

Initial Study

Washington Community Swim Center

Prepared by



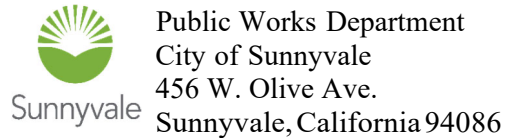
Sunnyvale

In Consultation with



DAVID J. POWERS
& ASSOCIATES, INC.
ENVIRONMENTAL CONSULTANTS & PLANNERS

March 2019



MITIGATED NEGATIVE DECLARATION

The Director of Public Works Department has reviewed the proposed project described below to determine whether it could have a significant effect on the environment as a result of project completion. "Significant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance.

NAME OF PROJECT: Washington Community Swim Center Reconstruction

PROJECT DESCRIPTION: The City proposes to redevelop the existing pool facility, including demolition of the existing swimming pool, pool deck, and existing structures. The project would include a new sport pool with teaching area, a multi-purpose building, a locker room building, a pool equipment and park maintenance building, a main entry plaza, a splash pad, partially shaded outdoor seating areas and a picnic area. Access to the new pool equipment building for servicing will be provided from the existing parking lot. Relocation of the existing horseshoe pits within Washington Park will be considered.

PROJECT LOCATION & ASSESSORS PARCEL NO: The project would be located in the existing Washington Park, at 255 South Pastoria Avenue in Sunnyvale, California.

APPLICANT CONTACT INFORMATION: Nathan Scribner, P.E., Senior Engineer, Sunnyvale Public Works Department, P.O. Box 3707, Sunnyvale, CA 94088-3707. Phone (408) 730-2783.

FINDING

The Director of Public Works Department finds the project described above will not have a significant effect on the environment in that the attached initial study identifies one or more potentially significant effects on the environment for which the project applicant, before public release of this draft Mitigated Negative Declaration, has made or agrees to make project revisions that clearly mitigate the effects to a less than significant level.

MITIGATION MEASURES INCLUDED IN THE PROJECT TO REDUCE POTENTIALLY SIGNIFICANT EFFECTS TO A LESS THAN SIGNIFICANT LEVEL

- I. AESTHETICS -The project will not have a significant impact on this resource, therefore no mitigation is required.
- II. AGRICULTURE RESOURCES -The project will not have a significant impact on this resource, therefore no mitigation is required.
- III. AIR QUALITY -The project will not have a significant impact on this resource, therefore no mitigation is required.
- IV. BIOLOGICAL RESOURCES - Due to the presence of potential migratory bird nesting habitat in the vicinity of the project area, the mitigation measure below will be implemented to reduce impacts to migratory birds during construction to a less than significant level.

- Construction activities shall be scheduled to avoid the nesting season to the extent feasible. If feasible, construction activities shall be commenced prior to the start of nesting season to help preclude nesting. The nesting season for most birds and raptors in the San Francisco Bay area extends from February 1 through August 31.
- If it is not possible to schedule the start of construction activities between September 1 and January 31, a qualified ornithologist shall be contracted to conduct a preconstruction survey for nesting raptors and other migratory breeding birds within on-site trees as well as all trees within 250 feet of the site to identify active bird nests that may be disturbed during project construction. Between February 1 and April 30, pre-construction surveys shall be completed no more than 7 days prior to the initiation of demolition/construction activities (including tree removal and pruning). During this survey, the ornithologist shall inspect all trees and other possible nesting habitats in and immediately adjacent to the construction areas for nests. If construction has commenced prior to February 1, construction activities must be continuously maintained on the site through August 31 in order to deter bird nesting on or adjacent to the site during the construction period. If the survey does not identify any nesting birds that would be affected by construction activities, no further mitigation is required.
- If an active nest is found sufficiently close to work areas to be disturbed by these activities, the ornithologist (in consultation with the California Department of Fish and Wildlife) shall designate a construction-free buffer zone (typically 250 feet for raptors and 100 feet for non-raptors) to be established around the nest to ensure that no nests of species protected by the Federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code will be disturbed during construction activities. The buffer shall remain in place until the breeding season has ended and/or a qualified ornithologist has determined that the nest is no longer active.

v. **CULTURAL RESOURCES** - Project implementation could result in significant impacts to buried cultural resources, if encountered. The following mitigation measures will be implemented to reduce impacts to cultural resources to a less than significant level.

- In the event of the discovery of prehistoric or historic archaeological deposits or paleontological deposits during construction, work shall be halted within 50 feet of the discovery and a qualified professional archaeologist (or paleontologist, as applicable) shall examine the find and make appropriate recommendations regarding the significance of the find and the appropriate mitigation. The recommendation shall be implemented and could include collection, recordation, and analysis of any significant cultural materials.
- Pursuant to Section 7050.5 of the Health and Safety Code and Section 5097.94 of the Public Resources Code of the State of California:
 - In the event of the discovery of human remains during construction, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains. The Santa Clara County Coroner shall be notified and shall make a determination as to whether the remains are Native American. If the Coroner determines that the remains are not subject to his authority, he shall notify the Native American Heritage Commission who shall attempt to identify descendants of the deceased Native American. If no satisfactory agreement can be reached as to the disposition of the remains pursuant to this State law, the City shall re-inter the human remains and items associated with Native American burials on the property in a location not subject to further subsurface disturbance.

- If cultural resources are encountered, a final report summarizing the discovery of cultural materials shall be submitted to the Director of Public Works prior to issuance of final building and occupancy permits. This report shall contain a description of the mitigation program that was implemented (e.g., monitoring and testing program), a list of the resources found, a summary of the resources analysis methodology and conclusion, and a description of the disposition/curation of the resources. The report shall verify completion of the mitigation program to the satisfaction of the Director Public Works.

VI. GEOLOGY AND SOILS -The project will not have a significant impact on this resource, therefore no mitigation is required.

VII. HAZARDS AND HAZARDOUS MATERIALS - Demolition of the existing structure on the project site could expose construction workers or residents in the vicinity of the project site to harmful levels of Asbestos Containing Materials (ACMs) or lead. The following mitigation measures will be implemented to reduce impacts from ACMs and Lead Based Paint to a less than significant level.

- The project shall conform to the following regulatory programs and to implement the following measures to reduce impacts due to the presence of ACMs and/or lead-based paint:
 - In conformance with state and local laws, a visual inspection/pre-demolition survey, and possible sampling, shall be conducted prior to the demolition of on-site buildings to determine the presence of asbestos-containing materials and/or lead-based paint.
 - Prior to demolition activities, all building materials containing lead-based paint shall be removed in accordance with Cal/OSHA Lead in Construction Standard, Title 8, California Code of Regulations 1532.1, including employee training, employee air monitoring, and dust control. Any debris or soil containing lead-based paint or coatings would be disposed of at landfills that meet acceptance criteria for the waste being disposed.
 - All potentially friable ACMs shall be removed in accordance with National Emissions Standards for Hazardous Air Pollutants (NESHAP) guidelines prior to any building demolition or renovation that may disturb the materials. All demolition activities will be undertaken in accordance with Cal/OSHA standards contained in Title 8 of CCR, Section 1529, to protect workers from exposure to asbestos.
 - A registered asbestos abatement contractor shall be retained to remove and dispose of ACMs identified in the asbestos survey performed for the site in accordance with the standards stated above.
 - Materials containing more than one percent asbestos are also subject to Bay Area Air Quality Management District (BAAQMD) regulations. Removal of materials containing more than one percent asbestos shall be completed in accordance with BAAQMD requirements.

VIII. HYDROLOGY AND WATER QUALITY -The project will not have a significant impact on this resource, therefore no mitigation is required.

IX. LAND USE AND PLANNING -The project will not have a significant impact on this resource, therefore no mitigation is required.

- X. MINERAL RESOURCES -The project will not have a significant impact on this resource, therefore no mitigation is required.
- XI. NOISE -The project will not have a significant impact on this resource, therefore no mitigation is required.
- XII. POPULATION AND HOUSING -The project will not have a significant impact on this resource, therefore no mitigation is required.
- XIII. PUBLIC SERVICES -The project will not have a significant impact on this resource, therefore no mitigation is required.
- XIV. RECREATION -The project will not have a significant impact on this resource, therefore no mitigation is required.
- XV. TRANSPORTATION / TRAFFIC -The project will not have a significant impact on *this* resource, therefore no mitigation is required.
- XVI. UTILITIES AND SERVICE SYSTEMS -The project will not have a significant impact on this resource, therefore no mitigation is required.
- XVII. MANDATORY FINDINGS OF SIGNIFICANCE -The project will not substantially reduce the habitat of a fish or wildlife species, be cumulatively considerable, or have a substantial adverse effect on human beings, therefore no additional mitigation is required.

PUBLIC REVIEW PERIOD

Before 5:00 p.m. on April 11, 2019, any person may:

1. Review the Draft Mitigated Negative Declaration (MND) as an informational document only; or
2. Submit written comments regarding the information, analysis, and mitigation measures in the Draft MND. Before the MND is adopted, staff will prepare written responses to any comments, and revise the Draft MND, if necessary, to reflect any concerns raised during the public review period. All written comments will be included as part of the Final MND.

_____, Director
Public Works Department

Circulated on: March 22, 2019

Adopted on: _____, 2019

TABLE OF CONTENTS

Section 1.0	Introduction and Purpose	1
Section 2.0	Project Information	2
2.1	Project Title	2
2.2	Lead Agency Contact	2
2.3	Project Applicant	2
2.4	Project Location.....	2
2.5	Assessor’s Parcel Number	2
2.6	General Plan Designation and Zoning District.....	2
Section 3.0	Project Description.....	6
Section 4.0	Environmental Setting, Checklist, and Impact Discussion	11
4.1	Aesthetics.....	13
4.2	Agricultural and Forestry Resources	19
4.3	Air Quality	21
4.4	Biological Resources	28
4.5	Cultural Resources.....	33
4.6	Geology and Soils.....	37
4.7	Greenhouse Gas Emissions.....	41
4.8	Hazards and Hazardous Materials	46
4.9	Hydrology and Water Quality	50
4.10	Land Use and Planning.....	57
4.11	Mineral Resources	59
4.12	Noise and Vibration.....	60
4.13	Population and Housing.....	66
4.14	Public Services.....	67
4.15	Recreation	70
4.16	Transportation/Traffic.....	71
4.17	Utilities and Service Systems	75
4.18	Mandatory Findings of Significance	78
Section 5.0	References.....	81
Section 6.0	Lead Agency and Consultants.....	83
6.1	Lead Agency.....	83
6.2	Consultants	83

TABLE OF CONTENTS

Figures

Figure 1: Regional Map	3
Figure 2: Vicinity Map.....	4
Figure 3: Aerial Map.....	5
Figure 3.0-1: Site Plan	8
Figure 3.0-2: East and West Building Elevations	9
Figure 3.0-3: North and South Building Elevations	10

Photos

Photo 1	13
Photo 2 and 3.	14
Photo 4 and 5	15
Photo 6 and 7	16

Tables

Table 4.3-1: Thresholds of Significance Used in Air Quality Analyses.....	24
Table 4.4-1: Trees On-Site.....	29
Table 4.12-1 General Plan Land Use Compatibility Guidelines.....	61

Appendices

Appendix A – Arborist Report	
Appendix B – USGS Web Soil Survey	

ACRONYMS AND ABBREVIATIONS

ADA	Americans With Disabilities Act
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
EIR	Environmental Impact Report
MND	Mitigated Negative Declaration
NOD	Notice of Determination
RWQCB	Regional Water Quality Control Board
USFWS	United States Fish and Wildlife Service

SECTION 1.0 INTRODUCTION AND PURPOSE

1.1 PURPOSE OF THE INITIAL STUDY

The City of Sunnyvale as the Lead Agency has prepared this Initial Study for the Washington Community Swim Center project in compliance with the California Environmental Quality Act (CEQA), the CEQA Guidelines (California Code of Regulations §15000 et. seq.) and the regulations and policies of the City of Sunnyvale, California.

The project proposes to demolish the existing swim facility (including the pool and maintenance building), and replace the improvements with a new pool, administration building with reception area and community room, locker room building, and pool equipment and park maintenance building and install new pool amenities. This Initial Study evaluates the environmental impacts that might reasonably be anticipated to result from implementation of the proposed project.

1.2 PUBLIC REVIEW PERIOD

Publication of this Initial Study marks the beginning of a 20-day public review and comment period. During this period, the Initial Study will be available to local, state, and federal agencies and to interested organizations and individuals for review. Written comments concerning the environmental review contained in this Initial Study during the 20-day public review period should be sent to:

Nathan Scribner, P.E., Senior Engineer
City of Sunnyvale, Department of Public Works
P.O Box 3707
Sunnyvale, CA 94088-3707
408-730-2783
NScribner@sunnyvale.ca.gov

1.3 CONSIDERATION OF THE INITIAL STUDY AND PROJECT

Following the conclusion of the public review period, the City of Sunnyvale will consider the adoption of the Initial Study/Mitigated Negative Declaration (MND) for the project at a regularly scheduled meeting. The City will consider the Initial Study/MND together with any comments received during the public review process. Upon adoption of the MND, the City may proceed with project approval actions. For project approvals, it is customary for the Sunnyvale City Council to adopt the MND, approve the project, and award the contract for construction of the project at the same City Council meeting.

1.4 NOTICE OF DETERMINATION

If the project is approved, the City of Sunnyvale will file a Notice of Determination (NOD), which will be available for public inspection for 30 days and be posted within 24 hours of receipt at the County Clerk's Office. The filing of the NOD starts a 30-day statute of limitations on court challenges to the approval under CEQA [CEQA Guidelines Section 15075(g)].

SECTION 2.0 PROJECT INFORMATION

2.1 PROJECT TITLE

Washington Community Swim Center

2.2 LEAD AGENCY CONTACT

Nathan Scribner, P.E., Senior Engineer
City of Sunnyvale, Department of Public Works
P.O Box 3707
Sunnyvale, CA 94088-3707
408-730-2783
NScribner@sunnyvale.ca.gov

2.3 PROJECT APPLICANT

City of Sunnyvale, Department of Public Works
P.O Box 3707
Sunnyvale, CA 94088-3707
408-730-2783

2.4 PROJECT LOCATION

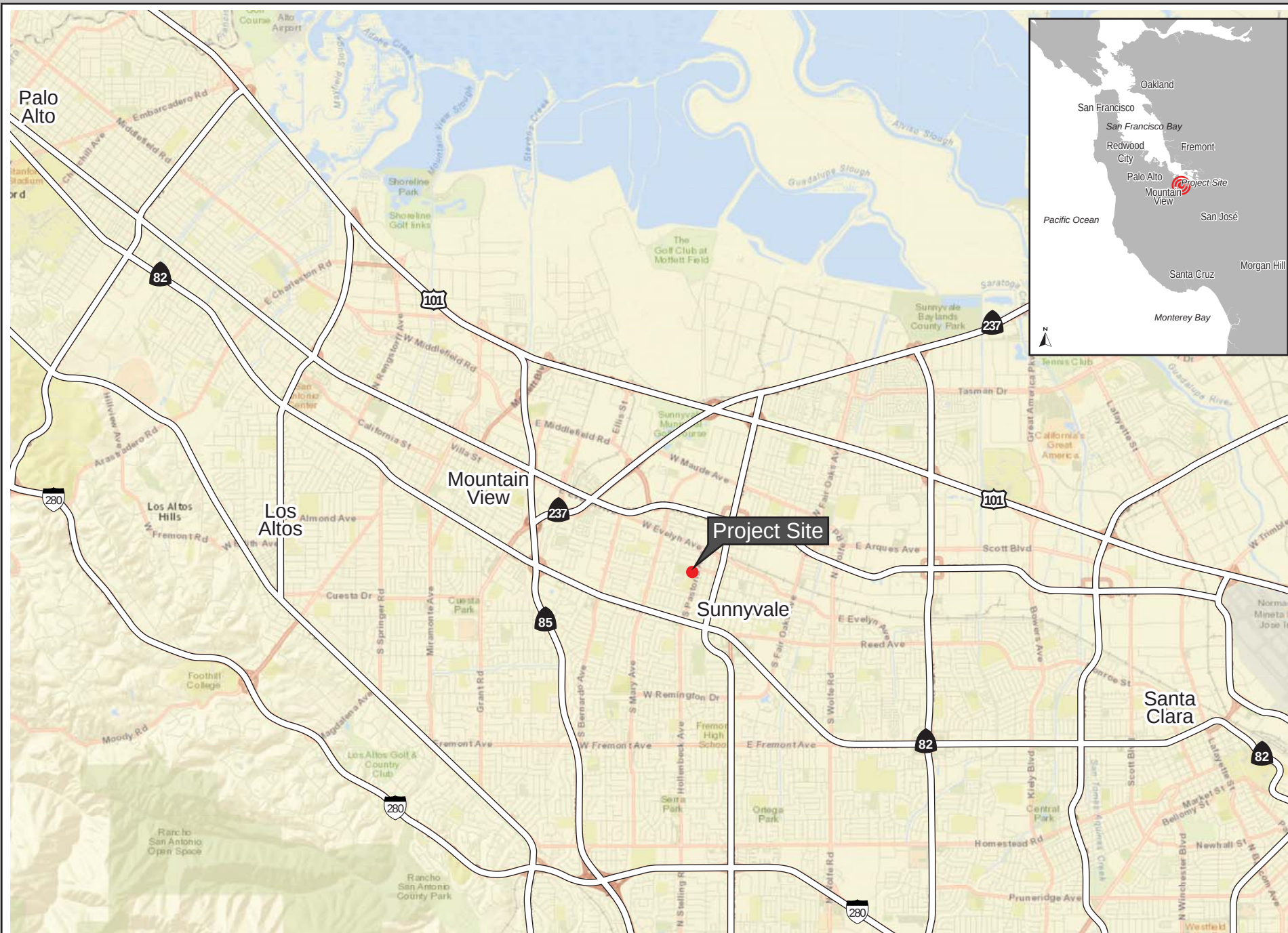
255 S. Pastoria Avenue
Sunnyvale, CA 94086

2.5 ASSESSOR'S PARCEL NUMBER

APN: 165-11-001

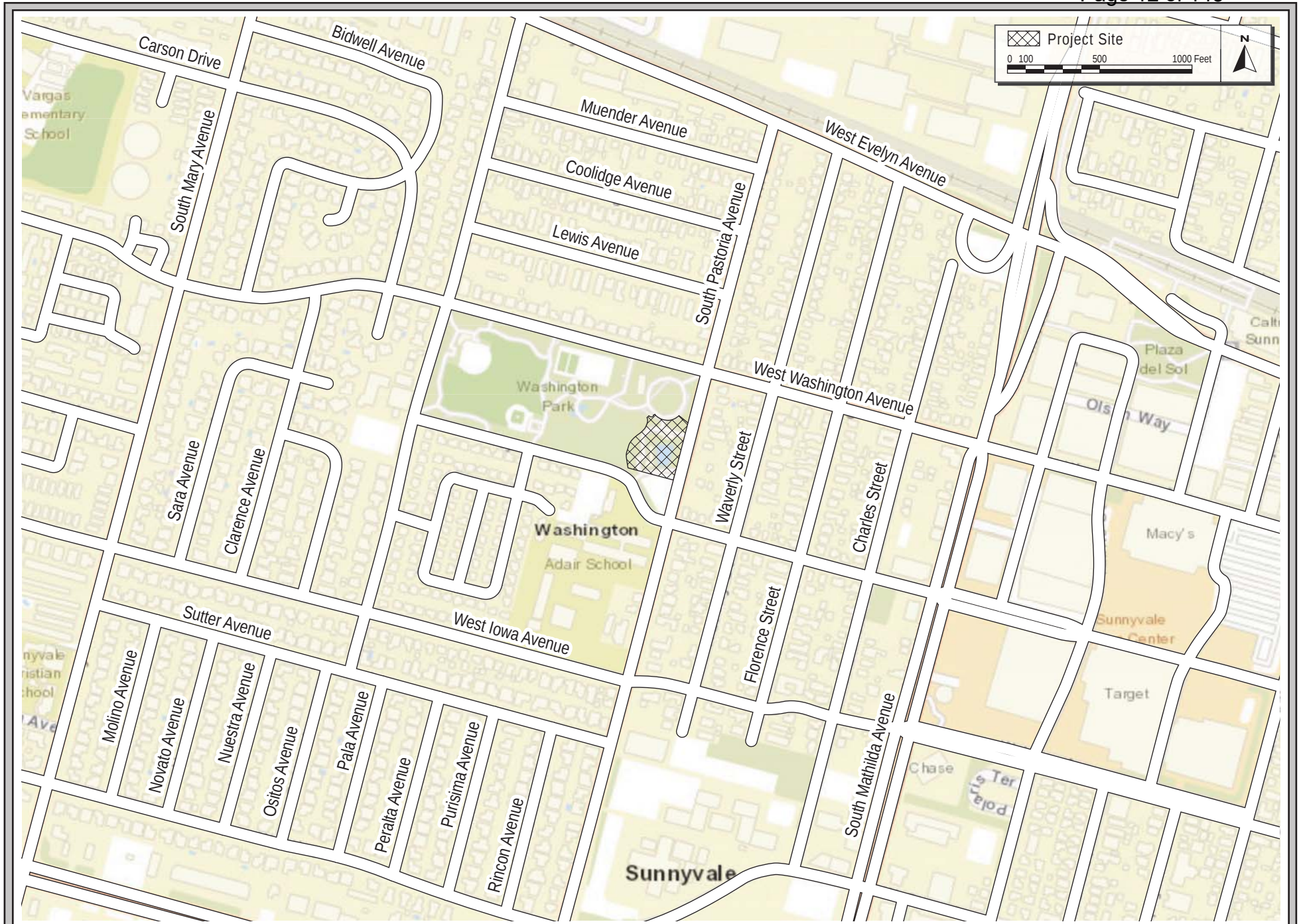
2.6 GENERAL PLAN DESIGNATION AND ZONING DISTRICT

General Plan Designation: *Parks*
Zoning Designation: *PF – Public Facilities*



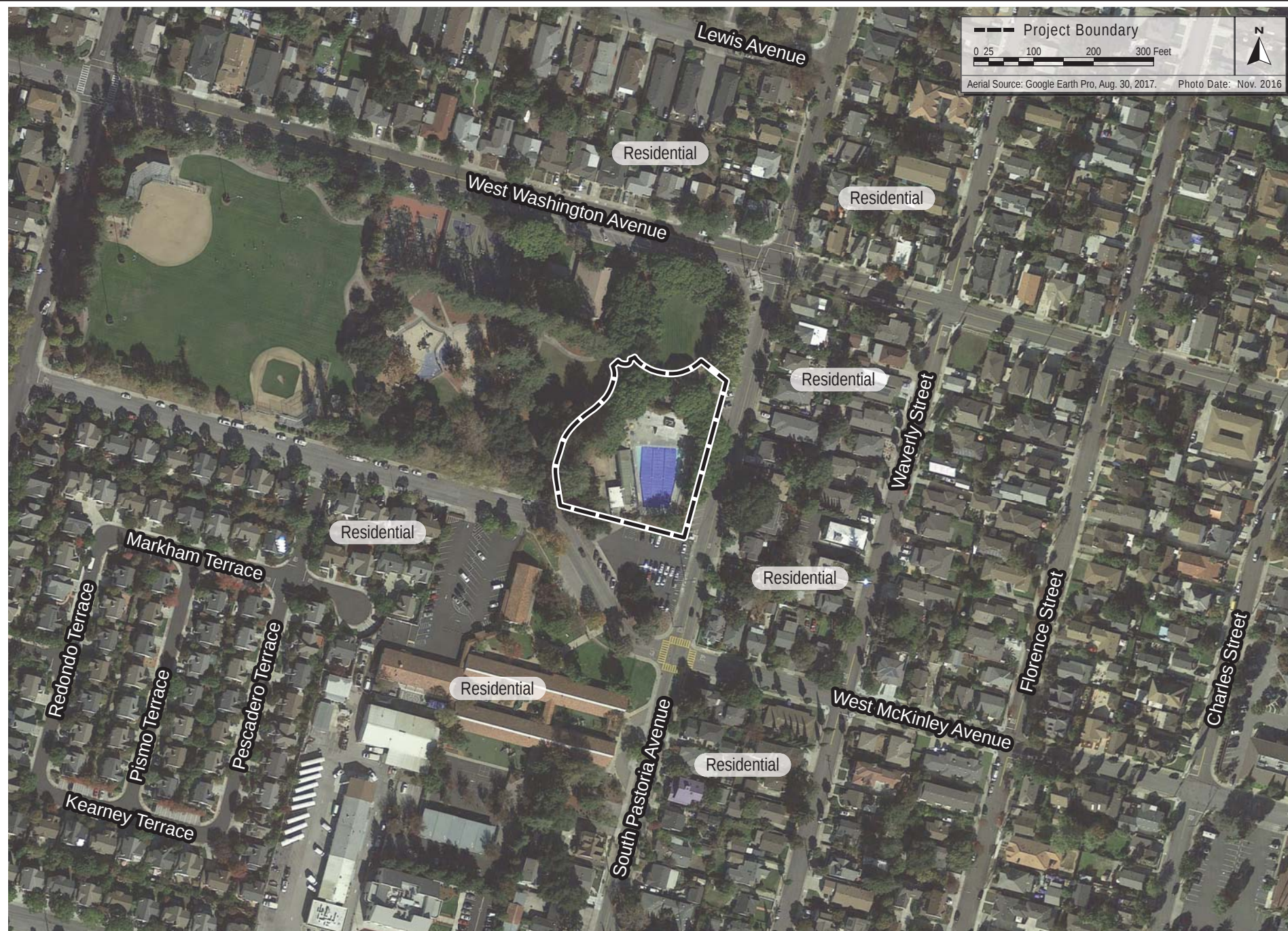
REGIONAL MAP

FIGURE 1



VICINITY MAP

FIGURE 2



AERIAL PHOTOGRAPH AND SURROUNDING LAND USES

FIGURE 3

SECTION 3.0 PROJECT DESCRIPTION

3.1.1 Existing Conditions

The project site consists of the existing pool area portion of Washington Park, located on the west side of South Pastoria Avenue, between West Washington Avenue and West McKinley Avenue in the City of Sunnyvale, California. The project site currently is developed with an existing swimming pool, a pool building with locker rooms, restrooms, office, a pool equipment and park maintenance building, bleachers, picnic tables, lights, and horseshoe pits. The pool deck area is separated from an adjacent sidewalk on two sides by a chain link fence. Benches that face the pool area are located behind the sidewalk. Mature trees surround the site on all sides.

The 0.7-acre site is located on the eastern end of Washington Park (11.9-acres total), which is situated in a primarily single-family residential neighborhood. The western portion of the park contains baseball and softball fields, and the eastern portion is more heavily wooded, containing mature trees. The eastern portion also contains tennis and basketball courts, a playground, and passive recreation areas. The subject project site is located in the southeast corner area of the park. Single-family houses are located across South Pastoria Avenue to the east of the site.

Stratford School, a private K-8 school, is located to the south, across West McKinley Avenue from the site. The school property is owned by the Sunnyvale School District and leased to Stratford. A surface parking lot also owned by Sunnyvale School District is located adjacent to the south side of the pool, at the intersection of South Pastoria Avenue and West McKinley Avenue. By agreement with the City, this parking lot is available to serve the park and pool during the times it is not being used by the school.

3.1.2 Proposed Project

The City proposes to redevelop the existing pool facility, including demolition of the existing swimming pool, pool deck, and existing structures. The project would include a new sport pool with teaching area, a multi-purpose building, a locker room building, a pool equipment and park maintenance building, a main entry plaza, a splash pad, partially shaded outdoor seating areas and a picnic area. Access to the new pool equipment building for servicing will be provided from the existing parking lot. Relocation of the existing horseshoe pits within Washington Park will be considered.

The proposed new pool is a 25-yard long combination pool with a 0' to 3'-6"-deep recreation area and a 3'-6" to 7'-deep lap swim area (see Figure 3.0-1). The surrounding deck area includes seating along the east and south sides of the site, with durable shade structures located on the south side to provide a comfortable viewing area for parents to watch their children take swim lessons or play in the pool. A splash pad containing water features and other interactive elements would be located to the west of the pool on the deck area. Additional seating and picnic areas with good sight lines to the pool are located along the western boundary of the site. These areas are shaded naturally by trees and umbrellas at the picnic tables. Lighting for the pool and deck area are also being considered.

The new multi-purpose building contains a reception area, multi-purpose room for community events, and lifeguard and administration areas (see Figure 3.0-2 – 3.0-3). The roof of the multi-purpose building would have solar zones that could potentially contain solar panels to provide either

electricity or hot water generation. A new locker room building containing men's and women's changing rooms, restrooms and showers, as well as two family changing rooms would be constructed to the east of the multi-purpose building.

The swim facility would have a single point of entry, located between the multi-purpose building and the locker room building. The new entry plaza would be accessed from the surrounding park area as well as the public sidewalk along South Pastoria Avenue. It will feature new landscaping and decorative pavement.

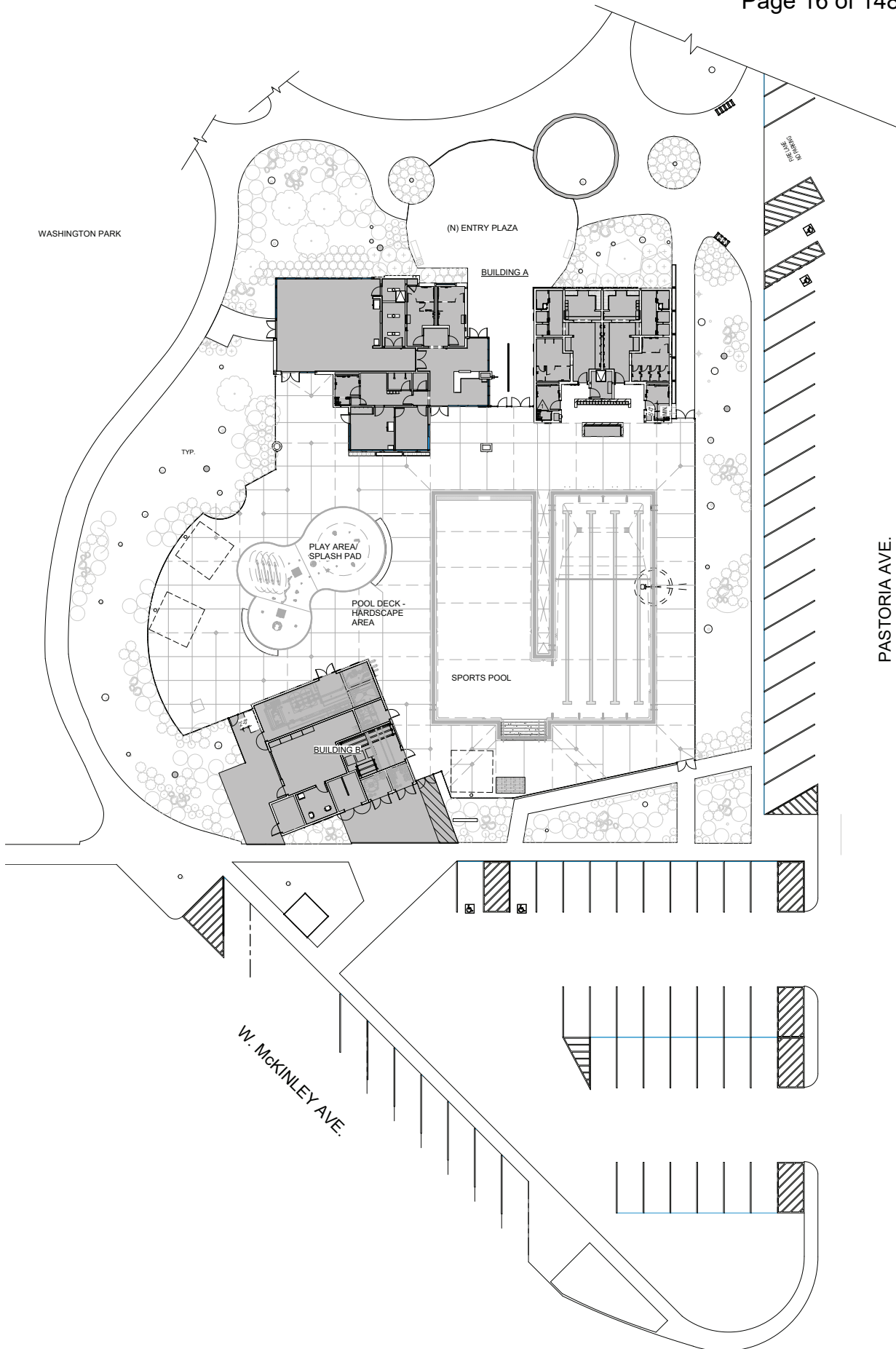
The final building to be constructed would be a new maintenance building in the southwestern portion of the proposed facility. This building would house the pool equipment (pumps and controllers), as well as the park maintenance equipment. It would also contain a park maintenance office, garage space and storage area. Approximately four of the existing trees surrounding the facility are proposed to be removed with the project. The project would install self-treating and self-retaining areas for the retention of stormwater runoff.

3.1.3 Parking and Vehicle Access

The existing parking lot, located adjacent to the pool facility on the south side, is owned by the Sunnyvale School District and contains 32 parking stalls, including two ADA stalls. It has two driveways to allow ingress and egress for vehicles from South Pastoria Avenue. As previously described, the parking lot is available for use by park and pool patrons when not in use by the School District. In addition to this parking lot, there are eight diagonal street parking stalls located on West McKinley Avenue, and 19 diagonal street parking stalls including two ADA stalls on South Pastoria Avenue, adjacent to the site that are available for use by all park patrons. Street parking is also available along the park frontages on Sunset Avenue and West Washington Avenue.

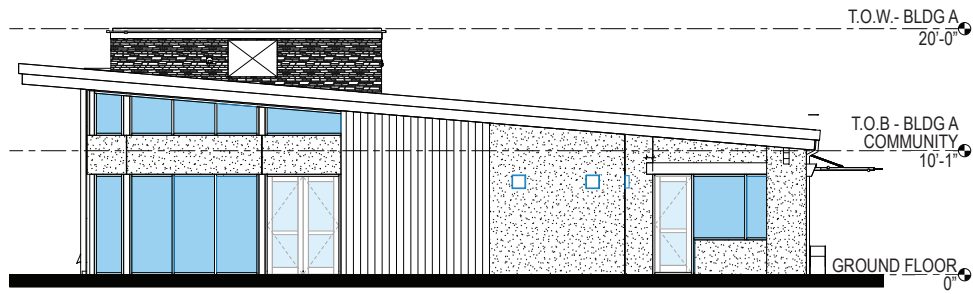
3.1.4 General Plan and Zoning Designations

The project site is currently zoned *PF – Public Facilities*, and has a General Plan designation of *Parks*. Washington Park is identified on the City's Open Space and Facilities Map as a Park Facility, and the pool area is specifically identified on the map as a City Public Facility.

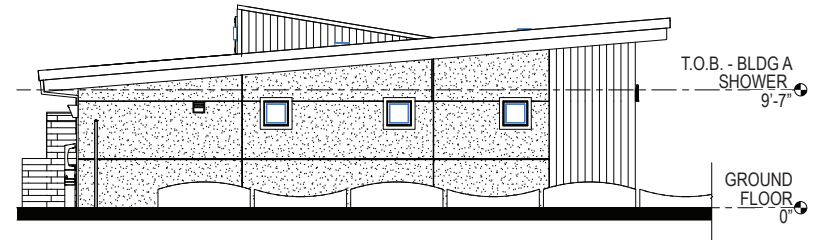


SITE PLAN

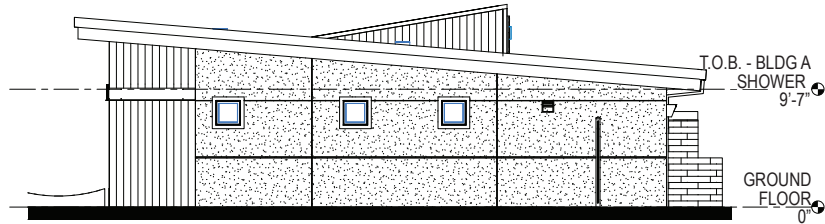
FIGURE 3.0-1



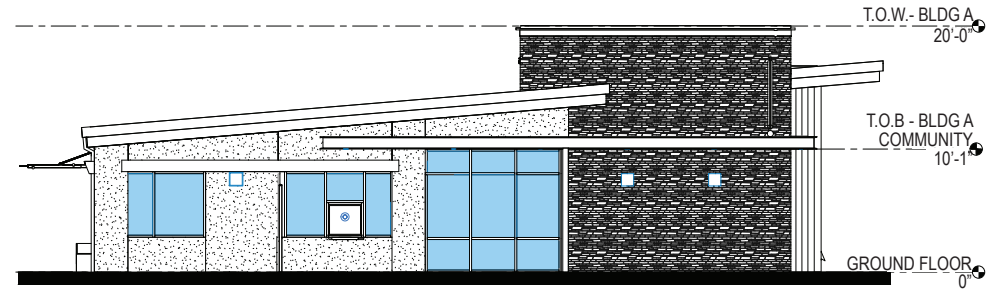
WEST ELEVATION - (BUILDING A)



EAST ELEVATION - (BUILDING A)



WEST ELEVATION - (BUILDING A)



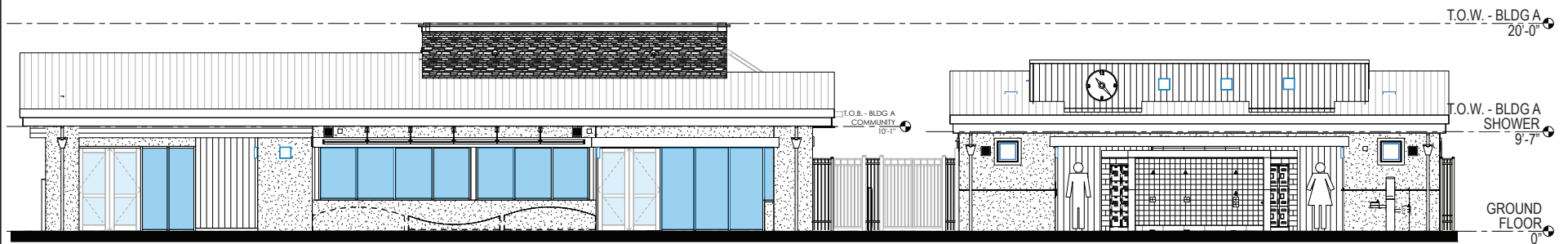
EAST ELEVATION - (BUILDING A)

EAST & WEST BUILDING ELEVATIONS

FIGURE 3.0-2



NORTH ELEVATION - (BUILDING A)



SOUTH ELEVATION - (BUILDING A)

NORTH & SOUTH BUILDING ELEVATIONS

FIGURE 3.0-3

SECTION 4.0 ENVIRONMENTAL SETTING, CHECKLIST, AND IMPACT DISCUSSION

This section presents the discussion of impacts related to the following environmental subjects in their respective subsections:

4.1	Aesthetics	4.10	Land Use and Planning
4.2	Agricultural and Forestry Resources	4.11	Mineral Resources
4.3	Air Quality	4.12	Noise and Vibration
4.4	Biological Resources	4.13	Population and Housing
4.5	Cultural Resources	4.14	Public Services
4.6	Geology and Soils	4.15	Recreation
4.7	Greenhouse Gas Emissions	4.16	Transportation/Traffic
4.8	Hazards and Hazardous Materials	4.17	Utilities and Service Systems
4.9	Hydrology and Water Quality	4.18	Mandatory Findings of Significance

The discussion for each environmental subject includes the following subsections:

- **Environmental Setting** – This subsection 1) provides a brief overview of relevant plans, policies, and regulations that compose the regulatory framework for the project and 2) describes the existing, physical environmental conditions at the project site and in the surrounding area, as relevant.
- **Checklist and Discussion of Impacts** – This subsection includes a checklist for determining potential impacts and discusses the project’s environmental impact as it relates to the checklist questions. For significant impacts, feasible mitigation measures are identified. “Mitigation measures” are measures that will minimize, avoid, or eliminate a significant impact (CEQA Guidelines Section 15370). Each impact is numbered using an alphanumeric system that identifies the environmental issue. For example, **Impact HAZ-1** denotes the first potentially significant impact discussed in the Hazards and Hazardous Materials section. Mitigation measures are also numbered to correspond to the impact they address. For example, **MM NOI-2.3** refers to the third mitigation measure for the second impact in the Noise section.
- **Conclusion** – This subsection provides a summary of the project’s impacts on the resource.

Important Note to the Reader

The California Supreme Court in a December 2015 opinion [*California Building Industry Association v. Bay Area Air Quality Management District*, 62 Cal. 4th 369 (No. S 213478)] confirmed that CEQA, with several specific exceptions, is concerned with the impacts of a project on the environment, not the effects the existing environment may have on a project. Therefore, the evaluation of the significance of project impacts under CEQA in the following sections focuses on

impacts of the project on the environment, including whether a project may exacerbate existing environmental hazards.

The City of Sunnyvale currently has policies that address existing conditions (e.g., air quality, noise, and hazards) affecting a proposed project, which are also addressed in this section. This is consistent with one of the primary objectives of CEQA and this document, which is to provide objective information to decision-makers and the public regarding a project as a whole. The CEQA Guidelines and the courts are clear that a CEQA document (e.g., EIR or Initial Study) can include information of interest even if such information is not an “environmental impact” as defined by CEQA. Therefore, where applicable, in addition to describing the impacts of the project on the environment, this chapter will discuss Planning Considerations that relate to policies pertaining to existing conditions. Such examples include, but are not limited to, locating a project near sources of air emissions that can pose a health risk, in a floodplain, in a geologic hazard zone, in a high noise environment, or on/adjacent to sites involving hazardous substances.

4.1 AESTHETICS

4.1.1 Environmental Setting

4.1.1.1 *Surrounding Visual Character*

The project site is located within Washington Park, a 11.9-acre community park built in 1945 and surrounded by a single-family neighborhood. Residential homes in the neighborhood vary in architectural style, and are primarily one- to two-stories, with driveways on South Pastoria Avenue (see Photo 3). The pool facility is across West McKinley Street from the Stratford School, a private K-8 school (see Photo 7).

The project site is currently developed with an existing swimming pool, pool building, bleachers, picnic tables, and lights. (see Photos 1, 2, and 4). Outside of the northern facing fence of the project site is a horseshoe pit area (see Photo 6). Large, mature trees are scattered throughout the park, and line the project site's northern border facing Washington Park (see Photo 5) near the horseshoe pit area.

4.1.1.2 *Scenic Views and State Scenic Highways*

Due to the relatively flat topography and the existing development in the surrounding area, views of the project site are limited to the immediate vicinity. The project site is not visible from state scenic highways.



Photo 1: View of project site from South Pastoria Avenue.



Photo 2: View of existing pool and bleacher viewing area, facing north.



Photo 3: View of adjacent single-family residences along South Pastoria Avenue, facing south.



Photo 4: Main entrance building to the pool facility, from Washington Park internal pathways.



Photo 5: View of mature trees aligning the north side of the project site.



Photo 6: View of horseshoe pits on the north side of the project site. Views of the bleachers are seen behind the horseshoe pits.



Photo 7: Stratford School across West McKinley Avenue, southwest of the project site.

4.1.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒	1,2,3
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒	1,2,3
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐	1,2,3
d) Create a new source of substantial light or glare which will adversely affect day or nighttime views in the area?	☐	☐	☒	☐	1,2,3

4.1.2.1 *Impacts to Scenic Resources*

The project site is not located within an area containing scenic vistas. There are no scenic resources on or near the site, and the project site is not visible from a state scenic highway. **(No Impact)**

4.1.2.2 *Impacts to Visual Character*

The project site is developed with a community pool and associated buildings. Redevelopment of the project would include demolition of the existing improvements and construction of a new lap pool with teaching area, multi-purpose building, locker room building, pool equipment and park maintenance building, main entry plaza, splash pad, partially shaded outdoor seating areas, and a picnic area. The proposed buildings would reach a maximum height of 20 feet, which is below the three-story, 40 foot maximum height allowed per Sunnyvale Building Code. The proposed pool and buildings would be comparable in size and scale to the existing facility, and would not obscure any scenic vistas, damage scenic resources, or degrade the visual quality of the area. Four trees will be removed for the project, one of which meets the City definition of a Protected Tree and is in very poor overall condition with low suitability for preservation. The new landscaping within the project boundaries includes planting 12 new trees. **(Less Than Significant Impact)**

4.1.2.3 *Light and Glare*

The project would have similar hours of operation as the existing facility (8:30 AM – 8:00 PM, seasonally), although the new facility's schedule could allow earlier hours to facilitate lap swimming. The proposed buildings would include interior lighting and exterior security lighting, similar to the existing buildings' lighting. The new buildings would be constructed with non-reflective materials and would not result in glare to adjacent residences. The project, therefore, would not significantly impact adjacent land uses due to increased nighttime light levels or daytime glare from building materials. **(Less Than Significant Impact)**

4.1.3 Conclusion

Implementation of the proposed project would have a less than significant aesthetic impact. **(Less Than Significant Impact)**

4.2 AGRICULTURAL AND FORESTRY RESOURCES

4.2.1 Environmental Setting

4.2.1.1 *Existing Conditions*

The site is designated as *Park* in the City's General Plan and is zoned *PF – Public Facility*.

According to the Santa Clara County Important Farmland 2014 map, the project site is designated as Urban and Built-Up Land, meaning that the land contains a building density of at least six units per 10-acre parcel or is used for industrial or commercial purposes, golf courses, landfills, airports, or other utilities.¹

The project site is currently developed as a community pool within a community park. There are no agricultural or forestry resources on-site.

4.2.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒	1,2,3,5
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒	1,2,3,4
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒	1,2,3,4
d) Result in a loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒	1,2,3
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒	1,2,3

¹ California Department of Conservation, Division of Land Resource Protection. *Santa Clara County Important Farmland 2012*. Published August 2014. Available at: <ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2012/sc112.pdf>. Accessed August 29, 2017.

4.2.2.1 *Agricultural Resources Impacts*

The project site is not designated, used, or zoned for agricultural purposes. The project site is designated as *Urban and Built-Up Land*, and is not part of a Williamson Act contract. Implementation of the proposed project would not result in impacts to agricultural resources. **(No Impact)**

4.2.2.2 *Forestry Resources Impacts*

The project site and surrounding area is not used or zoned for timberland or forest land. The project would not impact timberland or forest land. **(No Impact)**

4.2.3 Conclusion

Implementation of the proposed project would not result in an impact to agricultural or forestry resources in the area. **(No Impact)**

4.3 AIR QUALITY

4.3.1 Environmental Setting

Air quality and the concentration of a given pollutant in the atmosphere are determined by the amount of pollutant released and the atmosphere's ability to transport and dilute the pollutant. The major determinants of transport and dilution are wind, atmospheric stability, terrain, and for photochemical pollutants, sunshine. The project area is within the southwestern portion of the San Francisco Bay Area Air Basin. The Bay Area Air Quality Management District (BAAQMD) is the regional government agency that monitors and regulates air pollution within the air basin.

4.3.1.1 *Regulatory Framework*

Federal, state, and regional agencies regulate air quality in the Bay Area Air Basin. At the federal level, the USEPA is responsible for overseeing implementation of the Federal Clean Air Act (CAA). The CARB is the state agency that regulates mobile sources throughout the state and oversees implementation of the state air quality laws and regulations, including the California Clean Air Act. The primary agency that regulates air quality in the project area is BAAQMD. BAAQMD has permit authority over stationary sources, acts as the primary reviewing agency for environmental documents, and develops regulations that must be consistent with or more stringent than, federal and state air quality laws and regulations.

Regional air quality management districts such as BAAQMD must prepare air quality plans specifying how state air quality standards would be met. BAAQMD's most recently adopted plan is the Bay Area 2017 Clean Air Plan (2017 CAP). The 2017 CAP focuses on two closely-related BAAQMD goals: protecting public health and protecting the climate. To protect public health, the plan describes how BAAQMD will continue its progress toward attaining all state and federal air quality standards and eliminating health risk disparities from exposure to air pollution among Bay Area communities.

The 2017 CAP includes a wide range of control measures designed to decrease emissions of the air pollutants that are most harmful to Bay Area residents, such as particulate matter, ozone, and toxic air contaminants; to reduce emissions of methane and other "super-GHGs" that are potent climate pollutants in the near-term; and to decrease emissions of carbon dioxide by reducing fossil fuel combustion.

4.3.1.2 *Existing Conditions*

Topography and Climate

The proximity of Santa Clara County to both the Pacific Ocean and San Francisco Bay has a moderating influence on the climate. Northwest winds and northerly winds are most common in the project area, reflecting the orientation of the Bay and the San Francisco Peninsula.

The South Bay has significant terrain features that affect air quality. The Santa Cruz Mountains and Diablo Range on either side of the South Bay restrict horizontal dilution. This alignment of the terrain also channels winds from the north to south, carrying pollution from the northern San Francisco Bay Peninsula toward Santa Clara County.

Regional and Local Criteria Pollutants

Major criteria pollutants, listed in “criteria” documents by the U.S. Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) include ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, and suspended particulate matter (PM). These pollutants can have health effects such as respiratory impairment and heart/lung disease symptoms. Ozone also damages leaf tissue in trees and other plants.

Violations of ambient air quality standards are based on air pollutant monitoring data and are judged for each air pollutant. The Bay Area as a whole does not meet state or federal ambient air quality standards for ground level ozone or state standards for PM₁₀ and PM_{2.5}. The area is considered in attainment or unclassified for all other pollutants.

Local Community Risks/Toxic Air Contaminants and Fine Particulate Matter

Besides criteria air pollutants, there is another group of substances found in ambient air referred to as Toxic Air Contaminants (TACs). These contaminants tend to be localized and are found in relatively low concentrations in ambient air; however, they can result in adverse chronic health effects if exposure to low concentrations occurs for long periods.

Fine Particulate Matter (PM_{2.5}) is a complex mixture of substances that includes elements such as carbon and metals; compounds such as nitrates, organics, and sulfates; and complex mixtures such as diesel exhaust and wood smoke. Long-term and short-term exposure to PM_{2.5} can cause a wide range of health effects. In addition to anthropogenic sources, there are also natural or “biogenic” sources of some pollutants. For example, some species of trees and vegetation emit volatile organic compounds (VOCs) that contribute to formation of ozone in the atmosphere.²

Common stationary source types of TACs and PM_{2.5} include gasoline stations, dry cleaners, and diesel backup generators which are subject to permit requirements. The other, often more significant, common source is motor vehicles.

Sensitive Receptors

BAAQMD defines sensitive receptors as facilities where sensitive receptor population groups (children, the elderly, the acutely ill, and the chronically ill) are likely to be located. These land uses include residences, schools, playgrounds, child-care centers, retirement homes, convalescent homes, hospitals, and medical clinics. The sensitive receptors nearest the project site are the residences located across South Pastoria Avenue, approximately 70 feet east of the project site, and the students of Stratford School, located across West McKinley Avenue, approximately 70 feet from the site.

² BAAQMD. 2017. *Bay Area 2017 Clean Air Plan*.

4.3.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐	1,2,6
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☒	☐	☐	1,2,6
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is classified as non-attainment under an applicable federal or state ambient air quality standard including releasing emissions which exceed quantitative thresholds for ozone precursors?	☐	☐	☒	☐	1,2,6
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐	1,2,6
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒	1,2,6

4.3.2.1 *Air Quality Impact Thresholds of Significance*

As discussed in CEQA Guidelines Section 15064(b), the determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the Lead Agency and must be based to the extent possible on scientific and factual data. The City of Sunnyvale has carefully considered the thresholds updated by BAAQMD in May 2017 and regards these thresholds to be based on the best information available for the San Francisco Bay Area Air Basin and conservative in terms of the assessment of health effects associated with TACs and PM_{2.5}. The BAAQMD CEQA Air Quality thresholds used in this analysis are identified in Table 4.3-1 on the following page.

Table 4.3-1: Thresholds of Significance Used in Air Quality Analyses			
Pollutant	Construction	Operation	
	Average Daily Emissions (pounds)	Average Daily Emissions (pounds)	Maximum Annual Emissions (tons)
ROG, NO _x	54	54	10
PM ₁₀	82 (exhaust)	82	15
PM _{2.5}	54 (exhaust)	54	10
Fugitive Dust (PM ₁₀ /PM _{2.5})	Implement Best Management Practices	None	None
Risk and Hazards for New Sources and Receptors (Project)	Same as operational threshold	- Increased cancer risk of >10.0 in one million - Increased non-cancer risk of > 1.0 Hazard Index (chronic or acute) - Ambient PM_{2.5} increase: > 0.3 µ/m³ (Zone of influence: 1,000-foot radius from property line of source or receptor)	
Risk and Hazards for New Sources and Receptors (Cumulative)	Same as operational threshold	- Increased cancer risk of >100 in one million - Increased non-cancer risk of > 10.0 Hazard Index (chronic or acute) - Ambient PM_{2.5} increase: > 0.8 µ/m³ (Zone of influence: 1,000-foot radius from property line of source or receptor)	
Sources: BAAQMD CEQA <i>Thresholds Options and Justification Report (2009)</i> and BAAQMD CEQA <i>Air Quality Guidelines</i> (dated May 2017).			
¹ For stationary source projects, modeling for CO concentrations is only required for projects emitting 100 tons per year or more of CO. Projects emitting less are assumed to not exceed the CO concentration threshold.			

4.3.2.2 Criteria Pollutants

Operational Criteria Pollutants

According to the BAAQMD thresholds listed in Table 4.3-1, above, a project that generates more than 54 pounds per day of ROG (reactive organic gases), NO_x, or PM_{2.5}; or 82 pounds per day of PM₁₀ would be considered to have a significant impact on regional air quality. BAAQMD developed screening criteria that provide Lead Agencies with a conservative indication of whether a proposed project could result in a significant operational impact (e.g., daily or annual emissions above these thresholds). The proposed project would construct a pool and associated buildings on an approximately 1.7-acre site, which is well below the most stringent screening criteria of 2,613 acres of City park for operational impacts.³ Based on the BAAQMD screening tables, the project would not result in a significant impact to regional air quality in the San Francisco Bay Area Air Basin due to operational criteria pollutant emissions. **(Less Than Significant Impact)**

³ Bay Area Air Quality Management District. *CEQA Air Quality Guidelines*. Table 3-1, Operational-Related Criteria Air Pollutant and Precursor Screening Level Sizes. Updated May 2011. p. 3-2.

Construction Criteria Pollutants and Dust

Construction activities such as earthmoving, construction vehicle traffic, and wind blowing over exposed earth would generate exhaust emissions and fugitive particulate matter emissions that affect local and regional air quality. Construction activities are also a source of organic gas emissions. Solvents in adhesives, non-water based paints, thinners, some insulating materials, and caulking materials would evaporate into the atmosphere and would participate in the photochemical reaction that creates urban ozone. Asphalt used in paving is also a source of organic gases for a short time after its application.

BAAQMD has established screening thresholds for the evaluation of a project's emissions of criteria pollutants during construction. If a project is below the screening threshold size, it can be assumed the project would not result in a significant impact related to construction criteria pollutant emissions. The screening threshold for a city park is 67 acres. The project site is approximately 1.7 acres, and is therefore below the screening threshold. **(Less Than Significant Impact)**

For all proposed projects, BAAQMD recommends the implementation of Basic Construction Mitigation Measures, whether or not construction related emissions exceed applicable thresholds of significance for construction emissions. The proposed project includes basic construction mitigation measures, listed as best management practices (BMPs), to reduce project construction dust impacts. These measures are considered standard conditions by the City and are listed below.

Consistent with City policies, the project would be developed in conformance with the following standard BAAQMD dust control measures during all phases of construction on the project site to reduce dustfall emissions:

- All active construction areas shall be watered twice daily or more often if necessary. Increased watering frequency shall be required whenever wind speeds exceed 15 miles-per-hour.
- Pave, apply water three times daily, or apply non-toxic soil stabilizers on all unpaved access roads and parking and staging areas at construction sites.
- Cover stockpiles of debris, soil, sand, and any other materials that can be windblown. Trucks transporting these materials shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- Subsequent to clearing, grading, or excavating, exposed portions of the site shall be watered, landscaped, treated with soil stabilizers, or covered as soon as possible. Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas and previously graded areas inactive for 10 days or more.
- Installation of sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Replanting of vegetation in disturbed areas as soon as possible after completion of construction.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes. Clear signage shall be provided for construction workers at all access points.

- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Post a publicly visible sign with the telephone number and person to contact at the City of Sunnyvale regarding dust complaints. This person shall respond and take corrective action within 48 hours. BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

Construction TACs

In 1998, the California Air Resources Board identified particulate matter from diesel fueled engines as a TAC. Health risks from TACs are a function of both concentration and duration of exposure. Typically, if heavy equipment use does not occur within 300 feet of the same receptor for six months or more, then the associated health risk is considered less than significant. The proposed project will require the use of various diesel-powered vehicles and equipment. As described in *Section 4.12*, the use of heavy equipment during project construction is expected to last a total of approximately nine to 12 months. Given the proximity and location of the proposed project to existing sensitive receptors in the project area, sensitive receptors could be exposed to substantial TAC concentrations.

Impact AQ-1: The use of various diesel-powered vehicles and equipment during project construction could expose adjacent sensitive receptors to substantial TAC concentrations. **(Significant Impact)**

Mitigation Measures:

The following mitigation measure would reduce construction TAC impacts to sensitive receptors to a less than significant level:

MM AQ-1.1: Grading equipment used on-site for more than two days shall meet Tier 2 emission standards.⁴

With implementation of MM AQ-1.1, the project would not expose sensitive receptors to substantial pollutant concentrations. **(Less Than Significant With Mitigation Incorporated)**

4.3.2.3 Odors

The project does not include any odor-causing operations, and any odors emitted during construction would be temporary and localized. **(Less Than Significant Impact)**

⁴ Tier 1-3 Emission Standards: The 1998 non-road engine regulations were structured as a 3-tiered progression. Each tier involved a phase-in (by horsepower rating) over several years. Tier 1 standards were phased-in from 1996 to 2000. The more stringent Tier 2 standards took effect from 2001 to 2006, and yet more stringent Tier 3 standards phased-in from 2006 to 2008 (Tier 3 standards applied only for engines from 37 to 560 kW). Available at: <http://www.dieselnet.com/standards/us/nonroad.php> Accessed August 29, 2017.

4.3.3 Conclusion

With implementation of standard measures and the identified mitigation measure, the project would result in less than significant air quality impacts. **(Less Than Significant With Mitigation Incorporated)**

4.4 BIOLOGICAL RESOURCES

The following discussion is based, in part, on an Arborist Report prepared for the project by *Fujitrees Consulting* in February 2017. A copy of the report is attached as Appendix A of this Initial Study.

4.4.1 Environmental Setting

4.4.1.1 *Regulatory Framework*

City of Sunnyvale Tree Preservation Ordinance

The City of Sunnyvale Tree Preservation Ordinance defines a protected tree as any tree of significant size. A significant size single-trunk tree is any tree measuring 38 inches or more in circumference when measured at four and one-half feet above the ground surface. A significant size multi-trunk tree is any tree with at least one trunk measuring 38 inches or more in circumference or the cumulative measurement of all the trunks added together that equals 113 inches or greater. A tree removal permit is required from the City for the removal of any significant size tree.

Special Status Animal Species

Special status species are those plants and animals listed under the State and Federal Endangered Species Acts (including candidate species); plants listed on the California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California (1994); and animals designated as Species of Special Concern by the California Department of Fish and Wildlife. Most special status animal species occurring in the Bay Area use habitats that are not present on the project site. Salt marsh, freshwater marsh, and serpentine grassland habitats are not present on the project site.

Because the project site has been developed as an urban area for more than 40 years and the native vegetation of the area is no longer present on-site, native wildlife species are no longer on-site and have been supplanted by species that are more compatible with an urbanized area.

4.4.1.2 *Existing Conditions*

The project site is located within a highly urbanized part of Sunnyvale. The site is currently developed with the existing pool facility, and is located within the greater Washington Park. There are no waterways, wetlands, or other sensitive habitats on or adjacent to the project site. There are no open fields or grassy areas on-site. Mature trees and ornamental landscaping are located in and around the project site (see Photos 1, 2 and 5 in *Section 4.1*). Habitats in developed areas, such as the project site, are extremely low in species diversity. Species that use this habitat are predominantly urban adapted non-native birds and animals.

The project site is not located within a Habitat Conservation Plan area or a Natural Communities Conservation Strategy area.

Trees

The project site contains 35 trees. The arborist report prepared for the project evaluated 32 of the 35 trees on-site. The three remaining trees are less than 13 inches in circumference and therefore, are

not considered to be trees per Sunnyvale Municipal Code (SMC 19.94.030). Table 4.4-1 displays the surveyed trees on-site.

Table 4.4-1: Trees On-Site				
Tree Tag Number	Common Name	Tree Species	Circumference	Protected Tree
310	Camphor	<i>Cinnamomum camphora</i>	113.7	Yes
311	Tree fern	<i>Alsophila australis</i>	>13	No
312	Tree fern	<i>Alsophila australis</i>	>13	No
313	Buckeye	<i>Aesculus spp.</i>	26.1	No
314	Buckeye	<i>Aesculus spp.</i>	29.9	No
315	Buckeye	<i>Aesculus spp.</i>	33.9	No
316	Tree fern	<i>Alsophila australis</i>	>13	No
317	Camphora	<i>Cinnamomum camphora</i>	136.7	Yes
318	Camphora	<i>Cinnamomum camphora</i>	116.9	Yes
319	Southern magnolia	<i>Magnolia grandiflora</i>	72.3	Yes
320	Camphora	<i>Cinnamomum camphora</i>	35.3	Yes
321	Beech	<i>Fagus spp.</i>	30.8	No
322	Maidenhair tree	<i>Ginkgo biloba</i>	93.9	Yes
323	Coast redwood	<i>Sequoia sempervirens</i>	86.7	Yes
324	Coast live oak	<i>Quercus agrifolia</i>	99.0	Yes
325	Coast redwood	<i>Sequoia sempervirens</i>	72.6	Yes
326	Coast redwood	<i>Sequoia sempervirens</i>	113.1	Yes
327	Coast redwood	<i>Sequoia sempervirens</i>	59.1	Yes
328	Coast redwood	<i>Sequoia sempervirens</i>	89.5	Yes
329	Coast redwood	<i>Sequoia sempervirens</i>	107.8	Yes
330	Coast redwood	<i>Sequoia sempervirens</i>	115	Yes
331	Camphora	<i>Cinnamomum camphora</i>	67.5	Yes
332	Camphora	<i>Cinnamomum camphora</i>	99.6	Yes
333	Camphora	<i>Cinnamomum camphora</i>	61.3	Yes
334	Holly oak	<i>Quercus ilex</i>	53.4	Yes
335	Holly oak	<i>Quercus ilex</i>	62.2	Yes
336	Evergreen pear	<i>Pyrus Kawakamii</i>	~20.4	No

4.4.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
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 Wildlife (CDFW) or United States Fish and Wildlife Service (USFWS)?	☐	☒	☐	☐	1,2,3
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 CDFW or USFWS?	☐	☐	☐	☒	1,2,3
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒	1,2,3
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, impede the use of native wildlife nursery sites?	☐	☐	☐	☒	1,2,3
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒	1,2,3,7
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?	☐	☐	☐	☒	1,2,3

4.4.2.1 *Biological Impacts*

The project site is located within Washington Park, a neighborhood-serving community park located within a single-family residential neighborhood. While the park does have mature trees that provide nesting habitat for species, there are no sensitive habitats or habitats suitable for special-status plants or wildlife species that occur within or adjacent to the project site.

At the start of construction, raptors and nesting birds protected under the Federal Migratory Bird Treaty Act (MBTA) and California Department of Fish and Wildlife (CDFW) Code may be using

trees on-site and within the greater Washington Park for nesting and foraging habitat. Any loss of fertile eggs, nesting raptors, or any activities resulting in nest abandonment would constitute a significant impact.

Impact BIO-1: Construction of the project could result in impacts to nesting migratory birds. **(Significant Impact)**

Mitigation Measures: The following mitigation measures will be implemented during construction to reduce impacts to nesting birds to a less than significant level.

MM BIO-1.1: Construction activities shall be scheduled to avoid the nesting season to the extent feasible. If feasible, construction activities shall be commenced prior to the start of nesting season to help preclude nesting. The nesting season for most birds and raptors in the San Francisco Bay area extends from February 1 through August 31.

MM BIO-1.2: If it is not possible to schedule the start of construction activities between September 1 and January 31, a qualified ornithologist shall be contracted to conduct a preconstruction survey for nesting raptors and other migratory breeding birds within on-site trees as well as all trees within 250 feet of the site to identify active bird nests that may be disturbed during project construction. Between February 1 and April 30, pre-construction surveys shall be completed no more than 7 days prior to the initiation of demolition/construction activities (including tree removal and pruning). During this survey, the ornithologist shall inspect all trees and other possible nesting habitats in and immediately adjacent to the construction areas for nests. If construction has commenced prior to February 1, construction activities must be continuously maintained on the site through August 31 in order to deter bird nesting on or adjacent to the site during the construction period.

If the survey does not identify any nesting birds that would be affected by construction activities, no further mitigation is required.

MM BIO-1.3: If an active nest is found sufficiently close to work areas to be disturbed by these activities, the ornithologist (in consultation with the California Department of Fish and Wildlife) shall designate a construction-free buffer zone (typically 250 feet for raptors and 100 feet for non-raptors) to be established around the nest to ensure that no nests of species protected by the Federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code will be disturbed during construction activities. The buffer shall remain in place until the breeding season has ended and/or a qualified ornithologist has determined that the nest is no longer active.

With implementation of MM BIO-1.1 – 1.3, the project would not result in a significant impact to nesting birds or raptors. **(Less Than Significant With Mitigation Incorporated)**

Other than the potential for nesting birds to occur on the site, the project site does not support any watercourse, river, or provide habitat that facilitates the movement of any native resident or migratory fish or wildlife species. **(No Impact)**

4.4.2.2 *Trees*

Implementation of the project would result in the loss of four trees on-site. Trees 314, 315, 323 and 336 shown in Table 4.4-1 are expected to be removed with the project. These trees are in fair to very poor overall condition and three of them have a low suitability for preservation. Of the four trees that will be removed, only one meets the City definition of a Protected Tree, and a total of 12 new trees will be planted with the project. During project construction, the trees to be maintained would be exposed to construction activities which may impact the health of the trees. The project includes a Tree Protection Plan, prepared as part of the arborist report for the project, which would reduce potential impacts to trees during construction to a less than significant level. A copy of the Tree Protection Plan can be found in Appendix A.

With the proposed planting of the 12 replacement trees, and implementation of the Tree Protection Plan, which is a condition of project approval, the project would have a less than significant impact to trees on-site. **(Less Than Significant Impact)**

4.4.3 Conclusion

With implementation of Project Conditions and Mitigation Measures 1.1 – 1.3, the project would result in a less than significant impact to biological resources. **(Less Than Significant Impact with Mitigation Incorporated)**

4.5 CULTURAL RESOURCES

4.5.1 Environmental Setting

4.5.1.1 *Regulatory Framework*

Cultural resources are evidence of past human occupation and activity and include both historical and archaeological resources. These resources may be located above ground, underground, or underwater and have significance in history, prehistory,⁵ architecture or culture of the nation, State of California, or local or tribal communities. Cultural resources are generally identified in historic or cultural resources inventories maintained by the county or local cities or towns, and also on the California Register of Historical Resources (California Register) and the National Register of Historic Places (National Register).

Paleontological resources are fossils; the remains or traces of prehistoric life preserved in the geological record. They range from well-known and well publicized fossils (such as mammoth and dinosaur bones) to scientifically important fossils (such as paleobotanical remains, trace fossils, and microfossils). Potentially sensitive areas with fossil bearing sediments near the ground surface in areas of Santa Clara County are generally in or adjacent to foothill areas rather than the younger Holocene age deposits on the valley floor. Geologic units of the Holocene age are generally not considered sensitive for paleontological resources, because biological remains younger than 10,000 years are not usually considered fossils.

4.5.1.2 *Existing Conditions*

Washington Park has been developed as a community park since 1945. The existing Washington Park pool facility was constructed in 1955. There are no existing conditions or physical evidence on-site that would suggest the presence of prehistoric resources on-site. The site is not in proximity to any local waterways.

While the structures on-site are over 50 years old, they are not listed on the City's Heritage resources Inventory.⁶ Therefore, none of the existing buildings meet the criteria to qualify as a historic resource under CEQA (Section 15064.5).

⁵ Events of the past prior to written records are considered prehistory.

⁶ City of Sunnyvale. *Historical Resources Inventory*. 1988.

4.5.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
a) Cause a substantial adverse change in the significance of an historical resource as defined in CEQA Guidelines Section 15064.5?	☐	☐	☒	☐	1,2,3
b) Cause a substantial adverse change in the significance of an archaeological resource as defined in CEQA Guidelines Section 15064.5?	☐	☒	☐	☐	1,2,3
c) Directly or indirectly destroy a unique paleontological resource or site, or unique geologic feature?	☐	☐	☒	☐	1,2,3
d) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐	1,2,3
e) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:					
1. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k); or	☐	☐	☒	☐	1,2,3
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying this criteria, the significance of the resource to a California Native American tribe shall be considered.	☐	☐	☒	☐	1,2,3

4.5.2.2 *Prehistoric, Historic, Archaeological and Paleontological Resources*

Construction of the proposed project would not remove any buildings/structures/resources that have been identified as a historical resource or Historic or Commemorative site recognized by the City of Sunnyvale. Implementation of the project, therefore, would not impact historic resources in the City of Sunnyvale. **(Less Than Significant Impact)**

Although unlikely, unknown buried cultural resources could potentially be located on-site. Excavation activities may encounter unknown resources, which would result in a significant impact.

Impact CUL-1: Project implementation could result in significant impacts to buried cultural resources, if encountered. **(Significant Impact)**

Mitigation Measures: The following mitigation measures shall be implemented to reduce impacts to cultural resources to a less than significant level:

MM CUL-1.1: In the event of the discovery of prehistoric or historic archaeological deposits or paleontological deposits during construction, work shall be halted within 50 feet of the discovery and a qualified professional archaeologist (or paleontologist, as applicable) shall examine the find and make appropriate recommendations regarding the significance of the find and the appropriate mitigation. The recommendation shall be implemented and could include collection, recordation, and analysis of any significant cultural materials.

MM CUL-1.2: Pursuant to Section 7050.5 of the Health and Safety Code and Section 5097.94 of the Public Resources Code of the State of California:

- In the event of the discovery of human remains during construction, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains. The Santa Clara County Coroner shall be notified and shall make a determination as to whether the remains are Native American. If the Coroner determines that the remains are not subject to his authority, he shall notify the Native American Heritage Commission who shall attempt to identify descendants of the deceased Native American. If no satisfactory agreement can be reached as to the disposition of the remains pursuant to this State law, the City shall re-inter the human remains and items associated with Native American burials on the property in a location not subject to further subsurface disturbance.

MM CUL-1.3: If cultural resources are encountered, a final report summarizing the discovery of cultural materials shall be submitted to the Director of Public Works prior to issuance of final building and occupancy permits. This report shall contain a description of the mitigation program that was implemented (e.g., monitoring and testing program), a list of the resources found, a summary of the resources analysis methodology and conclusion, and a description of the disposition/curation of the resources. The report shall

verify completion of the mitigation program to the satisfaction of the Director Public Works.

With implementation of MM CUL-1.1 – 1.3, the proposed project would not result in significant impacts to subsurface cultural materials. **(Less Than Significant with Mitigation Incorporated)**

Assembly Bill (AB) 52 was approved by the Governor on September 25, 2014. It adds a new category of resources to CEQA that must be considered during project planning – Tribal Cultural Resources. It also establishes a framework and timeline for consultation. AB 52 applies to projects that have a Notice of Preparation or a notice of a Negative Declaration or Mitigated Negative Declaration filed on or after July 1, 2015.

AB 52 requires lead agencies to conduct formal consultations with California Native American tribes during the CEQA process to identify tribal cultural resources that may be subject to significant impacts by a project. Where a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document must discuss the impact and whether feasible alternatives or mitigation measures could avoid or substantially lessen the impact.

This consultation requirement applies to tribes that have sent written requests for notification of projects to the lead agency. To date, the City of Sunnyvale has not received any written requests for notification of consultation opportunities from any Native American tribal representatives.

Conformance with the provisions of AB 52, as described above, would result in the project having less than significant impacts on tribal cultural resources. **(Less Than Significant Impact)**

4.5.3 Conclusion

With incorporation of Mitigation Measures CUL-1.1 – 1.3, project implementation would result in a less than significant impact to cultural resources. **(Less Than Significant with Mitigation Incorporated)**

4.6 GEOLOGY AND SOILS

The following discussion is based, in part, on a US Geologic Survey Soil Report prepared in August 2017. The report is attached as Appendix B of this Initial Study.

4.6.1 Environmental Setting

The project site is located in the Santa Clara Valley, an alluvial basin, bounded by the Santa Cruz Mountains to the west, the Hamilton/Diablo Range to the east, and the San Francisco Bay to the north. The Santa Clara Valley was formed when sediments derived from the Santa Cruz Mountains and the Hamilton/Diablo Range were exposed by the continued tectonic uplift and regression of the inland sea that had previously inundated the area.

4.6.1.1 *Existing Conditions*

Soils

The project site is relatively flat with slopes of zero to two percent. The entire project site is underlain by soils of the Urban land-Stevens Creek complex, composed primarily of silty clay loam. Stevens Creek soils are well drained, and have a moderate to high shrink-swell potential.

Seismicity and Seismic-Related Hazards

The project site is located within the seismically active San Francisco Bay Area region. There is a 72 percent probability that one or more major earthquakes (6.7 in magnitude or greater) will occur in the region by 2044.⁷ Although the site is within a seismically active region, it is not located within a designated Alquist-Priolo Earthquake Fault Zone⁸ and no known active or potentially active faults exist on the site. Since no known surface active faults cross the site, fault rupture is not a significant geologic hazard on the site.

Significant active faults (which have a capability generating an earthquake with a magnitude of 6.7 or greater)⁹ within the region include the Hayward Fault, Calaveras Fault, and San Andreas Fault, located approximately seven miles northeast, nine miles east, and 11 miles west of the site, respectively. Due to the proximity of the project site to these active or potentially active faults, ground shaking, ground failure, and/or liquefaction as a result of an earthquake could cause damage to structures on the site.

⁷ US Geological Survey. *UCERF3: A New Earthquake Forecast for California's Complex Fault System*. Fact Sheet 2015–3009. March 2015. Available at: <<http://pubs.usgs.gov/fs/2015/3009/pdf/fs2015-3009.pdf>>. Accessed September 21, 2017.

⁸ California Geological Survey. Regional Geologic Hazards and Mapping Program. *Alquist-Priolo*. Available at: <<http://www.conservation.ca.gov/cgs/rghm/ap/Pages/index.aspx>>. Accessed September 21, 2017.

⁹ Active faults are ones that have ruptured in the last 11,000 years. California Geological Survey. *Alquist-Priolo Earthquake Fault Zoning Act*. Available at: <<http://www.conservation.ca.gov/cgs/rghm/ap/Pages/main.aspx>>. Accessed September 21, 2017.

Liquefaction

Liquefaction is a result of seismic activity and is characterized as the transformation of loose, water-saturated soils from a solid state to a liquid state after ground shaking. There are many variables that contribute to liquefaction, including the age of the soil, soil type, soil cohesion, soil density, and groundwater level. Soil susceptible to liquefaction includes loose to medium dense sand and gravel, low-plasticity silt, and some low-plasticity clay deposits. Liquefaction can result in ground surface deformations and settlement.

The project site is located within a State of California Hazard Zone for moderate liquefaction¹⁰ and also within a County of Santa Clara Liquefaction Hazard Zone.¹¹

4.6.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:					
1. Rupture of a known earthquake fault, as described on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (refer to Division of Mines and Geology Special Publication 42.)?	☐	☐	☒	☐	1,2,3,10
2. Strong seismic ground shaking?	☐	☐	☒	☐	1,2,3,10
3. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐	1,2,3,8 10
4. Landslides?	☐	☐	☐	☒	1,2,3
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒	1,2,3
c) Be located on a geologic unit or soil that is unstable, or that will become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒	1,2,3,8 10
d) Be located on expansive soil, as defined in Section 1803.5.3 of the California Building Code (2016), creating substantial risks to life or property?	☐	☐	☐	☒	1,2,3,8

¹⁰ Association of Bay Area Governments. Resilience Program. *Liquefaction: Official California Seismic Hazards Zone Map*. Available at: <<http://resilience.abag.ca.gov/earthquakes/>>. Accessed May 14, 2015.

¹¹ County of Santa Clara. *County Geologic Hazard Zones*. Map 11. February 2002.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒	1

4.6.2.2 *Soils Impacts*

The proposed project would not be exposed to substantial slope instability, erosion, or landslide-related hazards due to the flat topography of the project area. Soils within the project area, however, have a moderate to high expansion potential. The presence of expansive soil could damage the future improvements on-site. The proposed improvements on-site would be constructed based on applicable standard practices in the California Building Code, as adopted by the City of Sunnyvale, which would reduce expansive soil impacts to a less than significant level. **(Less Than Significant Impact)**

The proposed project would maintain the existing facility's connection to the City's existing sanitary sewers. The project, therefore, would not result in impacts related to alternative wastewater systems. **(No Impact)**

The project site is not located near any open-facing slopes that would result in a landslide. **(No Impact)**

4.6.2.3 *Seismic and Seismic-Related Impacts*

As stated above, the project site is located within the seismically active San Francisco Bay region. While the site is not located on or near a major earthquake fault, severe ground shaking is probable during the useful life of the proposed buildings. The buildings would be designed and built in conformance with the requirements of the 2013 California Building Code to reduce geologic hazard conditions (severe ground shaking and moderate liquefaction potential) on the project site. **(Less Than Significant Impact)**

4.6.2.4 *Construction Impacts*

Construction activities (grading) could temporarily increase sedimentation and erosion by exposing on-site soils to wind and runoff. The project would incorporate the following Best Management Practices (BMPs) to reduce potential construction-related impacts to a less than significant level:

- All excavation and grading work will be scheduled in dry weather months, or construction sites will be weatherized to minimize or avoid erosion.
- Stockpiles and excavated soils will be covered with secured tarps or plastic sheeting.

With implementation of standard BMPs, the project would result in a less than significant impacts to soils during project construction. **(Less Than Significant Impact)**

4.6.3 Conclusion

Implementation of standard construction BMPs will reduce geologic and soils impacts to a less than significant level. **(Less Than Significant Impact)**

4.7 GREENHOUSE GAS EMISSIONS

4.7.1 Environmental Setting

Unlike emissions of criteria and toxic air pollutants, which are discussed in *Section 4.3 Air Quality* and have local or regional impacts, emissions of greenhouse gases have a broader, global impact. Global warming associated with the “greenhouse effect” is a process where greenhouse gases accumulating in the atmosphere contribute to an increase in the temperature of the earth’s atmosphere over time. The principle greenhouse gases contributing to global warming and associated climate change are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated compounds. Greenhouse gas emissions contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial, and agricultural sectors.

4.7.1.1 *Regulatory Framework*

State of California

AB 32 and Related Executive Orders and Regulations

The Global Warming Solutions Act [also known as “Assembly Bill (AB) 32”] sets the State of California’s 2020 greenhouse gas emissions reduction goal into law. The Act requires that the greenhouse gas emissions in California be reduced to 1990 levels by 2020. Prior to adoption of AB 32, the Governor of California also signed Executive Order S-3-05 which identified CalEPA as the lead coordinating state agency for establishing climate change emission reduction targets in California. Under Executive Order S-3-05, the State plans to reduce greenhouse gas emissions to 80 percent below 1990 levels by 2050. Additional state law and regulations related to the reduction of greenhouse gas emissions includes SB 375, the Sustainable Communities and Climate Protection Act (see discussion below), the State’s Renewables Portfolio Standard for Energy Standard (Senate Bill 2X), and fleet-wide passenger car standards (Pavley Regulations).

In December 2008, the CARB approved the Climate Change Scoping Plan, which proposes a comprehensive set of actions designed to reduce California’s dependence on oil, diversify energy sources, save energy, and enhance public health, among other goals. Per AB 32, the Scoping Plan must be updated every five years to evaluate the mix of AB 32 policies to ensure that California is on track to achieve the 2020 greenhouse gas reduction goal. On May 22, 2014, the First Update to the Scoping Plan was approved by the CARB. The First Update identifies opportunities to leverage existing and new funds to further reduce greenhouse gas emissions through strategic planning and targeted low carbon investments. In addition, the First Update defines climate change priorities for CARB for the next five years and sets the groundwork to achieve long-term goals set forth in Executive Orders S-3-05 and B-16-2012.¹²

¹² California Air Resources Board. “First Update to AB 32 Scoping Plan.” May 27, 2014. Accessed July 27, 2017. Available at: <http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm>.

Regional and Local Plans

2017 Bay Area Clean Air Plan

BAAQMD and other agencies prepare clean air plans as required under the state and federal Clean Air Acts. The Bay Area 2017 Clean Air Plan (2017 CAP) focuses on two closely-related BAAQMD goals: protecting public health and protecting the climate. Consistent with the GHG reduction targets adopted by the state of California, the 2017 CAP lays the groundwork for BAAQMD's long-term effort to reduce Bay Area GHG emissions 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050. The 2017 CAP includes a wide range of control measures designed to decrease emissions of methane and other "super-GHGs" that are potent climate pollutants in the near-term; and to decrease emissions of carbon dioxide by reducing fossil fuel combustion.

City of Sunnyvale Climate Action Plan

The City of Sunnyvale adopted a Climate Action Plan (CAP) on May 20, 2014. The intent of the CAP is to reduce the City's overall GHG emissions by more than 15 percent by the year 2020 through identified goals and measures for City facilities and private development. This reduction goal exceeds the State's reduction goals established by AB 32. Reduction measures include providing more open space, decreasing energy consumption, providing a sustainable energy portfolio, decreasing water consumption, reducing landfill waste, minimizing emissions from off-road lawn/garden and construction equipment, increasing awareness of sustainability issues, improving non-auto mobility, and optimizing vehicular travel.

Measures found in the CAP that are applicable to the proposed project include:

- Policy EC-1.1: Replace City-owned streetlights and park and parking lot lighting with energy-efficient lighting such as light-emitting diode (LED) or induction lights as technology becomes more affordable and when return on investment is less than five years.
- Policy EC-2.2: Continue to require energy-efficient siting of buildings. Buildings should be oriented and landscape material should be selected to provide maximum energy efficiency for the buildings.
- Policy OR-2.1: Idling times will be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]), or less. Clear signage will be provided at all access points to remind construction workers of idling restrictions.
- Policy OR-2.2: Construction equipment must be maintained per manufacturer's specifications.
- Policy OR-2.3: Planning and Building staff will work with project applicants to limit GHG emissions from construction equipment by selecting one of the following measures, at a minimum, as appropriate to the construction project:

- Substitute electrified or hybrid equipment for diesel- and gasoline powered equipment where practical.
- Use alternatively fueled construction equipment on-site, where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane, or biodiesel.
- Avoid the use of on-site generators by connecting to grid electricity or utilizing solar-powered equipment.
- Limit heavy-duty equipment idling time to a period of three minutes or less, exceeding CARB regulation minimum requirements of five minutes.

4.7.1.2 *Existing Conditions*

The project site is developed with a community pool and associated buildings. The project site generates GHGs from pool patrons traveling to the site using automobiles. The site generates minimal GHGs from routine operations (i.e. heating the pool, lighting etc.).

4.7.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐	1,2,3,6
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐	1,2,3,6

GHG emissions worldwide cumulatively contribute to the significant adverse environmental impacts of global climate change. No single land use project could generate sufficient GHG emissions on its own to noticeably change the global average temperature. The combination of GHG emissions from past, present, and future projects in the City of Sunnyvale, the entire state of California, across the nation, and around the world, contribute cumulatively to the phenomenon of global climate change and its associated environmental impacts.

4.7.2.1 *Greenhouse Gas Emissions Threshold*

As discussed in CEQA Guidelines Section 15064(b), the determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the Lead Agency and must be based to the extent possible on scientific and factual data. The first checklist question is assessed using quantitative thresholds for GHG emissions identified by BAAQMD in 2009. Using a methodology that models how new land use development in the San Francisco Bay

area can meet Statewide AB 32 GHG reduction goals, BAAQMD identified a significance threshold of 1,100 metric tons of CO₂e per year.¹³

The City has carefully considered the thresholds prepared by BAAQMD and regards the quantitative thresholds to be based on the best information available for development in the San Francisco Bay Area Air Basin. Evidence supporting these thresholds has been presented in the following documents:

- BAAQMD. 2009. *CEQA Thresholds Options and Justification Report*.
- BAAQMD. 2011. *California Environmental Quality Act Air Quality Guidelines*. (Appendix D).
- CARB. 2008. Climate Change Scoping Plan. (Statewide GHG Emission Targets)

BAAQMD has not identified a threshold of significance for construction-related GHG emissions.

4.7.2.2 Compliance with Plans, Policies, and Regulations

The proposed multi-purpose building and locker room building would have solar panels on each of the roofs. The project's incorporation of on-site renewable energy would reduce the project's overall greenhouse gas emission generation.

As described in *Section 4.3 Air Quality*, the project would utilize best-available technology for construction equipment to reduce potential emissions to a less than significant level and would comply with the policies of the Sunnyvale CAP. **(Less Than Significant Impact)**

4.7.2.3 Greenhouse Gas Emission Impacts from the Project

Construction GHG Emissions

GHG emissions would occur during grading of the site and construction of the project. Construction of the project would involve emissions associated with equipment, vehicles, and manufacturing materials used to construct the project. Waste generated from demolition and construction would be salvaged and recycled to the extent practical to reduce waste going to the landfill. The project site is an infill site located in an urbanized location within close distance to construction supplies and equipment. These project features would help to minimize GHG emissions generated by transport of construction materials and waste associated with the project.

Neither the City of Sunnyvale nor BAAQMD have quantified thresholds for construction activities. Given that the project is in an urban setting close to construction supplies and equipment, discarded materials would be salvaged or recycled, and the project would implement the best management practices outlined in *Section 4.3 Air Quality*, construction of the project would not contribute substantially to local or regional GHG emissions. **(Less than Significant Impact)**

¹³ In addition to this bright-line threshold, an "efficiency" threshold was identified for urban high density, transit-oriented development projects that are intended to reduce vehicle trips but that may still result in overall emissions greater than 1,100 metric tons per year. This efficiency threshold is 4.6 metric tons of CO₂e per service population (e.g., residents and employees) per year.

Operational GHG Emissions

The project is the redevelopment of an existing community pool facility. The project site is accessible via existing sidewalks throughout the project area, and from internal pathways in Washington Park. Since the proposed improvements would not increase the size of the existing facility, the project is expected to maintain a similar number of patrons as the existing facility. The project, therefore, would not cause an increase in pool patrons and would not generate additional vehicle trips from implementation. The project, therefore, would not result in the generation of more greenhouse gas emissions than the existing facility. **(Less Than Significant Impact)**

4.7.3 Conclusion

Construction activities and project operations would have a less than significant GHG impact. **(Less Than Significant Impact)**

4.8 HAZARDS AND HAZARDOUS MATERIALS**4.8.1 Environmental Setting****4.8.1.1 *Existing Conditions***

The project site has been developed with the existing pool and pool buildings since its construction in 1955. Chemicals for facility maintenance (i.e. chlorine, cleaning supplies), are kept on-site in portable containers.

On-Site Sources of Contamination

A regulatory database records review found no records pertaining to underground storage tanks (USTs), toxic releases, or site cleanup requirements located on the project site.¹⁴

Off-Site Sources of Contamination

The State Water Resource Control Board's Geotracker database does not identify any open or closed hazardous materials release cases within 1,000 feet of the project site.

4.8.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐	1,2,3
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐	1,2,3
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐	1,2,3
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, will it create a significant hazard to the public or the environment?	☐	☐	☒	☐	1,2,3,9

¹⁴ Records search using Geotracker was performed on August 30, 2017. Available at: <https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=+255+S.+Pastoria+Ave.%2C+Sunnyvale>

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, will the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒	1
f) For a project within the vicinity of a private airstrip, will the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒	1
g) Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒	1,2
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒	1

4.8.2.1 *On-Site Hazardous Materials Impacts*

Soil and Groundwater Contamination

As discussed in *Section 4.8.1.2*, there are no regulatory agency records of hazardous materials usage within the park since it was developed in 1945. As a result, implementation of the proposed project would not expose construction workers or adjacent land uses to contaminated soil or groundwater from past and current operations of the park, including the ISC and CRC. **(No Impact)**

Asbestos and Lead Based Paint

Due to the age of the buildings on the project site, asbestos-containing materials (ACMs) may be present. The project proposes to demolish the existing structures and, as a result, an asbestos survey must be conducted under National Emission Standards for Hazardous Air Pollutants (NESHAP) guidelines. In addition, NESHAP guidelines require that all potentially friable ACMs be removed prior to building demolition or renovation that may disturb the ACMs.

Based on the age of the buildings, lead-based paint may also be present. If lead-based paint is still bonded to the building materials, its removal is not required prior to demolition. It will be necessary, however, to follow the requirements outlined by Cal-OSHA Lead in Construction Standard, Title 8, California Code of Regulations (CCR) 1532.1 during demolition activities; these requirements include employee training, employee air monitoring, and dust control. If lead based paint is peeling, flaking, or blistered, it should be removed prior to demolition. It is assumed that such paint will become separated from the building components during demolition activities and must be managed and disposed of as a separate waste stream. Any debris or soil containing lead paint or coating must

be disposed of at landfills that are permitted to accept such waste. Demolition of the existing structure on the project site could expose construction workers or residents in the vicinity of the project site to harmful levels of ACMs or lead. **(Significant Impact)**

Impact HAZ-1: Project implementation could result in the exposure of construction workers during demolition of the existing building to harmful levels of ACMs or lead. **(Significant Impact)**

Mitigation Measures: The following mitigation measures shall be implemented to reduce impacts from ACMs and Lead Based Paint to a less than significant level:

MM HAZ-1.1: The project shall conform to the following regulatory programs and to implement the following measures to reduce impacts due to the presence of ACMs and/or Lead Based Paint:

- In conformance with state and local laws, a visual inspection/pre-demolition survey, and possible sampling, shall be conducted prior to the demolition of on-site buildings to determine the presence of asbestos-containing materials and/or lead-based paint.
- Prior to demolition activities, all building materials containing lead-based paint shall be removed in accordance with Cal/OSHA Lead in Construction Standard, Title 8, California Code of Regulations 1532.1, including employee training, employee air monitoring, and dust control. Any debris or soil containing lead-based paint or coatings would be disposed of at landfills that meet acceptance criteria for the waste being disposed.
- All potentially friable ACMs shall be removed in accordance with National Emissions Standards for Hazardous Air Pollutants (NESHAP) guidelines prior to any building demolition or renovation that may disturb the materials. All demolition activities will be undertaken in accordance with Cal/OSHA standards contained in Title 8 of CCR, Section 1529, to protect workers from exposure to asbestos.
- A registered asbestos abatement contractor shall be retained to remove and dispose of ACMs identified in the asbestos survey performed for the site in accordance with the standards stated above.
- Materials containing more than one percent asbestos are also subject to Bay Area Air Quality Management District (BAAQMD) regulations. Removal of materials containing more than one percent asbestos shall be completed in accordance with BAAQMD requirements.

Conformance with aforementioned regulatory requirements will result in a less than significant impact from ACMs and lead. **(Less Than Significant With Mitigation Incorporated)**

Future Operations

Operation of the proposed project would likely include the use and storage on-site of pool maintenance chemicals as well as small quantities of cleaning and maintenance supplies. Pool maintenance chemicals typically consist of calcium hypochlorite, muriatic acid and carbon dioxide

(CO₂). The use, storage, and transportation of these materials would be in accordance with local, state, and federal laws and regulations. No other hazardous materials would be used or stored on-site. The pool maintenance chemicals and cleaning supplies that would be used on-site would not pose a risk to adjacent land uses. The implementation of the proposed project in accordance with local, state, and federal laws and regulations will ensure that the on-site use of chemicals results in a less than significant hazardous materials impact. **(Less Than Significant Impact)**

Off-Site Hazards

As there are no identified sources of contamination within 1,000 feet of the project site, the project would not be exposed to hazardous materials from off-site sources. **(No Impact)**

4.8.2.2 Other Hazards

The project site is not located near any public airport or private air strip. The nearest airport is the Moffett Federal Airfield, approximately 3.3 miles north of the project site. Therefore, implementation of the proposed project would not result in safety hazard impacts due to airport activities. **(No Impact)**

A private elementary school is located across West McKinley Avenue from the project site. The storage and use of chemicals on-site is consistent with current park operations and does not pose a risk to off-site land uses. As a result, implementation of the proposed project would not result in a hazardous materials impact to a school in the project area. **(Less Than Significant Impact)**

The project site is in a highly developed urban area and it is not adjacent to any wildland areas that would be susceptible to fire. Therefore, the proposed project would not expose the proposed building and future site users to wildland fires. **(No Impact)**

The City has evaluated the proposed project design and operations and determined that the project would not interfere with any adopted emergency response plan or emergency evacuation plan. **(Less Than Significant Impact)**

4.8.3 Conclusion

With implementation of the ACM and Lead Based Paint mitigation measures described, the project would not result in significant impacts related to hazardous materials. **(Less Than Significant with Mitigation Incorporated)**

4.9 HYDROLOGY AND WATER QUALITY

4.9.1 Environmental Setting

4.9.1.1 *Regulatory Framework*

Federal, State, and Regional

Water Quality Overview

The federal Clean Water Act and California's Porter-Cologne Water Quality Control Act are the primary laws related to water quality. Regulations set forth by the US EPA and the State Water Resources Control Board (SWRCB) have been developed to fulfill the requirements of this legislation. US EPA regulations include the National Pollutant Discharge Elimination System (NPDES) permit program, which controls sources that discharge pollutants into Waters of the United States (e.g., streams, lakes, bays, etc.). These regulations are implemented at the regional level by the water quality control boards. The project site is within the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (RWQCB).

Statewide Construction General Permit

The SWRCB has implemented a NPDES Construction General Permit for the State of California. For projects disturbing one acre or more of soil, a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) must be prepared by a qualified professional prior to commencement of construction. The Construction General Permit includes requirements for training, inspections, record keeping, and for projects of certain risk levels, monitoring. The general purpose of the requirements is to minimize the discharge of pollutants and to protect beneficial uses and receiving waters from the adverse effects of construction-related storm water discharges.

Municipal Regional Stormwater NPDES Permit (MRP)/C.3 Requirement

The San Francisco Bay RWQCB has issued a Municipal Regional Stormwater NPDES Permit (Permit Number CAS612008) that covers the project area. Under provisions of the NPDES Municipal Permit (MRP), redevelopment projects that disturb more than 10,000 square feet are required to design and construct stormwater treatment controls to treat post-construction stormwater runoff on-site. The MRP requires regulated projects to include Low Impact Development (LID) practices, such as pollutant source control measures and stormwater treatment features aimed to maintain or restore the site's natural hydrologic functions. The MRP also requires that stormwater treatment measures are properly installed, operated, and maintained.

In addition to water quality controls, the MRP requires all new and redevelopment projects that create or replace one acre or more of impervious surface to manage development-related increases in peak runoff flow, volume, and duration, where such hydromodification is likely to cause increased erosion, silt pollutant generation or other impacts to beneficial uses of local rivers, streams, and creeks. Projects may be deemed exempt from the permit requirements if they do not meet the size threshold, drain into tidally-influenced areas or directly into the Bay, drain into hardened channels, or are infill projects in subwatersheds or catchments areas that are greater than or equal to 65 percent impervious (per the Santa Clara Valley Permittees Hydromodification Management Applicability Maps).

4.9.1.2 Existing Conditions

Flooding

The project site is not located within a 100-year flood hazard area. According to the Federal Emergency Management Agency (FEMA), the project site located in Zone X which is an area with 0.2 percent annual chance of flood; areas with one percent chance of annual flood with average depths of less than one foot or with drainage areas less than one square mile; and areas protected by levees from one percent annual flood.¹⁵

Dam Failure

Based on the Santa Clara Valley Water District dam failure inundation hazard maps, the project site is not located within the Andersen Dam or Lexington Dam failure inundation hazard zone.^{16, 17}

Seiches, Tsunamis, and Mudflows

There are no landlocked bodies of water near the project site that would affect the development site in the event of a seiche. There are no bodies of water near the project site that would affect the site in the event of a tsunami.¹⁸ The project area is flat and there are no mountains near the site that would affect the site in the event of a mudflow.

Storm Drainage System

The City of Sunnyvale owns and maintains the municipal storm drainage system that serves the project area. There is an existing 15-inch storm drain line currently serving the project site located in South Pastoria Avenue. Runoff from the site flows into drains that empty into Calabazas Creek which flows north, carrying stormwater flows to San Francisco Bay. There is no overland release of stormwater directly into any water body from the project site.

Groundwater

The City of Sunnyvale is located within the Santa Clara Valley Groundwater Basin, one of two groundwater basins in Santa Clara County.¹⁹ Hydrologically, the groundwater basin is separated into recharge and confined zones. Geological conditions in the recharge areas allow precipitation, stream flow, and water diverted into percolation areas to recharge the deeper aquifers. The confined zones include areas of the valley where low permeability clays and silts overlie the major groundwater

¹⁵ Federal Emergency Management Agency. Map 06085C0045H. May 18, 2009. Accessed August 30, 2017. Available at:

<http://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1>

¹⁶ Santa Clara Valley Water District. *Andersen Dam EAP 2009 Flood Inundation Maps*. 2009. Accessed on August 30, 2017. Available at: <http://www.valleywater.org/Services/AndersonDamAndReservoir.aspx>.

¹⁷ Santa Clara Valley Water District. *Lexington Reservoir 2009 Flood Inundation Maps*. 2009. Accessed August 30, 2017. <http://www.valleywater.org/Services/LexingtonReservoirAndLenihanDam.aspx>.

¹⁸ Association of Bay Area Governments. *Tsunami Inundation Emergency Planning Map for the San Francisco Bay Region*. <<http://quake.abag.ca.gov/tsunamis>>. Accessed August 31, 2017.

¹⁹ California Department of Water Resources, Bulletin 118, 2003.

The California Department of Water Resources defined two groundwater basins in Santa Clara County: The Santa Clara Valley Basin and The Gilroy-Hollister Valley Basin.

aquifers which impedes the vertical flow of groundwater into the deeper aquifers. The City of Sunnyvale lies entirely within the confined zone.²⁰

Stormwater Runoff

The water quality of Calabazas Creek is directly affected by pollutants contained in stormwater runoff from a variety of urban uses. Stormwater from urban uses contains metals, pesticides, herbicides, and other contaminants, including oil, grease, asbestos, lead, and animal wastes. The Federal Clean Water Act, Section 303, establishes water quality standards and Total Maximum Daily Load (TMDL) programs. The 303(d) list is a list of impaired water bodies. The TMDL program calculates the maximum amount of a pollutant that a water body can receive and still meet water quality standards. The TMDL high priority schedule denotes the most severely impaired water bodies on the 303(d) list. Currently, Calabazas Creek is not listed on the California 303(d) list or on the TMDL high priority schedule.²¹ Calabazas Creek drains to the San Francisco Bay. The southern portion of the Bay is listed on the California 303(d) list for diazinon.

4.9.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐	1
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there will be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells will drop to a level which will not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐	1,2,3
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which will result in substantial erosion or siltation on-or off-site?	☐	☐	☒	☐	1

²⁰ Santa Clara Valley Water District. 2012 Groundwater Management Plan.

<<http://www.valleywater.org/Services/Groundwater.aspx>> Accessed on August 30, 2017.

²¹ California State Water Resources Control Board. 2010 CWA Section 303(d) List of Water Quality Limited Segments Requiring TMDLs. Accessed August 31, 2017. Available at: http://www.waterboards.ca.gov/water_issues/programs/tmdl/2010state_ir_reports/category4a_report.shtml.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which will result in flooding on-or off-site?	☐	☐	☒	☐	1
e) Create or contribute runoff water which will exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐	1,2,3
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐	1
g) Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒	1
h) Place within a 100-year flood hazard area structures which will impede or redirect flood flows?	☐	☐	☐	☒	1
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒	1,2,3,11
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒	1,2,312

4.9.2.1 *Water Quality Impacts*

Operational Impacts

The project would maintain approximately the same percentage of impervious area as the existing site condition. Once developed, the project site would contribute the same types of stormwater runoff pollutants as the current site. Runoff from streets and parking areas often carries grease, oil, and trace amounts of heavy metals into natural drainages. Runoff from landscaping can carry pesticides, herbicides, and fertilizers. Although the amounts of these pollutants ultimately discharged into the waterways are unknown, over time they could accumulate and be substantial.

Because the proposed project would add or replace more than 10,000 square feet of impervious surface area, it must conform to the requirements of Provision C.3 of the MRP. A future Stormwater Control Plan will be certified by engineers to ensure incorporation of appropriate and effective source control and treatment control measures to meet Low Impact Development (LID) requirements to prevent discharge of pollutants, reduce impervious surfaces, and retain a percentage of runoff on-site. In order to meet the City's requirements and the MRP requirements, the project proposes to incorporate self-treating and self-retaining areas throughout the site to allow on-site retention,

percolation, and evaporation of stormwater runoff. Runoff generated by impervious surfaces of the pool deck area will be conveyed to the public sanitary sewer system.

The proposed self-treating and self-retaining facilities would ensure that stormwater runoff generated by the project and ultimately discharged to the City's storm drainage system would not exceed the capacity of the storm drainage system. In addition, the project would be required to maintain all post-construction treatment control measures, as outlined below, throughout the life of the project.

The following standard measures, based on the RWQCB Best Management Practices (BMPs) and the City requirements, are included in the proposed project to ensure compliance with MRP permit requirements to reduce post-construction water quality impacts.

- When the construction phase is complete, a Notice of Termination (NOT) for the General Permit for Construction will be filed with the RWQCB and the City of Sunnyvale. The NOT will document that all elements of the SWPPP have been executed, construction materials and waste have been properly disposed of, and a post-construction stormwater management plan is in place as described in the SWPPP for the project site.
- All post-construction Treatment Control Measures (TCMs) will be installed, operated, and maintained by qualified personnel. On-site inlets will be cleaned out at a minimum of once per year, prior to the wet season.
- The property owner/site manager will keep a maintenance and inspection schedule and record to ensure the TCMs continue to operate effectively for the life of the project. Copies of the schedule and record must be provided to the City upon request and must be made available for inspection on-site at all times.

With implementation of the project's proposed stormwater control plan, the project would not violate any adopted water quality standards or waste discharge requirements. Runoff will be treated on-site utilizing LID TCMs in conformance with MRP requirements. Installation and maintenance of the proposed stormwater treatment systems will result in a less than significant impact on water quality. **(Less Than Significant Impact)**

Construction Impacts

Implementation of the proposed project would require the removal of all existing improvements and partial grading of the site. Demolition and construction activities would temporarily increase the amount of debris on-site and grading activities could increase erosion and the amount of sediment that could be carried by runoff into natural waterways via the existing City storm drain system. The project would disturb approximately 19,039 square feet of land. Because the project would not disturb more than one acre of land, the project would not be subject to the provisions of the Construction General Permit. The following measures (based on RWQCB recommendations), however, have been included in the project as a condition of project approval to reduce potential construction-related water quality impacts:

Project Conditions:

- Burlap bags filled with drain rock will be installed around storm drains to route sediment and other debris away from the drains.
- Earthmoving or other dust-producing activities would be suspended during periods of high winds.
- All exposed or disturbed soil surfaces would be watered at least twice daily to control dust as necessary.
- Stockpiles of soil or other materials that can be blown by the wind would be watered or covered.
- All trucks hauling soil, sand, and other loose materials would be covered and all trucks would be required to maintain at least two feet of freeboard.
- All paved access roads, parking areas, staging areas and residential streets adjacent to the construction sites would be swept daily (with water sweepers).
- Vegetation in disturbed areas would be replanted as quickly as possible.

With implementation of the identified construction measures, construction of the proposed project would have a less than significant impact on water quality. **(Less Than Significant Impact)**

4.9.2.2 *Groundwater Impacts*

The majority of the project site is impervious and does not contribute to the recharging of the groundwater aquifers used as water supply. The depth to groundwater in the project area ranges from approximately 27 to 31 feet below ground surface. Development of the project would include trenching for utilities and excavation for the pool, but would not interfere with groundwater flow or expose any aquifers. **(Less Than Significant Impact)**

4.9.2.3 *Storm Drain System Impacts*

Implementation of the project would roughly maintain the same percent imperviousness of the site as existing conditions. As a result, the amount of stormwater runoff generated by the project would not increase the demand upon the storm drainage system compared to the current land use or exceed the capacity of the existing lines. In addition, the project design that incorporates self-treating and self-retaining areas onsite would help reduce the overall amount of runoff entering the system. **(Less Than Significant Impact)**

4.9.2.4 *Flooding Impacts*

The site is not located within a 100-year flood hazard zone, and does not propose residential development. Implementation of the proposed project would not result in people or structures being exposed to significant flood risks. **(No Impact)**

4.9.2.5 *Inundation and Dam Failure Impacts*

Due to the location of the project site, the project would not be subject to inundation by seiche, tsunami, mudflow, or inundation by dam failure. **(No Impact)**

4.9.3 Conclusion

With implementation of the BMPs, Project Conditions, and RWQCB recommendations, the project would result in a less than significant impact to hydrology and water quality. **(Less Than Significant Impact)**

4.10 LAND USE AND PLANNING

4.10.1 Environmental Setting

4.10.1.1 *Regulatory Framework*

General Plan

The *City of Sunnyvale General Plan* (General Plan) designates the project site as *Parks*.

The following policies, found in the General Plan, are applicable to the proposed project:

Policy	Description
CC-4.1	Ensure that Sunnyvale's public facilities are easily identified, accessible, attractive and representative of the community's values and aspirations.
CC-4.2	Maintain beautiful and comfortable outdoor public places which provide a shared sense of ownership and belonging for Sunnyvale residents, business owners and visitors.

Zoning Ordinance

The project site is currently zoned as *PF – Public Facilities*. The *PF* designation (Section 19.24.020 of the Sunnyvale Municipal Code) is reserved for the construction, use and occupancy of governmental, public utility and educational buildings and facilities, and other uses compatible with the public character of the district.

4.10.1.2 *Existing Conditions*

Project Site

The project site is currently developed with an existing swimming pool and associated buildings. The project site is located in the southeast corner of Washington Park, a neighborhood-serving park that includes playground equipment, open turf area, and tennis and basketball courts.

Surrounding Land Use

The site is adjacent to the private K-8 Stratford School across West McKinley Avenue, and single-family residences along West McKinley Avenue, South Pastoria Avenue, and Washington Avenue.

4.10.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
a) Physically divide an established community?	☐	☐	☐	☒	1
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒	1,2,4
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒	1,2,3

4.10.2.1 *Land Use Compatibility Impacts*

The project would redevelop the existing use of the site with an improved pool facility, and therefore, would not conflict with the site's General Plan designation or zoning. The project is located within an existing park and would not physically divide an established community. **(No Impact)**

The project site is not located within a Habitat Conservation Plan or Natural Community Conservation Plan. **(No Impact)**

4.10.3 Conclusion

Project implementation would not result in land use impacts. **(No Impact)**

4.11 MINERAL RESOURCES

4.11.1 Environmental Setting

4.11.1.1 *Existing Conditions*

The Santa Clara Valley was formed when sediments derived from the Santa Cruz Mountains and the Mt. Hamilton-Diablo Range were exposed by continued tectonic uplift and regression of the inland sea that had previously inundated the project area. As a result of this process, the topography of the project area is relatively flat and there are no mapped mineral resources.²²

4.11.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
a) Result in the loss of availability of a known mineral resource that will be of value to the region and the residents of the state?	☐	☐	☐	☒	1,2
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒	1,2

4.11.2.1 *Mineral Resources Impacts*

The proposed project site is within a developed urban area and does not contain any known or designated mineral resources. **(No Impact)**

4.11.3 Conclusion

The project would not result in impacts to known mineral resources. **(No Impact)**

²² Stanley, R. G., R. C. Jachens, P. G. Lillis, R. J. McLaughlin, K. A. Kvenvolden, F. D. Hostettler, K. A. McDougall, and L. B. Magoon. 2002. *Subsurface and petroleum geology of the southwestern Santa Clara Valley ("Silicon Valley"), California*. (Professional Paper 1663) Washington, DC: U. S. Government Printing Office.

4.12 NOISE AND VIBRATION

4.12.1 Environmental Setting

Acceptable levels of noise vary from land use to land use. In any one location, the noise level will vary over time, from the lowest background or ambient noise level to temporary increases caused by traffic or other sources. State and federal standards have been established as guidelines for determining the compatibility of a particular land use with its noise environment.

There are several methods of characterizing sound. The most common in California is the *A-weighted sound level* or *dBA*.²³ This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This energy-equivalent sound/noise descriptor is called L_{eq} . The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration.

Although the A-weighted noise level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of noise from distant sources which create a relatively steady background noise in which no particular source is identifiable. To describe the time-varying character of environmental noise, the statistical noise descriptors, L_{01} , L_{10} , L_{50} , and L_{90} , are commonly used. They are the A-weighted noise levels equaled or exceeded during 1, 10, 50, and 90 percent of a stated time period.

Sound level meters can accurately measure environmental noise levels to within about plus or minus one dBA. Since the sensitivity to noise increases during the evening hours, 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The Community Noise Equivalent Level, CNEL, is the average A-weighted noise level during a 24-hour day, obtained after the addition of 5 decibels (dB) to noise levels measured between 7:00 PM and 10:00 PM, and 10 dB to noise levels measured between 10:00 PM and 7:00 AM.

The most widespread and continual source of noise in the City of Sunnyvale is transportation and transportation-related facilities. Roadways are the major source of transportation noise, followed by Moffett Federal Airfield, the Caltrain corridor, and San José International Airport.

4.12.1.1 *Regulatory Framework*

The State of California and the City of Sunnyvale have established guidelines, regulations, and policies designed to limit noise exposure at noise sensitive land uses. Appendix E of the State CEQA Guidelines, the State of California Building Code, and the City of Sunnyvale General Plan provide the following applicable criteria:

State CEQA Guidelines

The California Environmental Quality Act (CEQA) contains guidelines to evaluate the significance of effects resulting from a proposed project. These guidelines have been used in this Initial Study as thresholds for establishing potentially significant noise impacts and are listed under *Thresholds of Significance*.

²³ The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. All sound levels in this discussion are A-weighted, unless otherwise stated.

CEQA does not define what noise level increase would be considered substantial. Typically, project-generated permanent noise level increases of three dBA or greater would be considered significant where exterior noise levels would exceed the normally acceptable noise level standard (60 dBA CNEL). Where noise levels would remain below the normally acceptable noise level standard with the project, permanent noise level increases of five dBA or greater would be considered significant.

Sunnyvale General Plan

The Noise Element of the City's General Plan relies on the State of California published guidelines for noise compatibility land use planning and requires compliance with Title 24 noise standards. The City's noise and land use compatibility guidelines are shown in Table 4.12-1, below.

Table 4.12-1 General Plan Land Use Compatibility Guidelines						
Land Use Category	Exterior DNL Value in Decibels					
	55	60	65	70	75	80
1. Residential, Hotels and Motels						
2. Outdoor Sports and Recreation, Neighborhood Parks and Playgrounds						
3. Schools, Libraries, Museums, Hospitals, Personal Care, Meeting Halls, and Churches						
4. Office Buildings, Business Commercial, and Professional Offices						
5. Auditoriums, Concert Halls, Amphitheaters						
6. Industrial, Manufacturing, Utilities, and Agriculture.						
Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements. Conditionally Acceptable: Specified land use may be permitted only after detailed analysis of the noise reduction requirements and noise mitigation features included in the design. Unacceptable: New construction or development should generally not be undertaken because mitigation is usually not feasible to comply with noise element policies. Development will only be considered when technically feasible mitigation is identified that is also compatible with relevant design guidelines.						

Recreational land uses are considered compatible with DNL noise levels of up to 65 and conditionally acceptable with design and insulation techniques at up to 80 DNL.

General Plan policies applicable to the project include:

Policy	Description
SN-8.1	Enforce and supplement state laws regarding interior noise levels of residential units.
SN-8.5	Comply with “State of California Noise Guidelines for Land Use Planning” (Figure 6-5) for the compatibility of land uses with their noise environmental, except where the City determines that there are prevailing circumstances of a unique or special nature.

Municipal Code – Construction Standards (Section 16.08.030)

Construction activity shall be permitted between the hours of 7:00 AM and 6:00 PM daily Monday through Friday. Saturday hours of operation shall be between 8:00 AM and 5:00 PM. There shall be no construction activity on Sunday or federal holidays when City offices are closed.

No loud environmentally disruptive noises, such as air compressors without mufflers, continuously running motors or generators, loud playing musical instruments, radios, etc., will be allowed where such noises may be a nuisance to adjacent residential neighborhoods.

(a) As determined by the chief building official:

- (1) No loud environmentally disruptive noises, such as air compressors without mufflers, continuously running motors or generators, loud playing musical instruments, radios, etc., will be allowed where such noises may be a nuisance to adjacent properties.
- (2) Where emergency conditions exist, construction activity may be permitted at any hour or day of the week. Such emergencies shall be completed as rapidly as possible to prevent any disruption to other properties.
- (3) Where additional construction activity will not be a nuisance to surrounding properties, based on location and type of construction, a waiver may be granted to allow hours of construction other than as stated in this section.
(Ord. 3006-13 § 2).

4.12.1.2 Existing Conditions

The project site is developed with an existing pool facility and associated buildings. The facility is located within Washington Community Park, which is situated in a single-family neighborhood. Noise in the project area is generated primarily from vehicular traffic along Washington Avenue, South Pastoria Avenue, and West McKinley Avenue, and from park patrons, and school uses.

4.12.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project result in:					
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐	1,2,3
b) Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐	1,2,3
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐	1,2,3
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐	1,2,3
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, will the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒	1,2,3
f) For a project within the vicinity of a private airstrip, will the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒	1,2,3

For the above checklist questions involving environmental conditions affecting the project, it is noted that a December 2015 CA Supreme Court decision indicates that with the exception of noise impacts on projects due to proximity to an airport, this discussion is no longer required under CEQA. This information is included within the environmental impacts discussion to inform the planning process by discussing how the project complies with relevant local policies/regulations that protect sensitive land uses from existing hazards.

4.12.2.1 **Project-Generated Noise Impacts**

Since the project would be redeveloping the site with similar sized facilities as the existing facilities, the project is not expected to result in an increase in trips generated and thus, traffic noise levels would not increase. A noise increase is considered substantial if it increases the ambient noise level by three dB or more in sensitive noise areas. A three dB increase is equivalent to a doubling of traffic on local roadways.

Project traffic would result in approximately the same traffic noise experienced in the area, and would not double the amount of traffic on Washington Avenue, South Pastoria Avenue, or West McKinley Avenue.

While new facilities may slightly increase the use of the site, noise levels would not increase by more than three dBA.

The operation of the site as a pool facility is not expected to generate on-going activity noise that would expose adjacent residents to noise levels in excess of those that exist with the current swim facility. **(Less Than Significant Impact)**

4.12.2.2 *Construction Impacts*

Construction activities associated with implementation of the proposed project would temporarily increase noise levels in the project area. Construction activities generate considerable amounts of noise, especially during the construction of project infrastructure when heavy equipment is used. Typical average construction generated noise levels are about 81 – 89 decibels measured at a distance of 50 feet from the center of the site during busy construction periods (e.g., earth moving equipment, impact tools, etc.). Construction-related noise levels are normally less during building construction, finishing, and landscaping phases. Construction-generated noise levels drop off at a rate of about six decibels per doubling of distance between the source and receptor. Where noise from construction activities exceeds 60 dBA L_{eq} and exceeds the ambient noise environment by at least five dBA L_{eq} at noise-sensitive uses, the impact would be considered significant.

Construction of the proposed project would include demolition of existing pavement, pool, and buildings, site preparation work, foundation work, and construction of the new pool and buildings. There would be variations in construction noise levels on a day-to-day basis depending on the actual activities occurring at the site.

Construction noise impacts are more significant when construction occurs during noise-sensitive times of the day (early morning, evening, or nighttime hours), when the construction occurs in areas immediately adjoining noise sensitive land uses, or when construction lasts extended periods of time. Construction of the project would last approximately nine to 12 months. Construction activities would be audible at the existing residential and institutional (e.g., adjacent K-8 school) uses in the vicinity of the project site, but would not result in a significant impact because substantial noise generating activities would not continue for more than 12 months.

Project Conditions: The following conditions will be included in the project to reduce construction noise impacts on neighboring properties:

- Noise generating construction activities shall be limited to the hours between 7:00 AM and 7:00 PM, Monday through Friday, for any on-site or off-site work within 500 feet of any residential unit. Construction outside of these hours may be approved through a development permit, based on a site-specific construction noise mitigation plan and a finding by the Director of Community Development that the construction noise mitigation would adequately prevent noise disturbance to affected residential uses.
- Contractors shall use “new technology” power construction equipment with state-of-the-art noise shielding and muffling devices. All internal combustion engines used on the project shall be equipped with adequate mufflers and shall be in good mechanical condition to minimize noise created by faulty or poorly maintained engines or other components.

- Stationary noise-generating equipment shall be located as far as possible from sensitive receptors, such as residential uses. Staging areas should be a minimum of 200 feet from noise sensitive receptors.
- Unnecessary idling of internal combustion engines shall be prohibited.

Construction Vibration

As noted above, construction activities are expected to include demolition of the existing pavement, pool, and buildings, site preparation work, foundation work, and construction of the new pool and buildings.

Construction activities such as drilling, use of jackhammers, rock drills and other high-power or vibratory tools, and rolling stock equipment such as tracked vehicles, compactors, etc. may generate substantial vibration in the immediate site vicinity. However, the nearest residences would not be expected to be affected.

Noise and vibration studies conducted for similar projects have reported that typical vibration levels generated by construction activities would be expected to be 0.2 in/sec PPV or less at a distance of 25 feet, which would be below the significance threshold of 0.3 in/sec PPV.²⁴ The nearest residences are located approximately 100 feet to the east of the project site and the K-8 Stratford School is approximately 70 feet from the project site. Construction activities associated with the construction of the project are therefore, not anticipated to be a source of substantial vibration. **(Less Than Significant Impact)**

4.12.2.3 Proximity to Airports

The nearest public airport to the project site is Moffett Federal Airfield, located at approximately 3.3 miles northeast of the project site. There are no private airstrips within the vicinity of the project. The project would not have permanent employees or residents, and therefore, would not expose workers or residents to excessive noise levels. **(No Impact)**

4.12.3 Conclusion

With compliance to the General Plan policies and project conditions, the project would result in a less than significant noise and vibrations impact. **(Less Than Significant Impact)**

²⁴ Illingworth & Rodkin. *915 De Guine Drive Residential Project Environmental Noise Assessment Sunnyvale, California*. February 27, 2015.

4.13 POPULATION AND HOUSING

4.13.1 Environmental Setting

4.13.1.1 *Existing Conditions*

According to the California Department of Finance data, the City had a population of approximately 149,831 residents as of January 1, 2017.²⁵ The average number of persons per household in Sunnyvale was estimated at 2.61²⁶. Based on the City's General Plan, the projected population in 2040 would be 194,300 persons occupying 72,800 households.²⁷

4.13.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒	1,2
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒	1,2
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒	1,2

4.13.2.1 *Impacts to Population and Housing*

The proposed project is the redevelopment of an existing pool facility within Washington Community Park. The project would not generate additional permanent jobs.

The project site has not been used for residential purposes in the past; therefore, the proposed project would not displace existing housing or people. Implementation of the proposed project would have no impact on population and housing in Sunnyvale. **(No Impact)**

4.13.3 Conclusion

Project implementation would not result in impacts to population or housing in Sunnyvale. **(No Impact)**

²⁵ State of California, Department of Finance, E-1 Population Estimates for Cities, Counties and the State with Annual Percent Change—January 1, 2016 and 2017.

²⁶ California Department of Finance. *E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2015 with 2010 Census Benchmark*. Accessed September 1, 2017. Available at: <http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2011-20/view.php>.

²⁷ Association of Bay Area Governments. *Plan Bay Area Projections 2013*. December 2013.

4.14 PUBLIC SERVICES

4.14.1 Environmental Setting

4.14.1.1 *Regulatory Framework*

General Plan

The following policies found in the City of Sunnyvale General Plan are applicable to the proposed project:

Policy	Description
SN-1.1	Evaluate and consider existing and potential hazards in developing land use policies. Make land use decisions based on an awareness of the hazards and potential hazards for the specific parcel of land.
SN-3.1	Provide rapid and timely response to all emergencies.
SN-3.4	Reduce crime and fear by strengthening the police/community partnership.
SN-3.5	Facilitate the safe movement of pedestrians, bicyclists and vehicles.

4.14.1.2 *Existing Conditions*

Police and Fire Service

Police and fire protection services for the project site are provided by the Sunnyvale Department of Public Safety. The department is divided into three divisions: Bureau of Police Services, Fire Service Bureau, and Special Operations.

The Bureau of Police Services includes five squads that patrol the City 24 hours a day.²⁸ In 2013, the most frequent crimes in the City were property crimes including auto burglary, auto theft, and other larceny.²⁹ The Sunnyvale Police Department is located at 700 All America Way, approximately 0.6 miles southwest of the project site.

The Fire Service Bureau operates a total of six fire stations that serve the City of Sunnyvale. The nearest fire station to the project site is Sunnyvale Fire Station #1. It is located at 171 North Mathilda Avenue, approximately 0.8 miles northeast of the site.

The City of Sunnyvale participates in a mutual aid program with neighboring cities, including Mountain View, Santa Clara, and San José. Through this program, should Sunnyvale need additional assistance, one or more of the mutual aid cities would provide assistance in whatever capacity was needed.

²⁸ The number of officers per squad varies depending on the time of day and work shift.

²⁹ Crime Analysis Unit, Sunnyvale Department of Public Safety. Sunnyvale 2013 Year End Crime Summary Report. Table. February 3, 2014.

Schools

The nearest public schools to the project site are Vargas Elementary School located at 1054 Carson Drive (0.8 miles north of the site), Cumberland Elementary School (1.0 mile south of the site), Sunnyvale Middle School, located at 1080 Mango Avenue (approximately 1.8 miles southwest of the site), and Mountain View High School, located at 3535 Truman Avenue (approximately 3.7 miles west of the project site). The private K-8 Stratford Schools is located at 820 West McKinley Avenue, adjacent to the project site.

Parks

The project site is located within the greater Washington Park, a neighborhood-serving public park that includes a pool facility, playground equipment, open turf area, and tennis and basketball courts.

Libraries

The Sunnyvale Public Library is located 0.4 miles south of the project site at 665 W Olive Avenue.

4.14.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project					
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:					
- Fire Protection?	☐	☐	☒	☐	1,2
- Police Protection?	☐	☐	☒	☐	1,2
- Schools?	☐	☐	☐	☒	1,2
- Parks?	☐	☐	☒	☐	1,2
- Other Public Facilities?	☐	☐	☐	☒	1,2

4.14.2.1 *Impacts to Public Services*

The proposed project is the redevelopment of an existing pool facility within Washington Park. Since the size of the pool facility and associated amenities would be similar to the existing facility, demands for fire and police protection would be similar to those of the existing facility. The demand on Washington Park would be relatively the same, therefore, new facilities would not be required.
(Less Than Significant Impact)

The project does not include residential facilities and would not generate new residents. The project would not impact schools or other public facilities. **(No Impact)**

4.14.3 Conclusion

Project implementation would result in less than significant impacts to public services. **(Less Than Significant Impact)**

4.15 RECREATION

4.15.1 Environmental Setting

The City of Sunnyvale provides parklands, open space, and community facilities for public recreation and community services. The City's Parks and Recreation Department maintains a total of 821.48 acres of parks, trails, golf courses, and open space. The project site is located within Washington Community Park, a neighborhood-serving park that includes a pool facility, playground equipment, open turf area, and tennis and basketball courts.

4.15.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility will occur or be accelerated?	☐	☐	☒	☐	1,2
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐	1,2

4.15.2.1 *Recreational Impacts*

The proposed project is the redevelopment of the existing pool facility at the Washington Park. The project would not generate additional permanent employees and would not result in a substantial increase in the usage of the park, or other local recreational facilities. Since the proposed project would maintain the number of park facilities in the City, the project would not affect the usage of existing parks and recreational facilities such that the construction of new or expanded recreational facilities would be required. **(Less Than Significant Impact)**

4.15.3 Conclusion

The proposed project would not result in significant impacts to recreational facilities in Sunnyvale. **(Less Than Significant Impact)**

4.16 TRANSPORTATION/TRAFFIC

4.16.1 Environmental Setting

4.16.1.1 *Roadway Network*

Regional Access

Regional access to the project site is provided via Highway 101 (US 101), State Route 237 (SR 237), State Route 85 (SR 85), and Central Expressway.

US 101 provides access to the project site via its interchange with SR 237 and SR 85. US 101 is a regional north/south freeway with six mixed-flow lanes and two high occupancy vehicle (HOV) lanes in the project area. US 101 extends through the entire Bay Area north of San Francisco and south of San José.

SR 237 provides access to the project site via SR 85. SR 237 is an east-west regional freeway that connects I-880 and I-680 in the east to US 101 and SR 85.

SR 85 provides access to the project site via local roadways. SR 85 is a north-south regional freeway that connects Mountain View with south San José.

Central Expressway provides access to the project site via local roadways. Central Expressway is a north-south Santa Clara County expressway that provides regional access to local roadways from Palo Alto to Santa Clara.

Local Access

Local access to the project site is provided via South Mary Avenue, South Mathilda Avenue, West Washington Avenue, West McKinley Avenue, and South Pastoria Avenue.

South Mary Avenue is a north-south high thoroughfare road that provides access to the project site via West Washington Avenue.

South Mathilda Avenue is a north-south high thoroughfare road that provides access to the project site via West Washington Avenue and West McKinley Avenue.

West Washington Avenue is an east-west neighborhood street connecting North Sunnyvale Avenue to Acalanes Drive and provides access to the project site via South Pastoria Avenue.

West McKinley Avenue is an east-west neighborhood street connecting South Sunnyvale Avenue to Sunset Avenue and is adjacent to the project site's parking lot.

South Pastoria Avenue is a north-south neighborhood street connecting West Evelyn Avenue to El Camino Real and is adjacent to the project site's southern border.

4.16.1.2 *Bicycle and Pedestrian Facilities*

Bicycle Facilities

There are no dedicated bicycle paths or lanes within the immediate project area. Mary Avenue, which is close to the project site, has bike lanes in both directions, and a bike lane is planned for north-bound Mathilda Avenue as part of the planned Town Center development.

Pedestrian Facilities

Pedestrian access to the site is provided by sidewalks on West Washington Avenue, South Pastoria Avenue, and West McKinley Avenue.

4.16.1.3 *Transit Service*

Existing transit service to the project area is provided by the Santa Clara Valley Transportation Authority (VTA). A bus stop for *Local Route 53* is on the eastern side of Washington Park along West Washington Avenue.

4.16.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐	1,2,3
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒	1,2,3
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒	1
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible land uses (e.g., farm equipment)?	☐	☐	☐	☒	1

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
e) Result in inadequate emergency access?	☐	☐	☐	☒	1,2
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒	1,2

4.16.2.1 *Trip Generation Estimates*

Implementation of the project would maintain the size of the existing amenities and pool facility. The project would replace existing amenities with the same but improved amenities, which may result in an increase in use compared to the existing pool facility. However, given the age and condition of the existing facility, it is likely that the current usage of the facility is less than what was once occurring. For this reason, it is assumed that the proposed project would not generate more traffic than the originally approved project. Project implementation, therefore, would not generate a substantial increase in vehicle trips to the project site. **(Less Than Significant Impact)**

4.16.2.2 *Parking*

City of Sunnyvale Parking Code Requirements

The City of Sunnyvale Municipal Code does not specify an off-street parking requirement for public parks. The park is intended to serve primarily the surrounding neighborhood and would be served by the existing parking lot immediately adjacent to the project site. The existing parking lot is owned by Sunnyvale School District and contains 32 parking stalls, including two ADA stalls. By agreement with the City, this parking lot is available to serve the park and pool during the times it is not being used by the school. On-street parking is available on all four sides of Washington Park to serve users of the project site. **(No Impact)**

4.16.2.3 *Site Access and On-Site Circulation*

The project site is accessible via sidewalks along West Washington Avenue, South Pastoria Avenue, and West McKinley Avenue, and from internal pathways within Washington Park. The existing parking lot would be retained which is accessible from West McKinley Avenue and South Pastoria Avenue. The availability of the parking lot is subject to use by Sunnyvale School District. The existing driveway width adequately serves the existing project site and would, therefore, be adequate to serve the future project site. **(No Impact)**

4.16.2.4 *Other Transportation Issues*

The proposed project is located approximately 3.3 miles south of Moffett Federal Airfield. The proposed project would not result in a change in air traffic patterns or obstruct airport operations.

The proposed project would not increase on-site traffic hazards due to the design of the pool facility and would not result in inadequate emergency access.

The project would redevelop the existing pool facility and would, therefore, not affect or preclude any existing or planned pedestrian, bicycle, or transit facilities. **(No Impact)**

4.16.3 Conclusion

The proposed project would not result in significant transportation impacts. **(Less Than Significant Impact)**

4.17 UTILITIES AND SERVICE SYSTEMS

4.17.1 Environmental Setting

4.17.1.1 *Water Service*

The City's water supply is a combination of imported water, recycled water, and groundwater.³⁰ Approximately 92 percent of the water supply is imported from the San Francisco Public Utilities Commission (SFPUC) and the Santa Clara Valley Water District (SCVWD), five percent from groundwater, and three percent from recycled water. The City's total water demand in 2010 was 21,465 acre-feet per year (AFY), and the City projects a demand of 25,506 AFY by 2030.

Water is provided to the site by the SFPUC, who manages the Hetch-Hetchy water system (imported from the Sierra Nevada). Based on a water supply agreement in 2009 with the SFPUC, the City of Sunnyvale is provided a minimum of 8.93 million gallons per day (MGD) of water, equivalent to 10,003 AFY.

There is an eight-inch water supply line in South Pastoria Avenue that serves the project site.

4.17.1.2 *Wastewater*

Wastewater from the City is treated at the Sunnyvale Water Pollution Control Plant (SWPCP), located north of CA-237 on Borregas Avenue.³¹ The SWPCP is owned by the City and provides primary, secondary, and tertiary treatment of wastewater and has an average dry weather and wet weather flow capacity of 29.5 and 40.0 MGD of wastewater, respectively. Sanitary sewer lines that serve the project site are maintained by the City's Environmental Services Department (ESD). There is an eight-inch sanitary sewer line in South Pastoria Avenue that serves the project site.

4.17.1.3 *Storm Drainage*

The City of Sunnyvale owns and maintains the municipal storm drainage system which serves the project site. The majority of the existing 1.7-acre project site is impervious surfaces. Runoff from the site flows into drains that empty into Calabazas Creek. Calabazas Creek flows north, carrying the effluent from the storm drains into San Francisco Bay. There is no overland release of stormwater directly into any water body from the project site. There is a 15-inch storm drain line in South Pastoria Avenue that serves the project site.

4.17.1.4 *Solid Waste*

The City of Sunnyvale has granted an exclusive franchise to Specialty Solid Waste and Recycling to provide solid waste and recycling collection services to the residents and businesses in the City. In 2013, the City diverted approximately 65 percent of solid waste from disposal. This exceeds the requirements of AB 939, which mandates that the City divert 50 percent of solid waste by the year 2000. In addition, the City has adopted a Zero Waste Strategic Plan that calls for 75 percent diversion by 2020 and 90 percent diversion by 2030.³²

³⁰ The percentage of water from each source can vary.

³¹ City of Sunnyvale. About the Water Pollution Control Plant. Accessed on September 5, 2017. Available at: http://sunnyvale.ca.gov/Departments/Environmental_Services/WaterPollutionControlPlant.aspx.

³² City of Sunnyvale. Zero Waste Strategic Plan: A Quantifiable Approach. February 2013.

The existing project site generates minimal solid waste from pool patrons.

4.17.2 Checklist and Discussion of Impacts

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
Would the project:					
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐	1,2
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐	1,2
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐	1,2
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐	1,2
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐	1,2
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐	1,2

4.17.2.1 *Water Services Impacts*

The proposed project would redevelop the existing pool facility which includes the pool and associated buildings (i.e. restroom facilities). Project implementation would not result in an intensification of development compared to existing conditions and thus, not exceed the capacity of the Santa Clara Water Utility. The project would plant water-efficient landscaping to require minimal irrigation. All irrigation would utilized recycled water. The project, therefore, would have a less than significant impact on water supply. **(Less Than Significant Impact)**

4.17.2.2 *Wastewater Services Impacts*

Regional Wastewater Facility

The project would redevelop the site and maintain a similar number of restroom facilities as the existing facility. The project would not increase the need for wastewater treatment beyond the capacity of the SWPCP. The SWPCP has the ability to treat wastewater generated by the proposed project. The project, therefore, would not have a significant impact on the capacity of the SWPCP. **(Less Than Significant Impact)**

Sanitary Sewer

The proposed project would connect to existing sewer lines in the project area. Based on a Sanitary Sewer Analysis prepared by the City of Sunnyvale, project implementation would decrease the amount of wastewater discharged into the sanitary sewer system compared to the amount of discharge generated by the existing facility. The project would, therefore, have a less than significant impact on the sanitary sewer system. **(Less Than Significant Impact)**

4.17.2.3 *Storm Drainage Impacts*

Redevelopment of the project site would maintain the current relative percent of imperviousness. Under existing conditions, the storm drainage system has sufficient capacity to convey runoff from the site, the majority of which is impervious surfaces. The project, which also includes self-treating and self-retaining areas for the retention of stormwater runoff, would therefore, not exceed the capacity of the local drainage system. **(Less Than Significant Impact)**

4.17.2.4 *Solid Waste Impacts*

The existing development generates minimal solid waste. Redevelopment of the project site would not result in expanded use, and therefore, would not increase the amount of waste generated on-site. **(Less Than Significant Impact)**

4.17.3 Conclusion

The project would not result in any utility or service facility exceeding current capacity or require the construction of new infrastructure or service facilities. **(Less Than Significant Impact)**

4.18 MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact	Checklist Source(s)
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐	1 - 12
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐	1 - 12
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐	1 - 12

4.18.1 Project Impacts

As described in the specific sections of this Initial Study (refer to *Section 4.0 Environmental Setting, Checklist, and Discussion of Impacts, Sections 4.1-4.17*), with implementation of Standard Measures, Project Conditions, and identified mitigation measures, the proposed project would not result in significant environmental impacts. The project would not degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. **(Less than Significant with Mitigation Incorporated)**

4.18.2 Cumulative Impacts

Several of the environmental issues addressed in the previous sections of this Initial Study, such as air quality and greenhouse gas emissions, are assessments of a project's contribution to cumulative effects on either a regional or global basis. These effects were found to be less than significant. Additional impacts, such as those related to biology, cultural resources, and hazardous materials are limited to the project site. The project would generate minimal traffic during weekday peak hours, and would not make a considerable contribution toward any identified cumulative traffic impacts. The existing surrounding area is developed, and no other projects are planned in the area that would

include substantial sources of light and glare, and the light levels generated by the proposed project would be similar as the existing facility. **(Less than Significant With Mitigation Incorporated)**

4.18.3 Direct or Indirect Adverse Effects on Human Beings

The project's air quality impacts from construction to the surrounding residential area were analyzed in *Section 4.3* of this Initial Study and found, with mitigation measures, to be less than significant. The project's potential hazardous materials impacts were analyzed in *Section 4.8* and found, with the implementation of ACM and Lead Based Paint control measures, to be less than significant. The project, therefore, would not directly or indirectly cause significant adverse effects on human beings. **(Less than Significant With Mitigation Incorporated)**

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SECTION 6.0 LEAD AGENCY AND CONSULTANTS

6.1 LEAD AGENCY

City of Sunnyvale, Department of Public Works
Nathan Scribner, PE, Assistant City Engineer

6.2 CONSULTANTS

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Zach Dill, Graphic Artist

APPENDIX A

Arborist Report

ARBORIST TREE REPORT

The Washington Swim Center Project Sunnyvale, California

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February 27, 2017

Contents

Introduction	
Background.....	1
Assignment.....	1
Tree Survey Methods	1
Observations and Discussion	
Overview of Site.....	2
Tree Summary.....	2
Tree Valuation.....	3
Analysis.....	3
Conclusion	3
Recommendations.....	4
Literature Referenced	5
Table 1	
Evaluation Factors for Determining Overall Tree Condition	6
Table 2	
Suitability Factors for Tree Preservation	7
Table 3	
Tree Assessment Chart	8
Table 4	
Tree Appraisal Worksheet	13
Table 5	
Tree Appraisal Worksheet	14
Appendix 1	
Photograph Exhibit	15

Appendix 2

Tree Protection Plan	21
Warning Sign – English Sample.....	25
Warning Sign – Spanish Sample.....	26

Appendix 3

Tree Location Map	27
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Attachments

Certification of Performance.....	28
Terms and Conditions.....	29

DRAFT
Not Suitable
for Submittal

Introduction

Background

The City of Sunnyvale (CITY) intends to remove and replace the Washington Pool complex including the pool, pool deck and associated buildings. To accomplish this intent, the City selected the Dahlin Group, Inc. to serve as the Architect of this project. One of the City required conditions is the submittal of a Tree Survey and Tree Protection Plan. Fujiitrees Consulting, LLC was asked by the Dahlin Group, Inc. to submit the required Tree Survey and Tree Protection Plan in the form of an Arborist Tree Report.

Assignment

As per the Sunnyvale Municipal Code (SMC) 19.94.110:

(a) A tree survey conducted by an arborist who has been certified by the International Society of Arboriculture (ISA) shall be submitted as part of the required application materials for all use, design or special development permits on developing or redeveloping property. The survey shall show the location, size and species (both common and Latin names required) of all trees (protected and unprotected) on the site, and shall include a calculation of the value of each tree. A written letter shall be included when a protected tree(s) is proposed to be removed explaining why the tree(s) cannot be relocated or the design of the structures altered to maintain the trees.

(d) Tree Protection Plan. The developer shall submit a tree protection plan which shall demonstrate how tree protection shall be provided during and after construction and shall include, where appropriate, a description of any of the protective measures set forth in Section 19.94.120.

Tree Survey Methods

A visual assessment of the trees was made from the ground. No samples were collected for laboratory analysis, the trees were not entered and root collar examinations were not completed as none of these tasks were part of the assignment.

Assessed trees in this report were limited to those trees located on the topographic survey dated December 2016. This topographic survey served as the base for the Tree Location Map, see Appendix 2 of this report.

Of the trees located by the Land Surveyor, only those trees defined as a "tree" by SMC 19.94.030 were assessed. ("Tree" means any woody plant which has a trunk thirteen inches or more in circumference at four and one-half feet above ground level.)

Numbering of the designated trees was performed by the Land Surveyor using numbered metal tags. Sequential tree numbering was not entirely consistent.

When physically possible trunk diameters of trees were measured with a diameter tape at the height of four and a half feet above ground level. For consistency and in keeping with the Council of Tree and Landscape Appraisers Guide ninth edition (published by the ISA), multi-stem trunks were measured just below the stem attachments.

Arborist Tree Report
The Washington Community Swim Center Project
Sunnyvale, California

Tree height and crown radius were approximated. A Tru Pulse laser range finder was used to sample trees in order to gauge the accuracy of the approximated height and crown radius distances.

Observations and Discussion

Overview of the Site

On February 18, 2017, Fujiitrees Consulting, LLC (FTC) visited the Washington Community Swim Center located at 840 W. Washington Avenue in the city of Sunnyvale, California. The swim center is part of Washington Park that includes a large play field, walking paths, children play equipment and picnic areas. According to various real estate websites, the city of Sunnyvale has a very low crime rate with a highly educated populace and located in Silicon Valley; all positive attributes making it a desirable place to live.

Tree Summary

A total of 35 trees were located on the topographic survey. Of the 35 located trees, 32 trees were assessed for this report. Three trees were measured to be less than 13 inches in circumference and did not qualify as trees. (SMC 19.94.030)

Tree data was collected from nine of the ten tree species located on the topographic survey. The following assessed trees are listed by common name, Latin name and (occurrence): buckeye, *Aesculus spp.* (4); camphora tree, *Cinnamomum camphora* (14); beech, *Fagus spp.* (1); maidenhair tree, *Ginkgo biloba* (1); southern magnolia, *Magnolia grandiflora* (1); evergreen pear, *Pyrus kawakamii* (1); coast live oak, *Quercus agrifolia* (1); holly oak, *Quercus ilex* (2); coast redwood, *Sequoia sempervirens* (7).

Three tree ferns, *Alsophila australis* measured to be less than 13 inches in circumference (four inches in diameter) at four and a half feet above ground level. As such these trees were not assessed for the purposes of this report.

The buckeyes and beech were dormant at the time of the FTC site visit. Initial identification was made by indexing the bud and leaves. Positive genus identification was provided by the Sunnyvale parks staff. FTC is grateful for their assistance.

Most of the assessed trees were observed to be in need of proper pruning. The camphora trees in particular displayed dense foliage at the ends of limbs and branches. Camphora trees 306 and 320 exhibited "hangers", failed but still attached branches.

The coast redwoods displayed off color foliage and general low vigor. Coast redwood 326 exhibited a hanger over a park path.

Tree Valuation

The calculations of the value of each assessed tree is required by SMC 19.94.110. A tree appraisal was completed for each assessed tree using the Trunk Formula Method described in the Guide for Plant Appraisal ninth edition (Guide) prepared by the Council of Tree and Landscape Appraisers (CTLA) and published by the International Society of Arboriculture (ISA). The species rating and nursery data were derived from the Species Classification and Group Assignment, published by the Western Chapter of the ISA.

Calculations appear on Tables 4 and 5. Table 4 contains all trees 30 inches or less in trunk diameter and tree 5 contains all trees greater than 30 inches in trunk diameter. According to the Guide, those trees greater than 30 inches in trunk diameter require a calculations adjustment.

Analysis

The subject trees were assessed for structure, health and overall condition. Evaluation Factors for Determining Overall Tree Condition – Table 1, defines the characteristics for each rating.

Suitability Factors for Tree Preservation – Table 2, explains the method behind the rating system. Tree suitability for preservation can be a contributing factor when deciding the reasonableness of whether to accommodate a tree by design.

The Tree Assessment Chart – Table 3, contains the collected tree data from the subject trees. Data includes tag number, tree measurements, and ratings for structure, health and overall condition with a separate suitability rating for preservation. Entries include the Arborists' comments and recommendations.

The Tree Appraisal Worksheets – Tables 4 and 5 described under Tree Valuation presents the calculations employed when determining the appraised value of a tree.

Conclusions

The total appraised value for the appraised trees is \$398,050.

The failed but still attached branches in camphora trees 306 and 320 and in coast redwood 326 are of concern for reasons of safety.

In general, the trees assessed in this report were observed to be very mature trees. As such, these trees would benefit from an ongoing Tree Management Plan. Those trees considered to be low in suitability for preservation should receive proper attention prior to the commencement of construction operations.

Arborist Tree Report
The Washington Community Swim Center Project
Sunnyvale, California

Proper implementation of the Tree Protection Plan (Appendix 2) is expected to extend the normal and useful life of those trees determined to be moderate or highly suitable for preservation.

Recommendations

1. The failed but still attached branches in camphora trees 306 and 320 and in coast redwood 326 should be brought to the attention of Washington Park staff.
2. Prior to the commencement of construction operations, Washington Park staff or their representative should identify trees requiring maintenance pruning and conduct a follow-up inspection after the trees are pruned. Table 3 – Tree Assessment Chart can be used as a guide for locating those trees that would benefit from maintenance pruning.
3. If removals are to be considered, please note SMC 19.94.110 "A written letter shall be included when a protected tree(s) is proposed to be removed explaining why the tree(s) cannot be relocated or the design of the structures altered to maintain the trees." Other conditions may apply and it is the responsibility of the Project Lead to understand and comply with those conditions.
4. The Tree Protection Plan, Appendix 2, is to be properly implemented before, during and after construction operations.
5. Questions regarding the information contained in this report are to be addressed to Fujitrees Consulting, LLC.

These findings and recommendations are based on currently available information and are provided for the Client to make informed decisions regarding the subject trees contained in this report.

Literature Referenced

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Websites

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Table 1
Evaluation Factors for Determining Overall Tree Condition
Washington Community Swim Center Project
Sunnyvale, California

Factor	Variation of condition factor	Points
Canopy Development	100% density and balanced	(5)
	90% with variable density	(4)
	60 to 90% density but unbalanced	(3)
	20 to 60% density, sparse	(2)
	Less than 20%, very sparse	(1)
Growth rate	Abundant new growth throughout canopy	(5)
	Displays new growth	(4)
	New growth is short but presents	(3)
	Stunted growth some dieback / deadwood	(2)
	Stunted growth and abundant dieback	(1)
Insects and Diseases	None visible	(5)
	Minor evidence is visible	(4)
	Limited pest damage	(3)
	Significant damage or infestation	(2)
	Severe damage and infestation	(1)
Structural Integrity	Sound with a vertical trunk	(5)
	Minor branch attachment flaws	(4)
	Branches not evenly distributed	(3)
	Trunk lean and/or branch failures	(2)
	Severe lean and/or large branch or stem failures	(1)
Trunk condition	Sound, solid, round circumference	(5)
	Wounds display good compartmentalization	(4)
	Benign cavities, missing bark, no conks	(3)
	Conks and poor compartmentalization	(2)
	Extensive decay and heart rot	(1)
Root Collar	Fully exposed, good flare, sound buttress roots	(5)
	Exposed collar, irregular qualities	(4)
	Partially exposed, possible flaws, no visible decay	(3)
	<40% of root collar is decayed, undercut or girdled	(2)
	>40% of root collar is decayed, undercut or girdled	(1)

Total points	Condition class	Percentage for Overall Condition
27 - 30	Very Good	90 - 100
21 - 26	Good	70 - 89
15 - 20	Fair	50 - 69
9 - 14	Poor	30 - 49
3 - 8	Very Poor	10 - 29
0 - 2	Dead	0 - 9

Table 2
Suitability Factors for Tree Preservation
Washington Community Swim Center Project
Sunnyvale, California

Suitability Factors

To assist in the design process assessed trees have been rated as to suitability for preservation. Factors that influence suitability include:

Health: Overall tree vigor, extension of new growth, proper closing of wounds and the presence of plant pathogens.

Structure: The overall tree architecture, including roots, trunk, limbs, and branches are visually assessed for defects. A defect that can be corrected by proper arboricultural practices may allow a tree to be preserved.

Useful Life Expectancy: The life of a tree is much like a bell-shaped curve; where aging accentuates tree vigor until a point at the top of the curve where aging now reduces tree vigor and decline begins. A species may be long lived but have a poor structure that is prone to fail and should not be considered suitable.

Tree Species: The factors described above are predicated on the tree species. Certain species grow slowly and decline slowly. Other species grow quickly and decline quickly. Tree species that are invasive, or a nuisance or have an inherently poor structure are to be avoided.

Suitability Ratings

When the above factors are considered, assessed trees were rated as HIGH, MODERATE or LOW in suitability for preservation. An explanation for each rating is provided below.

HIGH: Trees which are significant and expected to provide long-term contributions to the site. They display fair or better health and fair or better structural condition. On-going suitability may require typical maintenance practices commonly associated with the tree species. These trees are the most suitable for retention measures and are worthy of consideration during the design process or design revision.

MODERATE: Trees which contribute to the site but provide less than significant contributions for reasons of health, structural condition or appearance. On-going suitability will require properly implemented maintenance practices. Design revisions to preserve these trees may not be warranted.

LOW: Trees which provide minor contributions to the property for reasons of poor health, structural condition or appearance. A tree species that is a nuisance due to litter, will grow too large for the area or is known to develop a structure prone to failure is also rated low in suitability. Generally speaking, trees in this category are not expected to benefit or respond to acceptable corrective measures. Removal of these trees will often allow the safe, useful and aesthetic enjoyment of the property. *Preservation of low rated trees is not recommended.*

*Preservation is referred to as "Conservation" in ANSI A300 (Part 5) – 2005 Management

Table 3

Tree Assessment Chart

Washington Community Swim Center Project

Sunnyvale, California

Tree Tag No.	Common Name	Tree Species	Measured Trunk Circumference ¹	Measured Trunk Diameter ²	Adjusted Trunk Diameter ³	Approximate Height ⁴	Approximate Crown Radius ⁵	Canopy	Growth	Pests / Health	Structure	Trunk	Root Collar	Condition Rating	Overall Condition ⁶	Suitability for Preservation ⁷	Protected Tree ⁸	Comments *
302	camphora tree	<i>Cinnamomum camphora</i>	84.82	27	27	37	31	2	2	2	3	3	3	50%	Fair	Mod	YES	branch dieback, thin canopy
303	buckeye	<i>Aesculus spp.</i>	28.27	9	9	18	10	3	3	3	2	3	3	57%	Fair	Mod	YES	trunk wounds, deciduous, species identified by park staff
304	camphora tree	<i>Cinnamomum camphora</i>	126	40.1	40	38	35	3	3	2	3	2	2	50%	Fair	Mod	YES	trunk cavity, heavy branch end weight, asymmetrical canopy
305	camphora tree	<i>Cinnamomum camphora</i>	60.32	19.2	19	35	18	1	1	1	2	2	2	30%	Poor	Low	YES	branch dieback, thin canopy, displays low vigor
306	camphora tree	<i>Cinnamomum camphora</i>	92.68	29.5	30	40	38	2	2	2	2	3	2	43%	Poor	Low	YES	Hanger mid crown , displays low vigor, heavy branch end weight, needs work
307	camphora tree	<i>Cinnamomum camphora</i>	103.4	32.9	33	40	40	3	3	3	2	4	3	60%	Fair	Mod	YES	heavy branch end weight, suppressed growth, root collar is not fully exposed
308	camphora tree	<i>Cinnamomum camphora</i>	87.96	28	28	40	42	3	2	2	2	2	2	43%	Poor	Low	YES	thin canopy, heavy branch end weight, asymmetrical canopy
309	camphora tree	<i>Cinnamomum camphora</i>	133.2	42.4	42	38	45	3	2	2	3	4	3	57%	Fair	Mod	YES	thin canopy, heavy branch end weight, asymmetrical canopy, branch dieback

Table 3

Tree Assessment Chart

Washington Community Swim Center Project

Sunnyvale, California

Tree Tag No.	Common Name	Tree Species	Measured Trunk Circumference 1	Measured Trunk Diameter 2	Adjusted Trunk Diameter 3	Approximate Height 4	Approximate Crown Radius 5	Canopy	Growth	Pests / Health	Structure	Trunk	Root Collar	Condition Rating	Overall Condition 6	Suitability for Preservation 7	Protected Tree 8	Comments *
310	camphora tree	<i>Cinnamomum camphora</i>	113.7	36.2	36	38	35	3	2	2	3	3	3	53%	Fair	Mod	YES	branch dieback, heavy branch end weight, thin canopy
311	tree fern	<i>Alsophila australis</i>	>13	>4	>4											NQ 9	NO	Less than 4 inches in trunk diameter.
312	tree fern	<i>Alsophila australis</i>	>13	>4	>4											NQ	NO	Less than 4 inches in trunk diameter.
313	buckeye	<i>Aesculus spp.</i>	26.08	8.3	8	18	18	3	3	3	2	3	3	57%	Fair	Mod	NO	asymmetrical canopy, extended over building, trunk wounds, deciduous, species identified by park staff
314	buckeye	<i>Aesculus spp.</i>	29.85	9.5	10	22	18	2	3	3	1	2	2	43%	Poor	Low	NO	trunk wounds, cavity at root collar, extended over building, asymmetrical canopy, deciduous, species identified by park staff
315	buckeye	<i>Aesculus spp.</i>	33.93	10.8	11	22	20	2	3	3	1	3	3	50%	Fair	Low	NO	asymmetrical canopy, extended over building, deciduous, species identified by park staff
316	tree fern	<i>Alsophila australis</i>	>13	>4	>4											NQ	NO	Less than 4 inches in trunk diameter.
317	camphora tree	<i>Cinnamomum camphora</i>	136.7	43.5	44	58	43	3	3	3	2	3	3	57%	Fair	Mod	YES	heavy branch end weight, asymmetrical canopy

Table 3

Tree Assessment Chart

Washington Community Swim Center Project

Sunnyvale, California

Tree Tag No.	Common Name	Tree Species	Measured Trunk Circumference ¹	Measured Trunk Diameter ²	Adjusted Trunk Diameter ³	Approximate Height ⁴	Approximate Crown Radius ⁵	Canopy	Growth	Pests / Health	Structure	Trunk	Root Collar	Condition Rating	Overall Condition ⁶	Suitability for Preservation ⁷	Protected Tree ⁸	Comments *
318	camphora tree	<i>Cinnamomum camphora</i>	116.9	37.2	37	58	40	3	3	3	2	3	2	53%	Fair	Mod	YES	heavy branch end weight, asymmetrical canopy, limb extended over turf, no tag found; affixed with blue tag
319	Southern magnolia	<i>Magnolia grandiflora</i>	72.26	23	23	48	33	3	3	3	2	4	4	63%	Fair	High	YES	existing branch failure, heavy branch end weight, reduced limb displays a wound
320	camphora tree	<i>Cinnamomum camphora</i>	110.9	35.3	35	55	33	3	3	3	4	4	4	70%	Good	High	YES	Hanger in northwest part of canopy , thin canopy, balanced canopy
321	beech	<i>Fagus spp.</i>	30.79	9.8	10	38	20	4	3	3	3	3	3	63%	Fair	High	NO	asymmetrical canopy, slight trunk lean, heavy branch end weight, narrow branch attachments, deciduous, species identified by park staff
322	maidenhair tree	<i>Ginkgo biloba</i>	93.93	29.9	30	62	50	3	4	4	3	3	3	67%	Fair	High	YES	asymmetrical canopy, narrow branch attachments, multi stem trunk
323	coast redwood	<i>Sequoia sempervirens</i>	86.71	27.6	28	77	20	1	0	0	1	1	1	13%	Very Poor	Low	YES	tree in decline, trunk wounds, multi leaders in upper canopy,

Table 3

Tree Assessment Chart

Washington Community Swim Center Project

Sunnyvale, California

Tree Tag No.	Common Name	Tree Species	Measured Trunk Circumference 1	Measured Trunk Diameter 2	Adjusted Trunk Diameter 3	Approximate Height 4	Approximate Crown Radius 5	Canopy	Growth	Pests / Health	Structure	Trunk	Root Collar	Condition Rating	Overall Condition 6	Suitability for Preservation 7	Protected Tree 8	Comments *
324	coast live oak	<i>Quercus agrifolia</i>	98.96	31.5	32	34	28	3	3	2	3	3	3	57%	Fair	High	YES	suppressed growth - due to soil compaction, heavy branch end weight, trunk cavity - possible wetwood infection, evidence of sycamore borer
325	coast redwood	<i>Sequoia sempervirens</i>	72.26	23	23	81	12	3	3	3	3	4	4	67%	Fair	High	YES	thin canopy, displays low vigor
326	coast redwood	<i>Sequoia sempervirens</i>	113.1	36	36	90	23	3	3	3	3	4	4	67%	Fair	High	YES	Hanger over path , thin canopy, displays low vigor,
327	coast redwood	<i>Sequoia sempervirens</i>	59.06	18.8	19	64	12	2	2	3	2	2	3	47%	Poor	Low	YES	foliar blight, co-dominant stem was removed, trunk cankers
328	coast redwood	<i>Sequoia sempervirens</i>	89.54	28.5	29	75	16	2	2	3	2	3	3	50%	Fair	Mod	YES	suppressed growth, rubbing limbs with neighboring oak, thin canopy, asymmetrical canopy
329	coast redwood	<i>Sequoia sempervirens</i>	107.8	34.3	34	88	18	3	3	3	3	3	3	60%	Fair	High	YES	displays low vigor
330	coast redwood	<i>Sequoia sempervirens</i>	115	36.6	37	85	38	3	3	3	3	3	3	60%	Fair	High	YES	displays low vigor
331	camphora tree	<i>Cinnamomum camphora</i>	67.54	21.5	22	50	35	3	3	3	2	3	3	57%	Fair	Mod	YES	asymmetrical canopy, thin canopy, heavy branch end weight
332	camphora tree	<i>Cinnamomum camphora</i>	99.59	31.7	32	58	38	3	3	3	3	3	4	63%	Fair	Mod	YES	thin canopy, displays low vigor, dead branches

Table 3

Tree Assessment Chart

Washington Community Swim Center Project

Sunnyvale, California

Tree Tag No.	Common Name	Tree Species	Measured Trunk Circumference 1	Measured Trunk Diameter 2	Adjusted Trunk Diameter 3	Approximate Height 4	Approximate Crown Radius 5	Canopy	Growth	Pests / Health	Structure	Trunk	Root Collar	Condition Rating	Overall Condition 6	Suitability for Preservation 7	Protected Tree 8	Comments *
333	camphora tree	<i>Cinnamomum camphora</i>	61.26	19.5	20	58	20	3	3	3	3	3	3	60%	Fair	Mod	YES	asymmetrical canopy, branch cankers, dead branches
334	holly oak	<i>Quercus ilex</i>	53.41	17	17	38	20	4	4	2	3	3	3	63%	Fair	High	YES	trunk wounds, dense canopy, balanced canopy
335	holly oak	<i>Quercus ilex</i>	62.2	19.8	20	40	38	2	4	3	2	3	3	57%	Fair	High	YES	heavy branch end weight, dense canopy, evidence of past limb failures
336	evergreen pear	<i>Pyrus kawakamii</i>	~20.4	~6.5	7	8	8	4	4	4	4	4	3	77%	Fair	High	NO	Espalier tree using chain link fence as a trellis

1/ Trunk Circumference: Converted from the trunk diameter measurement.

2/ Measured Trunk Diameter: Measured at 4.5 feet above the existing grade with a diameter tape. Large multi stem trees measured below trunk divide.

3/ Adjusted Trunk Diameter: Diameters were rounded to whole numbers. This number was used in the tree appraisal calculations.

4/ Approximate Height: Tree height was determined by a Tru Pulse laser range finder or approximated when conditions made it necessary.

5/ Crown Radius: Distance from trunk to furthest point of dripline was determined by a laser range finder or approximated when conditions made it necessary.

6/ Overall Condition: Please refer to Table 1 for an explanation of terms.

7/ Suitability for Preservation: Please refer to Table 2 for an explanation of terms. Mod. = Moderate

8/ Protected Tree: Sunnyvale Municipal Code 19.94.030: Tree of significant size; any tree 38 inches or greater in trunk circumference when measured at 4.5 feet above grade.

9/ NQ: Not Qualified, less than four inches in trunk diameter. Does not qualify as a tree Sunnyvale Municipal Code 19.94.030.

* / Comments in **BOLD** font require attention for reasons of safety.

Table 4
TREE APPRAISAL WORKSHEET
(Trees 30 inches and less in trunk diameter.)
Washington Community Swim Center Project
Sunnyvale, California

		1	2	3	4				5		6	7	8	9	10	11	12	13	14	
	TREE NO.	SPECIES	CONDITION %	DIAMETER *	¹ LOCATION %	SITE %	CONTRIBUTION %	PLACEMENT %	² SPECIES RATING %	² REPLACEMENT TREE SIZE SQ. INCHES	TRUNK AREA	² REPLACEMENT TREE COST	² INSTALLATION COST	² INSTALLED TREE COST	² UNIT TREE COST	APPRAISED TRUNK AREA	APPRAISED TREE TRUNK INCREASE	BASIC TREE COST	APPRAISED VALUE	³ ADJUSTED APPRAISED VALUE
1	302	camphora tree	50%	27	75%	100%	75%	50%	70%	1.69	2.2420	172.73	345.46	\$518.19	\$77.04	572.2650	570.0230	\$44,432.76	\$11,663.60	\$11,700
2	303	buckeye	57%	9	55%	100%	30%	35%	70%	1.69	2.2420	172.73	345.46	\$518.19	\$77.04	63.5850	61.3430	\$5,244.05	\$1,150.81	\$1,150
3	305	camphora tree	30%	19	58%	100%	50%	25%	70%	1.69	2.2420	172.73	345.46	\$518.19	\$77.04	283.3850	281.1430	\$22,177.44	\$2,716.74	\$2,720
4	306	camphora tree	43%	30	60%	100%	50%	30%	70%	1.69	2.2420	172.73	345.46	\$518.19	\$77.04	690.5000	688.2580	\$53,541.58	\$9,669.61	\$9,700
5	308	camphora tree	43%	28	58%	100%	50%	25%	70%	1.69	2.2420	172.73	345.46	\$518.19	\$77.04	615.4400	613.1980	\$47,758.96	\$8,385.68	\$8,400
6	313	buckeye	57%	8	55%	100%	30%	35%	70%	1.69	2.2420	172.73	345.46	\$518.19	\$77.04	50.2400	47.9980	\$4,215.95	\$925.19	\$930
7	314	buckeye	43%	10	55%	100%	30%	35%	70%	1.69	2.2420	172.73	345.46	\$518.19	\$77.04	78.5000	76.2580	\$6,393.10	\$1,058.38	\$1,060
8	315	buckeye	50%	11	55%	100%	30%	35%	70%	1.69	2.2420	172.73	345.46	\$518.19	\$77.04	94.9850	92.7430	\$7,663.11	\$1,475.15	\$1,480
9	319	Southern magnolia	63%	23	97%	100%	95%	95%	90%	2.20	3.7994	172.73	345.46	\$518.19	\$45.46	415.2650	411.4656	\$19,221.77	\$10,535.45	\$10,500
10	321	beech	63%	10	90%	100%	85%	85%	70%	1.69	2.2420	172.73	345.46	\$518.19	\$77.04	78.5000	76.2580	\$6,393.10	\$2,537.42	\$2,540
11	322	maidenhair tree	67%	30	77%	100%	65%	65%	90%	1.69	2.2420	172.73	345.46	\$518.19	\$77.04	690.5000	688.2580	\$53,541.58	\$24,752.27	\$24,800
12	323	coast redwood	13%	28	90%	100%	85%	85%	90%	2.46	4.7505	172.73	345.46	\$518.19	\$36.36	615.4400	610.6895	\$22,722.86	\$2,392.72	\$2,390
13	325	coast redwood	67%	23	90%	100%	85%	85%	90%	2.46	4.7505	172.73	345.46	\$518.19	\$36.36	415.2650	410.5145	\$15,444.50	\$8,381.73	\$8,400
14	327	coast redwood	47%	19	90%	100%	85%	85%	90%	2.46	4.7505	172.73	345.46	\$518.19	\$36.36	283.3850	278.6345	\$10,649.34	\$4,054.20	\$4,050
15	328	coast redwood	50%	29	90%	100%	85%	85%	90%	2.46	4.7505	172.73	345.46	\$518.19	\$36.36	660.1850	655.4345	\$24,349.79	\$9,861.66	\$9,900
16	331	camphora tree	57%	22	52%	100%	30%	25%	70%	1.69	2.2420	172.73	345.46	\$518.19	\$77.04	379.9400	377.6980	\$29,616.04	\$6,105.35	\$6,100
17	333	camphora tree	60%	20	80%	100%	75%	65%	70%	1.69	2.2420	172.73	345.46	\$518.19	\$77.04	314.0000	311.7580	\$24,536.02	\$8,244.10	\$8,200
18	334	holly oak	63%	17	87%	100%	80%	80%	70%	1.69	2.2420	172.73	345.46	\$518.19	\$77.04	226.8650	224.6230	\$17,823.14	\$6,812.01	\$6,800
19	335	holly oak	57%	20	73%	100%	40%	80%	70%	1.69	2.2420	172.73	345.46	\$518.19	\$77.04	314.0000	311.7580	\$24,536.02	\$7,179.24	\$7,200
20	336	evergreen pear	77%	7	53%	100%	30%	30%	50%	1.63	2.0857	172.73	345.46	\$518.19	\$82.82	38.4650	36.3793	\$3,531.13	\$725.06	\$730

Appraised Value of Trees Less Than 30 inches in Trunk Diameter \$128,750

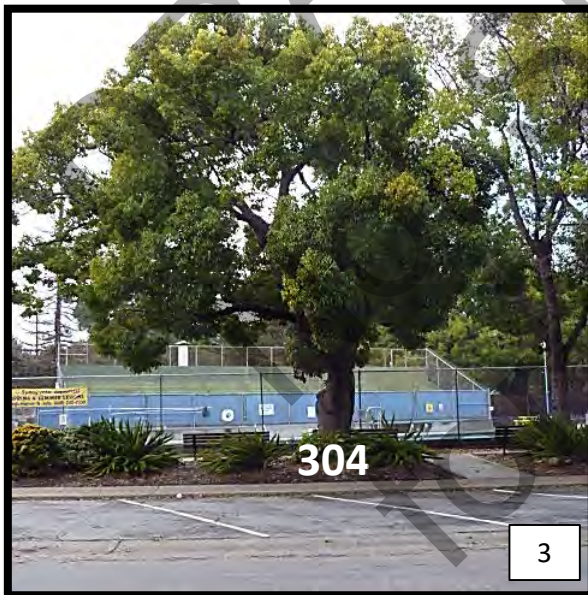
1/ Location is the average attained by adding columns 5, 6 and 7 with the total divided by 3.
2/ Refer to the "Species Classification and Group Assignment", a regional supplement to the CTLA Guide for Plant Appraisal, 9th Edition, unless noted otherwise.
3/ If appraised value is \$5000 or more, round it to the nearest \$100; if it is less, round to the nearest \$10.
*/ Appraisal calculations as specified in the CTLA Guide for Plant Appraisal are for trees 30 inches and less in trunk diameter.

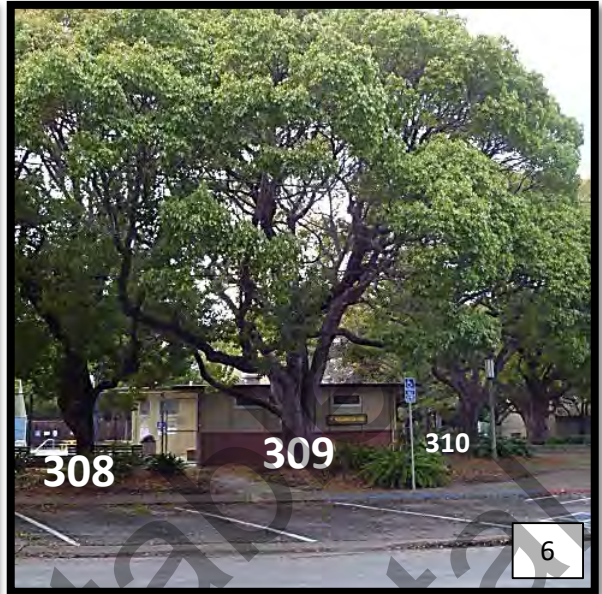
Table 5
TREE APPRAISAL WORKSHEET
(Adjusted for trees greater than 30 inches in trunk diameter.)
Washington Community Swim Center Project
Sunnyvale, California

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
LINE NO.	TREE NO.	SPECIES	CONDITION %	DIAMETER *	¹ LOCATION	SITE %	CONTRIBUTION %	PLACEMENT %	² SPECIES RATING %	² REPLACEMENT TREE SIZE SQ. INCHES	TRUNK AREA	² REPLACEMENT TREE COST	² INSTALLATION COST	² INSTALLED TREE COST	² UNIT TREE COST	APPRAISED TRUNK AREA	APPRAISED TREE TRUNK INCREASE	BASIC TREE COST	APPRAISED VALUE	³ ADJUSTED APPRAISED VALUE
1	304	camphora tree	50%	40	60%	100%	50%	30%	70%	1.69	2.2420	172.73	345.46	\$518.19	\$77.04	1149.0000	1146.7580	\$88,864.42	\$18,661.53	\$18,700
2	307	camphora tree	60%	33	60%	100%	50%	30%	70%	1.69	2.2420	172.73	345.46	\$518.19	\$77.04	835.0850	832.8430	\$64,680.41	\$16,299.46	\$16,300
3	309	camphora tree	57%	42	67%	100%	50%	50%	70%	1.69	2.2420	172.73	345.46	\$518.19	\$77.04	1232.6600	1230.4180	\$95,309.59	\$25,352.35	\$25,400
4	310	camphora tree	53%	36	75%	100%	75%	50%	70%	1.69	2.2420	172.73	345.46	\$518.19	\$77.04	973.6400	971.3980	\$75,354.69	\$20,967.44	\$21,000
5	317	camphora tree	57%	44	87%	100%	80%	80%	70%	1.69	2.2420	172.73	345.46	\$518.19	\$77.04	1313.6400	1311.3980	\$101,548.29	\$35,115.40	\$35,100
6	318	camphora tree	53%	37	87%	100%	80%	80%	70%	1.69	2.2420	172.73	345.46	\$518.19	\$77.04	1018.4850	1016.2430	\$78,809.55	\$25,339.90	\$25,300
7	320	camphora tree	70%	35	93%	100%	95%	85%	70%	1.69	2.2420	172.73	345.46	\$518.19	\$77.04	928.1250	925.8830	\$71,848.21	\$32,858.58	\$32,900
8	324	coast live oak	57%	32	97%	100%	95%	95%	90%	2.20	3.7994	172.73	345.46	\$518.19	\$45.46	787.5600	783.7606	\$36,147.95	\$17,925.77	\$17,900
9	326	coast redwood	67%	36	92%	100%	80%	95%	90%	2.46	4.7505	172.73	345.46	\$518.19	\$36.36	973.6400	968.8895	\$35,747.01	\$19,759.16	\$19,800
10	329	coast redwood	60%	34	92%	100%	80%	95%	90%	2.46	4.7505	172.73	345.46	\$518.19	\$36.36	881.9400	877.1895	\$32,412.80	\$16,044.34	\$16,000
11	330	coast redwood	60%	37	92%	100%	80%	95%	90%	2.46	4.7505	172.73	345.46	\$518.19	\$36.36	1018.4850	1013.7345	\$37,377.58	\$18,501.90	\$18,500
12	332	camphora tree	63%	32	83%	100%	70%	80%	70%	1.69	2.2420	172.73	345.46	\$518.19	\$77.04	787.5600	785.3180	\$61,019.09	\$22,424.51	\$22,400

Appraised Value of Trees 30 Inches or Greater in Trunk Diameter \$269,300

1/ Location is the average attained by adding columns 5, 6 and 7 with the total divided by 3.
2/ Refer to the "Species Classification and Group Assignment", a regional supplement by the Western Chapter ISA to the CTLA Guide for Plant Appraisal, 9th Edition, unless noted otherwise
3/ If appraised value is \$5000 or more, round it to the nearest \$100; if it is less, round to the nearest \$10.
*/ Appraisal calculations as specified in the CTLA Guide for Plant Appraisal are for trees greater than 30 inches in trunk diameter.







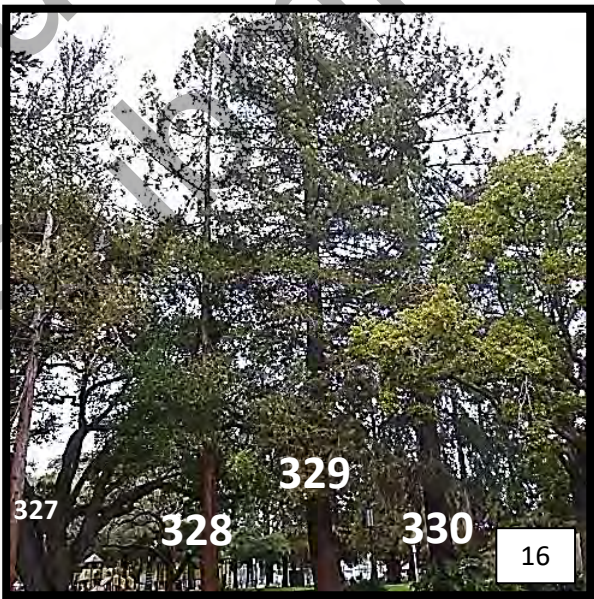






Photo 24. Shown is an example of the tags affixed to trees by the Land Surveyor.

Appendix 2
Tree Protection Plan
Washington Community Swim Center Project
Sunnyvale, California

Tree Protection Plan

- 1 This Tree Protection Plan is to be included as a detail on full-size sheets of the final site plan used for construction.
- 2 A Registered Consulting Arborist or Certified Arborist is to be retained to act as the Project Arborist to monitor any construction activities that may impact the health of protected trees at the site.
- 3 Sunnyvale Municipal Ordinance 19.91.120. Tree Protection During Construction reads:
Protected trees designated for preservation shall be protected during construction of a project by use of the following methods:
 - a. Protective fencing shall be installed no closer to the trunk than the dripline, and far enough from the trunk to protect the integrity of the tree. The fence shall be a minimum of four feet in height and shall be set securely in place. The fence shall be of a sturdy but open material (i.e., chain-link) to allow visibility to the trunk for inspections and safety.
 - b. The existing grade level around a tree shall normally be maintained out to the dripline of the tree. Alternate grade levels, as described in the tree protection plan may be approved by the director of community development.
 - c. Drain wells shall be installed whenever impervious surfaces will be placed over the root system of a tree (the root system generally extends to the outermost edges of the branches).
 - d. Pruning that is necessary to accommodate a project feature, such as a building, road, or walkway shall be reviewed and approved by the department of community development and the department of public works.
 - e. New landscaping installed within the dripline of an existing tree shall be designed to reproduce a similar environment to that which existed prior to construction. (Ord. 2623-99 section1; prior zoning code 19.81.130).
- 4 Supplemental Water
 - 4.1 Prior to construction activities, the protected trees may require water.
 - 4.2 Supplemental watering is to be provided by the contractor as determined by the Project Arborist.

Tree Protection Plan
Washington Community Swim Center Project

- 5 Prior to the start of grading and construction, all protected trees are to be checked for equipment and building clearance and professionally pruned. (Refer to item 15 Tree Contractors.)
- 6 Prior to the start of grading and construction, a minimum six inch layer of clean wood chips is to be installed within the dripline of protected trees.
- 7 Prior to the start of grading and construction activities, temporary protective barriers consisting of chain link fencing four (4) to six (6) feet high, attached to one and one half (1.5) inch diameter metal posts, driven eighteen (18) inches into the ground and spaced no more than ten (10) feet apart are to be placed just outside the dripline of protected trees in a configuration approved by the Project Arborist.
- 8 When a protected tree is fully enclosed, an access gate or panel is to be a component of the tree protection fencing to allow examination and watering of the trees.
- 9 The Project Arborist can require a trunk wrap form of tree protection, in addition to the tree protection fencing.
 - 9.1 Straw wattle is to be coiled around the trunk up to a minimum height of six feet above grade.
 - 9.2 A double layer or more of orange plastic construction fencing is to be wrapped and secured around the straw wattle.
 - 9.3 Damaged straw wattle is to be immediately replaced.
- 10 Warning signs, minimum size 8.5" x 11" are to be secured to each fence. (See example following this plan.)
- 11 Chain link panels five to six feet high and secured to concrete footings may be used when approved by the City of Sunnyvale and the Project Arborist.
- 12 The tree protection fencing is not to be moved without approval from the Project Arborist.
- 13 The area within the fencing is the Tree Protection Zone (TPZ).

Tree Protection Plan
Washington Community Swim Center Project

14 Tree Protection Zone (TPZ) Restrictions

- 14.1 All work within the TPZ is to be approved by the City of Sunnyvale and the Project Arborist prior to the commencement of the task.
- 14.2 No vehicles or equipment are allowed within the dripline or TPZ of any protected tree.
- 14.3 No storage or dumping of construction materials, equipment, supplies, chemicals, paints, broken concrete or spoils is permitted within the TPZ,
- 14.4 No exhaust is permitted to be discharged into the canopy of trees.
- 14.5 All work within the TPZ is to be performed by hand tools.
- 14.6 Trenching by use of pneumatic equipment such as an Air Spade® is recommended only when boring under roots is not feasible.

15 Tree Contractors

- 15.1 All tree work (pruning, tree removal and stump grinding) is to be performed by a State of California Licensed Tree Contractor. (C61 and D49)
- 15.2 All pruning is to be performed or directed by a Certified Arborist or a Certified Tree Worker in accordance with the Best Management Practices for Pruning (International Society of Arboriculture) and adhere to the most recent editions of the American National Standards Institute (ANSI) for Tree Care Operations (Z133.1) and Pruning (A300).
- 15.3 Stumps are to be grubbed 18 inches below the final project grade. Before grubbing contact the Underground Service Alert Company to mark the location of all underground utilities.

16 Post Construction Care

Trees preserved at the construction site will experience a physical environment different from that of pre-development. As a result, tree health and structural stability should be monitored. The following tasks are recommended only if park trees are not maintained by a City of Sunnyvale tree crew.

Tree Protection Plan
Washington Community Swim Center Project

- 16.1 The services of a Registered Consulting Arborist or a qualified Certified Arborist should be retained to provide written tree management recommendations.
- 16.2 Recommendations may include: occasional pruning, mulch, irrigation and a Plant Health Care Program. These trees may require pruning on a 5 to 7 year cycle.
- 16.3 All tree work (pruning and removals) is to be performed by a state of California Licensed Tree Contractor (C61 and D49) who can provide proof of insurance and is licensed to perform work in the City of Sunnyvale.
- 16.4 All pruning is to be performed or directed by an ISA Certified Arborist or a Western Chapter ISA Certified Tree Worker.

DRAFT
Not Suitable
for Submittal

WARNING

Tree Protection Zone

**This fence shall not be moved without approval.
Only authorized personnel may enter this area.**

Each Protected Tree is required to have at least one warning card on its fencing.

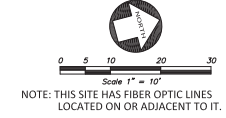
CUIDADO

Zona De Arbol Pretejido

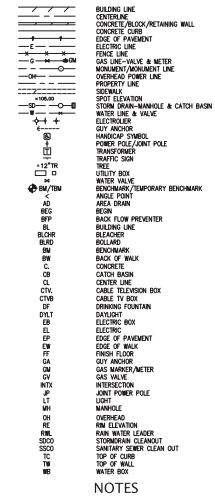
**Esta cerca no sera removida sin aprobacion.
Solo personal autorizado entrara en esta area.**

Cada arbol pretejido requiere tener por lo menos una tarjeta de advertencia en su cerca.

Appendix 3
Tree Location Map
Washington Community Swim Center Project
Sunnyvale, California



LEGEND



- NOTES
1. THIS IS NOT A BOUNDARY SURVEY. NO LIABILITY IS ASSUMED, BY KIER & WRIGHT, FOR THE EXISTENCE OF ANY EASEMENTS, ENCUMBRANCES, DISCREPANCIES IN BOUNDARY, OR TITLE DEFECTS NOT MENTIONED IN SAID DOCUMENTS AND THEREFORE NOT SHOWN ON THIS DRAWING. PROPERTY LINE PLAT ONLY (NO EASEMENTS SHOWN).
 2. ALL DISTANCES AND ELEVATIONS SHOWN HEREON ARE IN FEET AND DECIMALS THEREOF.
 3. THE TYPES, LOCATIONS, SIZES AND/OR DEPTHS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS TOPOGRAPHIC SURVEY WERE OBTAINED FROM SOURCES OF VARYING RELIABILITY. THE CONTRACTOR IS CAUTIONED THAT ONLY ACTUAL EXCAVATION WILL REVEAL THE TYPES, EXTENT, SIZES, LOCATIONS AND DEPTHS OF SUCH UNDERGROUND UTILITIES. (A REASONABLE EFFORT HAS BEEN MADE TO LOCATE AND DELINEATE ALL KNOWN UNDERGROUND UTILITIES). HOWEVER, THE ENGINEER CAN ASSUME NO RESPONSIBILITY FOR THE COMPLETENESS OR ACCURACY OF ITS DELINEATION OF SUCH UNDERGROUND UTILITIES WHICH MAY BE ENCOUNTERED, BUT WHICH ARE NOT SHOWN ON THESE DRAWINGS.
 4. BENCHMARK: CITY OF SUNNYVALE BM #73 BRASS DISC IN TOP OF CURB NEXT TO CATCH BASIN AT THE SOUTHWEST CURB RETURN, INTERSECTION OF PASTORIA AVENUE AND DOWA AVENUE, ELEVATION= 114.807, MARCH 1989.
 5. BASES OF BEARING: THE BEARING OF NORTH 14° 52' 00" EAST TAKEN ON THE CENTER LINE OF PASTORIA ROAD AS SHOWN ON THAT CERTAIN PARCEL MAP FILED FOR RECORD ON DECEMBER 15, 1992, IN BOOK 642 OF MAPS AT PAGE 35, OFFICIAL RECORDS OF SANTA CLARA COUNTY WAS TAKEN AS THE BASIS FOR ALL BEARINGS SHOWN HEREON.
- THIS SURVEY DOES NOT SHOW THE LOCATIONS OF THE FOLLOWING UNDERGROUND UTILITIES DUE TO THE FACT THAT THE CLIENT HAS NOT FURNISHED KIER & WRIGHT CIVIL ENGINEERS & SURVEYORS, INC. WITH ANY PLANS THAT DELINEATE THEIR LOCATIONS: ELECTRIC LINES, GAS LINES, WIRELESS LINES, IF ANY. ALL PARTIES SHOULD CONSIDER THIS SURVEY AS PRELIMINARY WITH REGARD TO THE LOCATION OF THE UTILITY FACILITIES. UPON RECEIPT OF THIS INFORMATION KIER & WRIGHT WILL UPDATE THIS SURVEY AND REISSUE IT.

- TREE MAP LEGEND
- PLOTTED TREE
 - SURVEYOR TREE TAG NUMBER
 - TREE DID NOT APPEAR ON MAP AND WAS APPROXIMATELY LOCATED
 - MAP SCALED FOR FULL SIZE SHEET
 - MAP PROVIDED BY THE DAHLIN GROUP

01/25/2017
PREPARED BY OR UNDER THE SUPERVISION OF
ROONEY A. STEWART P.E., 9225
LICENSE EXPIRES: 9-30-17

DATE DEC. 2016
SCALE 1" = 10'
SURVEYOR RAS II
DRAFTER REG
JOB NO. A16724
SHEET C1.1
OF 1 SHEETS

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
11000 N. DEER AVE., SUITE 100
SUNNYVALE, CALIFORNIA 94086
Tel: (408) 244-9196
Fax: (408) 244-9196

TOPOGRAPHIC SURVEY
OF
840 W. WASHINGTON AVENUE - WASHINGTON COMMUNITY SWIM CENTER
FOR
DAHLIN GROUP

SUNNYVALE, CALIFORNIA

Certification of Performance

That I have personally inspected the tree(s) and /or property referred to in this report and have stated my findings accurately. The extent of the evaluation and appraisal is stated in the attached report and the Terms and Conditions;

That I have no current or prospective interest in the vegetation or the property that is the subject of this report and I have no personal interest or bias with respect to the parties involved;

That the analysis opinions and conclusions stated herein are my own and are based on current scientific procedures and facts;

That my compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party nor upon the results of the assessment the attainment of stipulated results or the occurrence of any subsequent events;

That my analysis opinions and conclusion were developed and this report has been prepared according to commonly accepted Arboricultural practices;

I further certify that I am a Registered Consulting Arborist® by the American Society of Consulting Arborists (ASCA) and a Certified Arborist by the International Society of Arboriculture (ISA).

Disclosure Statement

Arborists are tree specialists who use their education, knowledge, training and experience to examine trees and recommend measures to enhance the beauty and health of trees and attempt to reduce the risk of living near trees. Clients may choose to accept or disregard the recommendations of the arborist or to seek additional advice.

Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that fail in ways we do not fully understand. Certain conditions are often hidden within trees or below the ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances or for a specific period of time. Likewise remedial treatments cannot be guaranteed.

Trees can be managed but they cannot be controlled. To live near trees is to accept some degree of risk.

FUJIITREES CONSULTING, LLC

By: _____ Date: _____

Walter Fujii, RCA®

Manager and Consulting Arborist

Fujiitrees Consulting, LLC TERMS AND CONDITIONS

The following terms and conditions apply to all oral and written reports and correspondence pertaining to the consultations, inspections and activities of Fujiitrees Consulting hereinafter referred to as "Consultant".

1. Any legal description provided to the Consultant is assumed to be correct. No responsibility is assumed for matters legal in character nor is any opinion rendered as to the quality of any title.
2. It is assumed that any property referred to in any report or in conjunction with any services performed by the Consultant, is not in violation of any applicable codes, ordinances, statutes, or other governmental regulations, and that any titles and ownership to any property are assumed to be good and marketable. Any existing liens and encumbrances have been disregarded.
3. Possession of this report or a copy thereof does not imply any right of publication or use for any purpose, without the express permission of the Consultant and the Client to whom the report was issued. Loss, removal or alteration of any part of a report invalidates the entire appraisal/evaluation.
4. The scope of any report or other correspondence is limited to the trees and conditions specifically mentioned in those reports and correspondence. The Consultant assumes no liability for the failure of trees or parts of trees, either inspected or otherwise. The Consultant assumes no responsibility to report on the condition of any tree or landscape feature not specifically requested by the named client.
5. No tree described in this report was climbed, unless otherwise stated. The Consultant cannot take responsibility for any defects, which could only have been discovered by climbing. A full root crown examination (RCX), consisting of excavating the soil around the tree to uncover the root crown and major buttress roots was not performed unless otherwise stated. We cannot take responsibility for any root defects, which could only have been discovered by such an inspection.
6. The Consultant shall not be required to provide further documentation, give testimony, be deposed, or attend court by reason of this appraisal/report unless subsequent contractual arrangements are made, including payment of additional fees for such services as described by the consultant or in the fee schedules or contract.
7. The Consultant offers no guarantees or warranties, either expressed or implied, as to the suitability of the information contained in the reports for any purpose. It remains the responsibility of the client to determine applicability to his/her particular case.
8. Any report and the values, observations, and recommendations expressed therein represent the professional opinion of the Consultant, and the fee for services is in no manner contingent upon the reporting of a specified value nor upon any particular finding to be reported.
9. Any photographs, diagrams, graphs, sketches, or other graphic material included in any report, being intended solely as visual aids, are not necessarily to scale and should not be construed as engineering reports or surveys, unless otherwise noted in the report. Any reproductions of graphs material or the work produce of any other persons is intended solely for the purpose of clarification and ease of reference. Inclusion of said information does not constitute a representation by the Consultant as to the sufficiency or accuracy of that information.
10. Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate all trees.
11. Payment terms are net payable upon receipt of invoice unless other arrangements have been mutually agreed upon. All balances due beyond 30 days of invoice date will be charged a service fee of 1.5 percent per month (18.0% APR). All checks returned for insufficient funds or any other reason will be subject to a \$25.00 service fee. Advance payment of fees may be required in some cases.

APPENDIX B

USGS Web Soil Survey



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Santa Clara Area, California, Western Part**



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface	2
How Soil Surveys Are Made	5
Soil Map	8
Soil Map.....	9
Legend.....	10
Map Unit Legend.....	11
Map Unit Descriptions.....	11
Santa Clara Area, California, Western Part.....	13
135—Urban land-Stevenscreek complex, 0 to 2 percent slopes.....	13
Soil Information for All Uses	15
Soil Reports.....	15
Soil Physical Properties.....	15
Physical Soil Properties.....	15
Soil Qualities and Features.....	19
Soil Features.....	19
References	22

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

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Soil Map



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MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Santa Clara Area, California, Western Part
Survey Area Data: Version 5, Sep 12, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 7, 2013—Nov 3, 2013

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Santa Clara Area, California, Western Part (CA641)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
135	Urban land-Stevenscreek complex, 0 to 2 percent slopes	1.6	100.0%
Totals for Area of Interest		1.6	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

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onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Santa Clara Area, California, Western Part

135—Urban land-Stevenscreek complex, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 1nszy
Elevation: 20 to 540 feet
Mean annual precipitation: 14 to 24 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 275 to 325 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 70 percent
Stevenscreek and similar soils: 25 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Disturbed and human transported material

Description of Stevenscreek

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from metamorphic and sedimentary rock and/or alluvium derived from metavolcanics

Typical profile

A1 - 0 to 2 inches: sandy loam
A2 - 2 to 9 inches: silt loam
ABt - 9 to 18 inches: silty clay loam
Bt1 - 18 to 27 inches: silty clay loam
Bt2 - 27 to 39 inches: clay loam
BC - 39 to 61 inches: sandy clay loam
C - 61 to 70 inches: sandy clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches

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Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water storage in profile: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Flaskan

Percent of map unit: 5 percent
Landform: Alluvial fans
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Soil Information for All Uses

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Soil Physical Properties

This folder contains a collection of tabular reports that present soil physical properties. The reports (tables) include all selected map units and components for each map unit. Soil physical properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

Physical Soil Properties

This table shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is

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given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, saturated hydraulic conductivity (*K_{sat}*), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

*Saturated hydraulic conductivity (*K_{sat}*)* refers to the ease with which pores in a saturated soil transmit water. The estimates in the table are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity (*K_{sat}*) is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause

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damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In this table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil.

Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in the table as the K factor (K_w and K_f) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and K_{sat} . Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor K_w indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor K_f indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook."

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service.
National soil survey handbook, title 430-VI. (<http://soils.usda.gov>)

Custom Soil Resource Report

Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Physical Soil Properties—Santa Clara Area, California, Western Part														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	<i>In</i>	<i>Pct</i>	<i>Pct</i>	<i>Pct</i>	<i>g/cc</i>	<i>micro m/sec</i>	<i>In/in</i>	<i>Pct</i>	<i>Pct</i>					
135—Urban land-Stevenscreek complex, 0 to 2 percent slopes														
Urban land	—	—	—	—	—	—	—	—	—					
Stevenscreek	0-2	-64-	-19-	12-17- 28	1.45-1.50-1.55	1.40-4.00-14.00	0.14-0.16-0.18	3.0- 6.0- 9.0	1.5- 2.0- 3.0	.17	.17	5	3	86
	2-9	-21-	-55-	16-25- 28	1.45-1.50-1.55	1.40-2.00-4.00	0.14-0.17-0.21	3.0- 6.0- 9.0	1.5- 2.0- 3.0	.43	.43			
	9-18	-18-	-50-	27-32- 40	1.45-1.50-1.55	1.40-2.00-4.00	0.14-0.17-0.21	3.0- 6.0- 9.0	1.3- 1.4- 3.0	.37	.37			
	18-27	-17-	-49-	27-34- 40	1.45-1.50-1.55	1.40-2.00-4.00	0.14-0.17-0.21	3.0- 6.0- 9.0	0.5- 0.7- 1.5	.37	.37			
	27-39	-34-	-32-	27-34- 40	1.45-1.50-1.55	1.40-2.00-4.00	0.14-0.17-0.21	3.0- 6.0- 9.0	0.3- 0.4- 0.8	.28	.28			
	39-61	-54-	-14-	25-32- 40	1.45-1.50-1.55	1.40-2.00-4.00	0.14-0.17-0.21	3.0- 6.0- 9.0	0.2- 0.3- 0.5	.20	.20			
	61-70	-55-	-17-	20-28- 35	1.45-1.50-1.55	1.40-2.00-4.00	0.14-0.17-0.21	3.0- 6.0- 9.0	0.1- 0.2- 0.3	.24	.24			

Soil Qualities and Features

This folder contains tabular reports that present various soil qualities and features. The reports (tables) include all selected map units and components for each map unit. Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Soil Features

This table gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage, or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, saturated hydraulic conductivity (Ksat), content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to

Custom Soil Resource Report

corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low*, *moderate*, or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Custom Soil Resource Report

Soil Features—Santa Clara Area, California, Western Part									
Map symbol and soil name	Restrictive Layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		<i>Low-RV-High</i>	<i>Range</i>		<i>Low-High</i>	<i>Low-High</i>			
		<i>In</i>	<i>In</i>		<i>In</i>	<i>In</i>			
135—Urban land-Stevenscreek complex, 0 to 2 percent slopes									
Urban land	Manufactured layer	- 0-	—	Indurated	0	24-79			
Stevenscreek		—	—		0	24-79	None	Moderate	Moderate

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Custom Soil Resource Report

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