0 above.

For purposes of this analysis, "special-status" plants are considered plant species that are:

- Listed under FESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species.
- Listed under CESA as threatened, endangered, rare, or a candidate species.
- Listed by the CNPS as CRPR 1A, 1B, 2, 3, or 4.

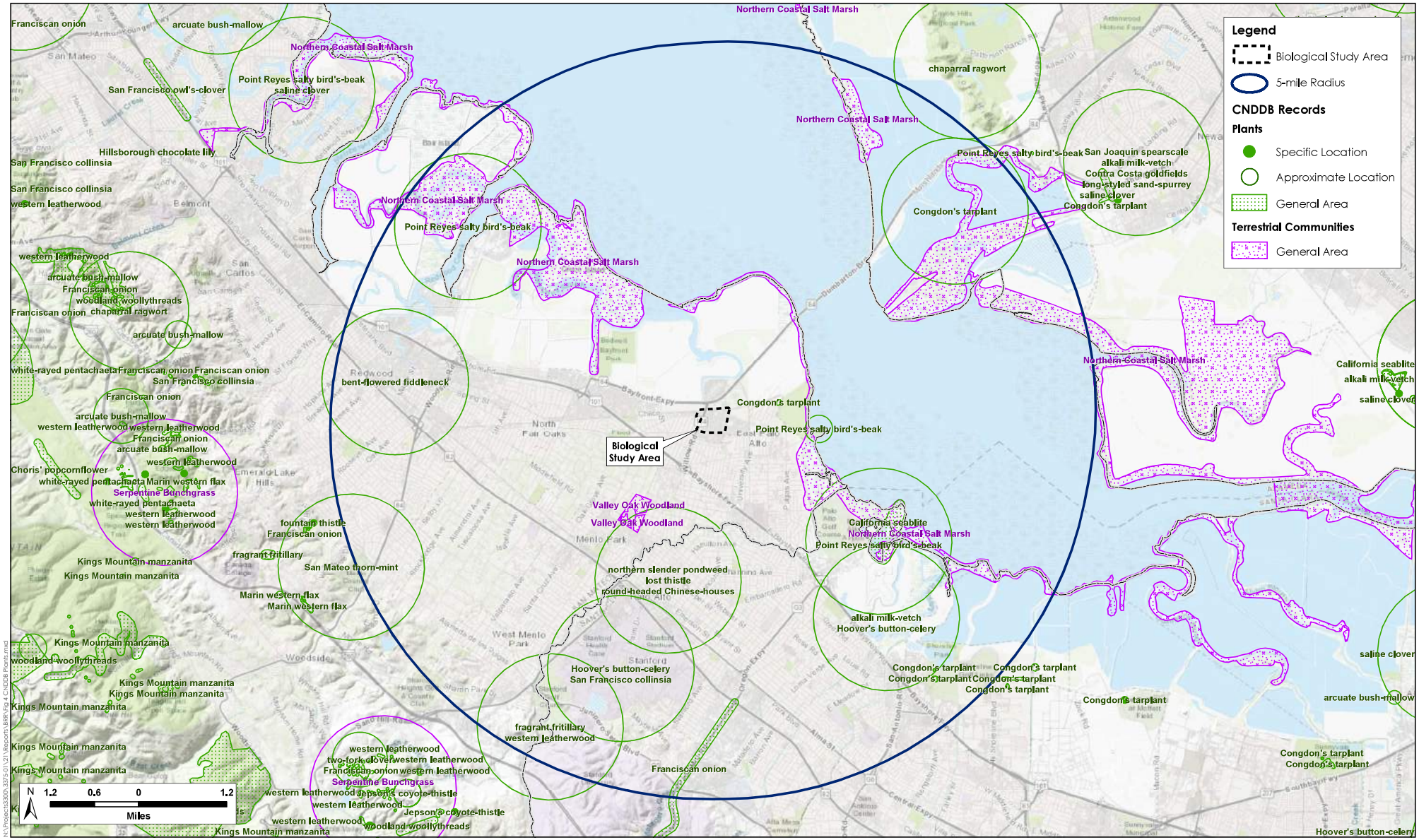
For purposes of this analysis, "special-status" animals are considered animal species that are:

- Listed under FESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species.
- Listed under CESA as threatened, endangered, or a candidate threatened or endangered species.
- Designated by the CDFW as a California species of special concern.
- Listed in the California Fish and Game Code as fully protected species (fully protected birds are provided in Section 3511, mammals in Section 4700, reptiles and amphibians in Section 5050, and fish in Section 5515).

Information concerning threatened, endangered, and other special-status species that potentially occur in the study area was collected from several sources and reviewed by H. T. Harvey & Associates biologists as described in Section 2.1 above. Figure 4 depicts CNDDB records of special-status plant species in the general vicinity of the project site and Figure 5 depicts CNDDB records of special-status animal species. These generalized maps show areas where special-status species are known to occur or have occurred historically.

5.1 Special-Status Plant Species

The CNPS (2021) and CNDDB (2021) identify 89 special-status plant species as potentially occurring in at least one of the nine USGS quadrangles containing or surrounding the study area for CRPR 1 or 2 species, or in San Mateo County for CRPR 3 and 4 species. Eighty-eight of those potentially occurring special-status plant species were determined to be absent from the study area for at least one of the following reasons: (1) lack of suitable habitat types; (2) absence of specific microhabitat or edaphic requirements, such as serpentine soils; (3) the elevation range of the species is outside of the range on the study area; or (4) the species is considered extirpated



H. T. HARVEY & ASSOCIATES
Ecological Consultants

Figure 4. CNDDB-Mapped Records of Special-Status Plant Species

Willow Village Master Plan Biological Resources Report (3375-21)

August 2022

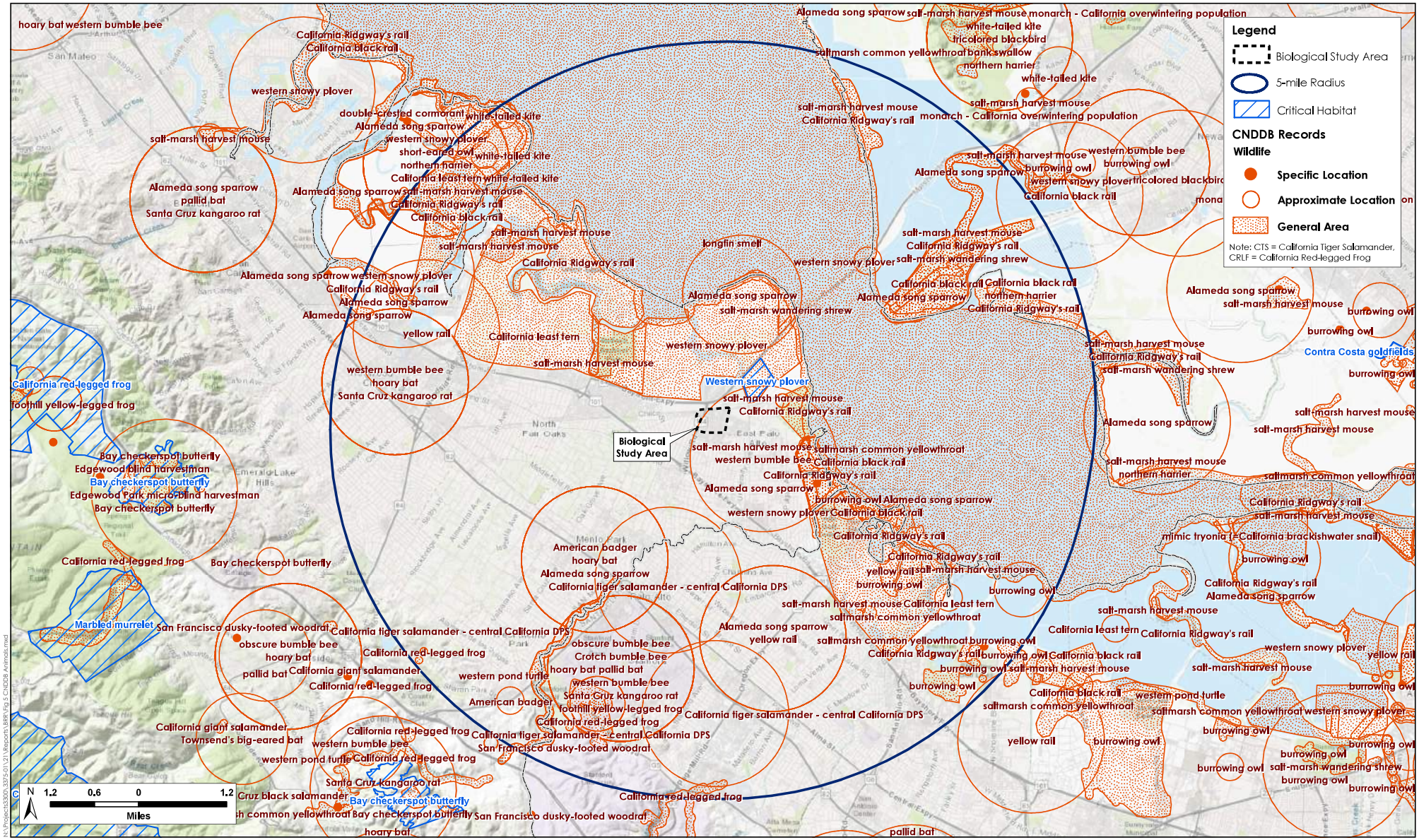


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Figure 5. CNDDB-Mapped Records of Special-Status Animal Species

Willow Village Master Plan Biological Resources Report (3375-21)

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from the project vicinity. Appendix B lists these plants along with the basis for the determination of absence. Suitable habitat, edaphic requirements, and elevation range were determined to be present in the study area for one plant species, Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), which can persist in disturbed grasslands and has been documented by the CNDDB in the project vicinity (Figure 4). While no suitable habitat occurs on the project site itself, there is suitable habitat for Congdon's tarplant within the study area, in the California annual grassland along the old rail line immediately north of the project boundary. However, this species should still have been flowering and detectable during our November 2017 reconnaissance survey, and a focused survey for the species was conducted in the Dumbarton Rail Corridor on June 12[3], yet no individuals of this species were observed. Therefore, this species is determined to be absent from the study area.

5.2 Special-Status Animal Species

The protected classifications and likelihood of occurrence in the study area of special-status animal species known to occur, or potentially occurring, in the pregion are presented in Table 1. Most of the special-status species listed in Table 1 are not expected to occur in the study area because it lacks suitable habitat, is outside the known range of the species, or is isolated from the nearest known extant populations by development or otherwise unsuitable habitat. Special-status animal species not expected to occur on the project site for these reasons include the Crotch bumble bee (*Bombus crotchii*), western bumble bee (*Bombus occidentalis*), green sturgeon (*Acipenser medirostris*), Central California coast steelhead (*Oncorhynchus mykiss*), California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana draytonii*), western pond turtle (*Actinemys marmorata*), San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), California Ridgway's rail (*Rallus obsoletus obsoletus*), California black rail (*Laterallus jamaicensis coturniculus*), western snowy plover (*Charadrius alexandrinus nivosus*), California least tern (*Sterna antillarum browni*), black skimmer (*Rynchops niger*), burrowing owl (*Athene cunicularia*), northern harrier, loggerhead shrike (*Lanius ludovicianus*), salt marsh harvest mouse, salt marsh wandering shrew (*Sorex vagrans halicoetes*) and American badger (*Taxidea taxus*). Although some of these species, such as the northern harrier, loggerhead shrike, white-tailed kite (*Elanus leucurus*), salt marsh harvest mouse, and salt marsh wandering shrew, may occur in wetland habitats not far outside the study area to the north and northeast, they are absent from the study area itself (including areas of proposed off-site improvements), and the proposed development footprint is well removed from suitable habitat for these species. Several other special-status species have some potential to occur in the study area only as visitors, migrants, or transients, but are not expected to reside or breed on the project site, to occur in large numbers, or otherwise to make substantial use of the project site. These include the San Francisco common yellowthroat, Alameda song sparrow, and pallid bat (*Antrozous pallidus*).

[3] Congdon's tarplant was documented flowering at the Sunnyvale Baylands Park, which is 9.4 miles southeast of the study area, on June 10, 2020. Therefore, given that this species was documented as flowering at a site that is relatively near the study area (but not located on the project site) on June 10, 2020, this species would have been detectable at the time of the June 12, 2020 site visit.

Table 1. Special-Status Animal Species, Their Status, and Potential Occurrence in the Study Area

Name	*Status	Habitat	Potential for Occurrence in the Study Area
Federal or State Endangered, Rare, or Threatened Species			
Crotch bumble bee (*Bombus crotchii*)	SC	Occurs in open grassland and scrub habitats. Like most other species of bumble bees, nests primarily underground (Williams et al. 2014). Generalist foragers that visit a variety of floral resources.	**Absent.** There is one historical record of the species approximately 4 miles southwest of the project site (CNDDB 2021), but there are no recent records in the vicinity. Although the species was historically found throughout the southern two-thirds of California, it now appears to be absent from most of its former range (Xerces Society 2018). It is not recently or currently known from the project area and is not expected to occur currently due to these recent range contractions.
Western bumble bee (*Bombus occidentalis occidentalis*)	SC	Occurs in meadows and grasslands with abundant floral resources. Nests are primarily underground.	**Absent.** There are several records of this species from the project vicinity, but all records are historical (CNDDB 2021). Although this species was historically found throughout much of central and northern California, it is now confined to high elevation sites and a small number of records on the northern California coast (Xerces Society 2018). It is not expected to occur in the project area due to these recent range contractions.
Green sturgeon (*Acipenser medirostris*)	FT, CSSC	Spawns in large river systems such as the Sacramento River; forages in nearshore oceanic waters, bays, and estuaries.	**Absent.** No suitable aquatic habitat is present in the study area. Green sturgeon may forage infrequently, and in low numbers in the open Bay, which is 1.5 mi north and east of the project site; however, there is no aquatic connection between the Bay and the project site. Determined to be absent.
Central California Coast steelhead (*Oncorhynchus mykiss*)	FT	Cool streams with suitable spawning habitat and conditions allowing migration between spawning and marine habitats.	**Absent.** No suitable aquatic habitat is present in the study area. Steelhead may forage in the open Bay, which is 1.5 mi north and east of the project site; however, there is no aquatic connection between the Bay and the project site. Determined to be absent.
California tiger salamander (*Ambystoma californiense*)	FT, ST	Vernal or temporary pools in annual grasslands or open woodlands.	**Absent.** No suitable habitat is present in the surrounding study area. Further, populations have largely been extirpated from San Mateo County due to habitat loss, and the species is now considered absent from the majority of the project vicinity, including the study area. The closest occurrence in the project vicinity is at Lake Lagunita on the Stanford campus, which is 4 mi south of the study area (CNDDB 2021). Determined to be absent.

Name	*Status	Habitat	Potential for Occurrence in the Study Area
San Francisco garter snake (*Thamnophis sirtalis tetrataenia*)	FE, SE	Prefer densely vegetated freshwater habitats. May use upland burrows for aestivation.	**Absent.** No suitable habitat is present in the study area. Furthermore, the project vicinity is outside of the known range of the species. Determined to be absent.
California red-legged frog (*Rana draytonii*)	FT, CSSC	Streams, freshwater pools, and ponds with emergent or overhanging vegetation.	**Absent.** No suitable habitat is present in the study area. Further, this species has been extirpated from the majority of the project vicinity, due to development, the alteration of hydrology of its aquatic habitats, and the introduction of non-native predators such as non-native fishes and bullfrogs (*Lithobates catesbeianus*). The most recent record of the species in the project vicinity is from 2016 near Bear Gulch reservoir, over 4.8 mi to the southwest of the study area (CNDDB 2021). Determined to be absent.
California Ridgway's rail (*Rallus obsoletus obsoletus*)	FE, SE, SP	Salt marshes characterized by large expanses of saltmarsh cordgrass (*Spartina* spp.) or pickleweed (*Salicornia* spp.), with well-developed tidal channels.	**Absent.** Although the species is known to occur in the Palo Alto Baylands and the Ravenswood Open Space Preserve located 1 mi east of the study area, as well as on Greco Island 1 mi northwest of the study area, no salt marsh habitat is present in the study area. Further, the only marsh habitat located within 700 ft of the project site (which is equivalent to the size of the non-disturbance buffer typically required around active nests by the USFWS and CDFW) is a mosaic of both fresh water and salt marsh habitats located north of the study area. This marsh habitat lacks extensive patches of cordgrass or pickleweed and tidally influenced, braided channels, and therefore is not considered suitable habitat for the California Ridgway's rail. Determined to be absent.
California black rail (*Laterallus jamaicensis coturniculus*)	ST, SP	Breeds in fresh, brackish, and tidal salt marsh.	**Absent.** This species occurs in the project region primarily as a scarce winter visitor, with individuals recently recorded as close as a slough 0.5 mi north of the study area (CNDDB 2021). However, no suitable nesting or foraging habitat for the California black rail is present in the study area. Determined to be absent.
Western snowy plover (*Charadrius nivosus nivosus*)	FT, CSSC	Sandy beaches on marine and estuarine shores and salt pans in Bay saline managed ponds.	**Absent.** Although western snowy plovers are known to nest in salt panne habitat within 0.5 mi to the northwest, north, and east of the study area in the NWR's Ravenswood complex (CNDDB 2021), no suitable nesting or foraging habitat is present in the study area. Determined to be absent.

Name	*Status	Habitat	Potential for Occurrence in the Study Area
California least tern (*Sternula antillarum browni*)	FE, SE, SP	Nests along the coast on bare or sparsely vegetated, flat substrates. In the South Bay, nests in salt pannes and on an old airport runway. Forages for fish in open waters.	**Absent**. Suitable nesting habitat for the California least tern is not present in the study area. Least terns have been recorded in the project vicinity during the post-breeding season, and have been known to forage in the Redwood City salt ponds, 2.5 mi west of the study area (CNDDB 2021). Least terns have also been known to forage infrequently along the shores of the Palo Alto Baylands Preserve, located 3 mi southeast of the study area. However, least terns are not expected to forage in the study area due to the lack of any open water habitats supporting fish. Determined to be absent.
Salt marsh harvest mouse (*Reithrodontomys raviventris*)	FE, SE, SP	Salt marsh habitat dominated by common pickleweed or alkali bulrush.	**Absent.** The species has been recorded in salt marsh habitat in the project vicinity, including on the NWR to the north and east of the site (CNDDB 2021), and suitable pickleweed/alkali bulrush-dominated salt marsh habitat is present within several hundred feet northeast of the study area. However, no suitable habitat is present in the study area itself. Determined to be absent.
California Species of Special Concern			
Western pond turtle (*Actinemys marmorata*)	CSSC	Permanent or nearly permanent water in a variety of habitats.	**Absent.** No suitable aquatic habitat is present in the study area. Determined to be absent.
Northern harrier (*Circus cyaneus*)	CSSC (nesting)	Nests in marshes and moist fields, forages over open areas.	**Absent.** Northern harriers nest and forage in the wetlands immediately north and northeast of the study area, but they are not expected to nest or forage in the study area due to a lack of suitable habitat.
Black skimmer (*Rynchops niger*)	CSSC (nesting)	Nests on sparsely vegetated beaches, isolated islands, and levees.	**Absent.** No suitable nesting or foraging habitat is present in or near the study area. Determined to be absent.
Burrowing owl (*Athene cunicularia*)	CSSC	Nests and roosts in open grasslands and ruderal habitats with suitable burrows, usually those made by California ground squirrels (*Spermophilus beecheyi*).	**Absent.** No nesting burrowing owls are known to occur in the surrounding project vicinity (CNDDB 2021), and no suitable burrowing owl roosting or nesting habitat (i.e., open grasslands with ground squirrel burrows) is present in the study area. The narrow strip of California annual grassland at the northern edge of the study area is too limited and too hemmed in by trees and development to provide good burrowing owl habitat. Thus, the species is not expected to occur in the study area.

Name	*Status	Habitat	Potential for Occurrence in the Study Area
Loggerhead shrike (*Lanius ludovicianus*)	CSSC (nesting)	Nests in tall shrubs and dense trees; forages in grasslands, marshes, and ruderal habitats.	**Absent.** No suitable breeding habitat is present in the study area, and the California annual grasslands in the study area are not sufficiently extensive to provide suitable foraging habitat. Determined to be absent.
San Francisco common yellowthroat (*Geothlypis trichas sinuosa*)	CSSC	Nests in herbaceous vegetation, usually in wetlands or moist floodplains.	**Absent as Breeder.** The San Francisco common yellowthroat breeds commonly in wetlands immediately north and northeast of the study area, but no suitable breeding habitat is present in the study area itself. Small numbers may occasionally forage along the northern edge of the study area.
Alameda song sparrow (*Melospiza melodia pusillula*)	CSSC	Nests in salt marsh, primarily in marsh gumplant and cordgrass along channels.	**Absent as Breeder.** Song sparrows breed commonly in wetlands immediately north and northeast of the study area, but no suitable breeding habitat is present in the study area itself. Small numbers may occasionally forage along the northern edge of the study area.
Salt marsh wandering shrew (*Sorex vagrans halicoetes*)	CSSC	Medium to high marsh 6 to 8 ft above sea level with abundant driftwood and common pickleweed.	**Absent.** Suitable pickleweed-dominated salt marsh habitat is present within several hundred feet northeast of the study area. However, no suitable habitat is present in the study area itself. Determined to be absent.
Pallid bat (*Antrozous pallidus*)	CSSC	Forages over many habitats; roosts in caves, rock outcrops, buildings, and hollow trees.	**Absent as Breeder.** Historically, pallid bats were likely present in a number of locations throughout the project region, but their populations have declined in recent decades. This species has been extirpated as a breeder from urban areas close to the Bay, as is the case in the study area. No suitable roosting habitat is present on the project site or in the study area and no known maternity colonies are present on or adjacent to the study area. There is a low probability that the species occurs in the project vicinity at all due to urbanization; however, individuals from more remote colonies could potentially forage over the study area on rare occasions.
American badger (*Taxidea taxus*)	CSSC	Burrows in grasslands and occasionally in infrequently disked agricultural areas.	**Absent.** Badgers are not known to occur in the project region due to the lack of extensive grasslands and agricultural areas with friable soils, needed for digging burrows. No suitable habitat is present on the project site or in the study area. Determined to be absent.

California Fully Protected Species			
White-tailed kite (*Elanus leucurus*)	SP	Nests in trees and forages in extensive grasslands or marshes.	**Absent.** No suitable breeding habitat is present in the study area, and the California annual grasslands in the study area are not sufficiently extensive to provide suitable foraging habitat. May nest north and northeast of the study area, but determined to be absent from the study area itself.

SPECIAL-STATUS SPECIES CODE DESIGNATIONS

FE = Federally Listed Endangered
FT = Federally Listed Threatened
SE = State Listed Endangered
ST = State Listed Threatened
SC = Candidate for State Listing
CSSC = California Species of Special Concern
SP = State Fully Protected Species

5.3 Sensitive Natural Communities, Habitats, and Vegetation Alliances

Natural communities have been considered part of the Natural Heritage Conservation triad, along with plants and animals of conservation significance, since the state inception of the Natural Heritage Program in 1979. The CDFW determines the level of rarity and imperilment of vegetation types, and tracks sensitive communities in its Rarefind database (CNDDB 2021). Global rankings (G) of natural communities reflect the overall condition (rarity and endangerment) of a habitat throughout its range, whereas state (S) rankings are a reflection of the condition of a habitat within California. Natural communities are defined using NatureServe's standard heritage program methodology as follows (Faber-Langendoen et al. 2012):

G1/S1: Critically imperiled

G2/S2: Imperiled

G3/S3: Vulnerable.

G4/S4: Apparently secure

G5/S4: Secure

In addition to tracking sensitive natural communities, the CDFW also ranks vegetation alliances, defined by repeating patterns of plants across a landscape that reflect climate, soil, water, disturbance, and other environmental factors (Sawyer et al. 2009). If an alliance is marked G1-G3, all of the vegetation associations within it will also be of high priority (CDFW 2021). The CDFW provides the Vegetation Classification and Mapping Program's (VegCAMP) currently accepted list of vegetation alliances and associations (CDFW 2021).

Impacts on CDFW sensitive natural communities, vegetation alliances/associations, or any such community identified in local or regional plans, policies, and regulations, must be considered and evaluated under CEQA (Title 14, Division 6, Chapter 3, Appendix G of the California Code of Regulations). Furthermore, aquatic, wetland and riparian habitats are also protected under applicable federal, state, or local regulations, and are generally subject to regulation, protection, or consideration by the USACE, RWQCB, CDFW, and/or the USFWS.

5.3.1 CDFW Sensitive Habitats

A query of sensitive habitats in Rarefind (CNDDB 2021) identified three sensitive habitats as occurring within the nine USGS quadrangles containing or surrounding the study area: serpentine bunchgrass grassland (Rank G2/S2.2), valley oak woodland (G3/S2.1), and northern coastal salt marsh (Rank G3/S3.2). Serpentine bunchgrass occurs only on serpentine soils, which do not occur in the study area. Valley oak woodland is characterized by valley oak (*Quercus lobata*) as the dominant or co-dominant species in the tree canopy. While some valley oak individuals do occur in the study area, they are ornamental plantings along buildings and roadways, and thus do not constitute this sensitive habitat type. The last sensitive habitat type, northern coastal

salt marsh, is described by Holland (1986) as occurring along sheltered inland margins of bays, often co-dominated by pickleweed (*Salicornia* spp.), cordgrass (*Spartina* spp.), and sometimes saltgrass (*Distichlis spicata*). None of these species was noted in the study area, thus this habitat type is also absent.

5.3.2 CDFW Sensitive Vegetation Alliances

CDFW Sensitive alliances are not present on the project site (CDFW 2021).

5.3.3 Sensitive Habitats (Waters of the U.S./State)

As described above our surveys did not identify any wetlands or other waters that would fall under the jurisdiction of the USACE (Waters of the U.S.), or under the jurisdiction of the RWQCB or CDFW (Waters of the State), on the project site itself. Outside the project boundary, but within the study area, an isolated forested wetland depression is located immediately north of the main project site. One linear area of herbaceous seasonal wetland is located immediately north of the Hamilton Avenue Parcels North and South. Another herbaceous seasonal wetland is located just outside the northeast corner of the project boundary. As discussed in Section 3.1.1 above, the USACE may claim these features as jurisdictional Waters of the U.S., and the RWQCB could consider these wetlands (and possibly an additional 0.13-acre area where the canopy of willows extends outside the 0.07-acre forested wetland footprint within which the willows are rooted) to be Waters of the State. It is our understanding that the project will avoid to the extent feasible placing fill in those wetlands, in which case no permits from the USACE or RWQCB would be needed for activities associated with wetlands even if these features are determined to be jurisdictional. However, if these features are determined to be jurisdictional and are impacted by the project, permits from the USACE and RWQCB would be required, and mitigation of impacts would be required as described in Mitigation Measures BIO-11 and 12 in Section 6.2.1.

These wetlands would be considered sensitive habitats for CEQA assessment purposes. These wetlands are not associated with a stream and would therefore not constitute sensitive riparian habitat claimed by CDFW.

A ditch located partially on-site and partially in the Hetch Hetchy easement area immediately south of the main project site, but within the study area, is dominated by upland (non-wetland) vegetation, receives relatively little runoff from surrounding areas, and drains to the City stormwater system, and is therefore not considered sensitive or expected to be jurisdictional (H. T. Harvey & Associates 2021b). Brackish marsh habitat well north and northeast of the site provides higher-quality habitat than any wetland or aquatic features within the study area, but it is located well outside of the study area.

5.4 Non-Native and Invasive Species

Several non-native, invasive plant species occur in the study area in the California annual grassland habitat. Of these, fennel has the potential to cause the more severe ecological impacts. In addition, black mustard and wild oats were observed in the study area and can have substantial and apparent ecological impacts if they spread into native, sensitive habitats (Cal-IPC 2021). However, all of these species are also present in abundance in

and around the wetland/grassland habitats to the north and northeast of the study area. The remainder of the project vicinity is developed/landscaped, and invasive species would not result in adverse effects on developed and landscaped areas.

Section 6. Impacts and Mitigation Measures

The State CEQA Guidelines provide direction for evaluating the impacts of projects on biological resources and determining which impacts will be significant. CEQA defines a "significant effect on the environment" as "a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." Under State CEQA Guidelines Section 15065, a project's impacts on biological resources are deemed significant if the project would:

A. "substantially reduce the habitat of a fish or wildlife species"
B. "cause a fish or wildlife population to drop below self-sustaining levels"
C. "threaten to eliminate a plant or animal community"
D. "reduce the number or restrict the range of a rare or endangered plant or animal"

In addition to the Section 15065 criteria that trigger mandatory findings of significance, Appendix G of State CEQA Guidelines provides a checklist of other potential impacts to consider when analyzing the significance of project effects. The impacts listed in Appendix G may or may not be significant, depending on the level of the impact. For biological resources, these impacts include whether the project would:

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

B. "have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service"

C. "have a substantial adverse effect on state or federally protected wetlands" (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling hydrological interruption, or other means)

D. "interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites"

E. "conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance"

F. "conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan"

The impact assessment below is structured based on the six significance criteria (A-F) listed above.

6.1 **Impacts on Special-Status Species:** Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS (Less than Significant with Mitigation)

6.1.1 Impacts on Special-Status Species during Demolition and Construction (Less than Significant)

No special-status plants are present within the study area, and therefore, none will be impacted by demolition of existing structures, construction of the project, or any other project components. No special-status animals are expected to breed in the study area. However, as noted in Table 1, nonbreeding individuals of the San Francisco common yellowthroat, Alameda song sparrow, and pallid bat could possibly forage on the site on occasion. San Francisco common yellowthroats and Alameda song sparrows breeding in the off-site brackish marsh to the north and northeast of the site may disperse (particularly during the nonbreeding season) along the Dumbarton Rail Corridor to the dense vegetation along the northern edge of the site, where they may forage. Pallid bats are expected to occur on or near the site rarely, if at all, but dispersing individuals could occasionally forage on the site. Due to the absence of high-quality roosting sites for pallid bats, this species is not expected to roost on the project site.

During demolition and construction, the removal of vegetation, as well as noise and operation of heavy equipment, could disturb foraging yellowthroats and song sparrows, and disturbance of existing vegetation could result in loss or degradation of foraging habitat and declines in food resources for these bird species as well as the pallid bat. However, the project site does not provide high-quality habitat for any of these species, in its current state. These species would not be likely to occur on the site, or close enough to the project site to be disturbed by demolition or construction activities. Given the project site's relatively urban characteristics, the amount of habitat that may be degraded and the number of individuals of these species that would be disturbed by project activities are minimal.

Construction on offsite areas could include the placement of utilities lines under existing rights-of-way, construction of roundabout, and improvements to a Pacific Gas and Electric Company substation. All of these areas are developed and have no natural features that provide habitat for special-status species. Construction of offsite project components will not result in impacts to special-status species or other sensitive biological resources.

Therefore, project activities would not result in substantial impacts to these species' population and habitat, and such impacts would be less than significant.

6.1.2 Impacts on Wildlife from Artificial Lighting (Less than Significant with Mitigation)

The installation of lighting on buildings and around roads, paths, and parking lots may result in potential impacts on animal species. Many animals, both special-status and common species, are sensitive to light cues,

which influence their physiology and shape their behaviors, particularly during the breeding season (Ringer 1972, de Molenaar et al. 2006). Artificial light has been used as a means of manipulating breeding behavior and productivity in captive birds for decades (de Molenaar et al. 2006), and has been shown to influence the territorial singing behavior of wild birds (Longcore and Rich 2004, Miller 2006, de Molenaar et al. 2006). While it is difficult to extrapolate results of experiments on captive birds to wild populations, it is known that photoperiod (the relative amount of light and dark in a 24-hour period) is an essential cue triggering physiological processes as diverse as growth, metabolism, development, breeding behavior, and molting (de Molenaar et al. 2006). This holds true for mammals and other taxa as well (Beier 2006), 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 animals by increasing the nocturnal activity of predators such as owls, hawks, and mammalian predators (Negro et al 2000, Longcore and Rich 2004, DeCandido and Allen 2006, Beier 2006). The presence of artificial light may influence habitat use by rodents (Beier 2006) and 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.

The *Willow Village Master Plan Bird-Safe Design Assessment*, provides a comprehensive analysis of lighting impacts for the Willow Village Master Plan based on the project's conceptual Conditional Development Permit (CDP) application. The report provides documentation of the lighting measures that will be incorporated into the project to ensure that (1) project impacts due to lighting are reduced to less-than-significant levels under CEQA, and (2) the project complies with City of Menlo Park lighting requirements. CEQA mitigation measures related to minimizing lighting impacts are identified below.

For all exterior lighting in the northern portion of the main project site (i.e., areas north of Main Street and Office Buildings 03 and 05 surrounding the hotel, Town Square retail pavilion, Office Building 04, event building, and North Garage):

- **Mitigation Measure BIO-1.** To the maximum extent feasible, up-lighting (i.e., lighting that projects upward above the fixture) shall be avoided in the project design. All lighting shall be fully shielded to block illumination from shining upward above the fixture.

  If up-lighting cannot be avoided in the project design, up-lights shall be shielded and/or directed such that no luminance projects above/beyond objects at which they are directed (e.g., trees and buildings) and such that the light would not shine directly into the eyes of a bird flying above the object. If the objects themselves can be used to shield the lights from the sky beyond, no substantial adverse effects on migrating birds are anticipated.

- **Mitigation Measure BIO-2.** All lighting shall be fully shielded to block illumination from shining outward towards San Francisco Bay habitats to the north. No light trespass shall be permitted more than 80 feet beyond the site's northern property line (i.e., beyond the JPB rail corridor).

- **Mitigation Measure BIO-3.** Exterior lighting shall be minimized (i.e., total outdoor lighting lumens shall be reduced by at least 30% or extinguished, consistent with recommendations from the International Dark-Sky Association [2011]) from 10:00 p.m. until sunrise, except as needed for safety and City code compliance.

- **Mitigation Measure BIO-4.** Temporary lighting that exceeds minimal site lighting requirements may be used for nighttime social events. This lighting shall be switched off no later than midnight. No exterior up-lighting (i.e., lighting that projects upward above the fixture, including spotlights) shall be used during events.

Due to the potential for lighting within the stair/elevator towers to result in bird collisions, the project will implement the following measure:

- **Mitigation Measure BIO-5.** Lights shall be shielded and directed so that lighting does not spill outwards from the elevator/stair towers into adjacent areas.

Due to the potential for interior lighting within the buildings within the atrium to spill outwards to the north and affect birds, the project shall implement the following mitigation measure for interior lights within the buildings within the atrium to minimize impacts due to lighting:

- **Mitigation Measure BIO-6.** Interior or exterior blinds shall be programmed to close on north-facing windows of interior buildings within the atrium from 10:00 p.m. to sunrise in order to block lighting from spilling outward from these windows.

If birds are able to distinguish illuminated interior vegetation, trees, and structures within the atrium at night, collisions with the building are expected to be appreciably higher as birds attempt to fly through glazing to reach these features (e.g., during descent from migration at dawn). The project shall implement Mitigation Measures BIO-1 and BIO-3 above as well as Mitigation Measure BIO-7 below to ensure that structures, trees, and vegetation in the atrium are not illuminated by up-lighting or accent lighting such that they are more conspicuous to birds from outside compared to ambient conditions (i.e., lighting levels from fixtures within the atrium that do not specifically illuminate these features). Structures, trees, and vegetation are considered 'more conspicuous' to birds when they would be more conspicuous when viewed by the human eye from outside the atrium at any elevation.

- **Mitigation Measure BIO-7.** Accent lighting within the atrium shall not be used to illuminate trees or vegetation. OR

  The applicant shall provide documentation to the satisfaction of a qualified biologist that the illumination of vegetation and/or structures within the atrium by accent lighting and/or up-lighting will not make these features more conspicuous to the human eye from any elevation outside the atrium compared to ambient conditions within the atrium. The biologist shall submit a report to the City following the completion of the lighting design documenting compliance with this requirement.

For Office Buildings 01, 02, 03, 05, and 06 and the residential/mixed-use buildings, the project shall implement Mitigation Measure BIO-1 above as well as the following mitigation measure to minimize impacts due to increased lighting:

- **Mitigation Measure BIO-8.** Exterior lighting shall be minimized (i.e., total outdoor lighting lumens shall be reduced by at least 30% or extinguished, consistent with recommendations from the International Dark-Sky Association [2011]) from midnight until sunrise, except as needed for safety and City code compliance.

6.1.3 Impacts on Wildlife from Feral Cat Predation (Less than Significant with Mitigation)

Mammalian predation of birds and small mammals is a natural process. However, when natural levels of predation are increased due to the presence of non-native species, the health of local animal populations, including populations of special-status species, can be adversely affected. Feral cats (*Felis catus*) have been implicated as a major predator on many native wildlife species, including birds and small mammals such as the salt marsh harvest mouse, which is known to occur in wetlands north and northeast of the study area (CNDDB 2021). Not only does predation by feral cats have a potential impact on animal populations, but feral cat feeding stations also attract other predators such as raccoons and skunks, increasing predation pressure on native species in these locations.

During the reconnaissance survey on November 13, 2017, multiple feral cats were observed on the main project site and in the surrounding study area. Implementation of the proposed project has the potential to result in an increase in the feral cat population, for example as a result of an influx of renters and their pets or the establishment of feral cat feeding stations by residents or workers. This impact would be potentially significant under CEQA due to the impact on native wildlife species (Criterion A). Implementation of Mitigation Measure BIO-9 will reduce potential impacts due to feral cats to a less-than-significant level.

Mitigation Measure BIO-9. Feral Cat Management Program. The developer shall implement a Feral Cat Management Program similar to the program developed in conjunction with the Peninsula Humane Society and the Society for the Prevention of Cruelty to Animals for Meta's East Campus in 2013. For one week, every three months (i.e., each quarter), three live trap cages designed to trap cats shall be placed around the perimeter of the main Project Site in locations where feral cats are likely to prey upon native wildlife species. Each trap cage shall be monitored and maintained on a daily basis during the week the traps have been set to determine whether a feral cat has been caught and whether the trap has inadvertently captured a non-target species. If a feral cat is caught, a representative from a pest control operator (or a similar service organization/company) shall be contacted and dispatched to transport the trapped cat to either the Humane Society of San Mateo County, a local cat shelter, a local cat rescue facility, or other local facility that accepts feral cats. If an animal other than a feral cat is caught in one of the traps, it shall be released immediately at the trap location.

6.2 **Impacts on Sensitive Communities:** Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service

6.2.1 Impacts on Riparian Habitat or Other Sensitive Natural Communities (Less than Significant with Mitigation)

No riparian habitats or other sensitive natural communities are present on the project site itself. A small, isolated segment of forested wetland is located in a drainage ditch along the northern edge of the study area, just outside the project boundary. A linear area of herbaceous seasonal wetland is present immediately north of the Hamilton Avenue Parcels North and South portion of the project site. Another herbaceous seasonal wetland is present just outside the northeast corner of the project boundary. These wetlands are small and isolated, being in depressional areas, rather than having a surface connection to more extensive wetlands. Due to their small, isolated nature and lack of high-quality habitat for wildlife, these are not high-quality habitat features. Nevertheless, forested wetlands are relatively scarce along the edge of the bay, and seasonal wetlands along the edge of the bay have declined due to development and fill. Therefore, we consider these wetlands to be sensitive habitat areas.

Although these wetlands are outside of the project's property boundary, it is possible that these features may be impacted, either temporarily or permanently, during project grading. Elevation of the site and construction of a bicycle/pedestrian path along the northern edge of the main project site will require import of fill into that area, and although a retaining wall may be constructed to support the trail, some clearing of vegetation within, and fill of, these wetlands (or portions of these wetlands) may occur. As a result, it is possible that up to the entire 0.07-acre isolated forested wetland (as well as an additional 0.13-acre area where the canopy of willows extends outside the 0.07-acre forested wetland footprint within which the willows are rooted) and 0.07-acre herbaceous seasonal wetlands may be lost due to fill. Even if these wetlands are not permanently impacted, temporary impacts to wetlands may occur due to construction access, potentially resulting in degradation of wetland vegetation or hydrology. Owing to the scarcity of forested wetlands along the edge of the bay and the decline in seasonal wetlands in the region, this impact would be significant (Criterion B). Implementation of Mitigation Measures BIO-10, 11, and 12 will reduce this impact to a less-than-significant level. Indirect impacts on these wetlands will be avoided and minimized as described under *Impacts on Wetlands and Water Quality* below.

Mitigation Measure BIO-10. Avoidance and Minimization. To the extent feasible, construction activities should avoid or minimize the removal of wetland vegetation or the placement of fill in the wetlands immediately north and northeast of the project site. If all direct impacts to wetlands (i.e., vegetation removal and fill) are avoided, Mitigation Measures BIO-11 and BIO-12 do not need to be implemented, but if any wetland vegetation needs to be removed from the wetlands, or any fill needs to be placed in the wetlands, Measure BIO-11 (and Measure BIO-12, if permanent impacts will occur) will be implemented.

Mitigation Measure BIO-11. In-Situ Restoration of Temporary Impacts. If impacts to the wetlands immediately north and northeast of the project site are temporary, resulting in vegetation removal or temporary fill, but no permanent fill of the wetland is necessary, then the wetland area will be restored by the Project Sponsor following construction. The herbaceous seasonal wetlands are likely to become recolonized easily without the need for seeding and planting, as long as their existing hydrology and topography are restored following temporary impacts. Depending on the level of impact, there is potential for the arroyo willow clumps in the isolated forested wetland to regrow from cut stumps. In such a case, the in-situ restoration would involve simply protecting the area with exclusion fencing following construction to allow for re-growth of vegetation. For temporary impacts that may have removed willow root masses, but where in-situ restoration is still an option, a more detailed restoration plan will need to be developed. The mitigation should, at a minimum, achieve no net loss of wetland acreage (i.e., jurisdictional wetlands lost to fill will be replaced by creation or restoration of wetland habitat, of the same type that was impacted [either forested or herbaceous seasonal] at a minimum 1:1 ratio, on an acreage basis, or as otherwise required by any state or federal permitting agencies) or ecological functions and values through the restoration and enhancement of the impacted wetland that are equal to or greater than the baseline conditions for the existing wetlands. An in-situ restoration approach could involve salvage of wetland plant material prior to construction (e.g., willow cuttings or salvage of willow clumps, in the case of the isolated forested wetland) and then replanting those clumps if the seasonal timing of the construction were appropriate. USACE and/or RWQCB approvals may be required to authorize temporary impacts to these features.

Mitigation Measure BIO-12. Compensatory Mitigation. If any permanent fill of the isolated forested wetland or the herbaceous seasonal wetlands will occur, the project proponent will provide new wetland habitat of the same type that was impacted (either forested or herbaceous seasonal) to offset this impact, either through the creation enhancement, or restoration of wetlands in an appropriate location or via the purchase of mitigation credits in a USACE or RWQCB-approved wetland mitigation bank. The purchase of such credits shall serve as full mitigation for impacts to these wetland features. If project-specific creation, enhancement, or restoration of wetland habitat is implemented, habitat will be restored or created at a minimum ratio of 2:1 (compensation : impact) on an acreage basis, or as otherwise required by any state of federal permitting agencies. This ratio is not higher due to the relatively low quality of the wetlands in the study area relative to more extensive, less fragmented wetlands elsewhere in the region, but it is not lower due to the temporal loss of wetland functions and values that would result from the lag between impacts to the wetlands and maturation of the mitigation habitat. USACE and/or RWQCB approvals may be required to authorize permanent impacts to this feature.

To the extent compensatory mitigation is not provided by purchasing mitigation credits from a USACE- or RWQCB-approved wetland mitigation back, then, if feasible, compensation will be provided by creating, enhancing, or restoring wetland habitat so as to achieve the 2:1 ratio somewhere in San Mateo County, or as otherwise required by any state or federal permitting agencies. A qualified biologist shall develop a "Wetland Mitigation and Monitoring Plan" describing the mitigation, which will contain the following components (or as otherwise modified by regulatory agency permitting conditions):

- Summary of habitat impacts and proposed mitigation ratios
- Goal of the restoration to achieve no net loss of habitat functions and values
- Location of mitigation site(s) and description of existing site conditions
- Mitigation design:
    - Existing and proposed site hydrology
    - Grading plan if appropriate, including bank stabilization or other site stabilization features
    - Soil amendments and other site preparation elements as appropriate
    - Planting plan
    - Irrigation and maintenance plan
    - Remedial measures and adaptive management
- Monitoring plan (including final and performance criteria, monitoring methods, data analysis, reporting requirements, and monitoring schedule). Success criteria will include quantifiable measurements of wetland vegetation type (e.g., dominance by natives) and extent appropriate for the restoration location, and provision of ecological functions and values equal to or exceeding those in the wetland habitat affected. At a minimum, success criteria will include following:
    - At Year 5 post-mitigation, at least 75 percent of the mitigation site will be dominated by native hydrophytic vegetation.

The Wetland Mitigation and Monitoring Plan must be approved by the City of Menlo Park prior to the wetland impacts, and implementation of the Plan must begin within one year after the discharge of fill into these wetland features.

Alternately, off-site mitigation could be provided via the purchase of mitigation credits at an agency-approved mitigation bank, as noted above.

6.2.2 Impacts Caused by Non-Native and Invasive Species (Less than Significant)

Several non-native, invasive plant species occur in the California annual grassland habitat located along the northern edge of the study area. Invasive species can spread quickly and can be difficult to eradicate. Many non-native, invasive plant species produce seeds that germinate readily following disturbance. Further, disturbed areas are highly susceptible to colonization by non-native, invasive species that occur locally, or whose propagules are transported by personnel, vehicles, and other equipment.

Development undertaken because of the proposed project would result in a large portion of the site being subject to soil disturbance due to replacement of the existing outdated industrial complex with a new, mixed-used campus. Activities such as trampling, equipment staging, and vegetation removal are all factors that would also contribute to disturbance. Areas of disturbance could serve as the source for promoting the spread of non-

native species, which could degrade the ecological values of wetlands that occur immediately adjacent to the project site, and adversely affect native plants and wildlife that occur there. Local propagule sources of one highly invasive weed, fennel, and other moderately invasive weeds such as wild oats and black mustard were observed on and surrounding the northern portion of the study area during the November 2017 and April 2019 surveys. Although no invasive weeds were observed on the project site itself, it is possible that some off-site grading in areas along the northern edge of the site will be necessary. Such grading may mobilize weeds within the immediate vicinity of the grading. However, given the minimal amount of disturbance in this off-site area, and the fact that surrounding areas are already developed, we do not expect this disturbance to result in an increased source population for the spread of non-native, invasive species into sensitive habitat areas.

Further, the project would comply with the City of Menlo Park Municipal Code, Chapter 12.44.090(a)(1)(G), which discourages the use of invasive or noxious plant species for landscaping. Thus, project activities would not result in the introduction of invasive species onto the project site or facilitate the spread of invasive plants into sensitive habitats (e.g., wetlands) surrounding the project site. In addition, the invasive species observed in the study area are already present in or around wetland habitats to the north and northeast, and the remainder of the surrounding area is developed/landscaped and thus not susceptible to habitat degradation by the spread of invasive plants. Therefore, the project would result in no impact due to the spread of non-native, invasive species.

6.3 Impacts on Wetlands: Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling hydrological interruption, or other means.

6.3.1 Impacts on Wetlands and Water Quality (Less than Significant with Mitigation)

No wetlands occur on the project site, but an isolated forested wetland and herbaceous seasonal wetlands are located to the north of the project site and to the northeast of the project site within the study area , and further, brackish wetlands occur to the north and northeast of the study area boundary. The isolated forested wetland, herbaceous seasonal wetlands, and brackish marsh may be subject to the regulatory jurisdiction of the USACE and RWQCB. Wetlands serve a variety of important functions, such as sediment stabilization, sediment/toxicant retention, nutrient removal/transformation, and terrestrial wildlife species habitat. Even though the acreage of these wetlands in the study area is small, wetlands are relatively scarce regionally, and even small wetland areas have disproportionate contributions to water quality, groundwater recharge, watershed function, and wildlife habitat in the region. In particular, forested wetlands are scarce along the edges of San Francisco Bay.

As discussed under *Impacts on Riparian Habitat or Other Sensitive Natural Communities* above, while the project proposes to avoid these features to the extent feasible, it is possible that the 0.07-acre isolated forested wetland (as well as an additional 0.13-acre area where the canopy of willows extends outside the 0.07-acre forested wetland footprint within which the willows are rooted) and 0.07-acre seasonal wetlands along the northern edge

of the site may be impacted, either temporarily or permanently, during project grading. Owing to the scarcity of wetlands along the edge of the bay, this direct impact would be significant (Criterion C). Implementation of Mitigation Measures BIO-10, 11, and 12 will reduce impacts from the direct loss or modification of wetlands to a less-than-significant level. The brackish wetlands are located approximately 220 ft from the nearest proposed building and are separated from the main project site by an approximately 25 – 40 ft tall self-storage business. The project would not cause any direct impacts on these brackish wetlands.

Redevelopment has the potential to cause indirect impacts on nearby wetlands or water quality within those wetlands based on site runoff patterns. Currently during the 100-year storm, approximately 16% of the main project site's runoff flows overland to the brackish wetlands located northeast of the study area, with the rest flowing west to the Willow Road storm drain (Sherwood Design Engineers 2017). The project is expected to increase the area of overland flow that drains to the northeast corner of the main project site during the 100-year storm event somewhat, but would detain water on-site to not exceed existing peak flow rates. Such infrequent storm events are not expected to shape the species composition or habitat quality of wetlands to the north and northeast, as those habitats are governed by much more regular/frequent physical and ecological processes. As a result, an increase in runoff from the main project site during 100-year storm events would not have substantial impacts on wetlands to the north and northeast of the study area. The proposed project's storm drainage system would be designed to convey the 10-year storm event and lesser events from the entire main project site to the existing Willow Road storm drain main. During such 10-year and lesser events, no runoff would flow overland to the brackish wetlands located north and northeast of the study area. Therefore, due to the infrequency with which overland flows would enter off-site wetlands, the potential impact on wetland community composition or quality due to an influx of freshwater during large storm events is considered less than significant. Additionally, because the peak flow rate will not be increased to the marsh in large storm events over the existing condition, no significant erosion or sedimentation impacts would occur to the brackish marsh during site discharges to the area in large storm events.

In addition, the project would install stormwater infrastructure to collect site run-off and direct it into the City's storm drain system, rather than into the isolated forested wetland or herbaceous seasonal wetlands adjacent to the project boundary. This would prevent post-construction changes in run-off, including run-off carrying sediment or oil and grease, that could degrade water quality from entering the feature. Construction projects in California causing land disturbances that are equal to 1 acre or greater must comply with State requirements to control the discharge of stormwater pollutants under the NPDES *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit; Water Board Order No. 2009-0009-DWQ). Prior to the start of construction/demolition, a Notice of Intent must be filed with the State Water Board describing the project. A Storm Water Pollution Prevention Plan (SWPPP) must be developed and maintained during the project and it must include the use of Best Management Practices (BMPs) to protect water quality until the site is stabilized. Standard permit conditions under the Construction General Permit require that the applicant utilize various measures including: on-site sediment control best management practices, damp street sweeping, temporary cover of disturbed land surfaces to control erosion during construction, and utilization of stabilized construction entrances or wash racks, among other elements.

Finally, in many Bay Area counties, including San Mateo County, projects must also comply with the *California Regional Water Quality Control Board, San Francisco Bay Region, Municipal Regional Stormwater NPDES Permit* (MRP) (Water Board Order No. R2-2015-0049). This MRP requires that all projects implement BMPs and incorporate Low Impact Development practices into the design to prevent stormwater runoff pollution, promote infiltration, and hold/slow down the volume of water coming from a site after construction has been completed. In order to meet these permit and policy requirements, projects must incorporate the use of green roofs, impervious surfaces, tree planters, grassy swales, bioretention and/or detention basins, among other factors. These same features will be used to treat any stormwater that flows to the off-site brackish marsh during large storm events.

Reductions in ambient light levels in wetland habitat can lead to a decrease in the amount of aquatic vegetation present, which results in a reduction in primary production, as well as the amount of cover and herbaceous food available in the wetland habitat. The proposed project would result in an increase in the maximum height of buildings on the project site from approximately 34 ft currently to 110 ft. Thus, the project has the potential to affect vegetation near taller buildings due to changes in ambient lighting (i.e., shading). However, the increased height of the proposed buildings is not expected to result in a substantial change in the ambient light reaching nearby wetlands. The isolated forested wetlands immediately north of the project boundary are currently bordered to the south by an area of tall trees that already provide some shade, and under the proposed project, regardless of the height of buildings that are constructed nearby, these wetlands would still have exposure to the eastern sky, unimpeded by new buildings. Thus, shading of this wetland under the proposed project is not expected to increase substantially over current levels.

The herbaceous seasonal wetland immediately outside the northeast corner of the project site is in an open area, with no substantive shading from trees or buildings. The herbaceous seasonal wetland immediately north of the Hamilton Avenue Parcels North and South portion of the project site is currently bordered to the south by shrubs and small trees that provide minimal shade, as well as two approximately 20-foot tall buildings located approximately 15–25 feet from the wetland that also shade portions of the wetlands. Shading of both herbaceous seasonal wetlands by new buildings would reduce the amount of light received by wetland plants, potentially affecting the health and growth of these plants, and we would expect some degradation of the wetland habitat over time as a result. However, these wetlands would still have exposure to the eastern sky, unimpeded by new buildings, so they would not be completely shaded. Because these herbaceous seasonal wetlands in the study area would continue to receive adequate lighting, impacts to their functions and values would not rise to a level of significance under CEQA.

The brackish marsh to the north of the study area is located approximately 220 ft from the nearest proposed building and is separated from the main project site by an approximately 25 – 40 ft tall self-storage business. Thus, shading of the marsh by the existing storage units currently have an effect on aquatic vegetation, and the net increase in shading from the proposed project would be insignificant given the project site's distance from the marsh. Shade from the proposed buildings would only reach the marsh for short periods of the day when the sun is low in the sky and ambient light is dimmer and providing less photosynthetic input. Further, because

of the open nature of the proposed development, with extensive open space, the project would not result in one large, continuous shadow but would allow light to penetrate through the campus. Therefore, shading impacts on wetlands from the proposed buildings would be less than significant.

Compliance with state requirements to control the discharge of stormwater pollutants during construction under the NPDES Construction General Permit and the RWQCB required SWPPP, and post-construction measures and design features required by the MRP would reduce the project's potential impact on water quality to a less-than-significant level.

6.4 Impacts on Wildlife Movement: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites (Less than Significant)

6.4.1 Impacts on Wildlife Movement and Native Wildlife Nursery Sites (Less than Significant)

For many species, a typical urban landscape is a mosaic of suitable and unsuitable habitat types. Environmental corridors are segments of land that provide a link between these different habitats while also providing cover. Development that fragments natural habitats (i.e., breaks them into smaller, disjunct pieces) can have a twofold impact on wildlife: first, as habitat patches become smaller they are unable to support as many individuals (patch size), and second, the area between habitat patches may be unsuitable for wildlife species to traverse (connectivity).

All proposed project activities are located within an already developed footprint that is surrounded by existing development. Therefore, the project would not result in fragmentation of natural habitats. Further, the proposed project includes extensive open space. Thus, any common, urban adapted species that currently move through the project site would continue to be able to do so following project construction, and the project would not interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors.

Construction disturbance during the avian breeding season (February 1 through August 31, for most species) could result in the incidental loss of eggs or nestlings, either directly through the destruction or disturbance of active nests or indirectly by causing the abandonment of nests. Due to the absence of sensitive habitats from the project site, the habitats on the project site support only regionally common, urban-adapted breeding birds and support only a very small proportion of these species' regional populations. In addition, many birds are expected to continue to nest and forage on the project site after project construction is completed. These birds are habituated to disturbance related to the existing technology park, and the project incorporates trees, shrubs, and forbs into the landscape design, which will provide some food and structural resources for the common, urban-adapted birds of the area, as well as for migrants that may use the area during spring and fall migration. Therefore, project impacts on nesting and foraging birds that use the site, due to habitat impacts or disturbance

of nesting birds, would not rise to the CEQA standard of having a substantial adverse effect, and these impacts would not constitute a significant impact on these species or their habitats under CEQA. However, all native bird species are protected from direct take by federal and state statutes (see Sections 3.1.5 and 3.2.4). Therefore, Mitigation Measures BIO-13, 14, 15, and 16 shall be implemented to ensure that project activities comply with the MBTA and California Fish and Game Code:

Mitigation Measure BIO-13. Avoidance. To the extent feasible, construction activities should be scheduled to avoid the nesting season. If construction activities are scheduled to take place outside the nesting season, all impacts on nesting birds protected under the MBTA and California Fish and Game Code will be avoided. The nesting season for most birds in San Mateo County extends from February 1 through August 31.

Mitigation Measure BIO-14. Preconstruction/Pre-disturbance Surveys. If it is not possible to schedule construction activities between September 1 and January 31 then preconstruction surveys for nesting birds should be conducted by a qualified ornithologist to ensure that no nests of migratory birds will be disturbed during project implementation. We recommend that these surveys be conducted no more than seven days prior to the initiation of construction activities for each construction phase. During this survey, the ornithologist will inspect all trees and other potential nesting habitats (e.g., trees, shrubs, California annual grasslands, buildings) in and immediately adjacent to the impact areas for migratory bird nests.

Mitigation Measure BIO-15. Buffers. If an active nest is found within trees or other potential nesting habitats that would be disturbed by these activities, the ornithologist will determine the extent of a construction-free buffer zone to be established around the nest (typically 300 ft for raptors and 100 ft for other species), to ensure that no nests of species protected by the MBTA and California Fish and Game Code will be disturbed during Project implementation.

Mitigation Measure BIO-16. Inhibition of Nesting. If construction activities will not be initiated until after the start of the nesting season, all potential nesting substrates (e.g., bushes, trees, grasses, and other vegetation) that are scheduled to be removed by the project may be removed prior to the start of the nesting season (e.g., prior to February 1). This will preclude the initiation of nests in this vegetation, and prevent the potential delay of the project due to the presence of active nests in these substrates.

6.5 Impacts due to Conflicts with Local Policies: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (Less than Significant)

6.5.1 Impacts Related to Compliance with Municipal Code Chapter 13.24, Heritage Trees (Less than Significant)

Per City of Menlo Park Municipal Code Chapter 13.24, Heritage Trees, permits from the City's Director of Public Works or his or her designee and payment of a fee are required for the removal of any trees which meets the definition of heritage tree, as defined in Section 3.3.1 above. A total of 983 trees are currently present on

the project site as a whole, including 805 on the main project site, 17 at 1305 O'Brien Drive, 6 at 1330 O'Brien Drive, 14 in the O'Brien Drive right-of-way, and 141 trees present on the Hamilton Avenue Parcels North and South; a total of 327 of these qualify as heritage trees. Of the 983 trees on the site, 865 (including 295 heritage trees) are expected to be removed during project construction activities (SBCA Tree Consulting 2017, Peninsula Innovation Partners 2020, 2022a-e). The removal or pruning of trees protected by the City of Menlo Park municipal code is considered potentially significant under CEQA (Criterion I). However, the project would comply with the City's heritage tree ordinance Sections 16.43.140(6) (with respect to the O District) and 16.45.130(6) (with respect to the RMU District), including obtaining a permit from the City to remove protected trees and paying any applicable fee. The project proposes to provide replacement trees for all heritage trees removed by the project, and a greater value of trees will be planted than removed (approximately 1,780 new trees will be planted). Therefore, impacts related to conflict with local policies or ordinances protecting heritage trees would be less than significant.

6.5.2 Impacts Related to Compliance with Municipal Code Chapters 16.43.140(6) and 16.45.130(6), Bird Safe Design (Less than Significant with Mitigation)

Development of the proposed project would result in the replacement of existing multi-story buildings with new multi-story buildings on the main project site, and the new buildings will incorporate glazing into their facades. Glass windows and building facades can result in injury or mortality of birds due to collisions with these surfaces. Because birds do not perceive glass as an obstruction the way humans do, they may collide with glass when the sky or vegetation is reflected in glass (e.g., they see the glass as sky or vegetated areas); when transparent windows allow birds to perceive an unobstructed flight route through the glass (such as at corners); and when the combination of transparent glass and interior vegetation (such as in planted atria) results in attempts by birds to fly through glass to reach that vegetation.

The majority of avian collisions with buildings occur within the first 60 ft of the ground (City of San Francisco 2011), where birds spend the majority of their time engaged in foraging, territorial defense, nesting, and roosting activities, and where vegetation is most likely to be reflected in glazed surfaces. However, very tall buildings (e.g., buildings 500 ft or more high) may pose a threat to birds that are migrating through the area, particularly to nocturnal migrants that may not see the buildings or that may be attracted to lights on the buildings.

Currently, terrestrial land uses and habitat conditions in and adjacent to the project site consist primarily of developed and landscaped uses such as buildings, parking lots, and roads. Vegetation in these areas is limited in extent, and consists primarily of non-native landscaped trees and shrubs. Although a number of bird species will use such vegetation, they typically do so in low numbers. Non-native vegetation supports fewer of the resources required by native birds than native vegetation, and the structural simplicity of the vegetation (without well-developed ground cover, understory, and canopy layers) further limits resources available to birds. In addition, although numerous waterbirds are known to congregate at the Don Edwards San Francisco Bay NWR to the north and east of the project site, because the area surrounding the project site to the west and south is heavily urbanized and contains no habitats of high value to estuarine birds using the NWR, we do not expect large numbers of waterbirds to be flying over the project site at altitudes low enough for bird-strike mortality

to occur. The bird species with the greatest potential to collide with any buildings would consist primarily of the common, urban-adapted passerine species that currently use the project site, as these are the species that would spend the most time in the vicinity of the new buildings.

Zoning regulations set forth in Municipal Code Chapter 16.43.140 (6) require projects such as the Willow Village project to implement the following bird-safe design measures to reduce collision risk:

- No more than 10% of facade surface area shall have non-bird-friendly glazing.
- Bird-friendly glazing includes, but is not limited to opaque glass, covering of clear glass surface with patterns, paned glass with fenestration patterns, and external screens over non-reflective glass.
- Placement of buildings shall avoid the potential funneling of flight paths towards a building facade.
- Glass skyways or walkways, freestanding glass walls, and transparent building corners shall not be allowed.
- Transparent glass shall not be allowed at the rooflines of buildings, including in conjunction with green roofs.
- Use of rodenticides shall not be allowed.

However, these regulations allow that a project may receive a waiver from one or more of the items listed above, excluding the prohibition on use of rodenticides, subject to the submittal of a project-specific evaluation from a qualified biologist and review and approval by the planning commission (Ord. 1024 § 3 (part), 2016). To provide such a project-specific evaluation for the Willow Village project, H. T. Harvey & Associates (2021a) prepared the *Willow Village Master Plan Bird-Safe Design Assessment*, which comprehensively analyzes bird collision risk for the Willow Village Master Plan based on the project's conceptual Conditional Development Permit (CDP) application. The report provides documentation of the bird-safe design measures and mitigation measures that will be incorporated into the project to ensure that project impacts due to bird collisions with buildings are reduced to less-than-significant levels under CEQA.

Based on the *Willow Village Master Plan Bird-Safe Design Assessment*, the project shall comply with the following for purposes of addressing the potential for avian collision risk associated with the project:

1. The "beneficial project features" identified in Appendix A of the *Willow Village Master Plan Bird-Safe Design Assessment* (H. T. Harvey & Associates 2021a). These are features of the proposed buildings' architecture that would reduce the frequency of avian collisions by making the buildings' facades appear conspicuous to birds.
2. City Bird-Safe Design Requirements
    a. The City Bird-Safe Design Requirements identified in Mitigation Measure BIO-1 of the *ConnectMenlo: General Plan Land Use & Circulation Elements and M-2 Area Zoning Update Environmental Impact Report* (ConnectMenlo EIR), certified by the City of Menlo Park in 2016 and codified in Sections 16.43.140(6) and 16.45.130(6) of the City's Municipal Code

(collectively referred to as the "City Bird-Safe Design Requirements"), as described in Sections 5.2.2.1, 5.3.2.1, 5.4.2.1, 5.5.2.1, and 6.2.2 of the Bird-Safe Design Assessment.

b. Subject to City approval of waivers to certain City Bird-Safe Design Requirements, the Alternative Measures Proposed, as described in Sections 5.2.2.2, 5.3.2.2, 5.4.2.2, 5.5.2.2, and 6.2.2 of the Bird-Safe Design Assessment. These Alternative Measures are derived from the City of Menlo Park's requirements but are tailored specifically to the Willow Village Master Plan to achieve a reduction in collision risk commensurate with the City Bird-Safe Design Requirements.

3. The "lighting design principles," as described in Section 6.2.1 of the Bird-Safe Design Assessment.
4. Additional mitigation measures, including BIO-1 through BIO-8 described above for impacts on wildlife from artificial lighting, and BIO-17 through BIO-21 described below for the atrium.

As described in the *Willow Village Master Plan Bird-Safe Design Assessment*, an assessment of the conceptual design of most of the proposed structures in the Master Plan area (i.e., the hotel, residential/mixed-use buildings, office campus buildings, and event building and nearby buildings) determined that impacts from bird collisions with these buildings would be less than significant under CEQA with incorporation of beneficial project features, compliance with City Bird-Safe Design Requirements, implementation of Alternative Measures as described above, and implementation of Mitigation Measures BIO-1 through BIO-8 described above for impacts on wildlife from artificial lighting. As such, no additional mitigation measures (i.e., related to the buildings' facades) for impacts related to avian collisions are proposed for those buildings.

However, due to the unique design of the atrium, incorporation of beneficial project features, compliance with City Bird-Safe Design Requirements, and implementation of Alternative Measures may not reduce collision impacts with this structure sufficiently to avoid a significant impact under CEQA. Therefore, additional CEQA mitigation measures are necessary to reduce impacts. With the implementation of the following mitigation measures, which go above and beyond the City's bird-safe design requirements, impacts due to bird collisions with the atrium will be reduced to less-than-significant levels under CEQA, in our professional opinion.

- **Mitigation Measure BIO-17.** The project shall treat 100% of glazing on the 'dome-shaped' portions of the atrium's façades (i.e., all areas of the north façade, and all areas of the south façade above the elevated park) with a bird-safe glazing treatment to reduce the frequency of collisions. This glazing shall have a Threat Factor[4] of 15 or lower.

  Because a Threat Factor is a nonlinear index, its value is not equivalent to the percent reduction in collisions that a glazing product provides. However, products with lower threat factors result in fewer bird collisions.

[4] A material's Threat Factor is assigned by the American Bird Conservancy, and refers to the level of danger posed to birds based on birds' ability to perceive the material as an obstruction, as tested using a "tunnel" protocol (a standardized test that uses wild birds to determine the relative effectiveness of various products at deterring bird collisions). The higher the Threat Factor, the greater the risk that collisions will occur. An opaque material will have a Threat Factor of 0, and a completely transparent material will have a Threat Factor of 100. Threat Factors for many commercially available façade materials can be found at https://abcbirds.org/wp-content/uploads/2021/01/Master-spreadsheet-1-25-2021.xlsx.

Because the City's bird-safe design requirements (and requirements of other municipalities in the Bay Area) do not specify the effectiveness of required bird-safe glazing, Mitigation Measure BIO-17 goes above and beyond what would ordinarily be acceptable to the City, as well as what is considered the industry standard for the Bay Area.

- **Mitigation Measure BIO-18.** The project shall treat 100% of glazing on the atrium's east and west facades with a bird-safe glazing treatment to reduce the frequency of collisions. This glazing shall have a Threat Factor of 15 or lower.

- **Mitigation Measure BIO-19.** Interior trees and woody shrubs will be set back from the atrium's east, west, and non-sloped (i.e., vertical/perpendicular to the ground) portions of the south facades by at least 50 feet to reduce the potential for collisions with these facades due to the visibility of interior trees. This 50-foot distance is greater than the distance used in the project design for the north and sloped portions of the south facades (e.g., 20-25 feet for the north façade) due to the vertical nature of the east, west, and non-sloped portions of the south facades, as opposed to the articulated nature of the north and sloped portions of the south facades (which is expected to reduce the visibility of internal vegetation to some extent), as well as the direct line-of-sight views between interior and exterior vegetation through the east, west, and non-sloped portions of the south facades compared to the north façade (where internal vegetation is elevated above exterior vegetation). Interior trees and shrubs that are not visible through the east, west, and south facades may be planted closer than 50 feet to glass facades.

- **Mitigation Measure BIO-20.** Because the glass production process can result in substantial variations in the effectiveness of bird-safe glazing, a qualified biologist will review physical samples of all glazing to be used on the atrium to confirm that the bird-safe frit will be visible to birds in various lighting conditions, and is expected to be effective.

- **Mitigation Measure BIO-21.** The project shall monitor bird collisions around the atrium for a minimum of two years following completion of construction of the atrium to identify if there are any collision "hotspots" (i.e., areas where collisions occur repeatedly).

  A monitoring plan for the atrium shall be developed by a qualified biologist that includes focused surveys for bird collisions in late April–May (spring migration), September–October (fall migration), and mid-November–mid-January (winter) to maximize the possibility that the surveys will detect any bird collisions that might occur. Surveys of the atrium will be conducted daily for three weeks during each of these periods (i.e., 21 consecutive days during each season, for a total of 63 surveys per year). In addition, for the two-year monitoring period, surveys of the atrium will be conducted the day following all nighttime events held in the atrium during which temporary lighting exceeds typical levels (i.e., levels specified in the International Dark-Sky Association's defined lighting zone LZ-2 from dusk until 10:00 p.m., or 30% below these levels from 10:00 p.m. to midnight, as described in Section 6.5 below). The applicant can assign responsibility for tracking events and notifying the biologist when a survey is needed to a designated individual who is involved in the planning and scheduling of atrium events. The timing of the 63 seasonal surveys (e.g., morning or afternoon) will vary on different days to the extent feasible; surveys conducted specifically to follow nighttime events will be conducted in the early morning.

At a frequency of no less than every six months, a qualified biologist will review the bird collision data for the atrium in consultation with the City to determine whether any potential hotspots are present (i.e., if collisions have occurred repeatedly in the same locations). A "potential hotspot" is defined as a cluster of three or more collisions that occur within one of the three-week monitoring periods described above at a given "location" on the atrium. The "location" shall be identified by the qualified biologist as makes sense for the observed collision pattern and may consist of a single pane of glass, an area of glass adjacent to a landscape tree or light fixture, the 8,990 square-foot vertical façade beneath the elevated park, the façade adjacent to vegetation on the elevated park, the atrium's east façade, the atrium's west façade, or another defined area where the collision pattern is observed. "Location" shall be defined based on observations of (1) collision patterns and (2) architectural, lighting, and/or landscape features contributing to the collisions, and not arbitrarily (e.g., by assigning random grids).

If any potential hotspots are found, the qualified biologist will provide an opinion regarding whether the potential hotspot will impact bird populations over the long-term to the point that additional measures (e.g., adjustments to lighting or the placement of vegetation) are needed to reduce the frequency of bird strikes at the hotspot location in order to reduce impacts to a less-than-significant level under CEQA (i.e., whether it constitutes an actual "hotspot"). This will be determined based on the number and species of birds that collide with the atrium over the monitoring period. In addition, a "hotspot" is automatically defined if a cluster of five or more collisions are identified at a given "location" on the atrium within one of the three-week monitoring periods described above. If a hotpot is identified, additional measures will be implemented at the potential hotspot location at the atrium; these may include one or more of the following options in the area of the hotspot depending on the cause of the collisions:

- The addition of a visible bird-safe frit pattern, netting, exterior screens, art, printed sheets, interior shades, grilles, shutters, exterior shades, or other features to untreated glazing (i.e., on the façade below the elevated park) to help birds recognize the façade as a solid structure.
- Installing interior or exterior blinds in the buildings within the atrium to prevent light from spilling outward though glazed facades at night.
- Reducing lighting by dimming fixtures, redirecting fixtures, turning lights off, and/or adjusting programmed timing of dimming/shutoff.
- Replacing certain light fixtures with new fixtures to provide increased shielding or redirect lighting.
- Adjusting or reducing lighting during events.
- Adjusting the timing of events to reduce the frequency of events during certain times of year (e.g., spring and/or fall migration) when relatively high numbers of collisions occur.
- Adjusting landscape vegetation by removing, trimming, or relocating trees or other plants (e.g., moving them farther from glass), or blocking birds' views of vegetation through glazing (e.g., using a screen or other opaque feature).

If modifications to the atrium are implemented to reduce collisions at a hotspot, one year of subsequent focused monitoring of the hotspot location will be performed to confirm that the modifications effectively reduce bird collisions to a less-than-significant level under CEQA. This monitoring may or may not extend beyond the two-year monitoring period described above, depending on the timing of the hotspot detection.

It is our understanding that the project proposes to use a frit consisting of ¼-inch white dots spaced in a 2x2-inch grid (i.e., similar in specifications to the Solyx SX-BSFD Frost Dot Bird Safety Film product rated with a Threat Factor of 15 by the American Bird Conservancy) for all treated façade areas on the atrium. We further understand that the atrium's glazing will have a dark gray thermal frit treatment (e.g., dark dots incorporated into the glass) in addition to the lighter-toned frit pattern that composes the bird-safe treatment. The extent of thermal frit will vary from the lower portions of the atrium to the upper portions of the atrium, with the upper portions incorporating more extensive (i.e., greater percent cover) thermal frit. Based on our review of preliminary physical glass samples supporting potential combinations of thermal frit and bird-safe frit, provided by the project team, it is our opinion that the combination of the bird-safe frit treatment with the thermal frit would produce very low Threat Factors. We are unaware of any glazing products that incorporate thermal frit patterns and have been assigned a Threat Factor by the American Bird Conservancy; however, the U.S. Green Building Council allows Threat Factors to be determined via any of the following options: (1) using a glass product that has been tested and rated by the American Bird Conservancy; (2) using a glass product with the same characteristics as a product that has been tested and rated by the American Bird Conservancy; or (3) using a glass product that has not been tested and rated, and asking the American Bird Conservancy to provide their opinion regarding an appropriate Threat Factor. We reached out to Dr. Christine Sheppard at the American Bird Conservancy to request her concurrence that the presence of the solar frit would not reduce the effectiveness of the bird-safe frit (and may even increase the effectiveness of the bird-safe frit). Dr. Sheppard responded in an email dated April 9, 2021 agreeing that the solar frit should make the lighter bird-safe frit dots more visible, and the proposed bird-safe treatment would have a Threat Factor of 15 as long as the bird-safe frit dots are ¼-inch in diameter (Sheppard 2021). Thus, the proposed bird-safe glazing treatment is appropriate for the atrium facades and goes above and beyond the City's minimum requirements, as well as the local standard for the San Francisco Bay Area.

The project will also implement Mitigation Measures BIO-1 through BIO-8 to minimize the contribution of project lighting on bird collision risk.

Prior to City approval of each Architectural Control Plan ("ACP") for the project, a qualified biologist shall review the final ACP to confirm that the above features, requirements, alternative measures, and mitigation measures, or other alternative features, requirements, alternative measures, and mitigation measures proposed by the applicant and reasonably acceptable to the qualified biologist, are incorporated into the final design, such that project impacts due to bird collisions would be less than significant under CEQA as indicated in the Bird-Safe Design Assessment.

6.5.3 Impacts Related to Compliance with General Plan Policy OSC1.3, Sensitive Habitats (Less than Significant with Mitigation)

General Plan Policy OSC1.3, Sensitive Habitats, requires new development on or near sensitive habitats to (1) provide a baseline assessment prepared by qualified biologists and specify requirements relative to the baseline assessments, (2) consult with appropriate regulatory and resource agencies, (3) incorporate appropriate avoidance and minimization measures, and (4) obtain necessary permits/authorizations. Further, Mitigation Measure BIO-1 of the ConnectMenlo EIR (PlaceWorks 2016) specifies that the required biological resources assessment must address a number of specific requirements. The following summarizes the project's compliance with the requirements of General Plan Policy OSC1.3 and ConnectMenlo Mitigation Measure BIO-1.

- The baseline biological resources report is required to provide a determination on whether any sensitive biological resources, including jurisdictional wetlands and waters, essential habitat for special-status species, and sensitive natural communities, are present on the site or on any adjacent undeveloped lands that could be affected by the project and lands of the NWR. In compliance with this requirement, Section 4.2 of this report describes the biotic habitat types present in the study area. Sections 5.1 and 5.2 discuss the potential for these habitats to support special-status plants and animals and analyze the potential for special-status species to occur on the study area or close enough to be impacted by proposed project activities; Section 6.1 analyzes potential impacts to special-status species. No plant or animal species listed as threatened or endangered by the USFWS or CDFW are expected to occur within the study area. Further, no species designated as a species of special concern is expected to breed in the study area.

  Section 5.3 addresses the presence of sensitive habitats in the project vicinity, and Sections 6.2 and 6.3 analyze the potential for the project to result in impacts on such habitats. No habitats under the jurisdiction of the USFWS, CDFW, USACE, or RWQCB were determined to be present on the project site, but 0.07 acre of isolated forested wetland (and an additional 0.13-acre area where the canopy of willows extends outside the 0.07-acre forested wetland footprint within which the willows are rooted) and 0.07 acre of herbaceous seasonal wetlands are present immediately north and northeast of the site, and could potentially be impacted by construction. Implementation of Mitigation Measures BIO-10, 11, and 12 as described in Section 6.2.1 would reduce impacts on sensitive/jurisdictional habitats to less-than-significant levels.

- The baseline biological resources report is required to incorporate guidance from relevant regional conservation plans related to determining the potential presence or absence of sensitive biological resources. As described above, Sections 5.1 and 5.2 analyze the potential for special-status plant or animal species to occur on the project site. This analysis incorporates information from the NWR Comprehensive Conservation Plan and Environmental Assessment (U.S. Fish and Wildlife Service 2012), which includes a discussion of all the special-status species potentially occurring on the NWR.

- The baseline biological resources report is required to include an evaluation of the potential effects of the project on sensitive biological resources. The potential for the proposed project to result in significant impacts on sensitive biological resources is analyzed in Section 6 of this report. This analysis takes into consideration the habitat types present in the study area (Section 4.2), the potential for special-status species to be present in the study area (Sections 5.1 and 5.2), and the proximity of the project site to sensitive habitats (Section 5.3). Based on the analysis, it is determined that the project would not result in significant impacts on special-status plant or animal species. The project could potentially result in impacts on sensitive habitats under the jurisdiction of the USACE and RWQCB, in the form of the small areas of isolated forested wetland (0.07 acre plus an additional 0.13-acre area where the canopy of willows extends outside the 0.07-acre forested wetland footprint within which the willows are rooted) and herbaceous seasonal wetlands (0.07 acre) present immediately north and northeast of the site. Implementation of Mitigation Measures BIO-10, 11, and 12 as described in Section 6.2.1 would reduce impacts on sensitive/jurisdictional habitats to less-than-significant levels.

- The baseline biological resources report is required to include avoidance, minimization, and mitigation measures for adverse impacts. Based on the *Willow Village Master Plan Bird-Safe Design Assessment*, Mitigation Measures BIO-1 through BIO-8, described in Section 6.1.2, were identified to reduce impacts of project lighting on wildlife and help to mitigate bird collision risk with project buildings, and Mitigation Measures BIO-17 through BIO-21, described in Section 6.5.2, will reduce impacts from bird collisions with the proposed atrium. Mitigation Measure BIO-9, described in Section 6.1.3, will reduce potential impacts of feral cats on native animals. Mitigation Measures BIO-10, 11, and 12, as described in Section 6.2.1, will reduce impacts on sensitive/jurisdictional habitats. Mitigation Measures BIO-13, 14, 15, and 16, described in Section 6.4.1, will avoid project conflicts with the MBTA and California Fish and Game Code related to nesting birds. Collectively all these mitigation measures will reduce Master Plan impacts on biological resources to less-than-significant levels.

- Per Mitigation Measure BIO-1 of the ConnectMenlo EIR, if sensitive biological resources are determined to be present on the project site or may be present on any adjacent parcel containing natural habitat, coordination with the appropriate regulatory and resource agencies must occur. The project could potentially result in impacts on sensitive habitats under the jurisdiction of the USACE and RWQCB, if these habitats are jurisdictional, in the form of the small areas of isolated forested wetland (0.07 acre plus an additional 0.13-acre area where the canopy of willows extends outside the 0.07-acre forested wetland footprint within which the willows are rooted) and herbaceous seasonal wetlands (0.07 acre) present immediately north and northeast of the site. As discussed in Mitigation Measure 2 of this biological resources report, the project will avoid and minimize impacts to these features to the extent feasible. If all direct impacts can be avoided, so that no clearing of wetland vegetation or fill of these wetlands will occur, no regulatory permitting related to these features would be necessary even if these habitats are jurisdictional. However, if these habitats are jurisdictional and will be impacted by vegetation clearing or fill, the applicant will obtain the necessary 404/401 permits from the USACE and RWQCB.

The project would not result in impacts on plant or animal species listed as threatened or endangered by the USFWS or CDFW, and therefore, no coordination with regulatory agencies regarding impacts on special-status species is warranted. Resource agencies would be provided the opportunity to comment on the proposed project as part of the CEQA process for the project.

- Per Mitigation Measure BIO-1, where jurisdictional waters or federally or State listed special-status species would be affected by the project, appropriate authorizations shall be obtained by the project applicant. As described above, the applicant will obtain any necessary 404/401 permits from the USACE and RWQCB if the off-site isolated forested wetland and/or herbaceous seasonal wetlands are determined to be jurisdictional and will be impacted by vegetation clearing or fill. The project would not result in impacts on plant or animal species listed as threatened or endangered by the USFWS or CDFW. The project would comply with the City's heritage tree ordinance, including obtaining a permit from the City to remove protected trees and paying any applicable fee, as described in Section 6.5.1.

Thus, provided that this project incorporates the mitigation measures described in this biological resources report, the project will not conflict with General Plan Policy OSC1.3. This biological resources report represents compliance with ConnectMenlo EIR Mitigation Measure BIO-1 by providing all the information required by that mitigation measure for a biological resources assessment.

6.6 Impact due to Conflicts with an Adopted Habitat Conservation Plan: Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan (No Impact)

6.6.1 Impacts due to Conflicts with an Adopted Habitat Conservation Plan (No Impact)

The project site is not located within an area covered by an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, the project would not conflict with any such documents.

6.7 Cumulative Impacts

Cumulative impacts arise due to the linking of impacts from past, current, and reasonably foreseeable future projects in the region. Future development activities in the City of Menlo Park will result in impacts on the same habitat types and species that will be affected by the proposed project. The proposed project, in combination with other projects in the area and other activities that impact the species that are affected by this project, could contribute to cumulative effects on special-status species. Other projects in the area include office/retail/commercial development, mixed use, and residential projects that could adversely affect these species, as well as restoration projects (e.g., the South Bay Salt Pond Restoration Project Phase 2, SAFER Bay

Project) that will benefit these species. The South Bay Salt Pond Restoration Project has active restoration sites approximately 750 feet north of the Hamilton Avenue Parcel North component of the project.

The cumulative impact on biological resources resulting from the project in combination with other projects in the project area and larger region would be dependent on the relative magnitude of adverse effects of these projects on biological resources compared to the relative benefit of impact avoidance and minimization efforts prescribed by planning documents, CEQA mitigation measures, and permit requirements for each project; compensatory mitigation and proactive conservation measures associated with each project. In the absence of such avoidance, minimization, compensatory mitigation, and conservation measures, cumulatively significant impacts on biological resources would occur.

However, the project would comply with applicable law regarding protection of biological resources, including among others federal and state law related to jurisdictional waters, federal and state law related to migratory birds, and local regulations regarding bird safety. In addition, the Menlo Park General Plan contains conservation measures that would benefit biological resources, as well as measures to avoid, minimize, and mitigate impacts on these resources. Further, the project would implement mitigation measures (Measures BIO-1-21) to mitigate impacts on sensitive and regulated habitats, and to minimize impacts on nesting and migratory birds, as described above. Thus, the project will make a less than cumulatively considerable contribution to cumulative impacts on biological resources.

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Appendix A. Plants Observed

Family	Scientific Name	Common Name
Aceraceae	*Acer palmatum*	Japanese maple
Aceraceae	*Acer rubrum*	red maple
Anacardiaceae	*Pistacia chinensis*	Chinese pistache
Anacardiaceae	*Schinus molle*	Peruvian pepper
Anacardiaceae	*Toxicodendron diversilobum*	poison oak
Apiaceae	*Foeniculum vulgare*	fennel
Araliaceae	*Hedera helix*	English ivy
Arecaceae	*Pheonix canariensis*	Canary Island palm
Asteraceae	*Baccharis pilularis*	coyote brush
Asteraceae	*Helminthotheca echioides*	bristly ox-tongue
Betulaceae	*Alnus cordata*	Italian alder
Bignoniaceae	*Jacaranda mimosifolia*	jacaranda
Brassicaeae	*Brassica nigra*	black mustard
Brassicaeae	*Raphanus sativus*	cultivated radish
Casuarinaceae	*Casuarina cunninghamiana*	casuarina
Cupresaceae	*Sequoia sempervirens*	coast redwood
Cupressaceae	*Cupressus sempervirens*	Italian cypress
Cyperaceae	*Cyperus eragrostis*	tall flatsedge
Fabaceae	*Acacia melanoxylon*	blackwood acacia
Fagaceae	*Quercus agrifolia*	coast live oak
Fagaceae	*Quercus lobata*	valley oak
Fagaceae	*Quercus rubra*	red oak
Ginkgoaceae	*Ginkgo biloba*	maidenhair
Lamiaceae	*Rosmarinus officinalis*	rosemary
Lythraceae	*Lagerstroemia spp.*	crepe myrtle
Magnoliaceae	*Magnolia soulangeana*	saucer magnolia
Malvaceae	*Malva nicaeensis*	bull mallow
Moraceae	*Ficus carica*	fig
Myrtaceae	*Eucalyptus camaldulensis*	red river gum
Myrtaceae	*Eucalyptus globulus*	Tasmanian blue gum
Myrtaceae	*Eucalyptus polyanthemos*	silver dollar gum
Myrtaceae	*Lophostemon confertus*	Brisbane box
Oleaceae	*Fraxinus oxycarpa 'Raywood'*	raywood ash
Oleaceae	*Fraxinus pennslyvanica*	Pennsylvania ash
Oleaceae	*Fraxinus uhdie*	shamel ash
Oleaceae	*Olea europaea*	olive
Papaveraceae	*Eschscholzia californica*	California poppy
Pinaceae	*Cedrus atlantica*	atlas cedar
Pinaceae	*Cedrus deodara*	deodar cedar
Pinaceae	*Pinus canariensis*	Canary Island pine

Pinaceae	*Pinus halepensis*	aleppo pine
Pinaceae	*Pinus pinea*	Italian stone pine
Pinaceae	*Pinus radiata*	Monterey pine
Platanaceae	*Planatus xhispanica*	London plane
Poaceae	*Avena* sp.	Wild oats
Poaceae	*Bromus diandrus*	ripgut brome
Poaceae	*Phragmites australis*	common reed
Poaceae	*Stipa miliaceae* var. *miliacea*	smilo grass
Podocarpaceae	*Afrocarpus gracilior*	African fern pine
Polygonaceae	*Rumex crispus*	curly dock
Rhamnaceae	*Rhamnus alaternus*	Italian buckthorn
Rosaceae	*Prunus cerasifera 'Krauter Vesuvis'*	purple leaf plum
Rosaceae	*Prunus serrulata*	cherry
Rosaceae	*Pyrus calleryana*	flowering pear
Rosaceae	*Pyrus kawakamii*	evergreen pear
Salicaceae	*Salix babylonica*	weeping willow
Salicaceae	*Salix* sp.	willow

Appendix B. Special-Status Plants Considered for Potential Occurrence

Common Name	Scientific Name	Suitable Habitat Absent	Edaphic Conditions Absent	Outside Elevation Range	Extirpated from Project Vicinity
alkali milk-vetch	Astragalus tener var. tener	x	x		
Anderson's manzanita	Arctostaphylos andersonii	x		x	
arcuate bush-mallow	Malacothamnus arcuatus	x		x	
bay buckwheat	Eriogonum umbellatum var. bahiiforme	x	x	x	
Ben Lomond buckwheat	Eriogonum nudum var. decurrens	x		x	
bent-flowered fiddleneck	Amsinckia lunaris	x			
Brewer's calandrinia	Calandrinia breweri	x		x	
Brewer's clarkia	Clarkia breweri	x	x	x	
bristly leptosiphon	Leptosiphon acicularis	x		x	
California androsace	Androsace elongata ssp. acuta	x		x	
California seablite	Suaeda californica	x			
caper-fruited tropidocarpum	Tropidocarpum capparideum	x	x		
chaparral ragwort	Senecio aphanactis	x		x	
Choris' popcornflower	Plagiobothrys chorisianus var. chorisianus	x			
clay buckwheat	Eriogonum argillosum	x	x	x	
clustered lady's-slipper	Cypripedium fasciculatum	x	x	x	
coast iris	Iris longipetala	x			
coast lily	Lilium maritimum	x			
coastal marsh milk-vetch	Astragalus pycnostachyus var. pycnostachyus	x			
Congdon's tarplant	Centromadia parryi ssp. congdonii				
Contra Costa goldfields	Lasthenia conjugens	x	x		
cotula navarretia	Navarretia cotulifolia	x	x		
Crystal Springs fountain thistle	Cirsium fontinale var. fontinale	x	x	x	
Crystal Springs lessingia	Lessingia arachnoidea	x	x	x	
Davidson's bush-mallow	Malacothamnus davidsonii	x		x	
Delta woolly-marbles	Psilocarphus brevissimus var. multiflorus	x		x	
Dudley's lousewort	Pedicularis dudleyi	x		x	
dusky-fruited malacothrix	Malacothrix phaeocarpa	x		x	
elongate copper moss	Mielichhoferia elongata	x	x		
fragrant fritillary	Fritillaria liliacea	x	X		
Franciscan onion	Allium peninsulare var. franciscanum	x		x	
Gairdner's yampah	Perideridia gairdneri ssp. gairdneri	x			
hairless popcornflower	Plagiobothrys glaber			x	x

Common Name	Scientific Name	Suitable Habitat Absent	Edaphic Conditions Absent	Outside Elevation Range	Extirpated from Project Vicinity
Hickman's popcornflower	Plagiobothrys chorisianus var. hickmanii	x		x	
Hillsborough chocolate lily	Fritillaria biflora var. ineziana	x	x	x	
Hoover's button-celery	Eryngium aristulatum var. hooveri	x			
Howell's onion	Allium howellii var. howellii	x		x	
Jepson's coyote-thistle	Eryngium jepsonii	x			
Jepson's woolly sunflower	Eriophyllum jepsonii	x		x	
Kings Mountain manzanita	Arctostaphylos regismontana	x	x	x	
large-flowered leptosiphon	Leptosiphon grandiflorus	x			
legenere	Legenere limosa	x			
Loma Prieta hoita	Hoita strobilina	x	x	x	
long-styled sand-spurrey	Spergularia macrotheca var. longistyla	x			
lost thistle	Cirsium praeteriens				x
maple-leaved checkerbloom	Sidalcea malachroides	x			
Marin western flax	Hesperolinon congestum	x	x		
Methuselah's beard lichen	Usnea longissima	x		x	
Mexican mosquito fern	Azolla microphylla	x		x	
Michael's rein orchid	Piperia michaelii	x			
minute pocket moss	Fissidens pauperculus	x		x	
Montara manzanita	Arctostaphylos montaraensis	x		x	
Mt. Diablo cottonweed	Micropus amphibolus	x		x	
narrow-petaled rein orchid	Piperia leptopetala	x		x	
Oakland star-tulip	Calochortus umbellatus	x	x	x	
Oregon polemonium	Polemonium carneum	x			
Patterson's navarretia	Navarretia paradoxiclara	x	x	x	
phlox-leaf serpentine bedstraw	Galium andrewsii ssp. gatense	x	x	x	
pincushion navarretia	Navarretia myersii ssp. myersii	x		x	
Point Reyes salty bird's-beak	Chloropyron maritimum ssp. palustre	x			
round-headed Chinese-houses	Collinsia corymbosa	x			
round-leaved filaree	California macrophylla	x		x	
saline clover	Trifolium hydrophilum	x			
San Antonio Hills monardella	Monardella antonina ssp. antonina	x		x	
San Francisco Bay spineflower	Chorizanthe cuspidata var. cuspidata	x			
San Francisco campion	Silene verecunda ssp. verecunda	x		x	
San Francisco collinsia	Collinsia multicolor	x		x	
San Francisco owl's-clover	Triphysaria floribunda	x		x	
San Francisco wallflower	Erysimum franciscanum	x			
San Joaquin spearscale	Extriplex joaquinana	x			
San Mateo thorn-mint	Acanthomintha duttonii	x	x	x	

Common Name	Scientific Name	Suitable Habitat Absent	Edaphic Conditions Absent	Outside Elevation Range	Extirpated from Project Vicinity
San Mateo woolly sunflower	Eriophyllum latilobum	x		x	
Santa Clara red ribbons	Clarkia concinna ssp. automixa	x		x	
Santa Clara thorn-mint	Acanthomintha lanceolata	x		x	
Satan's goldenbush	Isocoma menziesii var. diabolica	x		x	
serpentine leptosiphon	Leptosiphon ambiguus	x		x	
short-leaved evax	Hesperevax sparsiflora var. brevifolia	x			
slender-leaved pondweed	Stuckenia filiformis ssp. alpina	x		x	
South Coast Range morning-glory	Calystegia collina ssp. venusta	x	x	x	
spring lessingia	Lessingia tenuis	x		x	
stinkbells	Fritillaria agrestis	x		x	
sylvan microseris	Microseris sylvatica	x	x	x	
Tracy's eriastrum	Eriastrum tracyi	x		x	
two-fork clover	Trifolium amoenum	x			
western leatherwood	Dirca occidentalis	x		x	
white-flowered rein orchid	Piperia candida	x		x	
white-rayed pentachaeta	Pentachaeta bellidiflora	x	x	x	
woodland woollythreads	Monolopia gracilens	x	x		
woolly-headed lessingia	Lessingia hololeuca	x		x	

Appendix 4.2

Heritage Tree Removal Application Willow Village

HERITAGE TREE REMOVAL APPLICATION

WILLOW VILLAGE

Peninsula Innovation Partners
August 1, 2022

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H	Excel, Survey Data (separate file)
I	Excel, Tree Valuation (separate file)

A.

ARBORIST REPORT, TREE SURVEY AND VALUATION OF HERITAGE TREES

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Date: Amendment 11, July 26, 2022

To: Eric Harrison
Senior Vice President
Signature Development Group

Subject: Tree Survey and Valuation of Heritage Trees

Location: Willow Campus

Introduction

The original survey was conducted in July of 2017. At that time, all trees within the designated area of the Facebook Willow Campus were tagged and surveyed. SBCA Tree Consulting was asked to update survey to remeasure and provide valuation for all Heritage Trees, include trees suitable for preservation, and to include amount of Heritage and non-Heritage City Street trees. Amendment 10 includes the offsite trees.

Estimated value of all 284 Heritage Trees is **$3,448,500.**

Any tree protected by the City's Municipal Code to be retained will require replacement according to its appraised value if it is damaged beyond repair as a result of construction.

The Arborist Report and tree removal and preservation recommendations are based on a review of the most recent plan set: 18-021_WP_Willow_Heritage Tree Removal, 20210430.

City of Menlo Park Ordinance

Definitions of Heritage Tree:
https://www.codepublishing.com/CA/MenloPark/#!/MenloPark13/MenloPark1324.html#13.24.020

(5) "Heritage tree" shall mean:

(A) All trees other than oaks which have a trunk with a circumference of 47.1 inches (diameter of fifteen (15) inches) or more, measured fifty-four (54) inches above natural grade.

(B) An oak tree (Quercus) which is native to California and has a trunk with a circumference of 31.4 inches (diameter of ten (10) inches) or more, measured at fifty-four (54) inches above natural grade.

(C) A tree or group of trees of historical significance, special character or community benefit, specifically designated by resolution of the city council.

For purposes of subsections (5)(A) and (B) of this section, trees with more than one (1) trunk shall be measured at the diameter below the main union of all multi-trunk trees unless the union occurs below grade, in which case each stem shall be measured as a stand-alone tree. A multi-trunk tree under twelve (12) feet in height shall not be considered a heritage tree. (Ord. 1060 § 2 (part), 2019).

13.24.050 Permits and decision making criteria for removal:
https://www.menlopark.org/DocumentCenter/View/25577/Heritage-tree-ordinance-administrative-guidelines?bidId=

Development: The following documentation may be required to support criterion 5: • Schematic diagrams that demonstrate the feasibility/livability of alternative design(s) that preserve the tree, including utilizing zoning ordinance variances that would preserve the tree; • Documentation on the additional incremental construction cost attributable to an alternative that preserves the tree (i.e. construction cost of alternative design minus cost of original design) in relation to the appraised value of tree(s) and based on the most recent addition to the Guide for Plant Appraisal. The following guidance will be used to determine feasibility: • If the incremental cost of the tree preservation alternative is more than 140% of the appraised value of the tree, the cost will be presumed to be financially infeasible. • If the incremental cost of the tree preservation alternative is less than 110% of the appraised value of the tree, the cost will be presumed to be financially feasible. • If the incremental cost of the tree preservation alternative is between 110% and 140% of the appraised value of the tree, public works director or their designee will consider a range of factors, including the value of the improvements, the value of the tree, the location of the tree, the viability of replacement mitigation and other site conditions. • In calculating the incremental cost of the tree preservation alternative, only construction costs will be evaluated. No design fees or other soft costs will be considered

Survey Procedure

Trees Tagged – Each tree was tagged with a metal number tag corresponding with the numbers used in the Excel data sheets in *Appendix 1*. Trees located offsite were provided an 'a' after the tag number to differentiate between trees on the Willow Campus with the same number tag.

Data Recorded – Arborists recorded data on tree species, diameter (DBH[1]), tree height, health and structural conditions, Heritage Tree Status, and suitability for retention. Site constraints were noted for valuation purposes. Trees recommended for potential transplant have been noted. Notes were recorded to provide commentary on general conditions.

Summary

- **Total Trees**: 805 Trees
  - Heritage street tree: 87 Trees
  - Heritage tree: 197 Trees
  - Non-heritage street tree: 54 Trees

[1] **DBH** is tree diameter measured at 54 inches above soil grade.

- **Trees to be Removed**
  - Heritage street tree: 87 Trees
  - Heritage tree: 189 Trees
  - Non-heritage street tree: 54 Trees
  - Non-heritage tree: 451 Trees

- **Trees to Remain**
  - Heritage street tree: n/a
  - Heritage tree: 8 Trees
  - Non-heritage street tree: n/a
  - Non-heritage tree: 16 Trees

- **High Value Trees**
  - Valley Oak – One large 28" DBH *Quercus lobata* exists in the middle north area and appears to be in excellent health and structural condition. The tree is inundated with ivy which requires removal. It is recommended that efforts to retain this tree in the modified site be exercised.
  - Italian Stone Pine – The *Pinus pinea* that line Hamilton Ave are very nice, mature specimen trees.
  - London Plane – A few of the mature *Platanus x hispanica* located on site are very nice specimens. These include: #267-270, #438 and #587. Anthracnose infections were observed to be higher this year.
  - Brisbane Box – Two mature *Lophostemon confertus* are worth mentioning due to their pleasing structures, health, and size: #327 and #578.
  - Deodar Cedar – The mature *Cedrus deodara* lining Willow Ave seem to be thriving on site and provide valuable screening from the road.

- **Species diversity**
  - Most Numerous Species – The most numerous species was the Canary Island *Pine (Pinus canariensis)*, with 124 specimens identified. Eighty (80) trees qualify as "Heritage". Almost all these pines line the north and eastern perimeter of the property. Most all display good health and structural conditions and provide valuable screening to the property. Adjacent property owner on the eastern perimeter stubbed back branches on their side.

  - Second Most Numerous Species – The Crepe Myrtle *(Lagerstroemia spp.)* with 92 specimens identified, was the second most numerous species. Almost all trees located adjacent to buildings have been headed and are of little value. Nine trees display good structures and are suitable for relocation.

- **Problematic Trees** – Although some of the Raywood Ash *(Fraxinus oxycarpa* 'Raywood'*)* appear to be in fair condition, most are inflicted with Ash Blight (*Botryosphaeria stevensii*) and are displaying dieback and declining in health. Tree #286 is almost dead with bark falling off; the tree is at risk for failure and should be removed.

- **Suitable for Relocation –** Thirty-two (32) trees were found to be suitable for relocation. Factors that contributed to suitability include condition, species, size and proximity to adjacent infrastructure. These trees include:
  - 3 Atlas Cedar *(Cedrus atlantica)*
  - 12 Japanese Maple *(Acer palmatum)*
  - 9 Crepe Myrtle
  - 2 Chinese Pistache *(Pistacia chinensis)*
  - 3 Coast Redwood *(Sequoia sempervirens)*

Please refer to Arborist Memo, Willow Village Tree Relocation, 4-23-2021: *"It is our professional opinion that storing these non-Heritage trees for the duration of the project would be problematic. The estimated level of root damage to occur during excavation, the high level of care needed while in containers, and the likelihood of survival for a potential 2-3 year holding period is low."*

Table 1 – The table below provides a breakdown of numbers of each tree species surveyed.

	Species	Common Name	Total Amount	Heritage Tree Amount	Potential Transplant	Overall Retention Suitability	Comments
1	*Acacia melanoxylon*	Blackwood Acacia	5	1		Poor	Located in the middle north area
2	*Acer palmatum*	Japanese Maple	13	0	12	Fair	Cultivars include 'Bloodgood' and 'Dissectum Atropurpureum'; 12 are suitable for transplant
3	*Acer rubrum*	Red Maple	1	0		Good	Newly planted
4	*Afrocarpus gracilior*	African Fern Pine	2	0		Poor	
5	*Alnus cordata*	Italian Alder	2	2		Fair-Poor	Along Willow Ave; Bleeding lesions on trunk; Root damage from sidewalk installation
6	*Casuarina cunninghamiana*	Casuarina	15	12		Good-Poor	Located in the middle north area; Some nice specimens

	Species	Common Name	Total Amount	Heritage Tree Amount	Potential Transplant	Overall Retention Suitability	Comments
7	*Cedrus atlantica*	Atlas Cedar	4		3	Good	Newly planted along Willow
8	*Cedrus deodara*	Deodar Cedar	13	13		Good	Species performing well; Large specimen trees
9	*Cupressus sempervirens*	Italian Cypress	8	0		Good	Nice specimens; Located against one side of a building
10	*Eucalyptus camaldulensis*	Red River Gum	2	1		Fair-Poor	One large specimen likely with internal decay
11	*Eucalyptus globulus*	Tasmanian Blue Gum	3	3		Good-Poor	One nice specimen; One specimen in northern perimeter fence
12	*Eucalyptus polyanthemos*	Silver Dollar Gum	6	6		Fair-Poor	All SFPUC trees stump sprouts and growing in property fence
13	*Ficus carica*	Fig	3	0		Fair	Located in the middle north area, all multis with stems emminating below grade
14	*Fraxinus oxycarpa 'Raywood'*	Raywood Ash	43	32		Fair to Poor	Some doing well for the species; Most are experiencing fungal Ash Dieback
15	*Fraxinus uhdei*	Shamel Ash	23	18		Fair to Poor	Poor pruning
16	*Ginkgo biloba*	Maidenhair	1	0		Fair	Newly planted
17	*Hesperocyparis macrocarpa*	Monterey Cypress	1	1		Good	Lower branching
18	*Jacaranda mimosifolia*	Jacaranda	2	0		Fair	Newly planted, One has dysfunctional root system
19	*Juglas hindsii*	Black Walnut	4	1		Poor	Volunteers in SFPUC land

	Species	Common Name	Total Amount	Heritage Tree Amount	Potential Transplant	Overall Retention Suitability	Comments
20	*Lagerstroemia spp.*	Crepe Myrtle	92	0	9	Fair-Good	Some nice specimens, 9 have transplant potential, Most have been headed
21	*Lophostemon confertus*	Brisbane Box	62	11		Fair to Good	Some nice specimens
22	*Magnolia soulangeana*	Saucer Magnolia	2	0		Good, Poor	Nice specimens but form is not appropriate for transplant
23	*Olea europaea*	Olive	14	9		Poor	All located in the middle north area
24	*Phoenix canariensis*	Canary Island Palm	3	3		Fair	Located in the middle north area
25	*Pinus canariensis*	Canary Island Pine	124	80		Good	Planted at the south and east perimeters, Some trees require end weight reduction to reduce potential of limb breakage; Many trees along east perimeter have branches stubbed back on adjacent property side
26	*Pinus halepensis*	Aleppo Pine	2	2		Fair	Large trees, Poor pruning; One tree is dead
27	*Pinus pinea*	Italian Stone Pine	22	22		Good	Located along Hamilton Ave, Mature valuable specimens, May have suffered large branch removals, #534 is at risk for branch failure.
28	*Pinus radiata*	Monterey Pine	7	7		Fair to Poor	No recommended for retention due to common pathogen attacks

	Species	Common Name	Total Amount	Heritage Tree Amount	Potential Transplant	Overall Retention Suitability	Comments
29	*Pistacia chinensis*	Chinese Pistache	104	0	2	Fair to Good	Two specimens worthy of transplant
30	*Platanus x hispanica*	London Plane	67	29		Fair to Good	Some very nice specimens, Anthracnose not a significant issue this year
31	*Prunus cerasifera 'Krauter Vesuvius'*	Purple Leaf Plum	49	5		Poor	Poor structures
32	*Prunus serrulata*	Cherry	8	3		Good to Poor	Located along Willow Ave, 3 are in good condition
33	*Pyrus calleryana*	Flowering Pear	27	2		Poor	Some nice specimens, but overall Poor retention suitability due to structure and species
34	*Pyrus kawakamii*	Evergreen Pear	11	0		Fair-Poor	Dieback
35	*Quercus agrifolia*	Coast Live Oak	10	4		Good, Poor	Located in the middle north area on campus; 8 volunteers in SFPUC land
36	*Quercus lobata*	Valley oak	1	1		Good	Excellent specimen, Enveloped in ivy in the middle north area
37	*Quercus rubra*	Red Oak	12	1	2	Fair to Poor	Looking better than last year
38	*Rhamnus alaternus*	Italian Buckthorn	1	1		Poor	Located in the middle north area, Many shrubby buckthorns located in the middle north area
39	*Salix babylonica*	Weeping Willow	1	1		Poor	Recently retrenched

	Species	Common Name	Total Amount	Heritage Tree Amount	Potential Transplant	Overall Retention Suitability	Comments
41	*Sequoia sempervirens*	Coast Redwood	14	5	4	Good	#480, 481 and 482 were relocated to the south side of 980 Hamilton
		Totals:	**805**	**284**	**32**		

Tree Valuation, Source and Methodology

This tree valuation report was prepared according to the standards for tree valuation presented in the 10th Edition of GUIDE FOR PLANT APPRAISAL, published by the International Society of Arboriculture, 2019.

Information regarding tree species is from the publication: SPECIES CLASSIFICATION AND GROUP ASSIGNMENTS, published by the International Society of Arboriculture.

Tree valuation is determined by using the FUNCTIONAL REPLACEMENT METHOD, *Trunk Formula* Technique as the tree is larger than the standard 24" box size utilized in tree valuation.

Reproduction Method using Trunk Formula Technique for Determining Tree Value

The current price for a 24-inch box tree is $200 (Council of Tree & Landscape Appraisers). Value is affected by tree species, tree condition and the location in which the tree is growing. The terms below are used is the valuation in the table below.

- **Species** – Species qualities are determined through the publication Species Classification And Group Assignment published by the WESTERN CHAPTER INTERNATIONAL SOCIETY OF ARBORICULTURE. Tree species classification is used to determine the relative size of a replacement tree of a commonly attainable size.
    - **Species Group** – The group rating reflects the rate of growth for the tree species. The group rating determines the *basic price per square inch* of the trunk area for the different species.
- **DBH** - Diameter at Breast Height, measured at 4.5 feet above the average soil grade. Tree valuation is based upon DBH measurements. For multi-stemmed trees, this is based on calculations from the sum of the cross-sectional areas of all stems measured at 4.5 above grade. That figure is then matched with a DBH of a single stemmed tree with the same cross-sectional area.
- **Trunk Area** – The surface area of the cross-sectional area of the tree trunk measured at 4.5 feet above the soil grade (DBH).
- **Tree Condition** – Assessed base upon tree Health, Structure & Form.

Rating	Rating	Amount	Rating	Rating	Amount
G	G	0.9	F	F/P	0.6
G	F/G	0.85	F	P	0.5
G	F	0.8	P	F/G	0.55
G	F/P	0.7	P	F/P	0.4
G	P	0.6	P	P	0.2
F	F/G	0.75	F/G	F/G	0.8

Rating	Rating	Amount	Rating	Rating	Amount
F	F	0.7	F/G	F/P	0.65
F	F/P	0.6	F/P	F/P	0.45

- **Functional Limitations** – Factors within the controllable area that adversely impact the tree. Site Constraints - 1 is hardscape, structure, or wire limitations on one side; 2 is limitations on 2 sides; 3 is limitations on three or all sides.
- **External Limitations** – Adverse impacts beyond control of tree owner is the presence of the adjacent structure that limits the spread of the tree and will require pruning to accommodate. 1 is hardscape, structure, wire, or pruning limitations on one side; 2 is limitations on 2 sides; 3 is limitations on three or all sides.
- **Replacement Tree Diameter** – The diameter of the largest commonly available tree of the same species.
- **Cross-sectional area of Replacement tree** - Based upon diameter of replacement tree for 24" box size.
- **Replacement Tree Cost** – Standard cost for purchase is $200 for 24-inch size box tree. Cost does not include replanting.
- **Unit Tree Cost** – This is the cost of the tree divided by the cross-sectional area.
- **Basic Reproduction Cost** – The cross-sectional area of the tree being valued times the Unit Tree Cost.
- **Species Price per Square Inch**. – Determined from Species Group rating.
- **Depreciated reproduction cost** – Factor in Tree Condition, Functional Limitations & External Limitations.
- **Additional Costs** – Covers tree removal and cleanup prior to replanting.
- **Tree Value** – Total assessed value of the trees are rounded to the nearest $100.

Total value for all 284 Heritage Trees was determined to be $3,448,500

End Report

Appendices are as follows:

- *Appendix 1 – Tree Survey Data, Species Breakdowns, Heritage Trees, Street Trees, Non-Heritage Street Trees, Dead or Removed Trees*
- *Appendix 2 – Tree Valuation Data*
- *Appendix 3 – Facebook Tree Protection Specifications*

Report submitted by:

Molly Batchelder, Consulting Arborist
WC ISA Certified Arborist #9613A
Tree Risk Assessment Qualified (TRAQ)

B.

HERITAGE TREE REMOVALS

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Date: Amended 5-17-22

Project: Willow Village

Address: 1350-1390 Willow Rd., 923-1098 Hamilton Ave, 1010-1280 Hamilton Ct.

Project #: PLN2021-TBD

Owner: Facebook

Contact: Eric Harrison
Senior Vice President
Signature Development Group

Subject: Heritage Tree Removals

Description of site – 59-acre campus of single-story offices and industrial spaces located at corner of Willow Road and the Dumbarton rail line.

Description of development project – The Willow Village project proposes to replace more than one million square feet of existing industrial, office, and warehouse space in the Menlo Science and Technology Park with a new mixed-use village that would include up to 1,729 residential units, up to 200,000 sf of retail uses, up to a 193 room hotel and accessory uses (including restaurant and bar uses), and up to an 1,250,000 sf office campus with up to 350,000 sf of office amenity space uses for campus workers and visitors and approximately 150,000 square feet of open space within a sun-shaded, rain protected cover. In addition, other site improvements would include grading to elevate the property above the Federal Emergency Management Agency (FEMA) base flood elevation and compliance with the City's sea-level rise requirements, creating buildable pads, construction of new infrastructure and circulation improvements, construction of park and open space improvements including bicycle and pedestrian improvements.

The new housing and community-serving retail uses is proposed within the southwestern portion of the site, creating a Residential/Shopping District. This district would consist of up to 1,729 multi-family units, comprised of market rate and below market rate residential units, within multiple buildings along with approximately 100,000 sf of ground floor retail uses in the district. The retail uses may include a grocery store, fitness, cinema, live theatre, bowling alley, and other retail and dining uses along with public spaces of various scales. The Town Square District, in the northwestern portion of the Project Site, would form the center of the proposed neighborhood. A mix of uses would be organized around a Town Square surrounded by a hotel adjacent residential lobbies, public sidewalks, and bicycle lanes. In addition, the Town Square would feature three buildings with approximately 50,000 sf of food and retail uses. The

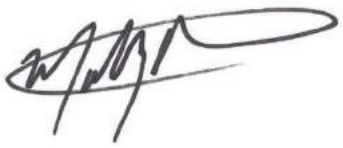
Office Campus District component of the Proposed Project would be in the northeastern and central portions of the Project Site, adjacent to the Dumbarton Rail Corridor and the life science buildings east of the Project Site. This district would accommodate office and office amenity space, accessory space, two parking structures, and publicly accessible retail space along Main Street.

Impacted to trees – All trees on site are proposed for removal due to a 5' grade elevation change.

Reasons for removal – "Criterion 5: Development. The heritage trees interfere with proposed development, repair, alteration or improvement of a site and there is no financially feasible and reasonable design alternative that would permit preservation of the heritage tree while achieving the applicant's reasonable development objectives or reasonable economic enjoyment of the property using the methodology established in the administrative guidelines."

Valuation – Appraised value of each protected tree related to development using the Trunk Formula Technique as described in the most current edition of the "Guide for Plant Appraisal," by the Council of Tree and Landscape Appraisers. Total value of 284 Heritage Trees is **$3,448,500.**

Report submitted by:



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Appendix items:

1. Willow Village Heritage Tree Survey Data
2. Willow Village Heritage Tree Valuation
3. Tree Location Maps

C.

NON-HERITAGE STREET TREE

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Date: May 17, 2022

To: Eric Harrison
Senior Vice President
Signature Development Group

Subject: Non-Heritage Street Trees

Location: Willow Campus

Summary

Arborist identified 54 non-Heritage City Street trees located on the Willow Campus.

Table 1. Table below provides information on 54 non-Heritage City Street Trees.

Tree Number	Tag #	Scientific name	DBH	Height	Health	Structure	Street Tree	Suitability for retention	Notes
1	**163**	*Platanus x hispanica*	6	30	Poor	Poor	1	Poor	Half tree gone, anthracnose
2	**164**	*Platanus x hispanica*	8	40	Fair	Fair	1	Fair to poor	Anthracnose, codominant
3	**170**	*Platanus x hispanica*	10.5	40	Good	Good	1	Good	
4	**176**	*no tree*					1		
5	**177**	*Pyrus calleryana*	12.5	25	Fair	Poor	1	Poor	Included bark x 4
6	**184**	*Pyrus calleryana*	12.5	45	Fair	Poor	1	Fair to poor	Fire blight, included bark
7	**186**	*Platanus x hispanica*	10	40	Fair	Fair to good	1	Good	Lean, anthracnose

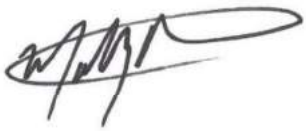
8	**188**	*Platanus x hispanica*	11	45	Good	Poor	1	Fair	Large pruning cuts, included bark
9	**194**	*Pyrus calleryana*	14.5	40	Fair to good	Poor	1	Fair	Some fire blight
10	**195**	*Platanus x hispanica*	12	40	Fair	Good	1	Fair	In canopy of euc
11	**197**	*Pyrus calleryana*	12	40	Fair to good	Poor	1	Fair to poor	Fire blight, included bark, large pruning cut
12	**198**	*Pyrus calleryana*	11.5	40	Fair to good	Poor	1	Fair to poor	Fire blight, included bark, large pruning cut
13	**200**	*Platanus x hispanica*	12.5	50	Good	Good	1	Good	
14	**201**	*Pistacia chinensis*	4	20	Good	Poor	1	Poor	2 rip outs
15	**202**	*Platanus x hispanica*	9	35	Fair	Fair	1	Fair	Lean, under canopy of willow, codominant
16	**206**	*Prunus cerasifera 'Krauter Vesuvius'*	7.5	25	Fair	Fair to poor	1	Fair to poor	Pruning cuts, some dieback
17	**210**	*Pyrus calleryana*	12	40	Fair to good	Fair	1	Fair	Under canopy of cedar, fire blight
18	**211**	*Pyrus calleryana*	9	35	Fair	Poor	1	Fair to poor	Under canopy of cedar, fire blight
19	**216**	*Prunus serrulata*	14	30	Fair	Fair	1	Fair	Sparse foliage, dieback
20	**220**	*Platanus x hispanica*	11.5	35	Good	Fair	1	Fair	Significantly lean

21	**221**	*Platanus x hispanica*	12	55	Poor	Good	1	Fair	Anthracnose
22	**222**	*Platanus x hispanica*	12.5	60	Poor	Good	1	Fair	Anthracnose, large pruning cuts
23	**226**	*Prunus serrulata*	9	25	Fair to poor	Fair	1	Fair to poor	Dieback
24	**227**	*Pistacia chinensis*	4	20	Good	Good	1	Good	
25	**477**	*Lagerstroemia spp.*	8	25	Good	Good	1	Fair to good	Poor pruning
26	**485**	*Magnolia soulangeana*	11	15	Good	Good	1	Good	One sided, but nice tree. Transplant potential
27	**490**	*Prunus cerasifera 'Krauter Vesuvius'*	10 @ 2'	25	Fair	Poor	1	Poor	Included bark, lean
28	**501**	*Prunus cerasifera 'Krauter Vesuvius'*	8.5 @ 2'	15	Fair	Fair	1	Poor	Included bark, dieback
29	**502**	*Prunus cerasifera 'Krauter Vesuvius'*	9.5	15	Poor-dead	Poor	1	Poor	Almost dead
30	**503**	*Prunus cerasifera 'Krauter Vesuvius'*	1.5	10	Good	Poor	1	Poor	Dysfunctional root system
31	**505**	*Pistacia chinensis*	6	25	Fair to good	Fair to good	1	Fair	In lawn
32	**506**	*Quercus rubra*	12	25	Fair	Good	1	Fair	Surface roots, in lawn, dieback
33	**509**	*Magnolia soulangeana*	7 @ base	10	Good	Fair	1	Fair to poor	In lawn, large wound at base
34	**513**	*Lagerstroemia spp.*	1.5	10	Poor	Poor	1	Poor	Headed, base girdled
35	**521**	*Fraxinus uhdei*	13.5	50	Good	Fair	1	Fair	

36	**530**	*Prunus cerasifera 'Krauter Vesuvius'*	12 @ 2.5'	25	Fair	Fair	1	Fair to poor	Some dieback
37	**531**	*Lagerstroemia spp.*	12 @ base	10	Fair	Fair	1	Fair	Multi, headed
38	**533**	*Lagerstroemia spp.*	7	15	Fair	Fair	1	Fair	Headed
39	**542**	*Sequoia sempervirens*	2.5	10	Poor	Good	1	Poor	Poorly planted
40	**543**	*Sequoia sempervirens*	2	10	Fair	Good	1	Poor	Poorly planted
41	**548**	*Prunus cerasifera 'Krauter Vesuvius'*	8	20	Fair	Poor	1	Poor	Dieback, included bark
42	**549**	*Prunus cerasifera 'Krauter Vesuvius'*	8.5	25	Good	Fair	1	Fair	Lots of suckers
43	**550**	*Prunus cerasifera 'Krauter Vesuvius'*	7	25	Good	Fair to good	1	Fair	
44	**552**	*Fraxinus uhdei*	10	25	Good	Fair to poor	1	Poor	Large branch removal
45	**553**	*Fraxinus uhdei*	13.5	40	Fair	Fair	1	Fair	
46	**586**	*Lagerstroemia spp.*	8	30	Good	Good	1	Good	Transplant worthy?
47	**588**	*Quercus rubra*	2	10	Fair	Good	1	Good	
48	**589**	*Quercus rubra*	2	10	Fair to good	Good	1	Fair	
49	**590**	*Cedrus atlantica*	4	15	Good	Poor	1	Good	Extensive vehicle damage to base
50	**604**	*Prunus cerasifera 'Krauter Vesuvius'*	8 @ 3'	25	Good	Poor	1	Poor	Lean, included bark x2
51	**630**	*Pyrus kawakamii*	11	15	Fair to good	Fair to good	1	Fair	

52	**637**	*Cedrus atlantica*	5 @ 1'	10	Good	Good	1	Good	
53	**638**	*Cedrus atlantica*	5 @ 1'	10	Good	Good	1	Good	
54	**639**	*Cedrus atlantica*	5 @ 1'	10	Good	Good	1	Good	

Report submitted by:



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D.

TREE RELOCATION MEMO

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Molly Batchelder, Consulting Arborist
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Date: May 17, 2022

To: Eric Harrison
Senior Vice President
Signature Development Group

Subject: This memo is to address the feasibility of relocating 32 trees listed as Suitable for Relocation in SBCA Tree Arborist Report, *Willow Campus Tree Survey and Valuation of Heritage Trees,* Amendment 10, 5-17-22.

Summary

We identified 32 trees suitable for relocation in our Willow Campus Tree Survey Amendment #10 report dated 5-17-22. None of the trees qualified as Heritage Trees based on the City of Menlo Park Tree Ordinance. These trees were installed with the original parking lot construction of the existing buildings.

Willow Campus improvement activities include demolition, grading, installation of utilities, street improvements, and construction of multiple buildings. It is our professional opinion that storing these non-Heritage trees for the duration of the project would be problematic. The estimated level of root damage to occur during excavation, the high level of care needed while in containers, and the likelihood of survival for a potential 2-3 year holding period is low.

Therefore, we recommend that the future is best served by putting resources into the procurement of vigorous nursery grown, disease-free replacement specimens with healthy and non-compromised root systems. In addition, the new tree species selection would be tailored to an appropriate plant palette of the completed overall Masterplan. We are recommending all the previously identified relocation trees (32 count) be removed with site construction.

End

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Tree Risk Assessment Qualified (TRAQ)

E.

ARBORIST RESPONSE TO CITY COMMENTS

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Date: May 17, 2022

To: Eric Harrison
Senior Vice President
Signature Development Group

Subject: Heritage Tree Removal Permits, Arborist Report, and Project Plans Evaluation- Willow Village Master Plant Project- City Arborist Review

Location: Willow Campus

Assignment: Arborist was asked to review City comments and provide response.

City Arborist Evaluation of the Revised Arborist Report and Project Plans

City Comment: "Specify the tree numbers for the 32 non-heritage trees evaluated as suitable for relocation and identify them in the tree inventory. Regarding the suitability of relocating these 32 trees listed as Suitable for Relocation in SBCA Tree Arborist Report, please confirm whether it is possible to immediately transplant these trees to a location on-site away from proposed work."

- Trees have been added to tree inventory, *Appendix 1, Willow Campus Survey Data, Amended 7-30-21*
- Please refer to Arborist Memo, Willow Village Tree Relocation, 4-23-2021: *"It is our professional opinion that storing these non-Heritage trees for the duration of the project would be problematic. The estimated level of root damage to occur during excavation, the high level of care needed while in containers, and the likelihood of survival for a potential 2-3 year holding period is low."*

City Comment: "Submit HTR permit applications for removal of all Street Trees currently located within City ROW (permit fee waived)"

- Submitted 7-16-21

City Comment: "Some of the appraisal costs appear to be off. For instance, tree #153 (a 14" purple leaf plum) was appraised at $19,700. Please provide the methodology used to determine such factors as the

Replacement Tree Area and Unit Costs of the largest commercially available nursery tree based on Group number".

- Our valuation utilized *Guide for Plant Appraisal, 10th Edition, Revised By Council of Tree and Landscape Appraisers.* Methodology is contained in *Arborist Report, Willow Village Tree Survey, Amendment 7, July 30, 2021.* We amended Replacement Tree Cost from $512 to $200 by taking out the planting cost.

City Comment: "Please clarify how multi-stemmed trees (such as #153, 154, and 156) were measured for this tree inventory. When the trunk splits at 4.5' above the ground or less, the trunk diameters are to be measured below the main union. This diameter is used to determine whether a tree is a Heritage Tree."

- For the purpose of determining City Heritage Tree status for multi-stemmed trees, diameter measurements are taken below the main union unless the union occurs below grade. For the purpose of tree valuation, DBH measurements were taken. Both measurements are contained in *Appendix 1, Willow Campus Survey Data, Amended 7-30-21*

City Comment: "Some non-native trees with diameters less than 15" in trunk diameter are listed as Heritage Trees. These include #156, 536, 157, 529, 153, 284, 285, and 768. Please address."

- Multi stemmed trees were determined as Heritage as per City Ordinance
- Trees 14.5" were rounded to 15"
- *Phoenix canariensis* were included as Heritage due to 25" diameter size.

Tree #	DBH	Diameter measured below the main union	Sum of cross-sectional area
156	4.5, 5.5, 5.5, 5, 2	16 @ base	10.5
536	7, 6.5, 5.5	15 @ base	11
157	7.5, 7, 6	19 @ base	12
529	5, 6.5, 9.5	15 @ 3'	12
153	7, 8.5, 6, 7	15 @ 2'	14
284	14.5	Rounded to 15	
285	9, 11	16.5 @ base	14.5
768	25	*Phoenix canariensis* were included as Heritage due to 25" trunk size	

City Comment: "Please list any development-related plans reviewed and date of plans. The Arborist Report and tree removal and preservation recommendations should be based on a review of the most recent plan set."

- Stated in *Arborist Report, Willow Village Tree Survey, Amendment 7, July 30, 2021:* The Arborist Report and tree removal and preservation recommendations are based on a review of the most recent plan set: 18-021_WP_Willow_Heritage Tree Removal, 20210430

City Comment: "Please include a statement that any tree protected by the City's Municipal Code to be retained will require replacement according to its appraised value if it is damaged beyond repair as a result of construction."

- Included in *Arborist Report, Willow Village Tree Survey, Amendment 7, July 30, 2021.*

City Comment: "Please include Facebook's Tree Preservation Specifications in the Arborist Report so these guidelines may be reviewed. Please ensure these specifications include the recommendation that the Project Arborist review tree protection measures and monitor impactful work near Heritage Trees to be preserved. Any time development-related work is recommended to be supervised by a Project Arborist, the Project Arborist shall provide a follow-up letter documenting the mitigation has been completed to specification."

- Facebook Tree Protection Specifications included as *Appendix 3 to Arborist Report, Willow Village Tree Survey, Amendment 7, July 30, 2021.*

City Comment: "The appendix tree valuation and tree survey data only include information for Heritage Trees to be removed. Please confirm whether any Heritage Trees will be preserved as a part of this project and include their information in the tables as well."

- Eight Heritage Trees will be preserved. These include: #s 5, 10, 15-19, and 23.

City Comment: "If any Heritage Trees are to be preserved, please define the tree protection zone (TPZ) for these trees with dimensions for tree protection fencing or a map indicating where fencing is to be placed."

- RPZs for trees designated for preservation contained in *Appendix 1, Willow Campus Survey Data, Amended 7-30-21*

City Arborist Review of Project Plans

City Comment: "Please include on-site, street tree, and off-site tree designations in the Tree Inventory Table. Please include reason(s) for tree removal in the Tree Inventory table, i.e., located where grading is planned."

- Submitted 7-16-21

City Arborist Comment: "Please include the tree preservation guidelines, including trunk protection specifications and tree protection fencing specifications as a sheet in the plan set."

- Facebook Tree Protection Specifications included as *Appendix 3 to Arborist Report, Willow Village Tree Survey, Amendment 7, July 30, 2021.*

City Arborist Comment: "For any Heritage Trees to be preserved, please include accurate trunk locations and canopy spread, numbered tree symbols, and tree protection fencing shown on demolition and site plans as a bold, dashed line and denote 6' tall chain link fencing."

- RPZ for Heritage Trees to be preserved has been included in *Appendix 1, Willow Campus Survey Data, Amended 7-30-21.* RPZ is determined by tree DBH, not canopy spread.

End

F.

MPK FACEBOOK TREE PRESERVATION SPECIFICATION

MPK Facebook Tree Preservation Specifications

Purpose

These guidelines provide for the care and maintenance of the tree(s) before, during and after construction activities. Tree condition is assessed during the design phase to determine suitability for retention. Healthy trees (measured in high starch reserves) are more likely to survive adverse impacts. It is recommended that costs of preservation do not exceed tree value.

The goal of tree protection and preservation is to provide for a successful transition to a modified site. To be most effective, health mitigation measures must begin before the time of disturbance.

Project construction documents shall provide clear and concise tree protection requirements. Documents shall also provide procedures to be used for all activities occurring within the designated tree protection area.

Project Arborist will review tree protection measures and monitor impactful work near Heritage Trees to be preserved. Any time development-related work is recommended to be supervised by a Project Arborist, the Project Arborist shall provide a follow-up letter documenting the mitigation has been completed to specification.

Definitions

City Heritage Trees – Menlo Park's Tree Ordinance designates tree removal permits for trees having attained Heritage size:

1. Any tree having a trunk with a circumference of 47.1 inches (diameter of 15 inches) or more measured at 54 inches above natural grade.
2. Any oak tree native to California, with a circumference of 31.4 inches (diameter of 10 inches) or more measured at 54 inches above natural grade.
3. Any tree with more than one trunk measured at the point where the trunks divide, with a circumference of 47.1 inches (diameter of 15 inches) or more, with the exception of trees that are under twelve (12) feet in height, which are exempt from the ordinance.1

Protected tree – Any tree that has been designated to be retained and is located within the scope of a construction project.

Project arborist – A certified arborist appointed to oversee tree protection. Project arborist shall have the authority to halt all construction activities if tree protection guidelines are not being adhered to.

DBH –Diameter at Breast Height: Tree diameter measured at 54 inches above average soil grade.

Root Protection Zone (RPZ) – A radial distance from the base of the tree designated by project arborist. Sometimes equal the crown spread but is generally a distance of one-foot from the base of the tree for every one-inch in tree (DBH). No heavy machinery is allowed within the RPZ.

Soil compaction – Soil compaction is excessive when planting soil is compacted (generally) over 80% ASTM from a standard Proctor compaction test. Soil compaction must be avoided and mitigated when identified within the designated RPZ.

Mechanical damage – Damage to tree trunk, branches, or roots that causes loss of bark and cambial damage.

Crown pruning – Shortening or removal of branches in accordance with guidelines presented in ANSI A300 PRUNING STANDARDS. All pruning must be approved of and conducted by qualified personnel.

Root pruning – Pruning of tree roots must be approved of and conducted by project arborist.

Water Jet/Air Spade – Soil aeration tools used to mitigate soil compaction using water and air, respectively.

Rootable Soil – Rootable soil is a soil medium that is compacted less than 80% ASTM, has oxygen levels between 6-16% and has sufficient available moisture and nutrients with no toxic substances.

Design

Whenever early design contemplates the retention of an existing tree in the modified environment, deference to the needs of the tree must be provided. This entails an understanding of the current conditions and the level of encroachment that will occur. Arborist involvement during the initial design period is important to understanding if the tree is worthy of saving and if the tree can be saved. Trees designated to be retained require both minimization of root loss and an overall improvement in the quality of the soil conditions.

The first logical step in tree preservation is to conduct a process called Site Analysis, which involves investigation of both physical soil properties and laboratory analysis. The purpose is to identify conditions that may limit the ability of the plant material to thrive. Once the site limitations have been identified, mitigation treatments can be prescribed.

Site analysis and early tree health mitigation

Prior tree survey and site analysis will designate trees to be retained and all procedures and treatments to be used to assure the trees survive the site modifications.

Soil profile examination – The soil profile examination determines soil texture and moisture levels. Soil compaction is also assessed. This information is vital to understanding the level of soil protection and mitigation that will be necessary.

Laboratory analysis – Analysis of soil and plant tissue samples can help guide the use of soil amendments and fertilization.

Root investigation – Preliminary excavation to determine the size, depth, and amount of roots present in the impacted area. This information may initiate design modifications.

Mitigation of limitations identified – Limitations identified during site analysis are best mitigated as soon as possible to improve overall tree health. Possible limitations to be mitigated include soil compaction, nutritional deficiencies, and soil moisture. Most basic mitigation entails: irrigation, mulching, water jet and air spade procedures. Soil amendments other than good quality mulch must be based upon laboratory soil analysis.

Pre-construction activities

These activities should be undertaken prior to initiation of construction activity.

Mulching – Use of good quality organic mulch (fresh wood chips are best) on soil surface helps to reduce soil compaction and retain soil moisture. Recommended material is wood chips generated from tree trimming. Fresh redwood, incense cedar and walnut chips are not acceptable, nor is palm generated mulch. Mulch shall be from tree parts taken from a minimum of 2 meters above ground. Mulch shall not contain soil particles.

Crown pruning –Pruning must comply with ANSI A300 Pruning Standards. Pruning prior to construction should include: Necessary Clearance Pruning, Deadwood Removal and Safety Pruning.

Construction documents to show protected trees and tree protection requirements – Project plans to show tree protection fencing layout, areas of encroachment, and list procedures for working around protected trees.

Designation of tree Root Protection Zone (RPZ)–The tree Root Protection Zone designates an area surrounding a tree or grouping of trees that is to be fenced off from all access. The RPZ is commonly defined as a distance of one (1) foot radial distance from the base of the tree for every one (1) inch in tree diameter (DBH). A tree with a 10-inch diameter would have a RPZ equal to 10 feet out from the tree. Project arborist can modify the RPZ distance based upon physical evidence of root presence or absence.

Tree Root Protection Zone fencing – Fencing is to be chain-link type metal fencing with metal posts driven two-feet into the soil. Signs shall be attached to tree protection fencing every 20' which read "TREE PROTECTION ZONE: DO NOT ENTER".

Procedures and treatments for work activities that must occur inside of the designated RPZ – All such activities and relocation of fencing must be overseen by project arborist. Special trunk, scaffold and soil protection measures are required. When encroachment is anticipated prior to the beginning of construction activities, the protections must be in place prior to beginning work activities.

Arborist review and approval of tree protection measures – Project arborist to review tree protection guidelines and modify as deemed necessary.

Tree protections installation and inspected – Project arborist must certify that all tree protection measures have been properly installed.

Pre-construction meeting – Project arborist shall meet with supervisor and work crew to review requirements of the tree protection. All personnel working on site must be provided an orientation to the tree preservation requirements. There will be no excuses for transgressions.

No construction activities may begin until this meeting has been conducted.

Project arborist can direct that all work activities stop if tree protection guidelines are not being followed. All work activities cease until such time as the problem has been corrected.

Work activities that encroach into the designated RPZ

Arborist supervision – All activities occurring within the designated RPZ must be under direct supervision of project arborist. Encroachment is not permitted until all additional protections are in place and have been approved.

Required method of excavation within critical root zone – When trenching is required, carefully **hand** excavation or the use of the Air Spade or hydraulic water excavation are acceptable methods. Project arborist must approve and supervise all such activity. No heavy equipment is allowed.

Wherever possible, route utilities outside of the designated RPZ. Tunneling is the preferred method for utilities passing through the RPZ.

Soil protection –The effects of foot traffic can be mitigated using six (6) inches of wood chip mulch and ¾ inch plywood placed on top.

Soil protections for equipment operating within the designated RPZ requires 12 inches of mulch with either metal trenching plates or 1 1/8-inch plywood placed on top.

Trunk and scaffold protection – Whenever construction activity must occur inside the tree protection zone, the base of the tree and the **first eight-feet and exposed scaffold limbs** must be armored. Protection is generally provided by wrapping the trunk with straw waddles covered with orange plastic construction fencing. Exposed scaffold limbs are best protected by strapping 2x4 boards to the part exposed to potential injury and wrapping with orange plastic fencing material.

Root protection – All exposed roots must be covered with 2 layers of damp burlap secured with jute staples. Burlap shall always remain damp and can remain in place when backfilled.

Necessary root pruning – Late fall season is the best time for root pruning and spring can be the most harmful. All necessary root pruning and shaving is conducted by project arborist after the roots have been exposed without damage.

Post construction mitigation

Arborist Designation of Health Mitigation Activities – Project arborist will designate tree health mitigation activities based upon the level of root loss and adverse impacts that have occurred.

Monitoring Tree Health – Trees that have been adversely impacted by construction activities are noted for regular visual inspection. Project arborist will direct further mitigation. Insects and fungal pathogens are a sign of poor tree health (low energy reserves) and indicate the need for health mitigation.

Monitoring of Soil Moisture –Moisture should be monitored using a soil probe. Project arborist will designate supplemental irrigation. When root loss occurs, supplemental irrigation may be required for several years.

Mitigation of Soil Compaction – The level and depth of soil compaction must be assessed and mitigated, as necessary. Tools that are most suitable for mitigation of compacted soil are the water jet or air spade.

Landscaping – All landscaping planning must take precautions when planting within the designated RPZ. All plant materials should be selected for compatibility with the favored moisture regime (hydrazone) of the tree species and soil texture.

Continued Mulching – Mulch is extremely beneficial in creating a healthy root environment. A regular program of mulch application is recommended to help retain soil moisture, provide a source of nutrients, help with control weed control and reduce soil compaction.

Fertilization –Trees should be fertilized only when the nutritional limitations have been identified through laboratory analysis of soil or plant tissue. Excessive nitrogen fertilization is known to draw sucking insects (aphid, scale, etc.) to the plants and provide nutrition to fungal pathogens in the soil.

Pest Management Program – Healthy trees do not generally have serious pest problems. Stressed trees are attractive hosts to pathogens, which can contribute to further decline. Pest management is prescribed when monitoring indicates a need.

Below pavement treatments adjacent to existing trees or newly planted trees

Damage to pavement near trees can be reduced and long-term health and vigor in the tree can be improved through treatments that promote good soil gas exchange and allow for deeper root development.

1. Excavation Techniques – In the situation where tree roots are already present, excavation occurs by hand, air spade or hydraulic evacuation methods. Crushed rock can be placed around exposed roots. *See graphic: Under Pavement Treatments in Areas with Existing Tree Roots*

2. Tunneling under Roots – Utilities that must pass through the designated tree protection area are best installed by tunneling below the tree roots.

3. Use of Clean Crushed Rock Below Pavement – This treatment is easiest to implement during original landscape installation. The treatment excavates the area below pavement to 6” to 12” deeper and place a clean crushed rock. Compaction can occur only from the surface of the rock after it is a minimum 6” deep. The rock is then covered with tensile and or filter fabric.

Aggregate base can be placed on the fabric and compaction can occur again prior to installing the pavement.

4. Use of 'Gap Graded' or 'Structural' Soil – Structural soil scan be purchased ready for installation or made from site soil and imported clean crushed rock.

5. Radial Trenching – In situations where trees are in areas with limited soil volumes and there are available rootable soil volumes adjacent, roots can be directed to rootable soil with radial trenching. Trenches are backfilled with structural soil. A layer of clean crushed rock is always placed on top of structural soil to reduce future hardscape displacement.

Treatment of contractor transgressions

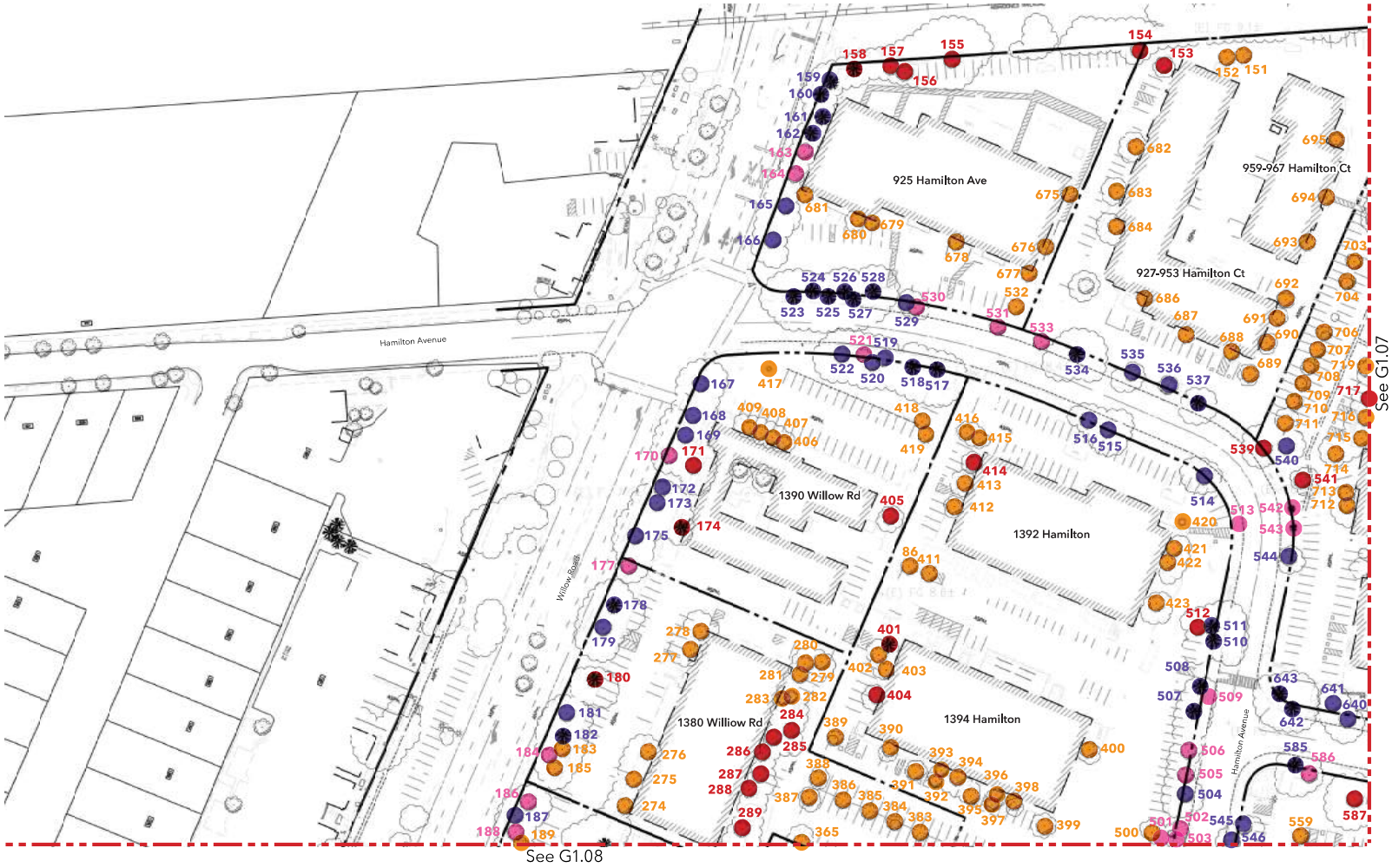
Enforcement of Tree Protection – Without a method to assure that the tree protection guidelines are properly followed, it is often the case that the protections are not adhered to. Transgressions occur both large and small as contractors make mistakes or attempt to cut corners to speed up their work. To be effective, the cost for contractor non-compliance must be greater than the savings to the contractor.

Penalties for Non-Compliance of Tree Protection Guidelines – It is recommended that contractors be required to place a bond to the value of the protected vegetation and potential soil mitigation. The bond is released when contractor compliance has been verified by project arborist. Should transgressions occur, the bond remains in place until such time at the situation has been fully mitigated.

End

G.

HERITAGE TREE REMOVAL PLAN



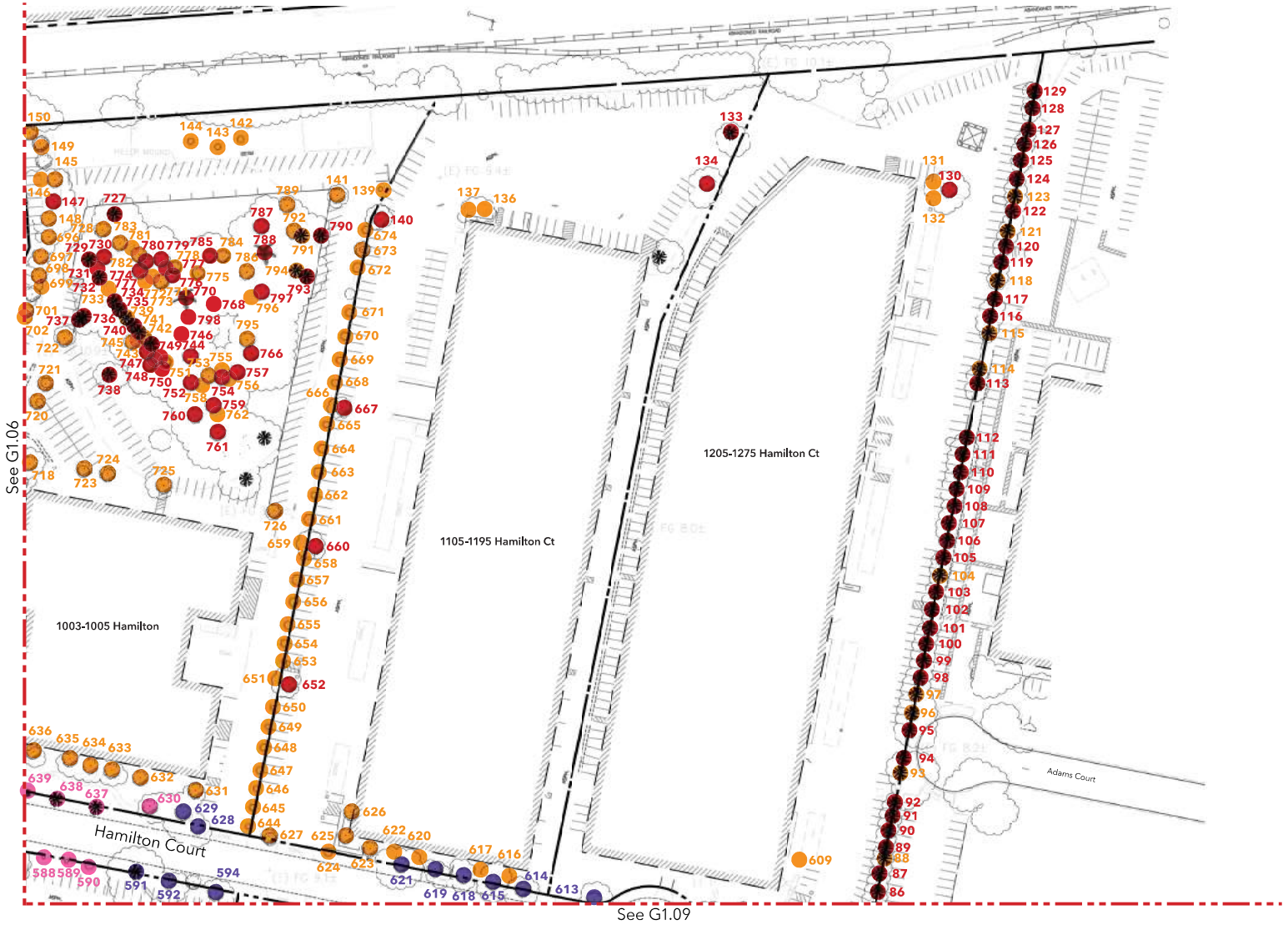
TREE INVENTORY SUMMARY		
Total Trees		**805**
Trees To-Be Removed		**781**
	Heritage Street Tree	87
	Heritage Tree	189
	Non-heritage Street Tree	54
	Non-heritage Tree	451
Trees To Remain		**24**
	Heritage Street Tree	N/A
	Heritage Tree	8
	Non-heritage Street Tree	N/A
	Non-heritage Tree	16

Note: All tree replacements will meet minimum tree replacement value determined by the arborist, SBCA Tree Consulting, per arborist report dated August 1, 2022.

1 min. Walk

0 50 100 150 250 400'

1" = 50' at 22" x 34"



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0 50 100 150 250 400'

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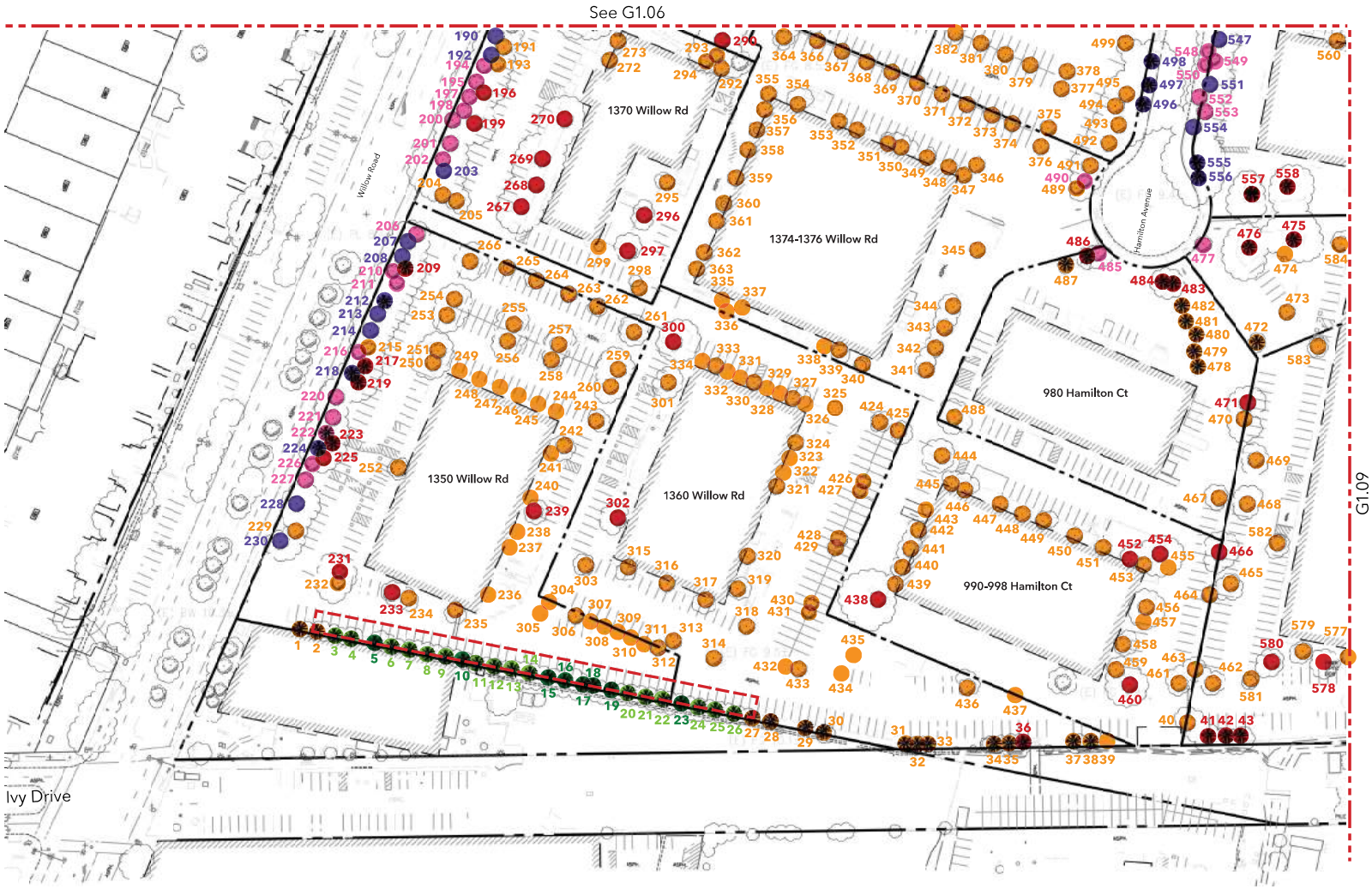
MASTER PLAN
Peninsula Innovation Partners

WILLOW VILLAGE

Menlo Park, CA

G1.07
Heritage Tree Removal Plan
August 1, 2022



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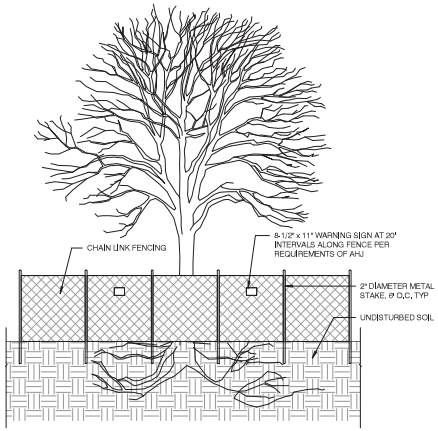
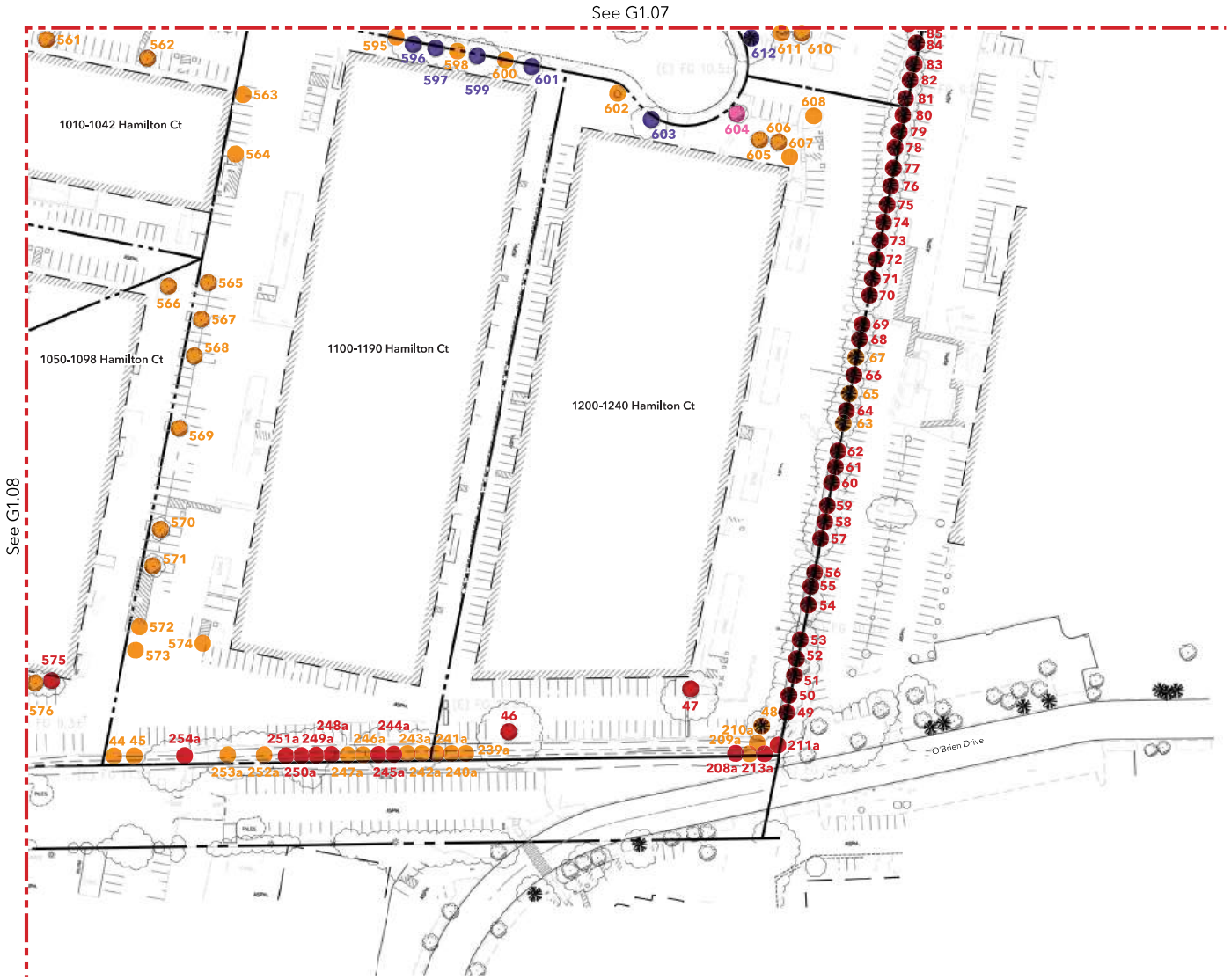


TEMP. TREE PROTECTION DETAIL
SCALE: 3/16" = 1' - 0"

NOTES

1. TREE IDENTIFICATION NUMBERS REFERENCE ARBORIST REPORT BY ERIC FOLMER DATED 2/1/2020, AND ARBORIST REPORT BY SBCA DATED 06/15/2021.
2. PROTECTIVE FENCING INSTALLED PRIOR TO ARRIVAL OF MATERIALS, VEHICLES, OR EQUIPMENT.
3. MOVING TREE PROTECTION FENCE PROHIBITED WITHOUT AUTHORIZATION FROM PROJECT ARBORIST AND CITY STAFF.
4. TREE PROTECTION ZONE COVERS PRIMARY ROOT PLATES (PRP) AT A MIN.
5. FOR DEMOLITION WITHIN AREAS OF TREE PROTECTION SEE PROJECT ARBORIST SPECIFICATIONS.



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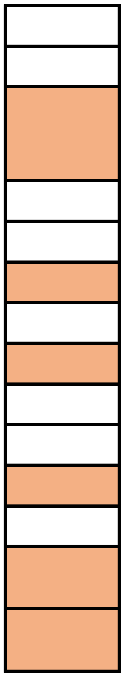
1 min. Walk

0 50 100 150 250 400'

1" = 50' at 22" x 34"

131	*No tree*									
132	*No tree*									
135	*Pinus halepensis*	Aleppo Pine			DEAD				DEAD	
176	*no tree*									
271	*No tree*									
291	*No tree*									
593	*No tree*									
685	*No tree*									
700	*No tree*									
705	*No tree*									
763	*No tree*									
764	*No tree*									
765	*Schinus molle*	Peruvian Pepper			DEAD				DEAD	
769	*Schinus molle*	Peruvian Pepper			DEAD				DEAD	



Tree No.	Tag #	Species	DBH	Trunk Area (TA)	Condition	Functional Limitations	External Limitations	Replacement Tree Diameter	Replacement Tree Area	Replacement Tree Cost	Unit Cost (I/H)	Basic Reproduction Cost (D/J)
1	5	*Pinus canariensis*	17.5	241	0.9	0.6	0.6	2.2	3.8	200	52.6	12659
2	10	*Pinus canariensis*	15	177	0.9	0.6	0.8	2.2	3.8	200	52.6	9301
3	15	*Pinus canariensis*	16.5	214	0.9	0.6	0.8	2.2	3.8	200	52.6	11254
4	16	*Pinus canariensis*	16.5	214	0.9	0.6	0.8	2.2	3.8	200	52.6	11254
5	17	*Pinus canariensis*	17	227	0.9	0.6	0.8	2.2	3.8	200	52.6	11946
6	18	*Pinus canariensis*	15.5	189	0.9	0.6	0.8	2.2	3.8	200	52.6	9931
7	19	*Pinus canariensis*	16.5	214	0.85	0.6	0.8	2.2	3.8	200	52.6	11254
8	23	*Pinus canariensis*	15	177	0.9	0.6	0.8	2.2	3.8	200	52.6	9301
9	36	*Pinus canariensis*	20	314	0.9	0.6	0.8	2.2	3.8	200	52.6	16535
10	41	*Pinus canariensis*	16	201	0.9	0.6	0.8	2.2	3.8	200	52.6	10582
11	42	*Pinus canariensis*	16.5	214	0.6	0.6	0.8	2.2	3.8	200	52.6	11254
12	43	*Pinus canariensis*	19.5	299	0.8	0.6	0.8	2.2	3.8	200	52.6	15718
13	46	*Fraxinus uhdei*	52	2124	0.6	0.6	0.8	2.2	3.8	200	52.6	111775
14	47	*Fraxinus uhdei*	38.5	1164	0.6	0.6	1	2.2	3.8	200	52.6	61272
15	49	*Pinus canariensis*	16.5	214	0.9	0.6	0.8	2.2	3.8	200	52.6	11254

16	**50**	*Pinus canariensis*	18	254	0.9	0.6	0.8	2.2	3.8	200	52.6	13393
17	**51**	*Pinus canariensis*	19.5	299	0.9	0.6	0.8	2.2	3.8	200	52.6	15718
18	**52**	*Pinus canariensis*	20	314	0.9	0.6	0.8	2.2	3.8	200	52.6	16535
19	**53**	*Pinus canariensis*	19	284	0.8	0.6	0.8	2.2	3.8	200	52.6	14923
20	**54**	*Pinus canariensis*	17.5	241	0.9	0.6	0.8	2.2	3.8	200	52.6	12659
21	**55**	*Pinus canariensis*	16	201	0.7	0.6	0.8	2.2	3.8	200	52.6	10582
22	**56**	*Pinus canariensis*	17.5	241	0.9	0.6	0.6	2.2	3.8	200	52.6	12659
23	**57**	*Pinus canariensis*	15.5	189	0.8	0.6	0.6	2.2	3.8	200	52.6	9931
24	**58**	*Pinus canariensis*	21.5	363	0.6	0.6	0.6	2.2	3.8	200	52.6	19108
25	**59**	*Pinus canariensis*	16	201	0.9	0.6	0.6	2.2	3.8	200	52.6	10582
26	**60**	*Pinus radiata*	16	201	0.8	0.6	0.6	2.2	3.8	200	52.6	10582
27	**61**	*Pinus canariensis*	21.5	363	0.8	0.6	0.6	2.2	3.8	200	52.6	19108
28	**62**	*Pinus canariensis*	21	346	0.9	0.6	0.6	2.2	3.8	200	52.6	18230
29	**64**	*Pinus canariensis*	18	254	0.7	0.6	0.6	2.2	3.8	200	52.6	13393
30	**66**	*Pinus canariensis*	15.5	189	0.9	0.6	0.6	2.2	3.8	200	52.6	9931
31	**68**	*Pinus canariensis*	15	177	0.9	0.6	0.6	2.2	3.8	200	52.6	9301
32	**69**	*Pinus canariensis*	16	201	0.8	0.6	0.6	2.2	3.8	200	52.6	10582
33	**70**	*Pinus canariensis*	18	254	0.9	0.6	0.6	2.2	3.8	200	52.6	13393

34	**71**	*Pinus canariensis*	18	254	0.9	0.6	0.6	2.2	3.8	200	52.6	13393
35	**72**	*Pinus canariensis*	17	227	0.9	0.6	0.6	2.2	3.8	200	52.6	11946
36	**73**	*Pinus canariensis*	20.5	330	0.7	0.6	0.6	2.2	3.8	200	52.6	17372
37	**74**	*Pinus canariensis*	15	177	0.8	0.6	0.6	2.2	3.8	200	52.6	9301
38	**75**	*Pinus canariensis*	19.5	299	0.85	0.6	0.6	2.2	3.8	200	52.6	15718
39	**76**	*Pinus canariensis*	19	284	0.9	0.6	0.6	2.2	3.8	200	52.6	14923
40	**77**	*Pinus canariensis*	19	284	0.8	0.8	0.6	2.2	3.8	200	52.6	14923
41	**78**	*Pinus canariensis*	23	415	0.6	1	0.6	2.2	3.8	200	52.6	21867
42	**79**	*Pinus canariensis*	22	380	0.6	1	0.6	2.2	3.8	200	52.6	20007
43	**80**	*Pinus canariensis*	20.5	330	0.9	1	0.6	2.2	3.8	200	52.6	17372
44	**81**	*Pinus canariensis*	25.5	511	0.9	1	0.6	2.2	3.8	200	52.6	26879
45	**82**	*Pinus canariensis*	24	452	0.7	1	0.6	2.2	3.8	200	52.6	23810
46	**83**	*Pinus canariensis*	20	314	0.6	1	0.6	2.2	3.8	200	52.6	16535
47	**84**	*Pinus canariensis*	15.5	189	0.85	1	0.6	2.2	3.8	200	52.6	9931
48	**85**	*Pinus canariensis*	19	284	0.8	1	0.6	2.2	3.8	200	52.6	14923
49	**86**	*Pinus canariensis*	21	346	0.6	0.6	0.6	2.2	3.8	200	52.6	18230
50	**87**	*Pinus canariensis*	18	254	0.9	0.6	0.6	2.2	3.8	200	52.6	13393
51	**89**	*Pinus canariensis*	19.5	299	0.8	0.6	0.6	2.2	3.8	200	52.6	15718

52	**90**	*Pinus canariensis*	15.5	189	0.8	0.6	0.6	2.2	3.8	200	52.6	9931
53	**91**	*Pinus canariensis*	18.5	269	0.9	0.6	0.6	2.2	3.8	200	52.6	14148
54	**92**	*Pinus canariensis*	16.5	214	0.8	0.6	0.6	2.2	3.8	200	52.6	11254
55	**94**	*Pinus canariensis*	15	177	0.9	0.6	0.6	2.2	3.8	200	52.6	9301
56	**95**	*Pinus canariensis*	18	254	0.9	0.6	0.6	2.2	3.8	200	52.6	13393
57	**98**	*Pinus canariensis*	18	254	0.9	0.6	0.8	2.2	3.8	200	52.6	13393
58	**99**	*Pinus canariensis*	16	201	0.9	0.6	0.8	2.2	3.8	200	52.6	10582
59	**100**	*Pinus canariensis*	17.5	241	0.8	0.6	0.8	2.2	3.8	200	52.6	12659
60	**101**	*Pinus canariensis*	17	227	0.9	0.6	0.8	2.2	3.8	200	52.6	11946
61	**102**	*Pinus canariensis*	17	227	0.8	0.6	0.8	2.2	3.8	200	52.6	11946
62	**103**	*Pinus canariensis*	16	201	0.9	0.6	0.8	2.2	3.8	200	52.6	10582
63	**105**	*Pinus canariensis*	15.5	189	0.5	0.6	0.8	2.2	3.8	200	52.6	9931
64	**106**	*Pinus canariensis*	16	201	0.8	0.6	0.8	2.2	3.8	200	52.6	10582
65	**107**	*Pinus canariensis*	16.5	214	0.9	0.6	0.8	2.2	3.8	200	52.6	11254
66	**108**	*Pinus canariensis*	17.5	241	0.8	0.6	0.8	2.2	3.8	200	52.6	12659
67	**109**	*Pinus canariensis*	17	227	0.85	0.6	0.8	2.2	3.8	200	52.6	11946
68	**110**	*Pinus canariensis*	20	314	0.9	0.6	0.8	2.2	3.8	200	52.6	16535
69	**111**	*Pinus canariensis*	20.5	330	0.9	0.6	0.8	2.2	3.8	200	52.6	17372

70	**112**	*Pinus canariensis*	15.5	189	0.9	0.6	0.8	2.2	3.8	200	52.6	9931
71	**113**	*Pinus canariensis*	20	314	0.9	0.6	0.8	2.2	3.8	200	52.6	16535
72	**116**	*Pinus canariensis*	16.5	214	0.9	0.6	0.8	2.2	3.8	200	52.6	11254
73	**117**	*Pinus canariensis*	21	346	0.8	0.6	0.8	2.2	3.8	200	52.6	18230
74	**119**	*Pinus canariensis*	19	284	0.6	0.6	0.8	2.2	3.8	200	52.6	14923
75	**120**	*Pinus canariensis*	15.5	189	0.9	0.6	0.8	2.2	3.8	200	52.6	9931
76	**122**	*Pinus canariensis*	15.5	189	0.9	0.6	0.8	2.2	3.8	200	52.6	9931
77	**124**	*Pinus canariensis*	16	201	0.9	0.6	0.8	2.2	3.8	200	52.6	10582
78	**125**	*Pinus canariensis*	15.5	189	0.9	0.6	0.8	2.2	3.8	200	52.6	9931
79	**126**	*Pinus canariensis*	19.5	299	0.85	0.4	0.8	2.2	3.8	200	52.6	15718
80	**127**	*Pinus canariensis*	17	227	0.85	0.4	0.8	2.2	3.8	200	52.6	11946
81	**128**	*Pinus canariensis*	21	346	0.9	0.6	0.8	2.2	3.8	200	52.6	18230
82	**129**	*Pinus canariensis*	21.5	363	0.85	0.6	0.8	2.2	3.8	200	52.6	19108
83	**130**	*Fraxinus oxycarpa 'Raywood'*	25	491	0.6	0.6	1	1.69	2.24	200	89.3	43828
84	**133**	*Pinus halepensis*	28.5	638	0.8	0.8	1	2.2	3.8	200	52.6	33576
85	**134**	*Schinus molle*	29	661	0.85	0.6	1	2.2	3.8	200	52.6	34764
86	**140**	*Fraxinus oxycarpa 'Raywood'*	15	177	0.7	0.6	1	1.69	2.24	200	89.3	15778

87	**147**	*Eucalyptus camaldulensis*	44	1521	0.75	0.4	1	2.2	3.8	200	52.6	80028
88	**153**	*Prunus cerasifera 'Krauter Vesuvius'*	14	154	0.7	0.8	1	1.69	2.24	200	89.3	13745
89	**154**	*Lophostemon confertus*	17	227	0.75	0.8	1	1.69	2.24	200	89.3	20266
90	**155**	*Eucalyptus globulus*	51	2043	0.8	0.6	1	2.46	4.75	200	42.1	86014
91	**156**	*Lophostemon confertus*	10.5	87	0.8	0.8	1	1.69	2.24	200	89.3	7731
92	**157**	*Lophostemon confertus*	12	113	0.8	0.8	1	1.69	2.24	200	89.3	10098
93	**158**	*Pinus radiata*	20.5	330	0.75	0.8	1	2.46	4.75	200	42.1	13897
94	**159**	*Pinus radiata*	19	284	0.75	0.8	1	2.46	4.75	200	42.1	11938
95	**160**	*Pinus radiata*	21.5	363	0.7	1	1	2.46	4.75	200	42.1	15286
96	**161**	*Pinus radiata*	17.5	241	0.75	1	1	2.46	4.75	200	42.1	10128
97	**162**	*Pinus radiata*	20.5	330	0.75	1	1	2.46	4.75	200	42.1	13897
98	**165**	*Platanus x hispanica*	15	177	0.65	0.8	1	2.2	3.8	200	52.6	9301
99	**166**	*Platanus x hispanica*	17	227	0.7	0.6	1	2.2	3.8	200	52.6	11946
100	**167**	*Platanus x hispanica*	19.5	299	0.9	0.4	1	2.2	3.8	200	52.6	15718
101	**168**	*Platanus x hispanica*	19.5	299	0.7	1	1	2.2	3.8	200	52.6	15718
102	**169**	*Platanus x hispanica*	16.5	214	0.55	1	1	2.2	3.8	200	52.6	11254

103	**171**	*Platanus x hispanica*	17.5	241	0.8	0.8	1	2.2	3.8	200	52.6	12659
104	**172**	*Prunus serrulata*	18	254	0.75	1	1	2.2	3.8	200	52.6	13393
105	**173**	*Platanus x hispanica*	23	415	0.85	1	1	2.2	3.8	200	52.6	21867
106	**174**	*Pinus radiata*	19	284	0.9	0.6	1	2.46	4.75	200	42.1	11938
107	**175**	*Platanus x hispanica*	17	227	0.85	1	0.8	2.2	3.8	200	52.6	11946
108	**178**	*Cedrus deodara*	28	616	0.8	1	1	2.2	3.8	200	52.6	32408
109	**179**	*Platanus x hispanica*	22.5	398	0.75	1	1	2.2	3.8	200	52.6	20927
110	**180**	*Cedrus deodara*	25.5	511	0.9	1	1	2.2	3.8	200	52.6	26879
111	**181**	*Platanus x hispanica*	17	227	0.8	1	1	2.2	3.8	200	52.6	11946
112	**182**	*Cedrus deodara*	25.5	511	0.9	1	1	2.2	3.8	200	52.6	26879
113	**187**	*Platanus x hispanica*	15	177	0.9	1	0.8	2.2	3.8	200	52.6	9301
114	**190**	*Platanus x hispanica*	17	227	0.7	1	1	2.2	3.8	200	52.6	11946
115	**192**	*Prunus serrulata*	19.5	299	0.9	1	1	1.69	2.24	200	89.3	26665
116	**196**	*Eucalyptus polyanthemos*	36.5	1046	0.7	0.8	1	1.69	2.24	200	89.3	93424
117	**199**	*Fraxinus uhdei*	20	314	0.6	0.8	1	2.46	4.75	200	42.1	13228
118	**203**	*Salix babylonica*	30	707	0.5	1	1	2.46	4.75	200	42.1	29763
119	**207**	*Platanus x hispanica*	15.5	189	0.5	1	1	2.2	3.8	200	52.6	9931

120	**208**	*Platanus x hispanica*	17	227	0.5	1	1	2.2	3.8	200	52.6	11946
121	**209**	*Cedrus deodara*	28	616	0.9	1	1	2.2	3.8	200	52.6	32408
122	**212**	*Cedrus deodara*	25	491	0.9	1	1	2.2	3.8	200	52.6	25836
123	**213**	*Platanus x hispanica*	16.5	214	0.5	1	1	2.2	3.8	200	52.6	11254
124	**214**	*Platanus x hispanica*	17	227	0.5	1	1	2.2	3.8	200	52.6	11946
125	**217**	*Cedrus deodara*	24.5	471	0.9	1	1	2.2	3.8	200	52.6	24812
126	**218**	*Cedrus deodara*	18	254	0.9	1	1	2.2	3.8	200	52.6	13393
127	**219**	*Cedrus deodara*	22.5	398	0.9	1	1	2.2	3.8	200	52.6	20927
128	**223**	*Cedrus deodara*	25	491	0.9	1	1	2.2	3.8	200	52.6	25836
129	**224**	*Cedrus deodara*	21.5	363	0.9	1	1	2.2	3.8	200	52.6	19108
130	**225**	*Prunus serrulata*	16	201	0.7	1	1	1.69	2.24	200	89.3	17952
131	**228**	*Platanus x hispanica*	16.5	214	0.2	1	1	2.2	3.8	200	52.6	11254
132	**230**	*Platanus x hispanica*	15	177	0.5	1	1	2.2	3.8	200	52.6	9301
133	**231**	*Platanus x hispanica*	15	177	0.9	0.8	1	2.2	3.8	200	52.6	9301
134	**233**	*Lophostemon confertus*	17	227	0.8	0.8	1	1.69	2.24	200	89.3	20266
135	**239**	*Lophostemon confertus*	16	201	0.6	0.8	1	1.69	2.24	200	89.3	17952
136	**267**	*Platanus x hispanica*	19	284	0.9	1	1	2.2	3.8	200	52.6	14923
137	**268**	*Platanus x hispanica*	18	254	0.9	1	1	2.2	3.8	200	52.6	13393

138	**269**	*Platanus x hispanica*	19	284	0.9	1	1	2.2	3.8	200	52.6	14923
139	**270**	*Platanus x hispanica*	18.5	269	0.9	1	1	2.2	3.8	200	52.6	14148
140	**284**	*Platanus x hispanica*	14.5	165	0.8	0.8	1	2.2	3.8	200	52.6	8691
141	**285**	*Fraxinus uhdei*	14.5	165	0.9	0.8	1	2.46	4.75	200	42.1	6953
142	**286**	*Fraxinus oxycarpa 'Raywood'*	16.5	214	0.2	0.8	1	1.69	2.24	200	89.3	19092
143	**287**	*Fraxinus oxycarpa 'Raywood'*	16	201	0.6	0.8	1	1.69	2.24	200	89.3	17952
144	**288**	*Fraxinus oxycarpa 'Raywood'*	18	254	0.6	0.8	1	1.69	2.24	200	89.3	22721
145	**289**	*Fraxinus oxycarpa 'Raywood'*	24	452	0.6	0.8	1	1.69	2.24	200	89.3	40392
146	**290**	*Fraxinus oxycarpa 'Raywood'*	26.5	552	0.7	0.8	1	1.69	2.24	200	89.3	49245
147	**296**	*Fraxinus oxycarpa 'Raywood'*	16.5	214	0.6	0.4	1	1.69	2.24	200	89.3	19092
148	**297**	*Fraxinus oxycarpa 'Raywood'*	20	314	0.6	0.4	1	1.69	2.24	200	89.3	28050
149	**300**	*Platanus x hispanica*	15.5	189	0.9	0.6	1	2.2	3.8	200	52.6	9931
150	**302**	*Lophostemon confertus*	17.5	241	0.8	0.8	1	1.69	2.24	200	89.3	21476
151	**401**	*Pinus canariensis*	25	491	0.9	0.8	1	1.69	2.24	200	89.3	43828

152	**404**	*Lophostemon confertus*	16	201	0.9	0.6	1	1.69	2.24	200	89.3	17952
153	**405**	*Lophostemon confertus*	16	201	0.9	0.6	1	1.69	2.24	200	89.3	17952
154	**414**	*Prunus cerasifera 'Krauter Vesuvius'*	15	177	0.5	0.8	1	1.69	2.24	200	89.3	15778
155	**438**	*Platanus x hispanica*	26.5	552	0.9	0.4	1	2.2	3.8	200	52.6	29029
156	**452**	*Prunus cerasifera 'Krauter Vesuvius'*	15	177	0.6	0.8	1	1.69	2.24	200	89.3	15778
157	**454**	*Platanus x hispanica*	15	177	0.9	0.8	1	2.2	3.8	200	52.6	9301
158	**460**	*Platanus x hispanica*	16	201	0.8	0.8	1	2.2	3.8	200	52.6	10582
159	**466**	*Pyrus calleryana*	20	314	0.6	0.8	1	1.69	2.24	200	89.3	28050
160	**471**	*Pyrus calleryana*	19	284	0.6	0.8	1	1.69	2.24	200	89.3	25315
161	**475**	*Pinus pinea*	40	1257	0.8	0.8	1	2.46	4.75	200	42.1	52911
162	**476**	*Pinus pinea*	41	1320	0.7	0.8	1	2.46	4.75	200	42.1	55590
163	**483**	*Sequoia sempervirens*	20	314	0.9	0.8	1	2.46	4.75	200	42.1	13228
164	**484**	*Sequoia sempervirens*	22	380	0.9	0.8	1	2.46	4.75	200	42.1	16006
165	**486**	*Sequoia sempervirens*	19.5	299	0.9	0.6	1	2.46	4.75	200	42.1	12575
166	**496**	*Pinus pinea*	49	1886	0.7	0.8	1	2.46	4.75	200	42.1	79400

167	**497**	*Pinus pinea*	34	908	0.8	0.8	1	2.46	4.75	200	42.1	38228
168	**498**	*Pinus pinea*	33	855	0.8	0.8	1	2.46	4.75	200	42.1	36013
169	**504**	*Quercus rubra*	17.5	241	0.7	0.8	1	1.69	2.24	200	89.3	21476
170	**507**	*Sequoia sempervirens*	31	755	0.9	0.8	1	2.46	4.75	200	42.1	31780
171	**508**	*Sequoia sempervirens*	26.5	552	0.9	0.8	1	2.46	4.75	200	42.1	23223
172	**510**	*Pinus pinea*	32	804	0.8	0.8	1	2.46	4.75	200	42.1	33863
173	**511**	*Pinus pinea*	29	661	0.8	0.6	1	2.46	4.75	200	42.1	27811
174	**512**	*Fraxinus oxycarpa 'Raywood'*	22.5	398	0.2	0.8	1	1.69	2.24	200	89.3	35501
175	**514**	*Fraxinus oxycarpa 'Raywood'*	17	227	0.75	0.8	1	1.69	2.24	200	89.3	20266
176	**515**	*Fraxinus uhdei*	20	314	0.7	0.8	1	2.46	4.75	200	42.1	13228
177	**516**	*Fraxinus oxycarpa 'Raywood'*	16	201	0.2	1	1	1.69	2.24	200	89.3	17952
178	**517**	*Pinus pinea*	45	1590	0.6	0.8	1	2.46	4.75	200	42.1	66966
179	**518**	*Pinus pinea*	40	1257	0.6	0.8	1	2.46	4.75	200	42.1	52911
180	**519**	*Fraxinus uhdei*	17	227	0.7	0.8	1	2.46	4.75	200	42.1	9557
181	**520**	*Fraxinus uhdei*	18	254	0.7	0.8	1	2.46	4.75	200	42.1	10715
182	**522**	*Fraxinus uhdei*	25.5	511	0.7	0.8	1	2.46	4.75	200	42.1	21503
183	**523**	*Pinus pinea*	35.5	990	0.85	0.8	1	2.46	4.75	200	42.1	41676
184	**524**	*Pinus pinea*	41	1320	0.85	0.8	1	2.46	4.75	200	42.1	55590

185	**525**	*Pinus pinea*	34	908	0.9	0.8	1	2.46	4.75	200	42.1	38228
186	**526**	*Pinus pinea*	23.5	434	0.8	0.8	1	2.46	4.75	200	42.1	18263
187	**527**	*Pinus pinea*	33.5	881	0.9	0.8	1	2.46	4.75	200	42.1	37112
188	**528**	*Pinus pinea*	37.5	1104	0.85	0.8	1	2.46	4.75	200	42.1	46504
189	**529**	*Prunus cerasifera 'Krauter Vesuvius'*	12	113	0.8	1	1	1.69	2.24	200	89.3	10098
190	**534**	Pinus pinea	47	1735	0.7	0.8	1	2.46	4.75	200	42.1	73050
191	**535**	*Alnus cordata*	20.5	330	0.7	1	1	2.2	3.8	200	52.6	17372
192	**536**	*Prunus cerasifera 'Krauter Vesuvius'*	11	95	0.7	1	1	1.69	2.24	200	89.3	8485
193	**537**	*Pinus pinea*	30.5	731	0.85	0.8	1	2.46	4.75	200	42.1	30763
194	**539**	*Fraxinus oxycarpa 'Raywood'*	19.5	299	0.4	0.6	1	1.69	2.24	200	89.3	26665
195	**540**	*Fraxinus oxycarpa 'Raywood'*	18.5	269	0.6	0.6	1	1.69	2.24	200	89.3	24000
196	**541**	*Fraxinus oxycarpa 'Raywood'*	16	201	0.6	0.6	1	1.69	2.24	200	89.3	17952
197	**544**	*Alnus cordata*	21	346	0.7	1	1	2.2	3.8	200	52.6	18230
198	**545**	*Fraxinus uhdei*	26	531	0.6	0.8	1	2.46	4.75	200	42.1	22355
199	**546**	*Fraxinus uhdei*	21	346	0.8	0.8	1	2.46	4.75	200	42.1	14584
200	**547**	*Fraxinus uhdei*	19	284	0.8	0.8	1	2.46	4.75	200	42.1	11938

201	**551**	*Fraxinus uhdei*	18	254	0.8	0.8	1	2.46	4.75	200	42.1	10715
202	**554**	*Fraxinus uhdei*	22	380	0.8	0.8	1	2.46	4.75	200	42.1	16006
203	**555**	*Pinus pinea*	46	1662	0.6	0.8	1	2.46	4.75	200	42.1	69975
204	**556**	*Pinus pinea*	39	1195	0.8	0.8	1	2.46	4.75	200	42.1	50299
205	**557**	*Pinus pinea*	38	1134	0.7	0.8	1	2.46	4.75	200	42.1	47752
206	**558**	*Pinus pinea*	35	962	0.7	1	1	2.46	4.75	200	42.1	40510
207	**575**	*Lophostemon confertus*	15.5	189	0.9	0.8	1	1.69	2.24	200	89.3	16848
208	**578**	*Lophostemon confertus*	15.5	189	0.9	0.8	1	1.69	2.24	200	89.3	16848
209	**580**	*Lophostemon confertus*	15.5	189	0.9	0.8	1	1.69	2.24	200	89.3	16848
210	**585**	*Cedrus deodara*	30.5	731	0.9	0.8	1	2.2	3.8	200	52.6	38454
211	**587**	*Platanus x hispanica*	21.5	363	0.9	0.6	1	2.2	3.8	200	52.6	19108
212	**591**	*Pinus pinea*	53	2206	0.6	0.8	1	2.46	4.75	200	42.1	92892
213	**592**	*Fraxinus uhdei*	23	415	0.75	0.8	1	2.46	4.75	200	42.1	17494
214	**594**	*Fraxinus uhdei*	30	707	0.8	0.8	1	2.46	4.75	200	42.1	29763
215	**596**	*Fraxinus oxycarpa 'Raywood'*	22.5	398	0.65	1	1	1.69	2.24	200	89.3	35501
216	**597**	*Fraxinus oxycarpa 'Raywood'*	19	284	0.75	1	1	1.69	2.24	200	89.3	25315
217	**599**	*Fraxinus oxycarpa 'Raywood'*	22	380	0.75	0.8	1	1.69	2.24	200	89.3	33941

218	**601**	*Fraxinus oxycarpa 'Raywood'*	19	284	0.9	1	1	1.69	2.24	200	89.3	25315
219	**603**	*Fraxinus oxycarpa 'Raywood'*	19	284	0.6	1	1	1.69	2.24	200	89.3	25315
220	**612**	*Pinus halepensis*	30.5	731	0.7	1	1	1.69	2.24	200	89.3	65234
221	**613**	*Fraxinus oxycarpa 'Raywood'*	18	254	0.5	1	1	1.69	2.24	200	89.3	22721
222	**614**	*Fraxinus oxycarpa 'Raywood'*	19	284	0.5	0.6	1	1.69	2.24	200	89.3	25315
223	**615**	*Fraxinus oxycarpa 'Raywood'*	17.5	241	0.6	1	1	1.69	2.24	200	89.3	21476
224	**618**	*Fraxinus oxycarpa 'Raywood'*	17.5	241	0.75	1	1	1.69	2.24	200	89.3	21476
225	**619**	*Fraxinus oxycarpa 'Raywood'*	23.5	434	0.6	0.8	1	1.69	2.24	200	89.3	38727
226	**621**	*Fraxinus uhdei*	25.5	511	0.85	1	1	2.46	4.75	200	42.1	21503
227	**628**	*Fraxinus oxycarpa 'Raywood'*	17	227	0.5	0.8	1	1.69	2.24	200	89.3	20266
228	**629**	*Fraxinus oxycarpa 'Raywood'*	22	380	0.5	0.8	1	1.69	2.24	200	89.3	33941
229	**640**	*Fraxinus uhdei*	21	346	0.8	0.8	1	2.46	4.75	200	42.1	14584
230	**641**	*Fraxinus oxycarpa 'Raywood'*	19	284	0.8	0.8	1	1.69	2.24	200	89.3	25315

231	**642**	*Cedrus deodara*	23	415	0.9	0.8	1	2.2	3.8	200	52.6	21867
232	**643**	*Cedrus deodara*	35.5	990	0.9	0.6	1	2.2	3.8	200	52.6	52095
233	**652**	*Fraxinus oxycarpa 'Raywood'*	23	415	0.6	0.6	1	1.69	2.24	200	89.3	37096
234	**660**	*Fraxinus oxycarpa 'Raywood'*	15	177	0.9	0.6	1	1.69	2.24	200	89.3	15778
235	**667**	*Fraxinus oxycarpa 'Raywood'*	15.5	189	0.8	0.6	1	1.69	2.24	200	89.3	16848
236	**717**	*Fraxinus oxycarpa 'Raywood'*	15	177	0.2	0.6	1	1.69	2.24	200	89.3	15778
237	**727**	*Casuarina cunninghamia na*	22	380	0.6	1	1	2.2	3.8	200	52.6	20007
238	**729**	*Casuarina cunninghamia na*	19	284	0.8	1	1	2.2	3.8	200	52.6	14923
239	**730**	*Eucalyptus globulus*	38	1134	0.9	1	1	2.46	4.75	200	42.1	47752
240	**731**	*Eucalyptus globulus*	26.5	552	0.7	1	1	2.46	4.75	200	42.1	23223
241	**732**	*Casuarina cunninghamia na*	26	531	0.75	1	1	2.2	3.8	200	52.6	27944
242	**734**	*Casuarina cunninghamia na*	33	855	0.9	1	1	2.2	3.8	200	52.6	45016
243	**735**	*Casuarina cunninghamia na*	15.5	189	0.75	1	1	2.2	3.8	200	52.6	9931

244	**736**	*Casuarina cunninghamiana*	15	177	0.9	1	1	2.2	3.8	200	52.6	9301
245	**737**	*Casuarina cunninghamiana*	15	177	0.6	1	1	2.2	3.8	200	52.6	9301
246	**738**	*Casuarina cunninghamiana*	18.5	269	0.85	1	1	2.2	3.8	200	52.6	14148
247	**740**	*Casuarina cunninghamiana*	17	227	0.8	1	1	2.2	3.8	200	52.6	11946
248	**744**	*Casuarina cunninghamiana*	15.5	189	0.2	1	1	2.2	3.8	200	52.6	9931
249	**746**	*Casuarina cunninghamiana*	18	254	0.45	1	1	2.2	3.8	200	52.6	13393
250	**747**	*Rhamnus alaternus*	15	177	0.75	1	1	2.2	3.8	200	52.6	9301
251	**749**	*Quercus lobata*	28	616	0.9	1	1	1.69	2.24	200	89.3	54978
252	**750**	*Olea europaea*	24	452	0.2	1	1	2.2	3.8	200	52.6	23810
253	**752**	*Olea europaea*	33.5	881	0.5	1	1	2.2	3.8	200	52.6	46390
254	**754**	*Olea europaea*	29	661	0.4	1	1	2.2	3.8	200	52.6	34764
255	**757**	*Olea europaea*	23.5	434	0.4	1	1	2.2	3.8	200	52.6	22828
256	**759**	*Schinus molle*	17	227	0.9	1	1	2.2	3.8	200	52.6	11946
257	**760**	*Schinus molle*	32	804	0.8	1	1	2.2	3.8	200	52.6	42329
258	**761**	*Schinus molle*	43	1452	0.8	0.9	0.9	2.2	3.8	200	52.6	76432

259	**766**	*Olea europaea*	25	491	0.6	1	1	2.2	3.8	200	52.6	25836
260	**767**	*Olea europaea*	15.5	189	0.6	1	1	2.2	3.8	200	52.6	9931
261	**768**	*Phoenix canariensis*	1		0.9	1	1	375		200		338
262	**770**	*Phoenix canariensis*	25		0.75	1	1	375		200		7031
263	**774**	*Olea europaea*	19.5	299	0.6	1	1	2.2	3.8	200	52.6	15718
264	**776**	*Schinus molle*	20	314	0.7	1	1	2.2	3.8	200	52.6	16535
265	**777**	*Schinus molle*	17	227	0.8	1	1	2.2	3.8	200	52.6	11946
266	**779**	*Schinus molle*	18	254	0.6	1	1	2.2	3.8	200	52.6	13393
267	**780**	*Schinus molle*	15.5	189	0.7	1	1	2.2	3.8	200	52.6	9931
268	**785**	*Olea europaea*	21	346	0.6	1	1	2.2	3.8	200	52.6	18230
269	**787**	*Quercus agrifolia*	20.5	330	0.6	1	1	2.2	3.8	200	52.6	17372
270	**788**	*Phoenix canariensis*	25		0.9	1	1	375	1			8438
271	**790**	*Casuarina cunninghamiana*	19.5	299	0.9	0.8	1	2.2	3.8	200	52.6	15718
272	**793**	*Hesperocyparis macrocarpa*	36	1018	0.8	0.8	1	1.69	2.24	200	89.3	90882
273	**797**	*Olea europaea*	20	314	0.2	1	1	2.2	3.8	200	52.6	16535
274	**798**	*Quercus agrifolia*	12.5	123	0.9	1	1	2.2	3.8	200	52.6	6459

275	**244 a**	*Eucalyptus polyanthemos*	22	380	0.5	1	0.5	1.69	2.24	200	89.3	33941
276	**245 a**	*Eucalyptus polyanthemos*	36	1018	0.5	1	0.5	1.69	2.24	200	89.3	90882
277	**248 a**	*Eucalyptus polyanthemos*	24.5	471	0.4	1	0.5	1.69	2.24	200	89.3	42093
278	**249 a**	*Eucalyptus polyanthemos*	22	380	0.2	1	0.5	1.69	2.24	200	89.3	33941
279	**250 a**	*Quercus agrifolia*	27.5	594	0.6	1	0.5	1.69	2.24	200	89.3	53032
280	**251 a**	*Eucalyptus polyanthemos*	33	855	0.5	1	0.5	1.69	2.24	200	89.3	76366
281	**254 a**	*Quercus agrifolia*	7.5	44	0.6	1	0.8	2.2	3.8	200	52.6	2325
282	**208 a**	*Fraxinus uhdei*	8	50	0.6	1	0.8	2.2	3.8	200	52.6	2646
283	**211 a**	*Acacia melanoxylon*	15	177	0.6	1	0.8	2.2	3.8	200	52.6	9301
284	**213 a**	*Juglans hindsii*	7	38	0.6	1	0.8	2.2	3.8	200	52.6	2026

Depreciated Reproduction Cost (K*E*F*G)
$ 4,102
$ 4,018
$ 4,862
$ 4,862
$ 5,161
$ 4,290
$ 4,592
$ 4,018
$ 7,143
$ 4,572
$ 3,241
$ 6,036
$ 32,191
$ 22,058
$ 4,862

$	5,786
$	6,790
$	7,143
$	5,730
$	5,469
$	3,556
$	4,102
$	2,860
$	4,127
$	3,429
$	3,048
$	5,503
$	5,906
$	3,375
$	3,218
$	3,013
$	3,048
$	4,339

$	4,339
$	3,871
$	4,378
$	2,679
$	4,810
$	4,835
$	5,730
$	7,872
$	7,203
$	9,381
$	14,515
$	10,000
$	5,953
$	5,065
$	7,163
$	3,938
$	4,339
$	4,527

$	2,860
$	4,584
$	3,241
$	3,013
$	4,339
$	5,786
$	4,572
$	4,861
$	5,161
$	4,587
$	4,572
$	2,383
$	4,064
$	4,862
$	4,861
$	4,874
$	7,143
$	7,505

$	4,290
$	7,143
$	4,862
$	7,000
$	4,298
$	4,290
$	4,290
$	4,572
$	4,290
$	4,275
$	3,249
$	7,875
$	7,796
$	15,778
$	21,489
$	17,730
$	6,627

$	24,008
$	7,697
$	12,160
$	41,287
$	4,948
$	6,463
$	8,338
$	7,163
$	10,700
$	7,596
$	10,423
$	4,836
$	5,017
$	5,659
$	11,003
$	6,190

$	8,102
$	10,045
$	18,587
$	6,447
$	8,124
$	25,926
$	15,695
$	24,191
$	9,557
$	24,191
$	6,697
$	8,362
$	23,999
$	52,317
$	6,349
$	14,881
$	4,966

$	5,973
$	29,167
$	23,252
$	5,627
$	5,973
$	22,331
$	12,054
$	18,834
$	23,252
$	17,197
$	12,566
$	2,251
$	4,650
$	6,697
$	12,970
$	8,617
$	13,430
$	12,054

$	13,430
$	12,733
$	5,562
$	5,006
$	3,055
$	8,617
$	10,906
$	19,388
$	27,577
$	4,582
$	6,732
$	5,363
$	13,745
$	31,556

$	9,694
$	9,694
$	6,311
$	10,450
$	7,574
$	6,697
$	6,773
$	13,464
$	12,151
$	33,863
$	31,130
$	9,524
$	11,524
$	6,790
$	44,464

$	24,466
$	23,048
$	12,026
$	22,881
$	16,721
$	21,672
$	13,349
$	5,680
$	12,160
$	7,408
$	3,590
$	32,144
$	25,397
$	5,352
$	6,000
$	12,042
$	28,340
$	37,801

$	27,524
$	11,688
$	26,721
$	31,623
$	8,078
$	40,908
$	12,160
$	5,940
$	20,919
$	6,400
$	8,640
$	6,463
$	12,761
$	10,730
$	9,334
$	7,640

$	6,857
$	10,244
$	33,588
$	32,191
$	26,741
$	28,357
$	12,130
$	12,130
$	12,130
$	27,687
$	10,318
$	44,588
$	10,496
$	19,048
$	23,076
$	18,986
$	20,364

$	22,784
$	15,189
$	45,664
$	11,360
$	7,595
$	12,885
$	16,107
$	18,589
$	18,278
$	8,106
$	13,576
$	9,334
$	16,202

$	15,744
$	28,131
$	13,355
$	8,520
$	8,087
$	1,893
$	12,004
$	11,938
$	42,977
$	16,256
$	20,958
$	40,514
$	7,448

$	8,371
$	5,580
$	12,025
$	9,557
$	1,986
$	6,027
$	6,976
$	49,480
$	4,762
$	23,195
$	13,906
$	9,131
$	10,752
$	33,863
$	49,528

$	15,501
$	5,959
$	304
$	5,273
$	9,431
$	11,574
$	9,557
$	8,036
$	6,952
$	10,938
$	10,423
$	7,594
$	11,317
$	58,164
$	3,307
$	5,813

$	8,485
$	22,721
$	8,419
$	3,394
$	15,910
$	19,092
$	1,116
$	1,270
$	4,464
$	972

$ 3,448,501

Appendix 4.3

Heritage Tree Removal Application Hamilton Avenue Parcels

HERITAGE TREE REMOVAL APPLICATION

HAMILTON AVENUE PARCELS

Peninsula Innovation Partners
August 1, 2022

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A Arborist Report, Tree Survey and Valuation of Heritage Trees

B Tree Location Map

C Heritage Tree Removal Plan

D Excel, Survey Data (separate file)

E Excel, Tree Valuation (separate file)

A.

ARBORIST REPORT, TREE SURVEY AND VALUATION OF HERITAGE TREES

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ISA Tree Risk Assessment Qualified
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Date: Amendment 6 July 31, 2022

To: Eric Harrison
Senior Vice President
Signature Development Group

Subject: Hamilton Parcels Tree Survey and Valuation

Scope: Trees are located on three parcels west of Willow Road, identified by Signature Development Group. Three trees behind the Starbucks were not accessible.

Introduction

Estimated value of the 18 Heritage Trees proposed for removal is $126,500.

Any tree protected by the City's Municipal Code to be retained will require replacement according to its appraised value if it is damaged beyond repair as a result of construction.

City of Menlo Park Ordinance

Definitions of Heritage Tree: https://www.menlopark.org/DocumentCenter/View/25577/Heritage-tree-ordinance-administrative-guidelines---draft

Section 13.24.080(4)(B) identifies special provisions for an oak tree which is native to California. The city arborist has determined the following species of oak trees are native to California:

• Coast live oak *(Quercus agrifolia)* • Scrub oak *(Quercus berberidifolia)* • Canyon live oak *(Quercus chrysolepis)* • Blue oak *(Quercus douglasii)* • Leather oak *(Quercus dumosa)* • Englemann oak *(Quercus englmannii)* • Oregon white oak *(Quercus garryanna)* • Black oak *(Quercus kellogii)* • Valley oak *(Quercus lobata)* • Shreve oak *(Quercus parvula var. shrevei)* • Oracle oak *(Quercus x morehus)* • Island oak *(Quercus tomentella)* • Interior live oak *(Quercus wislizenii)*

Multi-trunk trees, also known as multi-stemmed trees, with a union above the existing grade is measured by the following steps: 1. Measure the diameter of each trunk at 4.5 feet in height above the ground 2. Add the diameter measure measurement of each trunk and use the sum to determine trunk diameter.

In reference to Section 13.24.090, the monetary value of a replacement tree correlates with the size of the heritage tree trunk diameter (measured from 54 inches above grade). For every heritage tree proposed for removal, it must be replaced by the following replacement tree requirement:

- An oak heritage tree with a trunk diameter of 10 to 15 inches has a minimum replacement tree requirement of one (1) #5 container. The monetary value is $100.

- Any heritage tree with a trunk diameter of greater than 15 inches to 20 inches has a minimum replacement tree requirement of one (1) #15 container. The monetary value is $200.
- Any heritage tree with a trunk diameter of greater than 20 inches to 30 inches has a minimum replacement tree requirement of one (1) 24-inch tree box. The monetary value is $400. 6 PW rev 20200626
- Any heritage tree with a trunk diameter of greater than 30 inches to 40 inches has a minimum replacement tree requirement of one (1) 36-inch tree box. The monetary value is $1,200.
- Any heritage tree with a trunk diameter of greater than 40 inches to 50 inches has a minimum replacement tree requirement of one (1) 48-inch tree box. The monetary value is $5,000.
- Any heritage tree with a trunk diameter of greater than 50 inches has a minimum replacement tree requirement of one (1) 60-inch tree box. The monetary value is $7,000. Applicants shall submit written statements or landscape plans to describe how they will fulfil the replacement tree requirements. The submissions shall include: (a) the replacement tree species, (b) the container size, (c) the planting location, and (d) an in-lieu fee payment, if applicable

Survey Procedure

Trees Tagged – Each tree was tagged with a metal number tag corresponding with the numbers used in the Excel data sheets in *Appendix 1*.

Data Recorded – Arborists recorded data on tree species, diameter (DBH[1]), tree height, health and structural conditions, Heritage Tree Status, and suitability for retention, and suitability for relocation. Notes were recorded to provide commentary on general conditions.

Scope – Tag #132 does not exist.

Summary

North Parcel

- **Total Trees**: 82 Trees
  - Heritage street tree: n/a
  - Heritage tree: n/a
  - Non-heritage street tree: 25 Trees

- **Trees to be Removed**
  - Heritage street tree: n/a
  - Heritage tree: n/a
  - Non-heritage street tree: 19 Trees
  - Non-heritage tree: 9 Trees

[1] **DBH** is tree diameter measured at 54 inches above soil grade.

- **Trees to Remain**
  - Heritage street tree: n/a
  - Heritage tree: 7 Trees
  - Non-heritage street tree: 6 Trees
  - Non-heritage tree: 41 Trees

South Parcel

- **Total Trees**: 59 Trees
  - Heritage street tree: n/a
  - Heritage tree: 11 Trees
  - Non-heritage street tree: 10 Trees

- **Trees to be Removed**
  - Heritage street tree: n/a
  - Heritage tree: 3 Trees
  - Non-heritage street tree: 5 Trees
  - Non-heritage tree: 25 Trees

- **Trees to Remain**
  - Heritage street tree: n/a
  - Heritage tree: 8 Trees
  - Non-heritage street tree: 5 Trees
  - Non-heritage tree: 13 Trees

- **High Value Trees**

  - Coast Redwood – The two stands of redwoods located near the Jack in the Box and west of the Chevron Station are in very good condition. The stand south of the Chevron requires mitigation to address drought stress concerns.
  - Coast Live Oak – Two large (> 20" DBH) *Quercus agrifolia* are in Parcel 2. Tree #48 was noted with significant structural concerns (included bark) and requires pruning to mitigate failure potential. Tree #29 is a nice specimen.

- **Species Diversity** – Ten different tree species were identified.
  - Most Numerous Species – The most numerous species is the Chinese Pistache *(Pistacia chinensis)*, with 39 specimens identified. Sixteen (16) are City Street Trees.
  - Second Most Numerous Species – The Red Maple *(Acer rubrum)* is the second most numerous species, with 19 specimens identified. Most are doing well and exhibit good health and structure. Three additional trees were noted behind the Starbucks but were inaccessible due to fencing.

Table 1 – The table below provides a breakdown of numbers of each tree species surveyed.

	Species	Common Name	Total Amount	Heritage Tree Amount	Overall Retention Suitability	Overall Relocation Suitability	Comments
1	*Acer rubrum*	Red Maple	19	0	G	F	Overall trees are in Good condition in health and structure. #61 and #116 are in poor condition;
2	*Betula nigra*	River Birch	4	0	G	F	No issues
3	*Betula pendula*	European Birch	13	0	F-G	F	All located at the Chevron parcel
4	*Fraxinus oxycarpa 'Raywood'*	Raywood Ash	9	0	P	P	Ash dieback and poor structures
5	*Pistacia chinensis*	Chinese Pistache	39	0	G	F	23 are street trees; Ones noted as failure to thrive were likley root bound at time of planting
6	*Platanus x hispanica*	London Plane	16	0	G	F-P	Most along Willow Rd in front of the Chevron and Starbucks; eight (#63, 64 126-131) are street trees
7	*Prunus cerasifera*	Purple Plum	13	0	P	P	Received poor pruning; Poor structures; #62 is a street tree
8	*Pyrus calleryana*	Flowering Pear	5	0	F	P	Poor structures; Fireblight
9	*Quercus agrifolia*	Coast Live Oak	7	5	G	P	#29 and 48 are large trees; #48 requires pruning mitigation to address poor branching attachments and failure potential
10	*Sequoia sempervirens*	Coast Redwood	16	13	G	P	Stands #19-22 and #95-102 are in good condition; #108-111 may require mulch and supplemental irrigation to mitigate signs of drought stress
			141	**18**			

Tree Valuation, Source and Methodology

This tree valuation report was prepared according to the standards for tree valuation presented in the 10th Edition of GUIDE FOR PLANT APPRAISAL, published by the International Society of Arboriculture, 2019.

Information regarding tree species is from the publication: SPECIES CLASSIFICATION AND GROUP ASSIGNMENTS, published by the International Society of Arboriculture.

Tree valuation is determined by using the FUNCTIONAL REPLACEMENT METHOD, *Trunk Formula* Technique as the tree is larger than the standard 24" box size utilized in tree valuation.

Reproduction Method using Trunk Formula Technique for Determining Tree Value

The current price for a 24-inch box tree, installed in the landscape, is $516 (Council of Tree & Landscape Appraisers). Value is affected by tree species, tree condition and the location in which the tree is growing. The terms below are used is the valuation in the table below.

- **Species** – Species qualities are determined through the publication Species Classification And Group Assignment published by the WESTERN CHAPTER INTERNATIONAL SOCIETY OF ARBORICULTURE. Tree species classification is used to determine the relative size of a replacement tree of a commonly attainable size.
    - **Species Group** – The group rating reflects the rate of growth for the tree species. The group rating determines the *basic price per square inch* of the trunk area for the different species.
- **DBH** - Diameter at Breast Height, measured at 4.5 feet above the average soil grade. Tree valuation is based upon DBH measurements. For multi-stemmed trees, this is based on calculations from the sum of the cross-sectional areas of all stems measured at 4.5 above grade. That figure is then matched with a DBH of a single stemmed tree with the same cross-sectional area.
- **Trunk Area** – The surface area of the cross-sectional area of the tree trunk measured at 4.5 feet above the soil grade (DBH).
- **Tree Condition** – Assessed base upon tree Health, Structure & Form.

Rating	Rating	Amount
G	G	0.9
G	F/G	0.85
G	F	0.8
G	F/P	0.7
G	P	0.6
F	F/G	0.75
F	F	0.7
F	F/P	0.6
F	P	0.5
P	F/G	0.55
P	F/P	0.4
P	P	0.2
F/G	F/G	0.8
F/G	F/P	0.65
F/P	F/P	0.45

- **Functional Limitations** – Factors within the controllable area that adversely impact the tree. All trees were given variable scores based on proximity to hardscape.
- **External Limitations** – Adverse impacts beyond control of tree owner is the presence of the adjacent structure that limits the spread of the tree and will require pruning to accommodate.
- **Replacement Tree Diameter** – The diameter of the largest commonly available tree of the same species.
- **Cross-sectional area of Replacement tree** - Based upon diameter of replacement tree for 24" box size.
- **Replacement Tree Cost** – Standard cost for purchase of replacement tree. Normal is $200 for 24-inch size box tree.
- **Unit Tree Cost** – This is the cost of the tree divided by the cross-sectional area.
- **Basic Reproduction Cost** – The cross-sectional area of the tree being valued times the Unit Tree Cost.
- **Species Price per Square Inch**. – Determined from Species Group rating.
- **Depreciated reproduction cost** – Factor in Tree Condition, Functional Limitations & External Limitations.
- **Additional Costs** – Covers tree removal and cleanup prior to replanting.
- **Tree Value** – Total assessed value of the trees is to the nearest $100.

Table 2. Table below provides methodology for tree appraisal.

Tree No.	Species	DBH	Trunk Area (TA)	Condition	Functional Limitations	External Limitations	Replacement Tree Diameter	Replacement Tree Area	Replacement Tree Cost	Unit Cost (I/H)	Basic Reproduction Cost (D/J)	Depreciated Reproduction Cost (K*E*F*G)	Tree Value to nearest $100
6	*Quercus agrifolia*	13	132.7326	0.9	0.5	1	2.2	3.8	200	52.63157895	6,986	$ 3,144	$3,100
19	*Sequoia sempervirens*	21.5	363.05115	0.9	0.7	1	2.46	4.75	200	42.10526316	15,286	$ 9,630	$9,600
20	*Sequoia sempervirens*	24	452.3904	0.9	0.7	1	2.46	4.75	200	42.10526316	19,048	$ 12,000	$12,000
21	*Sequoia sempervirens*	21	346.3614	0.9	0.7	1	2.46	4.75	200	42.10526316	14,584	$ 9,188	$9,200
22	*Sequoia sempervirens*	17.5	240.52875	0.9	0.7	1	2.46	4.75	200	42.10526316	10,128	$ 6,380	$6,400
29	*Quercus agrifolia*	23	415.4766	0.9	0.8	1	2.2	3.8	200	52.63157895	21,867	$ 15,744	$15,700
48	*Quercus agrifolia*	22	380.1336	0.6	0.7	1	2.2	3.8	200	52.63157895	20,007	$ 8,403	$8,400
95	*Sequoia sempervirens*	22	380.1336	0.9	0.7	1	2.46	4.75	200	42.10526316	16,006	$ 10,084	$10,100
96	*Sequoia sempervirens*	16.5	213.82515	0.9	0.7	1	2.46	4.75	200	42.10526316	9,003	$ 5,672	$5,700
97	*Sequoia sempervirens*	17	226.9806	0.9	0.7	1	2.46	4.75	200	42.10526316	9,557	$ 6,021	$6,000
99	*Sequoia sempervirens*	15	176.715	0.9	0.7	1	2.46	4.75	200	42.10526316	7,441	$ 4,688	$4,700
101	*Sequoia sempervirens*	22	380.1336	0.9	0.6	1	2.46	4.75	200	42.10526316	16,006	$ 8,643	$8,600

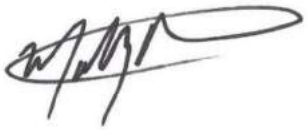
Tree No.	Species	DBH	Trunk Area (TA)	Condition	Functional	External	Replacement Tree	Replacement Tree	Replacement Tree	Unit Cost (I/H)	Basic Reproduction Cost	Depreciated Reproduction Cost	Tree Value to nearest $100
102	*Sequoia sempervirens*	17	226.9806	0.9	0.6	1	2.46	4.75	200	42.10526316	9,557	$ 5,161	$5,200
104	*Quercus agrifolia*	14.5	165.13035	0.9	0.7	0.7	2.2	3.8	200	52.63157895	8,691	$ 3,833	$3,800
108	*Sequoia sempervirens*	15	176.715	0.8	0.7	0.7	2.46	4.75	200	42.10526316	7,441	$ 2,917	$2,900
109	*Sequoia sempervirens*	18.5	268.80315	0.8	0.7	0.7	2.46	4.75	200	42.10526316	11,318	$ 4,437	$4,400
111	*Sequoia sempervirens*	22	380.1336	0.9	0.7	0.7	2.46	4.75	200	42.10526316	16,006	$ 7,058	$7,100
122	*Quercus agrifolia*	14	153.9384	0.9	0.5	1	2.2	3.8	200	52.63157895	8,102	$ 3,646	$3,600
													$126,500

End Report

Appendices are as follows:

- *Appendix 1 – Tree Survey Data*
- *Appendix 2 – Tree Location Map*
- *Appendix 3 – Facebook Tree Protection Specifications*

Report submitted by:



Molly Batchelder, Consulting Arborist
WC ISA Certified Arborist #9613A
Tree Risk Assessment Qualified (TRAQ)

B.

TREE LOCATION MAP

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1534 Rose St. Crockett, CA 94525
steve@sbcatree.com

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Fax (510) 787-3065
www.sbcatree.com

C.

HERITAGE TREE REMOVAL PLAN

TREE INVENTORY SUMMARY		
Total Trees		**82**
Trees To-Be Removed		**28**
	Heritage Street Tree	N/A
	Heritage Tree	N/A
	Non-heritage Street Tree	19
	Non-heritage Tree	9
Trees To Remain		**54**
	Heritage Street Tree	N/A
	Heritage Tree	7
	Non-heritage Street Tree	6
	Non-heritage Tree	41

Note: All tree replacements will meet minimum tree replacement value determined by the arborist, SBCA Tree Consulting, per arborist report dated August 1, 2022.

Proposed Parcel Line

Peninsula Innovation Partners

HAMILTON AVENUE PARCEL NORTH

Menlo Park, CA

Heritage Tree Removal Plan

August 1, 2022

TREE INVENTORY SUMMARY		
Total Trees		**59**
Trees To-Be Removed		**33**
	Heritage Street Tree	N/A
	Heritage Tree	3
	Non-heritage Street Tree	5
	Non-heritage Tree	25
Trees To Remain		**26**
	Heritage Street Tree	N/A
	Heritage Tree	8
	Non-heritage Street Tree	5
	Non-heritage Tree	13

Note: All tree replacements will meet minimum tree replacement value determined by the arborist, SBCA Tree Consulting, per arborist report dated August 1, 2022.

Proposed Parcel Line

Peninsula Innovation Partners

HAMILTON AVENUE PARCEL SOUTH

Menlo Park, CA

Heritage Tree Removal Plan

August 1, 2022

	Species	Common Name	Total Amount	Heritage Tree Amount	Overall Retention Suitability	Overall Relocation Suitability	Comments
1	*Acer rubrum*	Red Maple	19	0	G	F	Overall trees are in Good condition in health and structure. #61 and #116 are in poor condition;
2	*Betula nigra*	River Birch	4	0	G	F	No issues
3	*Betula pendula*	European Birch	13	0	F-G	F	All located at the Chevron parcel
4	*Fraxinus oxycarpa 'Raywood'*	Raywood Ash	9	0	P	P	Ash dieback and poor structures
5	*Pistacia chinensis*	Chinese Pistache	39	0	G	F	23 are street trees; Ones noted as failure to thrive were likley root bound at time of planting
6	*Platanus x hispanica*	London Plane	16	0	G	F-P	Most along Willow Rd in front of the Chevron and Starbucks; eight (#63, 64 126-131) are street trees
7	*Prunus cerasifera*	Purple Plum	13	0	P	P	Received poor pruning; Poor structures; #62 is a street tree
8	*Pyrus calleryana*	Flowering Pear	5	0	F	P	Poor structures; Fireblight
9	*Quercus agrifolia*	Coast Live Oak	7	5	G	P	#29 and 48 are large trees; #48 requires pruning mitigation to address poor branching attachments and failure potential
10	*Sequoia sempervirens*	Coast Redwood	16	13	G	P	Stands #19-22 and #95-102 are in good condition; #108-111 may require mulch and supplemental irrigation to mitigate signs of drought stress
			141	**18**			

Tree No.	Species	DBH	Trunk Area (TA)	Condition	Functional Limitations	External Limitations	Replacement Tree Diameter	Replacement Tree Area	Replacement Tree Cost	Unit Cost (I/H)	Basic Reproduction Cost (D/I)	Depreciated Reproduction Cost (K*E*F*G)	Additional Costs	Tree Value to be rounded to nearest $100	
19	*Sequoia sempervirens*	21.5	363	0.9	1	1	2.46	4.75	200	42.1	15,286	$ 13,758	0	$13,758	
20	*Sequoia sempervirens*	24	452	0.9	1	1	2.46	4.75	200	42.1	19,048	$ 17,143	0	$17,143	
21	*Sequoia sempervirens*	21	346	0.9	1	1	2.46	4.75	200	42.1	14,584	$ 13,125	0	$13,125	
22	*Sequoia sempervirens*	17.5	241	0.9	1	1	2.46	4.75	200	42.1	10128	9114.774	0	$9,115	
29	*Quercus agrifolia*	23	415	0.9	1	1	2.2	3.8	200	52.6	21867	19680.47	0	$19,680	
48	*Quercus agrifolia*	22	380	0.6	1	1	2.2	3.8	200	52.6	20007	12004.22	0	$12,004	
101	*Sequoia sempervirens*	22	380	0.9	1	1	2.46	4.75	200	42.1	16006	14405.06	0	$14,405	$14,405
102	*Sequoia sempervirens*	17	227	0.9	1	1	2.46	4.75	200	42.1	9557.1	8601.37	0	$8,601	$8,601
122	*Quercus agrifolia*	14	154	0.9	0.8	1	2.2	3.8	200	52.6	8102	5833.455	0	$5,833	$5,833
														$113,666	$28,840

Appendix 4.4

Heritage Tree Removal Application 1305 O'Brien Drive

HERITAGE TREE REMOVAL APPLICATION

1305 O'BRIEN DRIVE

Peninsula Innovation Partners
August 1, 2022

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A Arborist Report, Tree Survey and Valuation of Heritage Trees

B Heritage Tree Removal Plan

C Excel, Survey Data (separate file)

A.

ARBORIST REPORT, TREE SURVEY AND VALUATION OF HERITAGE TREES

SBCA TREE CONSULTING

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Phone: (510) 787-3075
Fax: (510) 787-3065
Website: www.sbcatree.com

Steve Batchelder, Consulting Arborist
WC ISA Certified Arborist #228
CUFC Certified Urban Forester #134
CA Contractor License #(C-27) 53367
E-mail: steve@sbcatree.com

Molly Batchelder, Consulting Arborist
WC ISA Certified Arborist #9613A
ISA Tree Risk Assessment Qualified
E-mail: molly@sbcatree.com

Date: Amended July 26, 2022

To: Eric Harrison
Senior Vice President
Signature Development Group

Subject: **1305 O'Brien Drive Tree Survey**

Scope: Arborist surveyed trees within the scope provided by Signature Development Group

Introduction

Estimated value of the 13 Heritage Trees is $197,400.

Any tree protected by the City's Municipal Code to be retained will require replacement according to its appraised value if it is damaged beyond repair as a result of construction.

City of Menlo Park Ordinance

"Heritage tree" shall mean:

(A) All trees other than oaks which have a trunk with a circumference of 47.1 inches (diameter of fifteen (15) inches) or more, measured fifty-four (54) inches above natural grade.

(B) An oak tree (Quercus) which is native to California and has a trunk with a circumference of 31.4 inches (diameter of ten (10) inches) or more, measured at fifty-four (54) inches above natural grade.

(C) A tree or group of trees of historical significance, special character or community benefit, specifically designated by resolution of the city council.

For purposes of subsections (5)(A) and (B) of this section, trees with more than one (1) trunk shall be measured at the diameter below the main union of all multi-trunk trees unless the union occurs below grade, in which case each stem shall be measured as a stand-alone tree. A multi-trunk tree under twelve (12) feet in height shall not be considered a heritage tree. (Ord. 1060 § 2 (part), 2019).

Survey Procedure

Trees Tagged – All 17 trees were tagged with a metal number tag corresponding with the numbers used in the Excel data sheets in *Appendix 1*. Numbering begins with #212 and then skips to #214-229.

Data Recorded – Arborists recorded data on tree species, diameter (DBH[1]), tree height, health and structural conditions, Heritage Tree Status, and suitability for retention, and suitability for relocation. Notes were recorded to provide commentary on general conditions.

Summary

- **Total Trees**: 17 Trees
  - Heritage street tree: n/a
  - Heritage tree: 13 Trees
  - Non-heritage street tree: n/a

- **Trees to be Removed**
  - Heritage street tree: n/a
  - Heritage tree: 7 Trees
  - Non-heritage street tree: n/a
  - Non-heritage tree: 2 Trees

- **Trees to Remain**
  - Heritage street tree: n/a
  - Heritage tree: 6 Trees
  - Non-heritage street tree: n/a
  - Non-heritage tree: 2 Trees

Table 1 – The table below provides a breakdown of numbers of each tree species surveyed.

	Species	Total Amount	Heritage Tree Amount	Street Tree Amount	Overall Retention Suitability	Overall Relocation Suitability	Comments
1	*Acacia melanoxylon*	1	0	0	0	P	Volunteer suckers, growing in fence
2	*Pinus canariensis*	5	5	0	G	P	Large, beautiful specimens
3	*Pinus halepensis*	1	1	0	G	G	Large, beautiful specimens, Both display leans
4	*Platanus hispanica*	4	1	0	F	P	Minimal soil volume
5	*Pyrus calleryana*	6	6	0	P	P	Poor structures; Fire blight; Trees in parking lot were headed
		17	**13**	**0**			

[1] **DBH** is tree diameter measured at 54 inches above soil grade.

Tree Valuation, Source and Methodology

This tree valuation report was prepared according to the standards for tree valuation presented in the 10th Edition of GUIDE FOR PLANT APPRAISAL, published by the International Society of Arboriculture, 2019.

Information regarding tree species is from the publication: SPECIES CLASSIFICATION AND GROUP ASSIGNMENTS, published by the International Society of Arboriculture.

Tree valuation is determined by using the FUNCTIONAL REPLACEMENT METHOD, *Trunk Formula* Technique as the tree is larger than the standard 24" box size utilized in tree valuation.

Reproduction Method using Trunk Formula Technique for Determining Tree Value

The current price for a 24-inch box tree is $200. Value is affected by tree species, tree condition and the location in which the tree is growing. The terms below are used is the valuation in the table below.

- **Species** – Species qualities are determined through the publication Species Classification And Group Assignment published by the WESTERN CHAPTER INTERNATIONAL SOCIETY OF ARBORICULTURE. Tree species classification is used to determine the relative size based upon rate for growth of a replacement tree of a commonly attainable size.
    - **Species Group** – The group rating reflects the rate of growth for the tree species. The group rating determines the *basic price per square inch* of the trunk area for the different species.

- **DBH** - Diameter at Breast Height, measured at 4.5 feet above the average soil grade. Tree valuation is based upon DBH measurements. For multi-stemmed trees, this is based on calculations from the sum of the cross-sectional areas of all stems measured at 4.5 above grade. That figure is then matched with a DBH of a single stemmed tree with the same cross-sectional area.
- **Trunk Area** – The surface area of the cross-sectional area of the tree trunk measured at 4.5 feet above the soil grade (DBH).
- **Tree Condition** – Assessed base upon tree Health, Structure & Form.

Rating	Rating	Amount	Rating	Rating	Amount
G	G	0.9	F	F/P	0.6
G	F/G	0.85	F	P	0.5
G	F	0.8	P	F/G	0.55
G	F/P	0.7	P	F/P	0.4
G	P	0.6	P	P	0.2
F	F/G	0.75	F/G	F/G	0.8
F	F	0.7	F/G	F/P	0.65
F	F/P	0.6	F/P	F/P	0.45

- **Functional Limitations** – Factors within the controllable area that adversely impact the tree. All trees were given variable scores based on proximity to hardscape.
- **External Limitations** – Adverse impacts beyond control of tree owner is the presence of the adjacent structure that limits the spread of the tree and will require pruning to accommodate.
- **Replacement Tree Diameter** – The diameter of the largest commonly available tree of the same species.
- **Cross-sectional area of Replacement tree** - Based upon diameter of replacement tree for 24" box size.
- **Replacement Tree Cost** – Standard cost for purchase of replacement tree. Normal is $200 for 24-inch size box tree.
- **Unit Tree Cost** – This is the cost of the tree divided by the cross-sectional area.

- **Basic Reproduction Cost** – The cross-sectional area of the tree being valued times the Unit Tree Cost.
- **Species Price per Square Inch**. – Determined from Species Group rating.
- **Depreciated reproduction cost** – Factor in Tree Condition, Functional Limitations & External Limitations.
- **Additional Costs** – Covers tree removal and cleanup prior to replanting.
- **Tree Value** – Total assessed values of the trees are to the nearest $100.

Table 2. Table below provides methodology for tree appraisal.

Tree No.	Species	DBH	Trunk Area (TA)	Condition	Functional Limitations	External Limitations	Replacement Tree Diameter	Replacement Tree Area	Replacement Tree Cost	Unit Cost (I/H)	Basic Reproduction Cost (D/J)	Depreciated Reproduction Cost (K*F*F*G)	Additional Costs	Tree Value to nearest $100
214	*Pyrus calleryana*	25	490.9	0.6	0.8	1	1.69	2.24	200	89.29	43,828	$21,038	0	21,000
215	*Pyrus calleryana*	18	254.5	0.6	1	1	1.69	2.24	200	89.29	22,721	$13,632	0	12,600
216	*Pyrus calleryana*	22.5	397.6	0.6	1	1	1.69	2.24	200	89.29	35,501	$21,300	0	21,300
219	*Pyrus calleryana*	16.5	213.8	0.6	0.7	1	1.69	2.24	200	89.29	19,092	$ 8,018	0	8,800
220	*Pinus halepensis*	26	530.9	0.85	0.6	1	2.2	3.8	200	52.63	27,944	$14,251	0	19,00
221	*Platanus x hispanica*	15	176.7	0.7	1	1	2.2	3.8	200	52.63	9,301	$ 6,511	0	6,500
222	*Pinus canariensis*	24	452.4	0.6	1	1	2.2	3.8	200	52.63	23,810	$14,286	0	14,300
223	*Pinus canariensis*	28	615.8	0.85	0.8	1	2.2	3.8	200	52.63	32,408	$22,037	0	22,000
225	*Pyrus calleryana*	22.5	397.6	0.6	1	1	1.69	2.24	200	89.29	35,501	$21,300	0	21,300
226	*Pyrus calleryana*	21	346.4	0.6	0.8	1	1.69	2.24	200	89.29	30,925	$14,844	0	14,800
227	*Pinus canariensis*	22.5	397.6	0.8	1	1	2.2	3.8	200	52.63	20,927	$16,741	0	16,700
228	*Pinus canariensis*	22.5	397.6	0.8	1	1	2.2	3.8	200	52.63	20,927	$16,741	0	16,700
229	*Pinus canariensis*	24	452.4	0.9	1	1	2.2	3.8	200	52.63	23,810	$21,429	0	21,400
														197,400

End Report

Appendices are as follows:

- *Appendix 1 – Tree Survey Data*
- *Appendix 2 – Tree Location Map*

Report submitted by:

Molly Batchelder, Consulting Arborist
WC ISA Certified Arborist #9613A
Tree Risk Assessment Qualified (TRAQ)

SBCA Tree Consulting
1534 Rose St. Crockett, CA 94525
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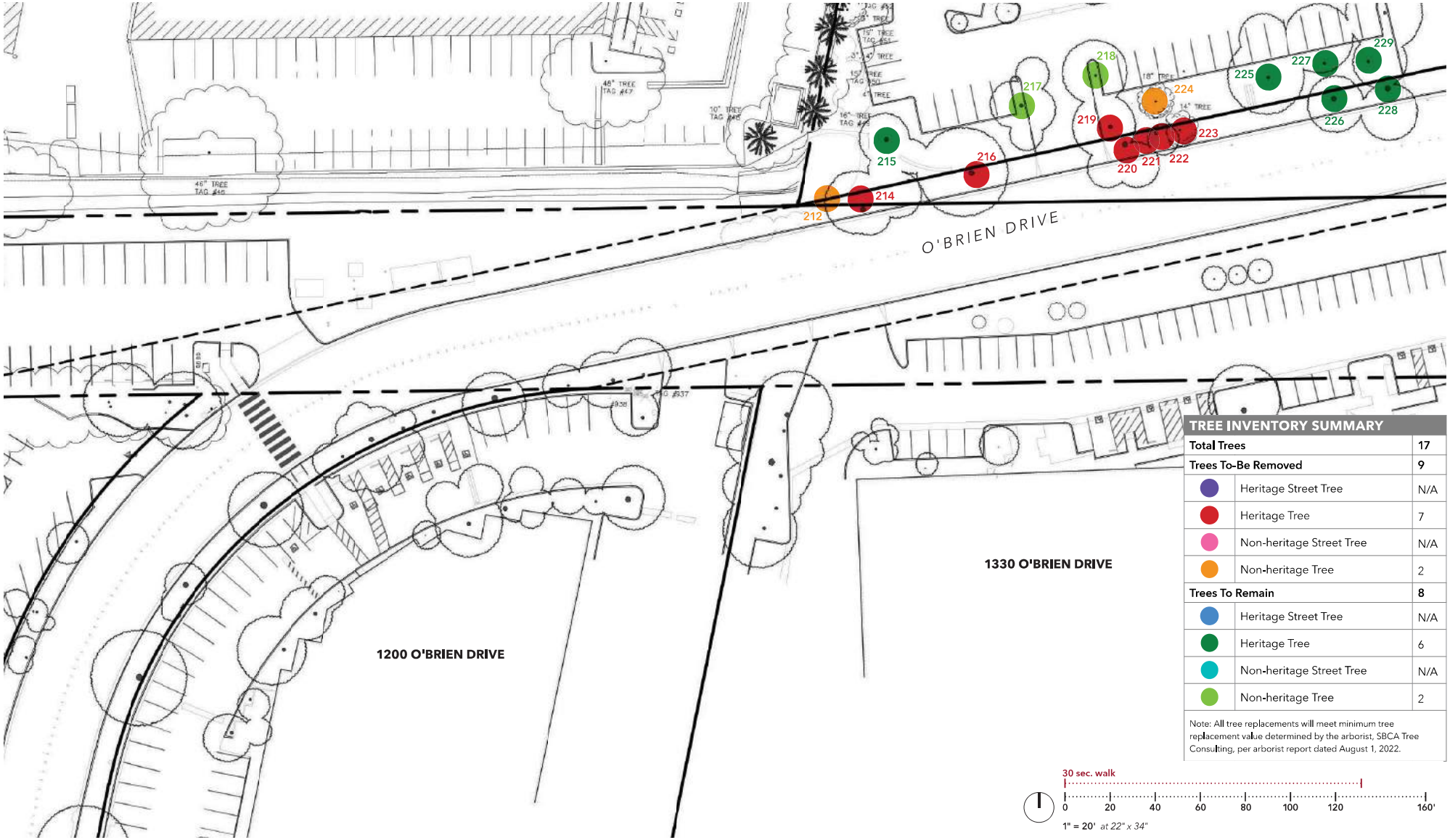
Fax (510) 787-3065
www.sbcatree.com

B.

HERITAGE TREE REMOVAL PLAN



TREE INVENTORY SUMMARY		
Total Trees		**17**
Trees To-Be Removed		**9**
	Heritage Street Tree	N/A
	Heritage Tree	7
	Non-heritage Street Tree	N/A
	Non-heritage Tree	2
Trees To Remain		**8**
	Heritage Street Tree	N/A
	Heritage Tree	6
	Non-heritage Street Tree	N/A
	Non-heritage Tree	2

Note: All tree replacements will meet minimum tree replacement value determined by the arborist, SBCA Tree Consulting, per arborist report dated August 1, 2022.

30 sec. walk

0 20 40 60 80 100 120 160'

1" = 20' *at 22" x 34"*

Peninsula Innovation Partners

1305 O'BRIEN DRIVE

Menlo Park, CA

Heritage Tree Removal Plan

August 1, 2022

214	*Pyrus calleryana*	Flowering Pear	25		40	G	P	1	P	P	25		34"	Cdeb, ripout pruning wounds, fireblight
216	*Pyrus calleryana*	Flowering Pear	22.5		40	G	P	1	P	P	23		52"	Cdeb,
219	*Pyrus calleryana*	Flowering Pear	16.5		35	G	P	1	F	P	17			Old tag#366, Cdeb
220	*Pinus halepensis*	Aleppo Pine	26		50	G	F-G	1	G	P	26		40"	Lean
221	*Platanus x hispanica*	London Plane	15		35	F	F	1	F	P	15			Old tag# 361, cd
222	*Pinus canariensis*	Canary Island Pine	24		65	G	P	1	G	P	24		65"	Cdeb, lean
223	*Pinus canariensis*	Canary Island Pine	28		65	G	F-G	1	G	P	28		60"	Old tag # 356, lean

Appendix 4.5

Heritage Tree Removal Application 1330 O'Brien Drive

HERITAGE TREE REMOVAL APPLICATION

1330 O'BRIEN DRIVE

Peninsula Innovation Partners
August 1, 2022

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A Arborist Report, Tree Survey and Valuation of Heritage Trees

B Heritage Tree Removal Plan

C Excel, Survey Data (separate file)

A.

ARBORIST REPORT, TREE SURVEY AND VALUATION OF HERITAGE TREES

SBCA TREE CONSULTING

1534 Rose Street, Crockett, CA 94525
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Website: www.sbcatree.com

Steve Batchelder, Consulting Arborist
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CUFC Certified Urban Forester #134
CA Contractor License #(C-27) 53367
E-mail: steve@sbcatree.com

Molly Batchelder, Consulting Arborist
WC ISA Certified Arborist #9613A
ISA Tree Risk Assessment Qualified
E-mail: molly@sbcatree.com

Date: Amended July 26, 2022

To: Eric Harrison
Senior Vice President
Signature Development Group

Subject: **1330 O'Brien Drive Tree Survey**

Scope: Arborist surveyed trees within the scope provided by Signature Development Group

Introduction

Estimated value of the four Heritage is $53,600.

Any tree protected by the City's Municipal Code to be retained will require replacement according to its appraised value if it is damaged beyond repair as a result of construction.

City of Menlo Park Ordinance

"Heritage tree" shall mean:

(A) All trees other than oaks which have a trunk with a circumference of 47.1 inches (diameter of fifteen (15) inches) or more, measured fifty-four (54) inches above natural grade.

(B) An oak tree (Quercus) which is native to California and has a trunk with a circumference of 31.4 inches (diameter of ten (10) inches) or more, measured at fifty-four (54) inches above natural grade.

(C) A tree or group of trees of historical significance, special character or community benefit, specifically designated by resolution of the city council.

For purposes of subsections (5)(A) and (B) of this section, trees with more than one (1) trunk shall be measured at the diameter below the main union of all multi-trunk trees unless the union occurs below grade, in which case each stem shall be measured as a stand-alone tree. A multi-trunk tree under twelve (12) feet in height shall not be considered a heritage tree. (Ord. 1060 § 2 (part), 2019).

Survey Procedure

Trees Tagged – Six (6) trees were tagged and identified within this designated area. Each tree was tagged with a metal number tag corresponding with the numbers used in the Excel data sheets in *Appendix 1*. Numbering begins with #233 and ends with #238.

Data Recorded – Arborists recorded data on tree species, diameter (DBH[1]), tree height, health and structural conditions, Heritage Tree Status, and suitability for retention, and suitability for relocation. Notes were recorded to provide commentary on general conditions.

Summary

- **Total Trees**: 6 Trees
  - Heritage street tree: n/a
  - Heritage tree: 4 Trees
  - Non-heritage street tree: n/a

- **Trees to be Removed**
  - Heritage street tree: n/a
  - Heritage tree: 3 Trees
  - Non-heritage street tree: n/a
  - Non-heritage tree: 2 Trees

- **Trees to Remain**
  - Heritage street tree: n/a
  - Heritage tree: 1 Tree
  - Non-heritage street tree: n/a
  - Non-heritage tree: n/a

Table 1 – The table below provides a breakdown of numbers of each tree species surveyed.

	Species	Common Name	Total Amount	Heritage Tree Amount	Overall Retention Suitability	Overall Relocation Suitability	Comments
1	*Geijera parviflora*	Australian willow	4	2	P	P	Poor structures
2	*Pinus canariensis*	Canary Island Pine	2	2	G	P	Large, beautiful specimens
			6	**4**			

Tree Valuation, Source and Methodology

This tree valuation report was prepared according to the standards for tree valuation presented in the 10th Edition of GUIDE FOR PLANT APPRAISAL, published by the International Society of Arboriculture, 2019.

Information regarding tree species is from the publication: SPECIES CLASSIFICATION AND GROUP ASSIGNMENTS, published by the International Society of Arboriculture.

Tree valuation is determined by using the FUNCTIONAL REPLACEMENT METHOD, *Trunk Formula* Technique as the tree is larger than the standard 24" box size utilized in tree valuation.

[1] **DBH** is tree diameter measured at 54 inches above soil grade.

Reproduction Method using Trunk Formula Technique for Determining Tree Value

The current price for a 24-inch box tree is $200. Value is affected by tree species, tree condition and the location in which the tree is growing. The terms below are used is the valuation in the table below.

- **Species** – Species qualities are determined through the publication Species Classification And Group Assignment published by the WESTERN CHAPTER INTERNATIONAL SOCIETY OF ARBORICULTURE. Tree species classification is used to determine the relative size based upon rate for growth of a replacement tree of a commonly attainable size.
    - **Species Group** – The group rating reflects the rate of growth for the tree species. The group rating determines the *basic price per square inch* of the trunk area for the different species.

- **DBH** - Diameter at Breast Height, measured at 4.5 feet above the average soil grade. Tree valuation is based upon DBH measurements. For multi-stemmed trees, this is based on calculations from the sum of the cross-sectional areas of all stems measured at 4.5 above grade. That figure is then matched with a DBH of a single stemmed tree with the same cross-sectional area.
- **Trunk Area** – The surface area of the cross-sectional area of the tree trunk measured at 4.5 feet above the soil grade (DBH).
- **Tree Condition** – Assessed base upon tree Health, Structure & Form.

Rating	Rating	Amount	Rating	Rating	Amount
G	G	0.9	F	F/P	0.6
G	F/G	0.85	F	P	0.5
G	F	0.8	P	F/G	0.55
G	F/P	0.7	P	F/P	0.4
G	P	0.6	P	P	0.2
F	F/G	0.75	F/G	F/G	0.8
F	F	0.7	F/G	F/P	0.65
F	F/P	0.6	F/P	F/P	0.45

- **Functional Limitations** – Factors within the controllable area that adversely impact the tree. All trees were given variable scores based on proximity to hardscape. Tree #236 is impacted by large pine growing overhead.
- **External Limitations** – Adverse impacts beyond control of tree owner is the presence of the adjacent structure that limits the spread of the tree and will require pruning to accommodate.
- **Replacement Tree Diameter** – The diameter of the largest commonly available tree of the same species.
- **Cross-sectional area of Replacement tree** - Based upon diameter of replacement tree for 24" box size.
- **Replacement Tree Cost** – Standard cost for purchase of replacement tree. Normal is $200 for 24-inch size box tree.
- **Unit Tree Cost** – This is the cost of the tree divided by the cross-sectional area.
- **Basic Reproduction Cost** – The cross-sectional area of the tree being valued times the Unit Tree Cost.
- **Species Price per Square Inch**. – Determined from Species Group rating.
- **Depreciated reproduction cost** – Factor in Tree Condition, Functional Limitations & External Limitations.
- **Additional Costs** – Covers tree removal and cleanup prior to replanting.
- **Tree Value** – Total assessed values of the trees are to the nearest $100.

Table 2. Table below provides methodology for tree appraisal.

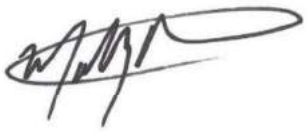
Tree No.	Species	DBH	Trunk Area (TA)	Condition	Functional Limitations	External Limitations	Replacement Tree Diameter	Replacement Tree Area	Replacement Tree Cost	Unit Cost (I/H)	Basic Reproduction Cost (D/J)	Depreciated Reproduction Cost (K*F*F*G)	Additional Costs	Tree Value to nearest $100
233	*Geijera parviflora*	18	254.4696	0.6	0.8	1	1.69	2.24	200	89.2857143	22,721	$ 10,906	0	10,900
235	*Pinus halepensis*	33.5	881.41515	0.8	0.8	1	2.2	3.8	200	52.6315789	46,390	$ 29,690	0	29,700
236	*Pinus canariensis*	15	176.715	0.9	0.7	1	2.2	3.8	200	52.6315789	9,301	$ 5,859	0	5,900
238	*Geijera parviflora*	15.5	188.69235	0.6	0.7	1	1.69	2.24	200	89.2857143	16,848	$ 7,076	0	7,100
														$ 53,600

End Report

Appendices are as follows:

- *Appendix 1 – Tree Survey Data*
- *Appendix 2 – Tree Location Map*

Report submitted by:



Molly Batchelder, Consulting Arborist
WC ISA Certified Arborist #9613A
Tree Risk Assessment Qualified (TRAQ)

B.

HERITAGE TREE REMOVAL PLAN

TREE INVENTORY SUMMARY		
Total Trees		**6**
Trees To-Be Removed		**5**
	Heritage Street Tree	N/A
	Heritage Tree	3
	Non-heritage Street Tree	N/A
	Non-heritage Tree	2
Trees To Remain		**1**
	Heritage Street Tree	N/A
	Heritage Tree	1
	Non-heritage Street Tree	N/A
	Non-heritage Tree	N/A

Note: All tree replacements will meet minimum tree replacement value determined by the arborist, SBCA Tree Consulting, per arborist report dated August 1, 2022.

30 sec. walk

0 20 40 60 80 100 120 160'

1" = 20' *at 22" x 34"*

Peninsula Innovation Partners

1330 O'BRIEN DRIVE

Menlo Park, CA

Heritage Tree Removal Plan

August 1, 2022

233	*Geijera parviflora*	Australian willow	18		30	G	P	1	P	P	18			Large breakout, cdeb
235	*Pinus halepensis*	Aleppo Pine	33.5		75	G	F	1	G	P	34			CD, slight lean
236	*Pinus canariensis*	Canary Island Pine	15		50	G	G	1	G	P	15			

Appendix 4.6

Heritage Tree Removal Application 1305 O'Brien Drive Right-of-Way

HERITAGE TREE REMOVAL APPLICATION

O'BRIEN ROW

Peninsula Innovation Partners
August 1, 2022

TABLE OF CONTENTS

A Arborist Report, Tree Survey and Valuation of Heritage Trees

B Heritage Tree Removal Plan

C Excel, Survey Data (separate file)

A.

ARBORIST REPORT, TREE SURVEY AND VALUATION OF HERITAGE TREES

SBCA TREE CONSULTING

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E-mail: steve@sbcatree.com

Molly Batchelder, Consulting Arborist
WC ISA Certified Arborist #9613A
ISA Tree Risk Assessment Qualified
E-mail: molly@sbcatree.com

Date: Amendment 2 July 31, 2022

To: Eric Harrison
Senior Vice President
Signature Development Group

Subject: **CITY ROW, O'Brien Drive Tree Survey**

Scope: Arborist surveyed trees within the scope provided by Signature Development Group

Introduction

Estimated value of the eight Heritage Trees was determined to be $122,000.

Any tree protected by the City's Municipal Code to be retained will require replacement according to its appraised value if it is damaged beyond repair as a result of construction.

City of Menlo Park Ordinance

"Heritage tree" shall mean:

(A) All trees other than oaks which have a trunk with a circumference of 47.1 inches (diameter of fifteen (15) inches) or more, measured fifty-four (54) inches above natural grade.

(B) An oak tree (Quercus) which is native to California and has a trunk with a circumference of 31.4 inches (diameter of ten (10) inches) or more, measured at fifty-four (54) inches above natural grade.

(C) A tree or group of trees of historical significance, special character or community benefit, specifically designated by resolution of the city council.

For purposes of subsections (5)(A) and (B) of this section, trees with more than one (1) trunk shall be measured at the diameter below the main union of all multi-trunk trees unless the union occurs below grade, in which case each stem shall be measured as a stand-alone tree. A multi-trunk tree under twelve (12) feet in height shall not be considered a heritage tree. (Ord. 1060 § 2 (part), 2019).

Survey Procedure

Trees Tagged – All 14 trees were tagged with a metal number tag corresponding with the numbers used in the Excel data sheets in *Appendix 1*. Numbering begins with #146-155 and #200-203.

Data Recorded – Arborists recorded data on tree species, diameter (DBH[1]), tree height, health and structural conditions, Heritage Tree Status, Street Tree status, and suitability for retention, and suitability for relocation. Notes were recorded to provide commentary on general conditions.

Summary

- **Total Trees**: 14 Trees
  - Heritage street tree: 8 Trees
  - Heritage tree: n/a
  - Non-heritage street tree: 5 Trees

- **Trees to be Removed**
  - Heritage street tree: 6 Trees
  - Heritage tree: n/a
  - Non-heritage street tree: 3 Trees
  - Non-heritage tree: n/a

- **Trees to Remain**
  - Heritage street tree: 2 Tree
  - Heritage tree: n/a
  - Non-heritage street tree: 2 Trees
  - Non-heritage tree: 1

Table 1 – The table below provides a breakdown of numbers of each tree species surveyed.

	Species	Total Amount	Heritage Tree Amount	Street Tree Amount	Overall Retention Suitability	Overall Relocation Suitability	Comments
1	*Araucaria heterophylla*	1	0	0	F	P	High voltage power lines above; Codominant with included bark
2	*Eucalyptus camaldulensis*	3	1	3	G, F, P	P	Many are growing under the high voltage wires and pruned for clearance; Good health
3	*Fraxinus uhdei*	6	4	6	P	P	Seven headed for line clearance; Good health
4	*Prunus cerasifera*	1	0	1	F-P	P	Dieback, pruning wounds, lean
5	*Salix spp*	1	1	1	P	P	Volunteer with bunch of suckers

[1] **DBH** is tree diameter measured at 54 inches above soil grade.

	Species	Total Amount	Heritage Tree Amount	Street Tree Amount	Overall Retention Suitability	Overall Relocation Suitability	Comments
6	*Sequoia sempervirens*	2	2	2	G	P	Nice trees; Appear a little off color and drought stressed
		14	**8**	**13**			

Tree Valuation, Source and Methodology

This tree valuation report was prepared according to the standards for tree valuation presented in the 10th Edition of GUIDE FOR PLANT APPRAISAL, published by the International Society of Arboriculture, 2019.

Information regarding tree species is from the publication: SPECIES CLASSIFICATION AND GROUP ASSIGNMENTS, published by the International Society of Arboriculture.

Tree valuation is determined by using the FUNCTIONAL REPLACEMENT METHOD, *Trunk Formula* Technique as the tree is larger than the standard 24" box size utilized in tree valuation.

Reproduction Method using Trunk Formula Technique for Determining Tree Value

The current price for a 24-inch box tree is $200. Value is affected by tree species, tree condition and the location in which the tree is growing. The terms below are used is the valuation in the table below.

- **Species** – Species qualities are determined through the publication Species Classification And Group Assignment published by the WESTERN CHAPTER INTERNATIONAL SOCIETY OF ARBORICULTURE. Tree species classification is used to determine the relative size based upon rate for growth of a replacement tree of a commonly attainable size.
    - **Species Group** – The group rating reflects the rate of growth for the tree species. The group rating determines the *basic price per square inch* of the trunk area for the different species.

- **DBH** - Diameter at Breast Height, measured at 4.5 feet above the average soil grade. Tree valuation is based upon DBH measurements. For multi-stemmed trees, this is based on calculations from the sum of the cross-sectional areas of all stems measured at 4.5 above grade. That figure is then matched with a DBH of a single stemmed tree with the same cross-sectional area.
- **Trunk Area** – The surface area of the cross-sectional area of the tree trunk measured at 4.5 feet above the soil grade (DBH).
- **Tree Condition** – Assessed base upon tree Health, Structure & Form.

Rating	Rating	Amount	Rating	Rating	Amount
G	G	0.9	F	F/P	0.6
G	F/G	0.85	F	P	0.5
G	F	0.8	P	F/G	0.55
G	F/P	0.7	P	F/P	0.4
G	P	0.6	P	P	0.2
F	F/G	0.75	F/G	F/G	0.8
F	F	0.7	F/G	F/P	0.65
F	F/P	0.6	F/P	F/P	0.45

- **Functional Limitations** – Factors within the controllable area that adversely impact the tree. All trees were given variable scores based on proximity to hardscape.
- **External Limitations** – Adverse impacts beyond control of tree owner is the presence of the adjacent structure that limits the spread of the tree and will require pruning to accommodate. Trees #143 and 144 were reduced in value based on high voltage power lines.
- **Replacement Tree Diameter** – The diameter of the largest commonly available tree of the same species.
- **Cross-sectional area of Replacement tree** - Based upon diameter of replacement tree for 24" box size.
- **Replacement Tree Cost** – Standard cost for purchase of replacement tree. Normal is $200 for 24-inch size box tree.
- **Unit Tree Cost** – This is the cost of the tree divided by the cross-sectional area.
- **Basic Reproduction Cost** – The cross-sectional area of the tree being valued times the Unit Tree Cost.
- **Species Price per Square Inch**. – Determined from Species Group rating.
- **Depreciated reproduction cost** – Factor in Tree Condition, Functional Limitations & External Limitations.
- **Additional Costs** – Covers tree removal and cleanup prior to replanting.
- **Tree Value** – Total assessed values of the trees are to the nearest $100.

Table 2. Table below provides methodology for tree appraisal.

Tree No.	Species	DBH	Trunk Area (TA)	Condition	Functional Limitations	External Limitations	Replacement Tree Diameter	Replacement Tree Area	Replacement Tree Cost	Unit Cost (I/H)	Basic Reproduction Cost (D/J)	Depreciated Reproduction Cost (K*E*F*G)	Tree Value to nearest $100
146	*Eucalyptus camaldulensis*	23.5	433.73715	0.8	0.8	1	1.69	2.24	200	89.2857143	38,727	$ 24,785	24,800
147	*Fraxinus uhdei*	18.5	268.80315	0.8	0.8	1	2.2	3.8	200	52.6315789	14,148	$ 9,054	10,000
148	*Sequoia sempervirens*	31.5	779.31315	0.8	0.8	1	2.2	3.8	200	52.6315789	41,016	$ 26,251	26,300
150	*Fraxinus uhdei*	19	283.5294	0.7	0.8	1	2.2	3.8	200	52.6315789	14,923	$ 8,357	8,400
152	*Sequoia sempervirens*	31.5	779.31315	0.8	0.8	1	2.2	3.8	200	52.6315789	41,016	$ 26,251	26,300
154	*Fraxinus uhdei*	19	283.5294	0.6	0.8	1	1.69	2.24	200	89.2857143	25,315	$ 12,151	12,200
155	*Fraxinus uhdei*	17.5	240.52875	0.8	0.8	1	1.69	2.24	200	89.2857143	21,476	$ 13,745	13,700
201	*Salix spp*	5.5	23.75835	0.5	0.5	1	2.2	3.8	200	52.6315789	1,250	$ 313	300

End Report

Appendices are as follows:

- *Appendix 1 – Tree Survey Data*
- *Appendix 2 – Tree Location Map*

Report submitted by:

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WC ISA Certified Arborist #9613A
Tree Risk Assessment Qualified (TRAQ)

B.

HERITAGE TREE REMOVAL PLAN

TREE INVENTORY SUMMARY		
Total Trees		**14**
Trees To-Be Removed		**9**
	Heritage Street Tree	6
	Heritage Tree	N/A
	Non-heritage Street Tree	3
	Non-heritage Tree	N/A
Trees To Remain		**5**
	Heritage Street Tree	2
	Heritage Tree	N/A
	Non-heritage Street Tree	2
	Non-heritage Tree	1

Note: All tree replacements will meet minimum tree replacement value determined by the arborist, SBCA Tree Consulting, per arborist report dated August 1, 2022.

30 sec. walk

0 20 40 60 80 100 120 160'

1" = 20' *at 22" x 34"*

Peninsula Innovation Partners

O'BRIEN DRIVE ROW

Menlo Park, CA

Heritage Tree Removal Plan

August 1, 2022

147	*Fraxinus uhdei*	Shamel Ash	18.5		35	G	F	1	F	P	19	1	28"	Heading cuts, internal decay
148	*Sequoia sempervirens*	Coast Redwood	31.5		55	F	G	1	G	P	32	1	36"	Recent pruning for clearance, off color, drought stressed
150	*Fraxinus uhdei*	Shamel Ash	19		30	F	F	1	P	P	19	1	37"	Pruning wounds internal decay, dieback
152	*Sequoia sempervirens*	Coast Redwood	31.5		55	F	G	1	G	P	32	1	30"	Off color, drought stressed
154	*Fraxinus uhdei*	Shamel Ash	19		45	G	P	1	F	P	19	1	40"	CDEB, lean, previous tag# 938
155	*Fraxinus uhdei*	Shamel Ash	17.5		45	G	F	1	F	P	18	1	5"	Lean, CD, previous tag #937