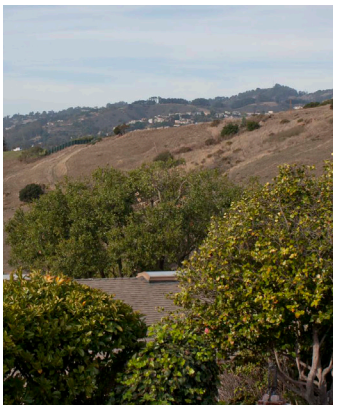
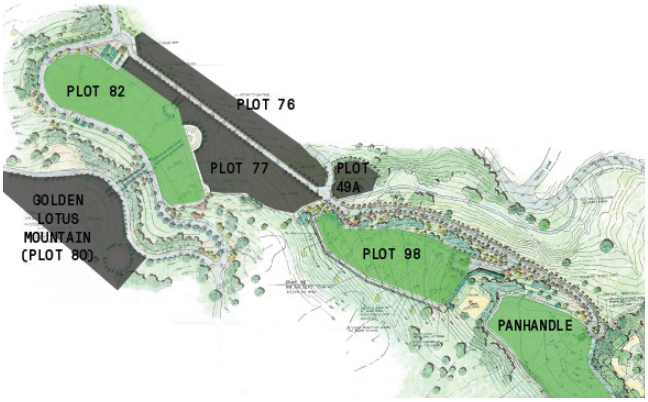
Mountain View Cemetery Expansion Project







Draft Environmental Impact Report

SCH # 2015022037
Lead Agency: City of Oakland
May, 2016

City Case # PCN15048 – ER01

LAMPHIER-GREGORY

Print Form

Appendix C

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #

Project Title: Mountain View Cemetery Burial Site Expansion

Lead Agency: City of Oakland — Contact Person: Catherine pPayne
Mailing Address: 250 Frank H. Ogawa Plaza, Suite 2114 — Phone: (510) 238-6168
City: Oakland, CA — Zip: 94612 — County: Alameda

Project Location: County: Alameda — City/Nearest Community: Oakland
Cross Streets: Piedmont Avenue and Ramona Avenue — Zip Code: 94611
Longitude/Latitude (degrees, minutes and seconds): ____° ____′ ____″ N / ____° ____′ ____″ W Total Acres: 226
Assessor's Parcel No.: 48A-7002-3-2 — Section: ____ Twp.: ____ Range: ____ Base: ____
Within 2 Miles: State Hwy #: 12, 24, I-580, I-980 — Waterways: Lake Temescal, Lake Merritt, Glen Echo Creek
Airports: ____ — Railways: BART — Schools: many

Document Type:

CEQA: ☐ NOP ☒ Draft EIR — NEPA: ☐ NOI — Other: ☐ Joint Document
☐ Early Cons ☐ Supplement/Subsequent EIR ☐ EA ☐ Final Document
☐ Neg Dec (Prior SCH No.) ____ ☐ Draft EIS ☐ Other: ____
☐ Mit Neg Dec Other: ____ ☐ FONSI

Local Action Type:

☐ General Plan Update ☐ Specific Plan ☐ Rezone ☐ Annexation
☐ General Plan Amendment ☐ Master Plan ☐ Prezone ☐ Redevelopment
☐ General Plan Element ☐ Planned Unit Development ☒ Use Permit ☐ Coastal Permit
☐ Community Plan ☐ Site Plan ☐ Land Division (Subdivision, etc.) ☐ Other: ____

Development Type:

☐ Residential: Units ____ Acres ____
☐ Office: Sq.ft. ____ Acres ____ Employees ____
☐ Commercial: Sq.ft. ____ Acres ____ Employees ____
☐ Industrial: Sq.ft. ____ Acres ____ Employees ____
☐ Educational: ____
☐ Recreational: ____
☐ Water Facilities: Type ____ MGD ____
☐ Transportation: Type ____
☐ Mining: Mineral ____
☐ Power: Type ____ MW ____
☐ Waste Treatment: Type ____ MGD ____
☐ Hazardous Waste: Type ____
☒ Other: Cemetery use

Project Issues Discussed in Document:

☒ Aesthetic/Visual ☐ Fiscal ☒ Recreation/Parks ☒ Vegetation
☒ Agricultural Land ☐ Flood Plain/Flooding ☐ Schools/Universities ☒ Water Quality
☒ Air Quality ☒ Forest Land/Fire Hazard ☐ Septic Systems ☒ Water Supply/Groundwater
☒ Archeological/Historical ☒ Geologic/Seismic ☒ Sewer Capacity ☒ Wetland/Riparian
☒ Biological Resources ☒ Minerals ☒ Soil Erosion/Compaction/Grading ☒ Growth Inducement
☐ Coastal Zone ☒ Noise ☒ Solid Waste ☒ Land Use
☒ Drainage/Absorption ☒ Population/Housing Balance ☒ Toxic/Hazardous ☒ Cumulative Effects
☐ Economic/Jobs ☒ Public Services/Facilities ☒ Traffic/Circulation ☐ Other: ____

Present Land Use/Zoning/General Plan Designation:

Land use = Cemetery, Zoning = RD-1, General Plan = Urban Park and Open Space

Project Description: *(please use a separate page if necessary)*

The project would develop portions of the upper one-third of the Cemetery property to accommodate future needs for burial sites. Three separate but interrelated development sites, all entirely within the City of Oakland, would be included. The sites would be developed as cut and fill, moving existing soil from proposed cut locations to proposed fill locations. This approach would require transfer of soil between undeveloped sections of the Cemetery property and subsequent grading and site work. The Project would connect the development sites to each other and to the existing portions of the Cemetery by extensions of on-site roadways.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "**X**".
If you have already sent your document to the agency please denote that with an "**S**".

____ Air Resources Board	X Office of Historic Preservation
____ Boating & Waterways, Department of	____ Office of Public School Construction
____ California Emergency Management Agency	____ Parks & Recreation, Department of
____ California Highway Patrol	____ Pesticide Regulation, Department of
____ Caltrans District # ____	____ Public Utilities Commission
____ Caltrans Division of Aeronautics	X Regional WQCB # ____
____ Caltrans Planning	X Resources Agency
____ Central Valley Flood Protection Board	____ Resources Recycling and Recovery, Department of
____ Coachella Valley Mtns. Conservancy	____ S.F. Bay Conservation & Development Comm.
____ Coastal Commission	____ San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
____ Colorado River Board	____ San Joaquin River Conservancy
____ Conservation, Department of	____ Santa Monica Mtns. Conservancy
____ Corrections, Department of	____ State Lands Commission
____ Delta Protection Commission	____ SWRCB: Clean Water Grants
____ Education, Department of	X SWRCB: Water Quality
____ Energy Commission	____ SWRCB: Water Rights
____ Fish & Game Region # ____	____ Tahoe Regional Planning Agency
____ Food & Agriculture, Department of	____ Toxic Substances Control, Department of
____ Forestry and Fire Protection, Department of	____ Water Resources, Department of
____ General Services, Department of	
____ Health Services, Department of	____ Other: ____
____ Housing & Community Development	____ Other: ____
____ Native American Heritage Commission	

Local Public Review Period (to be filled in by lead agency)

Starting Date 6/15/16 Ending Date 8/1/16

Lead Agency (Complete if applicable):

Consulting Firm: Lamphier-Gregory
Address: 1944 Embarcadero
City/State/Zip: Oakland, CA 94606
Contact: Scott Gregory
Phone: (510) 535-6690

Applicant: Mountain View Cemetery Association
Address: 5000 piedmont Avenue
City/State/Zip: Oakland, CA 94611
Phone: (510) 658-2588

Signature of Lead Agency Representative: ____ **Date:** 6/15/16

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

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Appendices

(Technical appendices are included on a Compact Disk included in the back cover of the Draft EIR document.)

Appendix 1A: Notice of Preparation
Appendix 1B: Responses to Notice of Preparation

Appendix 4.2: Technical Air Quality, GHG and Health Risk Assessment Appendices

Appendix 4.3A: *Arborist Report*, HortScience, January 2015
Appendix 4.3B: *Supplemental Arborist Report*, Valley Crest, 2015
Appendix 4.3C: List of Suspected Species with Potential for Occurrence, Environmental Collaborative, 2015

Appendix 4.4A Mountain View Cemetery Expansion Project Historic Resource Evaluation, Page & Turnbull, November 2014
Appendix 4.4B Cultural Resources Assessment Report, William Self Associates, Inc., December 2014

Appendix 4.5A Geotechnical Evaluation of Plot 82, Plot 98 and Panhandle at Mountain View Cemetery, Hultgren-Tillis Engineers, December 23, 2014
Appendix 4.5B Existing Slope at Panhandle Site, Hultgren-Tillis Engineers, June 17, 2015

Appendix 4.8 Construction-Period Noise Calculations

Appendix 4.9 Estimated Water Demands for the Project, SWA 2015

1

Introduction

This Draft Environmental Impact Report (Draft EIR) has been prepared by the City of Oakland in accordance with the California Environmental Quality Act (CEQA)[1] and associated CEQA Guidelines[2] to describe the potential environmental consequences of the proposed Mountain View Cemetery Expansion Project (the Project). This Draft EIR is intended to serve as an informational document for use by public agency decision makers and the public in their consideration of the proposed Project.

The information contained in the EIR will be reviewed and considered by public agencies prior to making a decision to approve, reject, or modify the proposed Project. The City of Oakland (City) is the lead agency for environmental review of the proposed Project.

Proposed Project

Mountain View Cemetery

The Mountain View Cemetery (the Cemetery) occupies approximately 223 acres surrounded by the Claremont Country Club and St. Mary's Cemetery on the north, the City of Piedmont on the south, and Oakland residential neighborhoods to the east and west. Most of the Cemetery is located in the City of Oakland, with a small portion in its southeast corner in the City of Piedmont.

The Cemetery is located on steeply sloping land, rising from approximately 160 feet above mean sea level at its main entrance at the end of Piedmont Avenue, to elevations of 650 feet near the eastern edge near Clarewood Drive. The lower portion of the Cemetery, which accounts for around two-thirds of the property, has been developed with access roads, landscaping and burial plots.

Project Site

The proposed Project is located on three adjacent plots in the easterly, upper portion of the Cemetery, which is largely undeveloped. The Cemetery is not acquiring additional land for the Project. All three sites are located in the City of Oakland.

Project Description

The proposed Project will develop a total of approximately 7.5-acres of existing Cemetery land into three new burial sites with a total capacity of approximately 6,300 individual burial plots. Plot 82, located just above the currently developed portion of the Cemetery; Plot 98, located southeast of Plot

---

1 The California Environmental Quality Act (CEQA) is codified in section 21000, et seq., of the California Public Resources Code

2 The CEQA Guidelines are set forth in sections 15000 through 15387 of the California Code of Regulations, Title 14, Chapter 3

82 and connected to Plot 82 by an existing ridgeline road; and the "Panhandle" area, located immediately east of Plot 98 and also accessed by an existing ridge road. Each site (or Plot) will be substantially graded to transform the existing topography to accommodate burial plots, visitors, and views. Soil removed from each site will be placed back into the excavated area or placed as fill in one of the other sites. All grading conducted for the Project will have a mass balance, such that no off-hauling of soils and no import of soils will occur. Other construction activities include relocating the existing roadway that cuts across Plot 82, improvements to other existing roadways and pedestrian routes, construction of new pedestrian pathways and retaining walls, and creation of new open lawns for in-ground burial.

All grading operations will be completed at one time, after which activities at the new burial sites will be the same as the majority of the Cemetery, primarily a pastoral and scenic area with occasional services and visitors. Individual plot sales, installation of irrigation systems, and final landscaping will be implemented in phases. Opening of Plot 82 for burial use will be followed by Plot 98, then the Panhandle site. The Project will provide Mountain View Cemetery with approximately 15 years of operational capacity.

Environmental Review Process

The City of Oakland Bureau of Planning and Building, Planning Division has determined that the proposed Project is subject to CEQA, and that a an Environmental Impact Report (EIR) will be prepared for the proposed Project. The City circulated a Notice of Preparation (NOP) on February 6, 2015 (see **Appendix 1A**). The public comment period on the scope of the EIR lasted through March 11, 2015. The NOP was sent to responsible agencies, neighboring cities, interested organizations and individuals, and to the State Clearinghouse.

A scoping session was held before the City of Oakland Planning Commission on March 4, 2015. Both written and oral comments received by the City on the NOP and scoping sessions were taken into account during the preparation of this EIR. The written comments received are included in **Appendix 1B**.

EIR Scope

The following environmental topics are addressed in this EIR:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural and Historic Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Noise
- Other Less-than–Significant Effects, including agriculture and forest resources, greenhouse gas emissions / global climate change, land use and planning, mineral resources, population and housing, public services, recreation, transportation and traffic, and utilities and service systems

Report Organization

This Draft EIR is organized into the following chapters:

- *Chapter 1 – Introduction*: Discusses the overall EIR purpose; provides a summary of the proposed Project; describes the EIR scope; and summarizes the organization of the EIR.
- *Chapter 2 – Summary*: Provides a summary of the significant environmental impacts that would result from implementation of the proposed Project, and describes Standard Conditions of Approval and mitigation measures recommended to avoid or reduce significant impacts.
- *Chapter 3 – Project Description*: Provides a description of the Project objectives, Project site, site development history, the proposed development, and required approval process.
- *Chapter 4 – Setting, Impacts, Standard Conditions of Approval, and Mitigation Measures*: Describes the following for each environmental technical topic: existing physical setting, applicable regulatory setting including relevant City of Oakland Standard Conditions of Approval; thresholds of significance; potential environmental impacts and their level of significance; Standard Conditions of Approval relied upon to ensure significant impacts would not occur; mitigation measures recommended when necessary to mitigate identified impacts; and resulting level of significance following implementation of mitigation measures, when necessary. Cumulative impacts are also discussed in each technical topic section.
- *Chapter 5 – Alternatives*: Evaluates a reasonable range of alternatives to the proposed Project and identifies an environmentally superior alternative.
- *Chapter 6 – CEQA-Required Assessment Conclusions*: Provides the required analysis of growth-inducing impacts, significant irreversible changes, effects found not to be significant, and significant unavoidable impacts.
- *Chapter 7 – Report Preparation*: Identifies preparers of the EIR, references used, and the persons and organizations contacted.
- *Appendices*: The appendices contain the NOP and written comments submitted on the NOP, as well as other technical studies and reports relied upon in the EIR.

Public Review

This Draft EIR is available for public review and comment during the period identified on the *Notice of Release and Availability of the Draft EIR* accompanying this document. This Draft EIR, all supporting technical documents, and the reference documents are available for public review at the City of Oakland Department of Planning, Building and Neighborhood Preservation, Planning Division, under Case #PCN15048 – ER01.

During the public review period, written comments on the Draft EIR may be submitted to the City of Oakland Bureau of Planning and Building, Planning Division at the address indicated on the Notice of Availability/Notice of Public Hearing as provided under the front cover. Oral comments on the Draft EIR may be stated at a public hearing which shall be held as also indicated on the Notice.

Following the public review period, the City will prepare responses to all comments received during the specified review period on the environmental analysis in this Draft EIR. The responses and any other revisions to the Draft EIR will be prepared as a Response to Comments document. The Draft EIR and its appendices, together with the Response to Comments document, will constitute the Final EIR for the Project.

Intended Use of this EIR

Pursuant to CEQA, this EIR is a public information document for use by governmental agencies and the public to identify and evaluate potential environmental consequences of the Project, to evaluate and recommend mitigation measures that would substantially lessen or eliminate adverse impacts, and to examine a range of feasible alternatives to the Project. The information contained in this EIR is subject to review and consideration by the City of Oakland prior to the City's decision to approve, reject, or modify the proposed Project. The EIR will be used by the City and any other responsible agencies in connection with all approvals necessary for the Project. A list of anticipated City and other responsible agency permits and approvals necessary for implementation of the Project is included at the end of Chapter 3: Project Description of this Draft EIR.

The City must ultimately certify that it has reviewed and considered the information in the EIR and that the EIR has been completed in conformity with the requirements of CEQA before making any decision regarding the proposed Project. This EIR identifies significant effects that would result from the proposed Project. Therefore, pursuant to CEQA Guidelines Section 15091, the City cannot approve the Project unless it makes one or more of the following findings:

- That changes or alternations have been required in or incorporated into the Project that avoid or substantially lessen the significant environmental effects as identified in the EIR.
- That such changes or alterations are within the responsibility and jurisdiction of another public agency (not the City of Oakland), and that such changes have been adopted by such other public agency, or can and should be adopted by such other agency.
- Specified economic, legal, social, technological, or other considerations make infeasible the mitigation measures or Project alternatives identified in the EIR.

2

Executive Summary

Project Overview

Mountain View Cemetery Association is proposing to develop portions of the undeveloped upper areas of the Mountain View Cemetery to accommodate future needs for additional burial sites. Mountain View Cemetery is an Oakland institution dating to 1863, its original landscape concept was designed by the renowned landscape architect Frederick Law Olmsted, and it is considered an important historic resource by the City of Oakland. The Project does not include any alterations within the existing developed portions of the Cemetery or the historic Frederick Law Olmsted landscape. Located within the undeveloped eastern hillside portions of the property, the Project would not alter any existing historic buildings or other character-defining contributing features to the Mountain View Cemetery historic district.

Mountain View Cemetery is seeking a conditional use permit (CUP) for expanded cemetery use, and Design Review approval for the overall Project plan, including development at sites known as Plot 82, Plot 98 and the Panhandle.

The City of Oakland Bureau of Planning and Building, Planning Division determined that the Project is subject to CEQA, and that an Environmental Impact Report (EIR) was required. A Notice of Preparation was issued on February 6, 2015, and public comments on the scope of the EIR were solicited through March 11, 2015. The NOP was sent to responsible agencies, neighboring cities, interested organizations and individuals, and to the State Clearinghouse. An EIR scoping session was also held before the City of Oakland Planning Commission on March 4, 2015. All comments received by the City on the NOP and at the scoping session have been taken into account during preparation of this EIR.

Project Location

Mountain View Cemetery occupies a site of approximately 223 acres located primarily within the City of Oakland, surrounded by the Claremont Country Club and St. Mary Cemetery on the north, the City of Piedmont on the south, and Oakland residential neighborhoods to the east and west. The Project site consists of approximately 7.5 acres of currently undeveloped land within the upper hillside portion of the Cemetery. The Project site includes development plans at three separate but interrelated development plots on the Cemetery property, all of which are entirely within the City of Oakland.

Project Description Summary

The proposed Project includes development plans at three separate but interrelated development sites on the Cemetery property, all of which are entirely within the City of Oakland. The three new development sites will be connected to each other and to the existing portions of the Cemetery by extensions of on-site roadways. The grading operation needed to develop these sites as desired by Mountain View Cemetery is an interrelated cut-and-fill plan that will move existing soils from proposed cut locations to proposed fill locations, with a resulting cut and fill balance on site. The intent of the

Project is to develop new burial sites that are gently pitched to the southwest, offering panoramic views of the San Francisco Bay and skyline.

All grading operations are proposed to be completed at one time, with all cut and fill placed on the plot sites as a single operation. However, final design plans and individual plot sales and development are expected to be implemented in phases for operational and economic purposes. Opening of Plot 82, including installation of irrigations systems and landscaping, will comprise Phase 1. Phase 2 will include final development of Plot 98, and opening of the Panhandle site for burial use will be the final phase of the Project. Activities at the new burial sites will be the same as the majority of the Cemetery, primarily a pastoral and scenic area with occasional burial services and visitors. With a design capacity of approximately 6,300 individual plots among the three development sites, the Project would provide Mountain View Cemetery with approximately 15 years of additional operational capacity.

Scope of the EIR

The following environmental topics are addressed in this EIR:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural and Historic Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Noise
- Other Less-than–Significant Effects, including agriculture and forest resources, greenhouse gas emissions / global climate change, land use and planning, mineral resources, population and housing, public services, recreation, transportation and traffic, and utilities and service systems.

Public Agency Approvals

This EIR is intended to provide environmental review for all City of Oakland approvals and actions necessary for this Project. A number of City permits and approvals would be required before the development of the Project could proceed. These approvals include, but are not limited to:

- **Conditional Use Permit**: According to the City Planning Code, cemetery use is considered an "extensive impact use," requiring approval of a Conditional Use Permit for expansion. Under the City of Oakland Standard Conditions of Approval, permits expire after two years unless a different termination date is prescribed. It is anticipated that a modification to the Standard Conditions of Approval to accommodate build-out of the project over a 15-year period will be requested as part of the Conditional Use Permit.
- **Design Review**: The Project is subject to the City of Oakland's regular design review process, as it includes new construction requiring a CUP.

- **Grading permits**: City of Oakland grading permits will be required for the proposed Project. Applications for these grading permits may be submitted after zoning approval, or concurrent with the CUP application.
- **Building Permits**: Pursuant to the City of Oakland Building Code, the Project's proposed retaining walls and mausoleum and/or columbaria walls will each require building permits prior to construction.
- **Tree Removal permits**: The Project's proposed sub-surface excavations and soils remediation process and finish grading operations will require removal of certain existing trees. Tree surveys have been conducted to identify the location, health and suitability of existing trees, and to determine which trees will need to be removed and which trees will remain and require protective measures to ensure their preservation. Tree Removal permits will be needed for all qualifying trees proposed to be removed.
- **Creek permit**. Based on the Project site's location relative to the nearest defined creek, City approval of a Category II Creek Permit (for projects that are more than 100 feet from the centerline of a creek) will be required prior to any grading or construction activity.

The Project is also expected to require certain permits and/or approvals from other outside agencies. These other agencies, acting a responsible agencies and relying on this EIR for their decision-making process include, but are not limited to:

- State Water Resources Control Board (SWRCB) – Acceptance of Notice of Intent to obtain coverage under the General Construction Activity Storm Water Permit.
- Regional Water Quality Control Board – Waste Discharge Requirements (WDRs) or National Pollutant Discharge Elimination System (NPDES) permit

Summary of Alternatives

Chapter 5 presents an analysis of a range of reasonable alternatives to the Project. The following alternatives were analyzed:

- **Alternative #1, No Project**: In this instance, failure to approve the Project as proposed is unlikely to result in preservation of the existing environmental conditions. Not approving the Project does not remove the Cemetery's need for additional burial sites. The practical result of the Project's non-approval would most likely result in Mountain View Cemetery proposing a re-designed version of the current Project's layout; considering one of the other alternatives addressed below; or potentially re-considering one of the alternatives that were previously considered but rejected as either environmentally inferior to the Project or too speculative to consider at this time.
- **Alternative #2: Reduced Project – Plot 82 and Plot 98 Only**: The Reduced Alternative provides a comparative assessment of an alternative development program for the Project that reduces the extent of proposed grading operations. This alternative would result in less total future burial sites than the Project, and would not include new cemetery development at the Panhandle site.
- **Alternative #3: Larger Plot 82 Site – Off-Haul of Excess Soil**: This Alternative seeks to develop additional burial sites by utilizing a greater portion of the undeveloped property by expanding the Plot 82 site upwards into the adjacent Hill 500). Rather than re-using excess soil generated by grading activity on this hillside elsewhere on site, all excess soils would be off-hauled to a landfill or other appropriate location.

- **Alternative #4: Stark Knoll Buttressing Alternative**: This alternative differs from the Project only in that it considers a different grading concept whereby excess fill material would be placed against the Stark Knoll hillside all the way to the top of the hill, serving as a buttress against potential slope movement, instability and erosion.
- **Alternative #5: Blasting to Remove Existing Bedrock**: This alternative differs from the Project only in the method for removal of the large rock mass located within the approximate center of the Plot 82 site using blasting, rather than pneumatic drilling and ram hoes to crush fractured rock pieces into smaller rock suitable for use as fill material.

In the absence of a practical and reasonable No Project alternative wherein the Project site is preserved in its existing condition, the Reduced Project (Alternative #2) is environmentally superior as compared to the Project and all other alternatives. On balance, the environmental effects of the Reduced Project (Alternative #2) and the Project are both able to be mitigated to less than significant levels. The environmental effects of the Reduced Project are comparatively less than those of the Project, but the differences in the level of significance of these effects are minor. There are no significant impacts of the Project that can only be reduced or avoided by consideration of the Reduced Project Alternative. However, because the Reduced Project would result in impacts that are reduced as compared to the Project, it is marginally environmentally superior to the Project and all other alternatives considered in this EIR.

Summary of Impacts and Mitigation Measures

The following **Table 2-1**: Summary of Impacts and Mitigation Measures provides a summary of potential environmental impacts, applicable Standard Conditions of Approval (SCAs), recommended mitigation measures (as necessary), and the resulting level of significance after implementation of all SCAs and mitigation measures. For a more complete discussion of potential environmental impacts and mitigation measures, please refer to specific discussions in individual chapters of this Draft EIR.

Significant and Unavoidable Impacts

Based on the analysis presented in this EIR, the Project would not result in any environmental impacts that would be considered significant and unavoidable. SCAs and/or mitigation measures have been identified that, when implemented, would be capable of reducing all identified environmental impacts to a level of less than significant.

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures, and Residual Impacts:

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
Aesthetics		
Aesthetics-1: Development of the Project would not have a substantial adverse effect on scenic views or vistas generally enjoyed by members of the public.	None needed	Less than Significant
Aesthetics-2: The Project would not substantially degrade the existing visual character or quality of the site and its surroundings.	None needed	Less than Significant
Aesthetics-3: The Project would remove scenic trees from the site, including trees that are specifically visible from state and locally designated scenic routes.	**SCA #27: Tree Permit, inclusive of tree protection during construction and tree replacement plantings**	Less than Significant
Aesthetics-4: The Project would not create new sources of substantial light or glare that would substantially and adversely affect day or nighttime views in the area.	None needed	No Impact
Air Quality		
Air-1: During construction, the Project will generate fugitive dust from grading, hauling and construction activities.	**SCA #19: Construction-Related Air Pollution Controls (Dust and Equipment Emissions)** **SCA #24: Naturally-Occurring Asbestos**	Less than Significant
Air-2: During construction, the Project will generate regional ozone precursor emissions and regional particulate matter emissions from construction equipment exhaust. However, these emissions will not exceed City of Oakland's established construction-period thresholds.	**SCA #19: Construction-Related Air Pollution Controls (Dust and Equipment Emissions)**	Less than Significant
Air-3: TAC emissions resulting from construction activity at the Project site would not result in an increase in cancer risk level for the maximum exposed individual of greater than 10 in one million, would not exceed the chronic health hazard index of	**SCA #19: Construction-Related Air Pollution Controls (Dust and Equipment Emissions)**	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures, and Residual Impacts:

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
1, and would not exceed the annual average PM2.5 concentration threshold of 0.3 ug/m^3.		
Air-4: The Project will not result in significant new operational emissions of criteria pollutants, carbon monoxide (CO) concentrations, or new sources of toxic air contaminants.	None needed	Less than Significant
Air-5: The Project would not expose new sensitive receptors to substantial levels of toxic air contaminants (TACs).	None needed	Less than Significant
Biological Resources		
Bio-1: The Project will not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate sensitive or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service.	**SCA #26: Tree Removal during Breeding Season**	Less than Significant
Bio-2: The Project will not have a substantial adverse impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service.	None needed	Less than Significant
Bio-3: The Project will not have a substantial adverse effect on federally protected wetlands (as defined by Section 404 of the Clean Water Act) or state protected wetlands, through direct removal, filling, hydrological interruption, or other means.	None need to address direct effects See Hydrology chapter regarding potential indirect effects	Less than Significant
Bio-4: The Project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or	**SCA #26: Tree Removal during Breeding Season**	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures, and Residual Impacts:

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
impede the use of native wildlife nursery sites.		
Bio-5: The Project would not fundamentally conflict with an applicable habitat conservation plan or natural community conservation plan.	None needed	No Impact
Bio-6: The Project would not fundamentally conflict with the City of Oakland's Tree Protection Ordinance by removing protected trees under certain circumstances. Factors considered in determining significance include the number, type, size, location and condition of the protected trees to be removed and/or impacted by construction, the number of protected trees to remain, and the proposed replacement with appropriate new tree species.	**SCA #27: Tree Permit**, inclusive of tree protection during construction and tree replacement plantings Project-specific recommendations in furtherance of SCA #27 include the following **Additional Tree Preservation Efforts**. During preparation of final grading plans for the proposed Project, the applicant's landscape architect and geotechnical engineer shall work collaboratively to seek, where possible, reasonable Project re-design strategies that can effectively result in the preservation and protection of additional trees, specifically including the following; <u>Plot 82:</u> a. At the westerly portion of Plot 82 near the terminus of the retaining/crypt wall, attempt to reduce the extent of 'cut' below the existing Plot 77 slope, such that additional tree preservation in this area can be achieved. Specific trees that could potentially be preserved in this area include oak trees #180, 184 and 185. b. At the most westerly portion of Plot 82 and immediately upslope of the existing road, attempt to reduce the extent of 'cut' just above the existing road such that additional tree preservation in this area can be achieved. Specific trees that could potentially be preserved in this area include oak trees #197 through #206. c. At the most southerly portion of Plot 82, efforts shall be attempted to contour the proposed cut and fill just above the existing road, such that the prominent 91-inch dbh eucalyptus tree (#137) at this location can be achieved. Although this eucalyptus is not considered a "protected" tree, its size and spreading canopy serves to provide existing erosion control, visual screening and shade, and is a dominant tree in the existing landscape. <u>Plot 98 and Panhandle:</u> d. Along the unimproved portion of the ridge road immediately north of Plot 98, seek to reduce "extra" roadway grading and improvements beyond the edge of pavement, and/or design the proposed fill slope in this area such that additional tree preservation can be achieved. Specific trees that could potentially be preserved along the perimeter of the upper road alignment include oak trees # 2-4, 11, 14, 16-17 and 21 in the westerly portion	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures, and Residual Impacts:

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
	of Plot 98, #37 and 38 in the central portion, and #48 in the eastern portion of the Panhandle. e. At the southerly edge of Plot 98 near the existing water tank, seek to design the proposed retaining wall in this area such that it is uphill and does not intrude into the root zone of oak trees # 86, 87 and 327 near the water tank, #92 west of the water tank, and #85 east of the water tank.	
Cultural Resources		
Cultural-1: The Project as designed complies with the Secretary of the Interior's Standards for Rehabilitation, and does not affect the eligibility of the Mountain View Cemetery for listing in any local, state, or national historical registers. According to Section 15126.4(b)(1) of the CEQA Guidelines, if a project complies with the Secretary's Standards, the project's impact will generally be considered mitigated below a level of significance and thus is not significant. Because the proposed Project complies with the Secretary's Standards, it does not cause a significant adverse impact under CEQA.	None needed	Less than Significant
Cultural-2: The Project area is unlikely to yield archaeological information important in history or prehistory, and the Project is unlikely to directly or indirectly destroy a unique archaeological resource or site, or cause a substantial adverse change in the significance of currently undiscovered archaeological resources.	**SCA #29: Archaeological and Paleontological Resources – Discovery during Construction**	Less than Significant
Cultural-3: The Project area is unlikely to disturb any human remains, including those interred inside or outside of formal cemeteries.	**SCA #31: Human Remains – Discovery during Construction**	Less than Significant
Geology and Soils		
Geo-1: The Project will be constructed within areas containing unknown fill soils and. These existing	**SCA #34: Soils Report**	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures, and Residual Impacts:

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
conditions could potentially jeopardize the long-term stability and permanence of the proposed cemetery use.	Project-specific recommendations pursuant to SCA #34 include the following Grading Practices for artificial fill: **1.** Plot 82 Over-Excavation: The Project's proposed grading plan for Plot 82 includes removal of approximately 100,000 cubic yards of material from this location to create a gradually sloped, near level cemetery site. The planned cuts within this area will be of sufficient depth to remove all existing fill. Over-excavation and removal of additional fill beyond this cut is not expected to be necessary. 2. Grading Near Existing Burial Sites: Plot 77, immediately adjacent to the Plot 82 site and adjacent to the ridgeline road, will be retained at its existing approximately 3:1 slope. Removal of fill material from this location is not anticipated. The condition of the area immediately downslope from Plot 77, within the Plot 82 site, will be checked during construction. If zones of loose fill or debris are encountered, additional grading may be required at the lower edge of Plot 77. 3. Plot 98 and the Panhandle. The existing fill near and below the footprint of Plot 98 and the Panhandle will need to be removed and re-compacted during grading, mixed with the relocated fill excavated from Plot 82. 4. North Access Road. The access road along the north side of Plot 98 and the Panhandle will be partially located on fill, and this fill also extends downslope of the roadway. The fill below the road will be removed and replaced as a compacted buttress, whereas the fill further downslope is expected to remain. 5. Grading within Piedmont. The existing fill to the east of the Panhandle and within the City of Piedmont will not be removed since no significant grading is planned in this area.	
Geo-2: The Project will be constructed within areas containing landslide-prone materials. These existing conditions could potentially jeopardize the long-term stability and permanence of the proposed cemetery use.	**SCA #34: Soils Report** Project-specific recommendations pursuant to SCA #34 include the following: Grading Practices to address potential landslides: 1. Site Preparation: Surface soils and existing fill be removed, and the areas rebuilt as well-compacted fills. Grading will include construction of keyways into rock, benching into firm material and placement of subdrains. The future development sites will be cleared of brush, trees, stumps and surface vegetation designated for removal. Brush, trees, and stumps will be removed from the site, and the site will be stripped to remove grasses and shallow roots. 2. Grading: The fill and cut slopes will be constructed in accordance with the typical details	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures, and Residual Impacts:

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
	presented on Figure 4.5-4 and 4.5-5. A keyway will be excavated at the slope toe. Keyways should be at least 20 feet wide, measured front to back. The keyway should extend through the surface soils and existing fill, and at least 5 feet into bedrock at the back of the keyway; at least 2 feet into bedrock at the front of the keyway for fill slopes, and at least 5 feet for cut slopes. Keyways should dip slightly into the hill. As the fill is extended up the hillside, benches will be excavated into the slope, exposing undisturbed bedrock. Benches at sub-drain locations should be at least 10 feet wide. 3. Retaining Structures / Mausoleums and Niche Walls: To minimize the need for extensive remedial grading outside of (and down-slope from) the grading limits, retaining walls maybe constructed and are planned for at certain locations at Plot 82 and at Plot 98 and the Panhandle (see Figure 4.5-4). a. The retaining structures may consist of a soldier-pile and lagging walls, and to limit deflections, tiebacks may be needed in some areas. The design criteria for the walls will be provided as part of final building permit design. b. Design of foundations and flatwork for mausoleums or niche walls will also need to consider the presence of expansive soil material at foundation level and proximity to grave excavations. Recommendations for these structures will be presented as part of final building permit design. 4. Subdrains: New subdrains shall be installed at the rear of the excavated keyways and on benches above the keyway (as shown on Figures 4.5-4 and 4.5-5). a. Sub-drains should consist of a free-draining layer of Class 2 permeable material meeting Caltrans' Standard Specifications. The permeable material should be at least 12-inches thick and extend up the face of the back cuts. The permeable material should cover at least 50 percent of the vertical height of the existing slope. b. The maximum height of excavated slope that is not covered by permeable material should not exceed 8 feet between subdrains. c. Four-inch diameter perforated collector pipes should be installed near the bottom of the Class 2 permeable material. The pipes should be underlain by at least 3-inches of permeable material. The sub-drain pipes should have a minimum slope of one percent and should drain to discharge to a suitable outlet. Sub-drain lines should include a clean-out riser that should be covered with a tamper-proof locking cap and a concrete Christie box. d. The sub-drains shall be connected to solid pipes that outlet to V-ditches, storm drains or paved areas. The discharge point of the down-drains should be covered with a heavy wire mesh to deter rodent access. The locations of subdrains and their cleanouts and	

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures, and Residual Impacts:

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
	outlets should be surveyed and marked on the as-built grading plans. 5. Fill Materials: Fill placed at the site will be derived from the on-site excavations. Chert may generate large pieces of rock, depending on the method of excavation and massiveness of the rock. Boulders up to 3 feet in maximum dimension may be placed at least 3 feet below finished grade where burials are not planned. No rock fragments larger than 6-inches should be placed within 3 feet of finished grade or future gravesite areas. Wood, tree limbs, roots greater than 1-inch in diameter, tree stumps, metal and concentrated zones of common trash should be removed from existing fill during grading. Some debris (glass, plastic) that is well mixed within the existing fill may remain and be placed in the new, compacted fills. The contractor should stage grading such that existing fill containing debris is only placed in the lowest elevation of the fill below depths of future graves and excavations. a. Select fill placed at the site should be a soil or soil/rock mixture, free of deleterious matter and contain no rocks or hard fragments larger than 4-inches in maximum dimension, with less than 15 percent larger than 1-inch in maximum dimension. b. Select fill should have a low expansion potential, which for this site should be defined as having a Liquid Limit (LL) less than 40 and Plasticity Index (PI) less than 15. c. Select fill should be predominantly granular with 100 percent passing a 2-inch sieve and less than 30 percent passing the Number 200 sieve. d. Permeable material should meet requirements for Class 2 Permeable Material in accordance with Caltrans Standard Specification Section 68-1.025. e. Sub-drain pipe should be an ABS or PVC plastic pipe having a SDR of 23.5. The collection pipe should be nominally 4-inches in diameter and should have nominally ¼-inch diameter perforations at 12-inches or less longitudinal spacing. Sub-drain pipes should be placed with perforations down. Cleanouts should be solid 4-inch diameter SDR 23.5 pipe, and discharge pipes should be solid 6-inch diameter SDR 23.5 pipe. 6. Compaction: Fill shall be placed in lifts 8-inches or less, in loose thickness, and moisture conditioned to at least over optimum moisture content. Moisture conditioning should be performed prior to compaction. Each lift should be compacted to a least 90 percent relative compaction with a sheepsfoot compactor. A sheepsfoot compactor or equivalent equipment should be used for compacting soils. Materials that are too wet to compact should be spread out and aerated by tilling or discing to achieve a moisture content suitable for compaction. ASTM Test No. D-1557 should be used to assess relative compaction. The outside face of the slope should be over-filled (constructed fat) to allow the finished slope to be cut back to a well compacted surface.	

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures, and Residual Impacts:

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
	7. Slopes: Slopes should be inclined at 2:1 or flatter. Fill slopes should be constructed in accordance with the details shown on Figure 4.5-5. Cut slopes should include a slope buttress constructed in accordance with the details provided on Figure 4.5-4. Slopes should include surface benches and concrete V-ditches to collect surface water. a. The benches should be at least 10 feet wide and at about 25 feet vertical spacing. The new V-ditches should drain to the existing storm drain system or paved areas. b. A V-ditch or lined swale should be located at the top of slopes or the area above the slopes should be graded to drain away from slopes. 8. Slope Creep and Setback: Slopes tend to creep downhill due to gravity forces. Structures located near tops of slopes will tend to move slowly downslope and settle. New structures, including retaining walls, crypt walls and graves, should not be founded within 10 feet of finished slopes that are inclined at 3:1 or steeper. A railing or fence should be considered at the top of steep slopes in public areas to improve safety and limit access to the slope face. 9. Hydro-Seeding: Shortly after completion of filling, slopes will be hydro-seeded and irrigated to establish groundcover to minimize surface erosion. 10. Utility Trenches: Utility trenches will be set back far enough from structures (retaining walls) so they will not affect the planned foundations. The utility lines should not extend down below an imaginary plane inclined at 2:1 down and away from the base of footings. In the absence of local agency requirements, the following criteria for bedding and backfilling utility lines should be used. a. For pipes other than concrete storm drains, a bedding layer consisting of clean sand or fine gravel should be placed below and around pipes and extend at least 12-inches above their tops. The bedding thickness below the bottom of the pipe should be at least 3-inches. b. For concrete storm drains, the above bedding criteria may be modified by extending the sand or fine gravel bedding material only up to the spring line of the pipe, provided care is taken during placement and compaction of the fill around and above the pipe. Common fill may be used for trench backfill above the sand or fine gravel. Backfill materials should be placed and compacted as described above. Jetting should not be allowed for compacting backfill.	
Geo-3: The Project will not result in substantial soil erosion, loss of topsoil or exacerbation of slope instability that could create substantial risks to life or property.	None needed	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures, and Residual Impacts:

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
Geo-4: The proposed Project would not expose people or structures to substantial risk of loss, injury, or death involving strong seismic ground shaking or seismic-related ground failure including liquefaction, lateral spreading, subsidence, or collapse.	**SCA #33: Construction-Related Permits** **SCA #34: Soils Report**	Less than Significant
Geo-5: The proposed Project could result in substantial soil erosion or loss of topsoil, creating substantial risks to property or downhill creeks and waterways.	**SCA #45: Erosion and Sediment Control Plan for Construction** **SCA # 46: State Construction General Permit** **SCA #50: NPDES C.3 Stormwater Requirements for Regulated Projects**	Less than Significant
Geo-6: The Project is not located above a well, pit, swamp, mound, tank vault or unmarked sewer line. There are no subsurface features that could result in substantial risks to life or property.	None needed	Less than Significant
Geo-7: The proposed Project is not located above a landfill for which there is no approved closure and post-closure plan. The proposed Project is located above fill.	None needed	Less than Significant
Geo-8: The Project does not include the need for septic tanks or alternative wastewater disposal systems, so concerns relative to soils capable of adequately supporting such facilities are not relevant.	None needed	Less than Significant
Hazards and Hazardous Materials		
Haz-1: The Project site is not located on a site included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and does not represent a significant hazard to the public or the environment.	None needed	Less than Significant
Haz-2: The Project's construction activities will likely utilize construction materials and fuels considered	**SCA #35: Hazards Best Management Practices**	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures, and Residual Impacts:

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
hazardous, and regular landscape maintenance of the expanded cemetery will likely involve the use of hazardous chemicals. Spills or accidents with these materials or chemicals could result in a significant impact to the health of workers and the environment. Compliance with existing regulations and applicable Standard Conditions of Approval will ensure the Project will not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	**SCA #41: Hazardous Materials Business Plan (HMBP)**	
Haz-3: the proposed Project would not expose people or structures to risks involving wildland fires.	**SCA #70 Vegetation Management Plan** **Recommendation Haz-3:** The Project applicant should consider providing a centralized Joss paper burner, specifically fitted with a cover which can eliminate the spread of burning ashes while allowing enough oxygen in to ensure that all of the offering is completely burned.	Less than Significant
Haz-4: The Project would not impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan.	None needed	Less than Significant
Haz-5: The Project site is not located in the vicinity of a public airport or private airstrip.	None needed	No Impact
Hydrology and Water Quality		
Hydro-1: During construction, the Project could result in substantial erosion, siltation and pollution that could affect the quality of receiving waters.	**SCA #45: Erosion and Sedimentation Control Plan for Construction** **SCA #46: State Construction General Permit**	Less than Significant
Hydro-2: The Project would result in increased storm water runoff from the site, potentially creating a new source of polluted runoff that could degrade downstream water quality.	**SCA #50: NPDES C.3 Stormwater Requirements for Regulated Projects**	Less than Significant
Hydro-3: The Project site is located at a high elevation within the Oakland Hills and would not be	None needed	No Impact

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures, and Residual Impacts:

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
susceptible to flooding hazards of any type.		
Hydro-4: The Project would not substantially alter the course of any creek, or otherwise substantially alter (increase or decrease) stormwater runoff volume or the velocity of runoff into a receiving creek.	**SCA #50: NPDES C.3 Stormwater Requirements for Regulated Projects**	Less than Significant
Hydro-5: The Project would not substantially deplete groundwater supplies, nor would it interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table.	None needed	Less than Significant
Hydro-6: The Project would not conflict with the City of Oakland Creek Protection Ordinance (OMC Chapter 13.16) intended to protect hydrologic resources.	**SCA #45: Erosion and Sedimentation Control Plan for Construction** **SCA #50: NPDES C.3 Stormwater Requirements for Regulated Projects** **SCA #53: Vegetation Management on Creekside Properties** Should adjustments to the grading limits for the Project later be found necessary based on unknown conditions encountered in the field, and such adjustments result in grading operations that would occur within 100 feet of the ephemeral drainage within the Clarewood bowl, then (pursuant to City Ordinance) grading activity would need to cease until a Category III Creek Protection permit is prepared, reviewed and approved. A Creek protection Plan pursuant to SCA #54.	Less than Significant
Noise		
Noise-1: Construction activity at the Project site would include use of heavy grading, rock breaking and other construction equipment that would temporarily increase noise levels at surrounding sensitive receptors to noise levels exceeding City construction-period thresholds. In consideration of the limited duration of grading and construction activity and the required implementation of all reasonable and feasible noise attenuation measures pursuant to the City's Standard Conditions of	**SCA #58: Construction Days/Hours** **SCA #59: Construction Noise** **SCA #60: Extreme Construction Noise** **SCA #61: Project-Specific Construction Noise Reduction Measures** **SCA #62: Construction Noise Complaints**	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures, and Residual Impacts:

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
Approval, the construction-period noise impacts of the Project are considered to be less than significant with implementation of all required SCAs.		
Noise-2: Project construction is not expected to generate groundborne vibration that exceeds City of Oakland established criteria.	None needed	Less than Significant
Noise-3: The Project will not generate operational noise that would exceed the City of Oakland Noise Ordinance standards at adjacent sensitive receivers, will not expose persons to an interior Ldn or CNEL greater than 45 dBA, and will not expose new or existing noise-sensitive land uses to noise levels in excess of noise levels considered normally acceptable according to the land use compatibility guidelines of the Oakland General Plan.	None needed	Less than Significant
Noise-4: The Project site is not located within an airport land use plan or in the vicinity of a private airstrip, and would not expose people to excessive noise levels from aircraft activity.	None needed	No Impact
Other Less than Significant Effects		
Ag-1: The Project would not convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use. **Ag-2**: The Project would not conflict with existing zoning for agricultural use, or with a Williamson Act contract. **Ag-3**: The Project would not conflict with existing zoning for, or cause rezoning of forest land, and would not result in the loss of forest land or conversion of forest land to non-forest use.	None needed	No Impact

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures, and Residual Impacts:

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
Ag-4: The Project would not involve any changes in the existing environment which could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use.		
GHG-1: Construction and operation of the Project would not result in GHG emissions that exceed City thresholds of significance. Therefore, the Project would result in a less-than-considerable contribution to cumulative global climate change, and thus a less-than-significant impact. **GHG-2**: Because the estimated GHG emissions of the Project would not exceed the City's numeric significance threshold, development and implementation of the Project would comply with applicable plans, policies and regulations adopted for the purpose of reducing GHG emissions.	None needed	Less than Significant
Land Use-1: The Project would not physically divide an established community. **Land Use-2**: The Project would not result in a fundamental conflict between adjacent or nearby land uses. **Land Use-3**: The Project will not fundamentally conflict with any applicable City of Oakland, City of Piedmont or other agency land use plan, policy, or regulation. **Land Use-4**: the Project will not fundamentally conflict with any applicable habitat conservation plan or natural community conservation plan.	None needed	Less than Significant / No Impact
Mineral-1: The Project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. **Mineral-2**: The Project would not result in the loss	None needed	No Impact

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures, and Residual Impacts:

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.		
Pop-1: The Project will not induce substantial population growth in a manner not contemplated in the General Plan, either directly or indirectly. **Pop-2**: The Project would not displace existing housing or people, necessitating the construction of replacement housing elsewhere in excess of that contained in the City's Housing Element.	None needed	No Impact
Public Serv-1: The Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities in order to maintain acceptable service ratios, response times or other fire protection service performance objectives. **Public Serv-2**: The Project would not result in an increase in calls for police protection services or result in substantial adverse physical impacts associated with the provision of new or physically altered police facilities or the need for new or physically altered police facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other Police Department performance objectives. **Public Serv-3**: The Project would not result in new students for local schools, and would not require new or physically altered school facilities to maintain acceptable performance objectives.	None needed	Less than Significant / No Impact
Rec-1: The Project would not increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be	None needed	No Impact

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures, and Residual Impacts:

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
accelerated. **Rec-2**: The Project does not include recreational facilities nor does it require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.		
Transp-1: The Project would not result in a substantial increase in motor vehicle traffic and would not impact the capacity of roadways, intersections or arterials or highways, nor would it increase travel times for AC Transit buses. **Transp-2**: The Project would not make, require, or result in alterations to the public circulation system, and therefore would not cause or expose public roadway users to permanent substantial transportation hazards. The Project would make alterations in the private internal circulation system of Mountain View Cemetery, which would be designed to accommodate increased vehicle and pedestrian use in the Project site, and would not expose Cemetery roadway users to permanent or substantial transportation hazards. **Transp-3**: The Project would not fundamentally conflict with adopted City policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities adopted for the purpose of avoiding or mitigating an environmental effect. **Transp-5**: The Project would not 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.	None needed	Less than Significant / No Impact
Transp-4: The proposed Project would not result in temporary adverse effects on the circulation system during construction of the Project.	**SCA #13: Construction Management Plan**	Less than Significant
Util-1: The Project would not exceed water supplies	SCA #78: Green Building Requirements – Small Projects	Less than Significant

Table 2-1: Summary of Project Impacts, Standard Conditions of Approval, Mitigation Measures, and Residual Impacts:

Potential Environmental Impacts	Mitigation Measures / Standard Conditions of Approval (SCA)	Resulting Level of Significance
available from existing entitlements and resources, and would not require or result in construction of water facilities or expansion of existing facilities that could result in environmental effects. **Util-2**: The Project will not generate new wastewater flows and will not affect or otherwise exceed the wastewater treatment requirements of the San Francisco Bay Regional Water Quality Control Board, exceed the capacity of existing wastewater treatment facilities, or necessitate the expansion of existing wastewater treatment facilities. **Util-3**: The Project will include the expansion of existing storm water drainage facilities, but construction of these facilities would not cause a significant environmental effect. **Util-4**: The Project would not generate solid waste that would exceed the permitted capacity of a landfill, nor would it violate any applicable federal, state or local statutes and regulations related to solid waste. **Util-5**: The Project would not require more energy than what the local energy provider (PG&E) has the capacity to serve, nor would it require construction of new energy facilities or expansion of existing facilities which could cause significant environmental effects. The Project would be subject to the requirements of currently applicable federal, state and local statutes and regulations relating to energy standards.	**SCA #74: Construction and Demolition Waste Reduction and Recycling.** **SCA #78: Green Building Requirements – Small Projects**	

3

Project Description

The Mountain View Cemetery Association is proposing development of portions of the undeveloped upper areas of the Cemetery site, in accordance with its dedication under the California Health and Safety Code for such use, to accommodate future needs for additional burial sites. This chapter describes the proposed Mountain View Cemetery development project (Project) that is evaluated in this Environmental Impact Report (EIR). The chapter begins with a description of the Project site, planning context and a discussion of relevant Project background, followed by a detailed description of the proposed Project, Project objectives and a discussion of the intended uses of the EIR for required Project approvals and entitlements.

Mountain View Cemetery (Cemetery) is an Oakland institution dating to 1863. Soon thereafter, its original landscape concept was designed by the renowned landscape architect Frederick Law Olmsted as a site for future burials and related services. The City of Oakland considers Mountain View Cemetery as historically significant and an Area of Primary Importance (API). The Project does not include any alterations within the existing developed portions of the Cemetery or the historic Frederick Law Olmsted landscape. Located within the undeveloped eastern hillside portions of the property, the Project would not alter any existing historic buildings or other character-defining contributing features to the Mountain View Cemetery historic district.

The Cemetery property is located almost entirely within the City of Oakland, with the exception of a small 'flag' of its property which extends into the City of Piedmont. The Project site is located entirely within the City of Oakland, and is not located within the historic Olmsted-designed portion of the Cemetery.

Project Location

Mountain View Cemetery occupies approximately 223 acres located primarily within the City of Oakland (**Figure 3-1**) surrounded by the Claremont Country Club and St. Mary Cemetery on the north, the City of Piedmont on the south, and Oakland residential neighborhoods to the east and west. The southeastern portion of the Cemetery also abuts the Piedmont Corporation Yard and the adjacent Coaches Field/Kennelly Skate Park public recreation area. The Chapel of the Chimes lies just outside the Cemetery's entrance at the end of Piedmont Avenue.

The Cemetery is topographically interesting, rising from approximately 160 feet above mean sea level at its main entrance at the end of Piedmont Avenue, to elevations of 650 feet along its eastern edge near Clarewood Avenue. Approximately two-thirds, or the lower portions of the Cemetery have been improved with administration buildings, chapels, mausoleums, access roads, landscaping and burial plots. The easterly or upper one-third of the Cemetery remains largely undeveloped, providing potential future sites for expanded burial and interment plots (**Figure 3-2**). Per California Health & Safety Code Sections 8550-8561, the entire Cemetery is already dedicated for the interment of human remains.

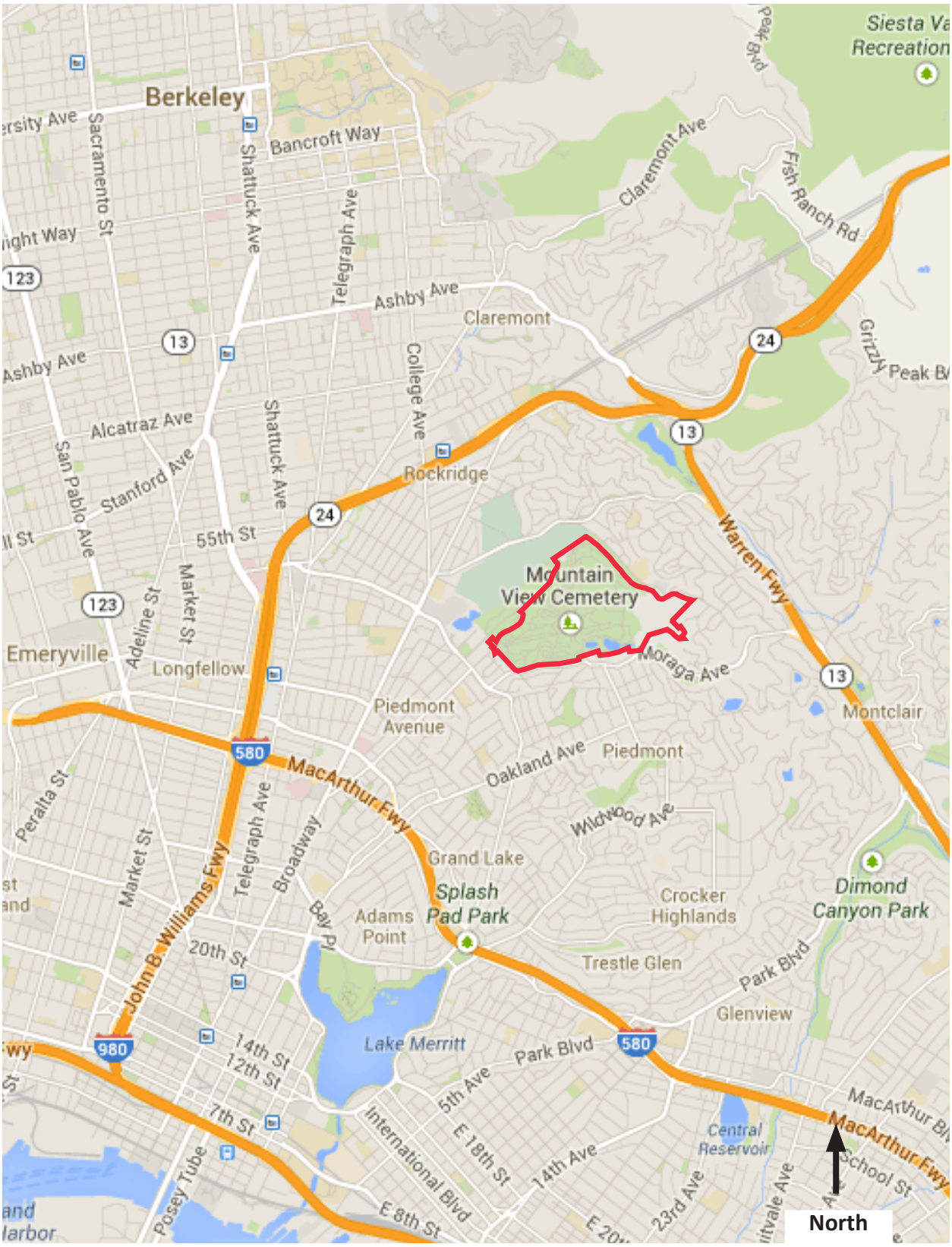


Figure 3-1
Regional Location



Figure 3-2
Mountain View Cemetery Property

The entire Mountain View Cemetery is zoned by the City of Oakland as RD-1: Residential Low Density. According to the City Planning Code, cemetery use is considered an "extensive impact use," requiring approval of a Conditional Use Permit (CUP) for expansion of this existing use. The City of Oakland's issuance of a CUP would be a discretionary approval and therefore a "project" pursuant to the California Environmental Quality Act (CEQA).

Proposed Development Program

Mountain View Cemetery wishes to develop an approximately 7.5-acre portion of the undeveloped upper one-third of the Cemetery (i.e., the Project site –**Figure 3-3**) in accordance with its dedication for such use, to accommodate future needs for additional burial sites. As shown in Figure 3-3, the Project site is outside of that portion of the Cemetery designed by Olmsted in 1865. The proposed Project site includes development plans at three separate but interrelated development plots on the Cemetery property, all of which are proximate to other more recently developed portions of the Cemetery and entirely within the City of Oakland (**Figures 3-4** and **3-5**). The interrelationship between these three new development plots is operational, in that each of these new development plots will be connected to each other and to the existing portions of the Cemetery by extensions of on-site roadways. The grading operation needed to develop these plots as desired by Mountain View Cemetery Association is also interrelated, as a cut-and-fill plan that will move existing soils from proposed cut locations to proposed full locations, with a resulting cut and fill balance on site. The intent of the Project is to develop new burial plots that are moderately flat, but which provide a gentle pitch to the southwest, offering panoramic views of the San Francisco Bay and skyline. Burial sites in such a setting are highly desirable, in short supply throughout the Bay Area, and uniquely available at this upper portion of the Mountain View Cemetery. The development plans for each of the three new burial plots being proposed as part of this Project are more fully described below.

New Plot 82

Site Plan and Design

Plot 82 is located just above the currently developed portion of the Cemetery, generally centered within the north-south dimensions of the Cemetery property and approximately 400 feet from the nearest (easterly) property boundary, and at existing elevations of between 440 to 520 feet. As illustrated in the Plot 82 site plan (**Figure 3-6**), development of this burial site includes:

- Relocation of the existing roadway, which currently cuts more sharply across the Plot 82 site, so that it loops around the new development area and reconnects with the existing road at the top of the ridgeline. A pedestrian drop-off area is located at the junction of this relocated road and the existing ridgeline road.
- Construction of a pedestrian pathway and staircase as an architectural extension of the existing landscape design of the existing Plot 77 (known as Golden Lotus Mountain) through to the new burial site at Plot 82.
- A moderately sloped (slopes ranging from 3% to 15%) open lawn area of approximately 3 acres (approximately 126,000 square feet) that will provide spaces for new burial sites. Although final design of the cemetery burial sites has not been developed, it is expected that upwards of 2,800 new burial sites (in a combination of mausoleum and/or columbaria above ground, and traditional in-ground plots) will be accommodated within this area.

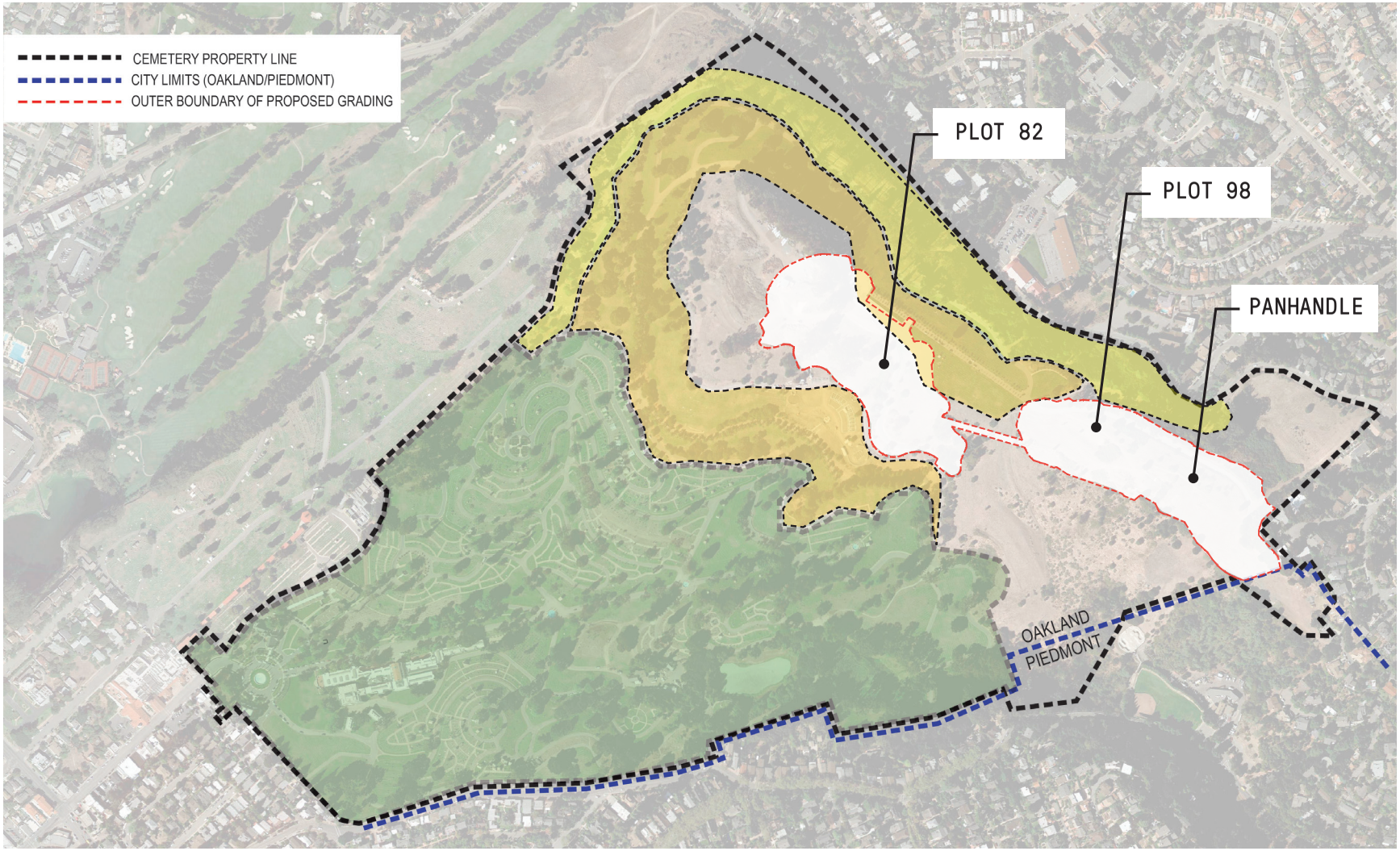


Figure 3-3
Project Site Location

Source: SWA



Figure 3-4
Project Sites in Context

Source: SWA

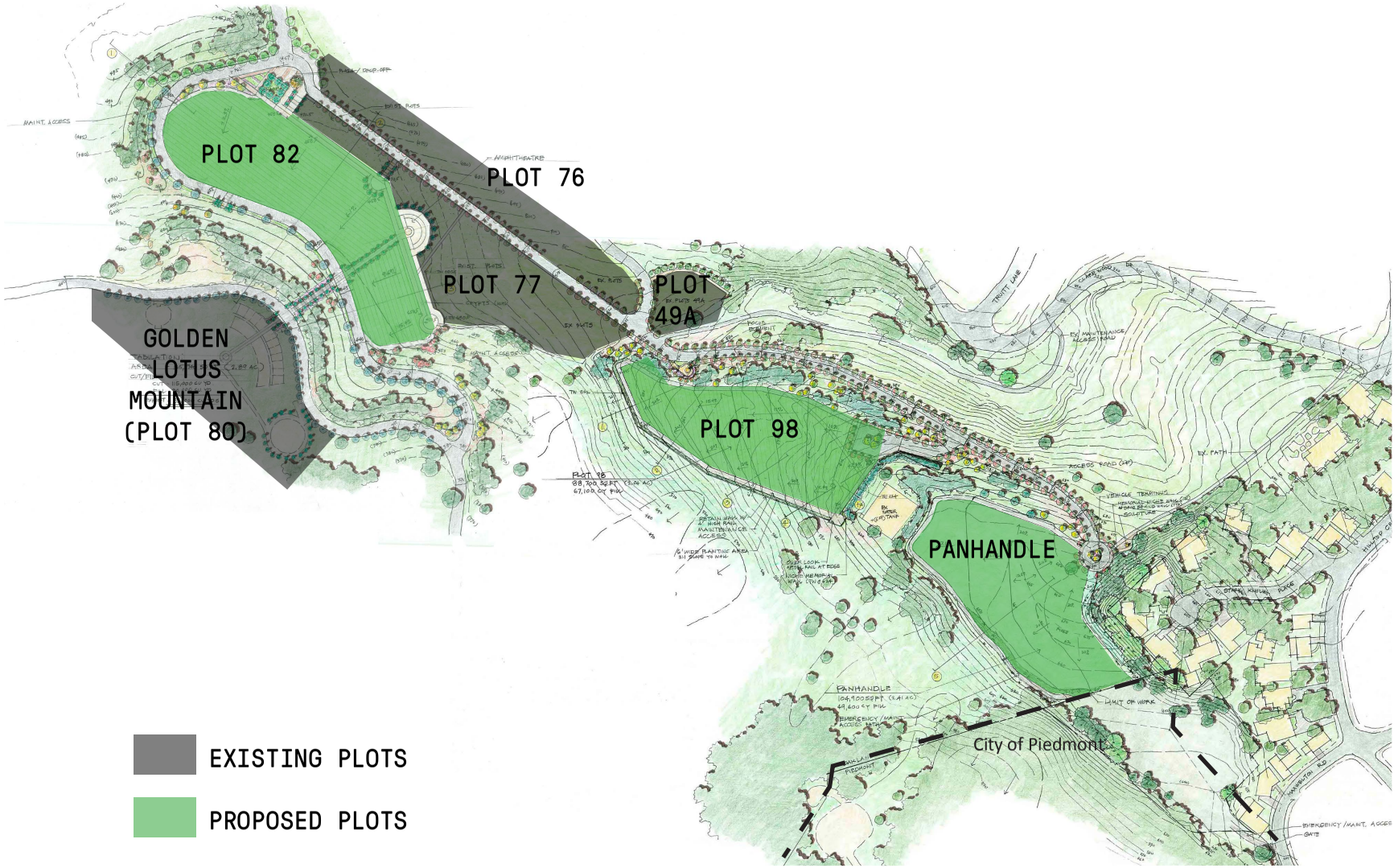


Figure 3-5
Project Site Relative to Other Developed Portions of the Cemetery

Source: SWA



Figure 3-6
Plot 82 Site Plan

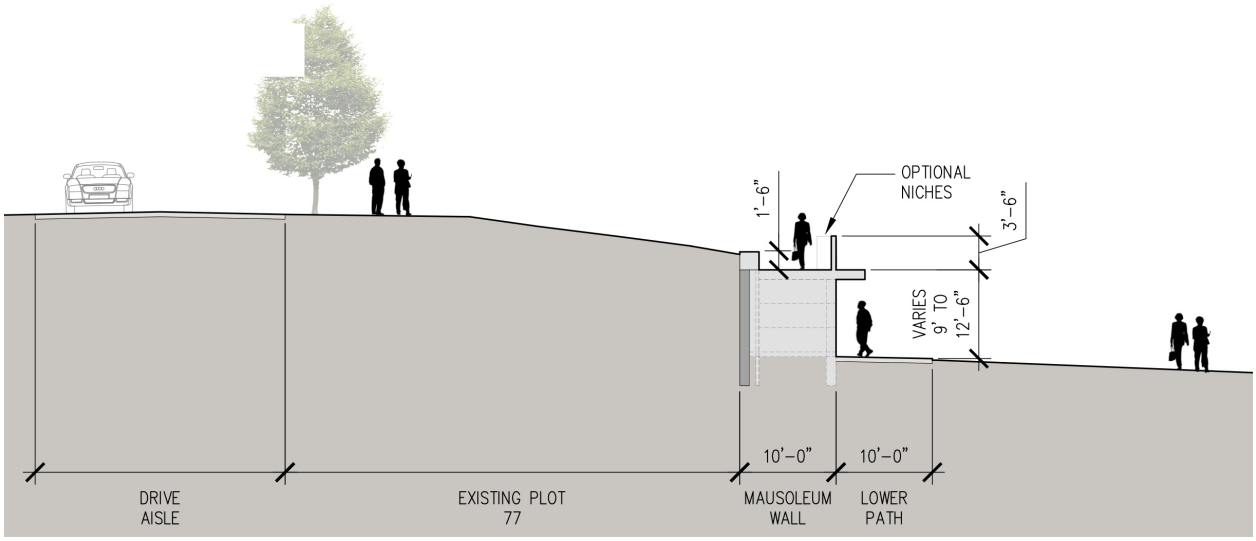
Source: SWA

- Across the upper portion of this sloped burial area, a retaining wall will be constructed. The retaining wall will serve to hold back the existing grade behind it, and the front face of the wall will be designed to accommodate new mausoleum and/or columbaria interment spaces (**Figure 3-7**). The retaining wall will allow for concrete or stone chambers to be placed fronting the wall for internment sites, and chambers could accommodate caskets and/or urns. Along the wall will be a small outdoor amphitheater for family gatherings and small ceremonies.

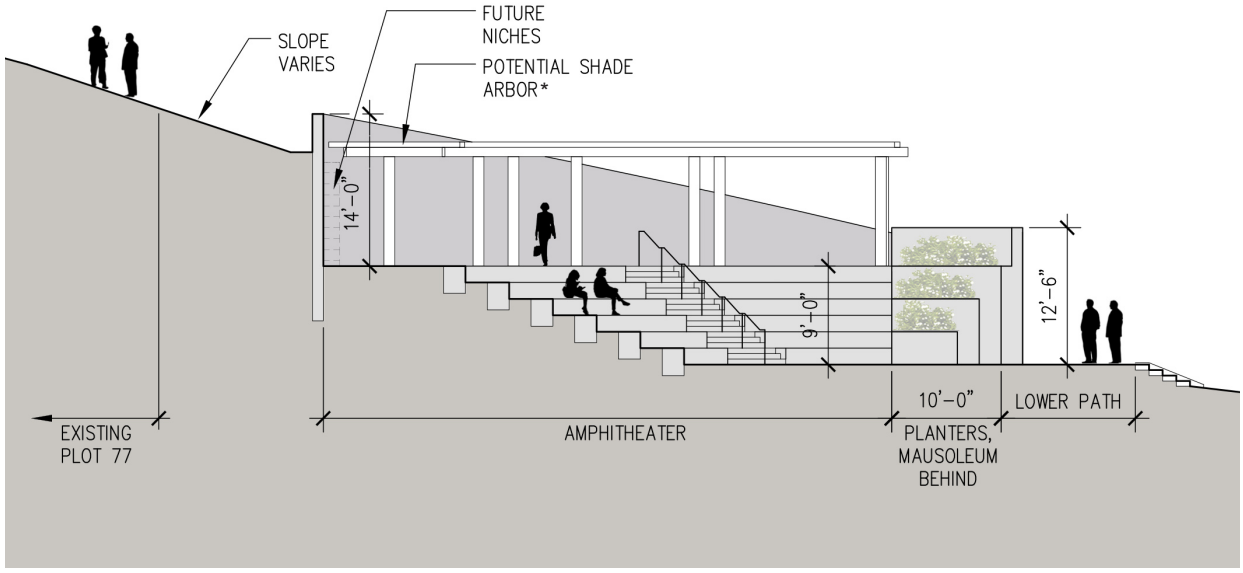
Grading Plan

Currently, the Plot 82 site is steeply pitched with a sharp incline at about the center of its elevation gain. The grading concept for this site is to smooth this steep grade by removing a substantial portion of the hillside. Unconsolidated soils and artificial fill underlay portions of the site and need to be remediated, while hard bedrock (or chert) underlies and is exposed along the steep grade. Generally the grading concept for this area (see Plot 82 cross-section, **Figure 3-8**) includes:

- Approximately 115,000 cubic yard (CY) of soil and rock will be removed from the site. Soil removal will be accomplished with large grading equipment such as graders and dozers, and rock removal may require drilling and fracturing (or potentially blasting). The Project applicant has requested the option of either drilling and fracturing, or blasting the chert rock mass in Plot 82. The analysis presented in following chapters of this EIR assess impacts associated with drilling and fracturing (e.g., dust generation, equipment emission, construction noise, etc.). A comparative analysis of the potential effects related to the option of blasting activities (hazards, noise, etc.) are address as an alternative, or Project option in Chapter 5, Alternative #5: Blasting to Remove Existing Bedrock. The maximum depth of cut for soil and rock removal would be approximately 15 to 18 feet.
- Keyways will be excavated at the toe of the slope, extending into the bedrock. Subdrains will be installed at the lower end of the keyways and benched fill.
- Removed soil will be placed back into the excavated area as benched, compacted and engineered fill. As the fill is replaced in this area, individual pre-burial vaults will be carefully placed within the engineered fill, such that the bottom of the vaults are placed 5 feet to 8 feet below finished grade. The vault locations are surveyed and flagged prior to placing the final fill.
- An approximately 10-foot high retaining wall/crypt wall will be constructed along the upper portions of the slope to retain the existing hillside above, which currently includes existing burial sites and the ridge road.
- The volume of soil and rock removal from this area will substantially exceed the volume of replaced material by as much as approximately 100,000 CY. This excess material will be placed as fill elsewhere in the site, as described below.



Plot 82 Crypt Wall, Cross-Section



*Subject to Cost and Feasibility

Plot 82 Amphitheater, Cross-Section

Figure 3-7
Plot 82 Crypt Wall and Amphitheater Cross Sections

Source: SWA

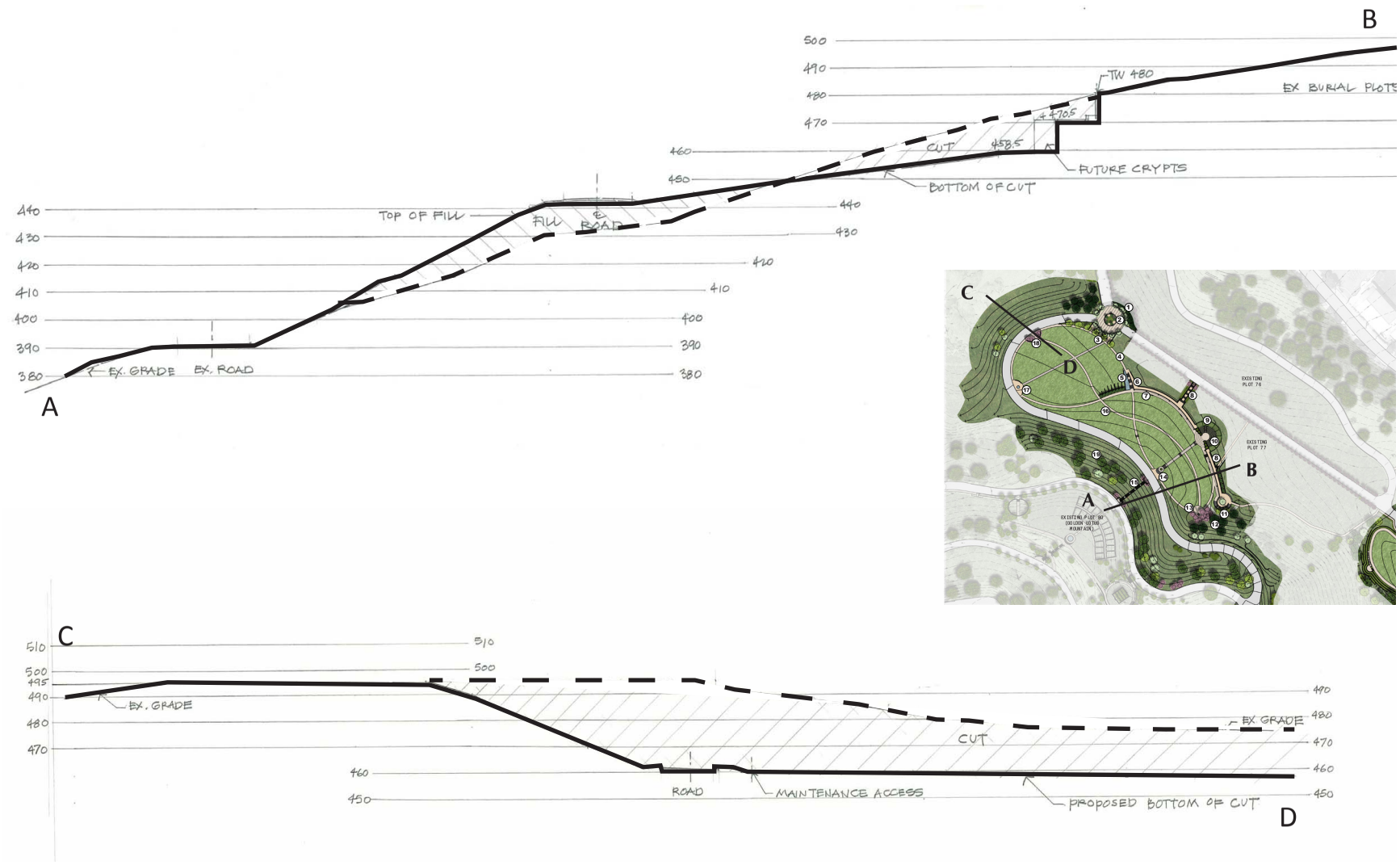


Figure 3-8
Plot 82 Grading Concept, Cross Sections

Source: SWA and Tillis Hultgren

Plot 98

Site Plan and Design

Plot 98 is located southeast and up-hill of Plot 82, connected by the existing ridgeline road. This site is higher along the hillside than Plot 82, ranging in elevation from 530 to 600 feet. It is located approximately 200 feet from the nearest (northeasterly) property boundary. As illustrated in the Plot 98/Panhandle site plan (**Figure 3-9**), development of this burial site includes:

- Improvements to the existing roadway to make it a more finished access road, with a short cul-de-sac entering from the ridge road into the site for parking and pedestrian drop-off.
- Construction of a pedestrian pathway/maintenance path around the perimeter of the site, ending at an overlook platform at the southeast corner of the site near the existing water tank.
- A moderately sloped (slopes ranging from 10% to 20%) open lawn area of approximately 2 acres (approximately 88,700 square feet), pitched to provide westerly views, that will provide spaces for new burial sites. Although final design of the cemetery burial sites has not been developed, this site may accommodate between 1,200 and 2,000 new traditional in-ground burial sites, depending on whether pre-burial vaults are used. The plan may include future above ground mausoleum and/or columbaria development within the footprint of the Plot.
- Along the lower portion of this sloped burial area, a retaining wall ranging in height from several feet to 15 feet in height will be constructed as part of the grading operation. The retaining wall will serve to retain new fill placed in this area, which will be filled to near the top of the wall. A decorative metal railing will sit atop the wall.
- A separate niche memorial wall will visually shield this burial site from an adjacent water tank.

Grading Plan

Currently, the Plot 98 site is moderately pitched from west to east. The grading concept for this site is to remediate loose soils with over-excavation, and smooth this grade by adding engineered fill back into this area, held in place with a retaining wall (**Figure 3-10**). Generally, the grading concept for this area includes:

- Unconsolidated soils and artificial fill underlay portions of the Plot 98 site at depths of approximately 10 or more feet will be temporarily removed, keyways will be excavated into the slope and extending into the bedrock, and subdrains will be installed at the lower end of the keyways and benched fill (see cross-section, Figure 3-10).
- A 660 linear foot, 10 to 15 foot high retaining wall will be constructed at the lower end of the slope, anchored into the keyway.
- All of the soil temporarily removed from this area, plus an additional 52,000 CY of soil from Plot 82, will be placed back onto the Plot 98 site as benched, compacted and engineered fill, partially held in place by the retaining wall.
- Finish grade will generally be 5 to 10 feet higher than existing grade.



Figure 3-9
Plot 98 / Panhandle Site Plan

Source: SWA

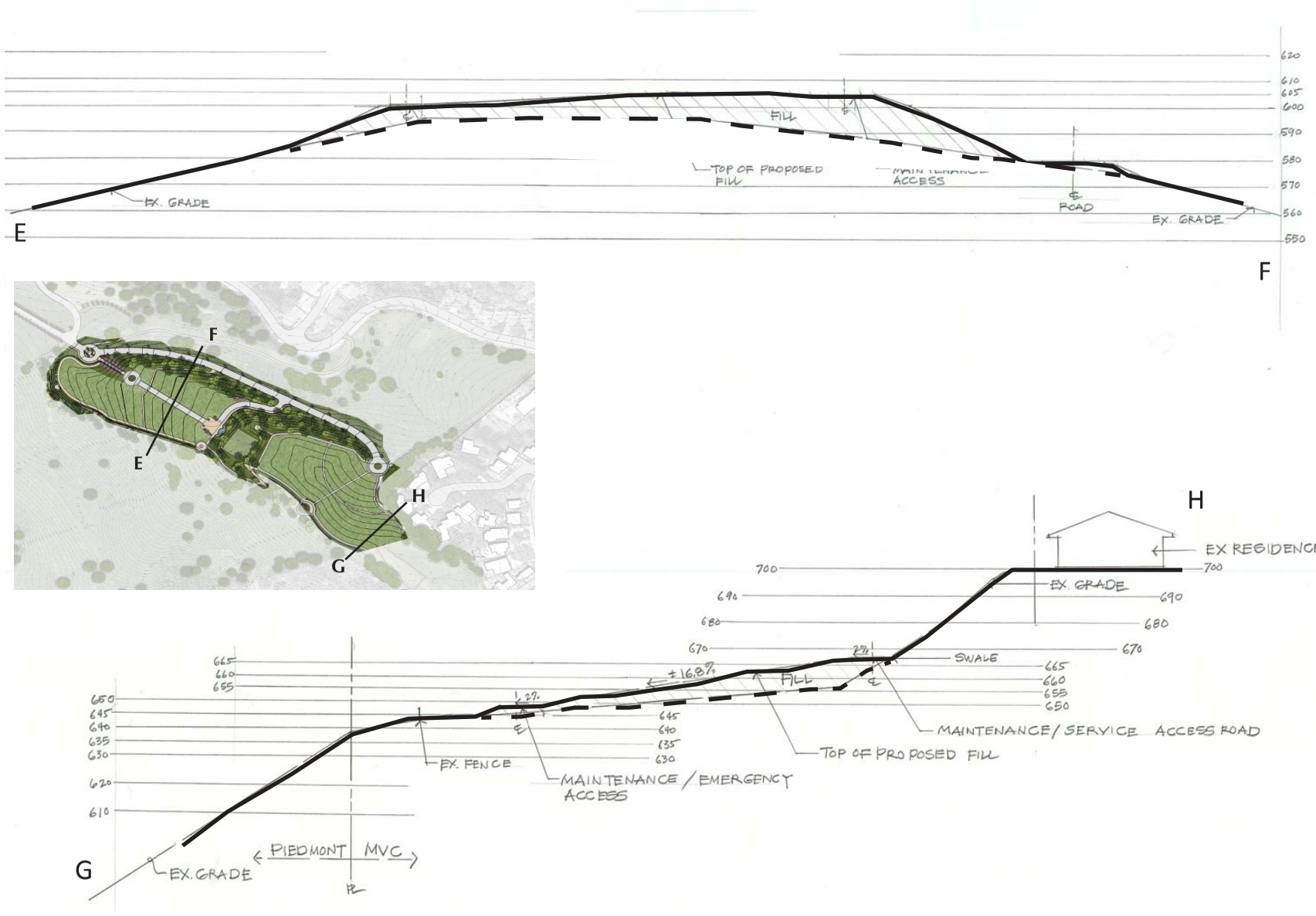


Figure 3-10
Plot 98 and Panhandle Grading Concept, Cut and Fill

Source: SWA and Tillis Hultgren

Panhandle

Site Plan and Design

The "Panhandle" is the third proposed new burial site pursuant to the Project. It is located immediately east of Plot 98, and is also accessed by the existing ridge road. This Panhandle site ranges in elevation from 640 to 675 feet. A steep, wooded hillside of approximately 25 to 35 feet in height separates the Cemetery property from the residences along Stark Knoll Place and Hilltop Crescent Road. As also illustrated in the Plot 98/Panhandle site plan (see Figure 3-8), development of this burial site includes:

- Improvements to the existing roadway will make it a more finished access road, terminating in a cul-de-sac designed to accommodate emergency vehicles, ending at the base of the Stark Knoll hillside.
- All new burial sites will be designed to remain on the Oakland side of the City of Oakland /City of Piedmont boundary within a 2.4 acre (104,900 square feet) site, such that no expansion of cemetery use or any grading associated with expanded cemetery use will occur within the City of Piedmont. The Panhandle site will be the last phase of development of the Project, and design of the burial sites and landscape setting for this area is not yet defined. Ultimately, this site may accommodate upwards of 1,500 new interment sites, depending on final design.
- Improvements to the existing pedestrian pathway/maintenance path and the emergency access route within the Panhandle boundaries. Improvements associated with this new pathway will terminate a few feet before entering into Cemetery property within the City of Piedmont. From the City of Piedmont boundary to the access gate at Maxwelton Road, the existing pathway will be unimproved, but will remain fully functional, as it is now.

Grading Plan

The grading concept for the Panhandle is to add new fill to this currently relatively flat area such that the entire site will be moderately pitched to the southwest views. Generally, the grading concept for this area includes:

- Unconsolidated soils and artificial fill that underlay the Panhandle site will be temporarily removed, keyways will be excavated into the slope and extending into the bedrock, and subdrains will be installed at the lower end of the keyways and benched fill (see Panhandle cross-section, Figure 3-10). All soil stabilization grading work will be conducted within the portion of the Cemetery that falls within the City of Oakland, and no subsurface work will be conducted in Piedmont.
- All of the soil temporarily removed from this area, plus an additional 48,000 CY of soil from Plot 82, will be placed back onto the Panhandle site as benched, compacted and engineered fill.
- Finish grade will generally be at a 2:1 slope, with maximum fill depths of 15 to 20 feet higher than existing grade. Grading work will "feather" new grades at the Panhandle site to match existing grades to the east within the City of Piedmont boundaries.

Landscape Plan

As indicated in the Landscape Plan (**Figure 3-11**), the overall intent of the Project is to create relatively level open grassed areas to accommodate new burial sites within the Cemetery. These burial sites will appear much like most of the surrounding Cemetery (particularly similar to the adjacent Plots 49, 77 and 80) with smaller head stones placed in an organized, linear pattern across the lawn.

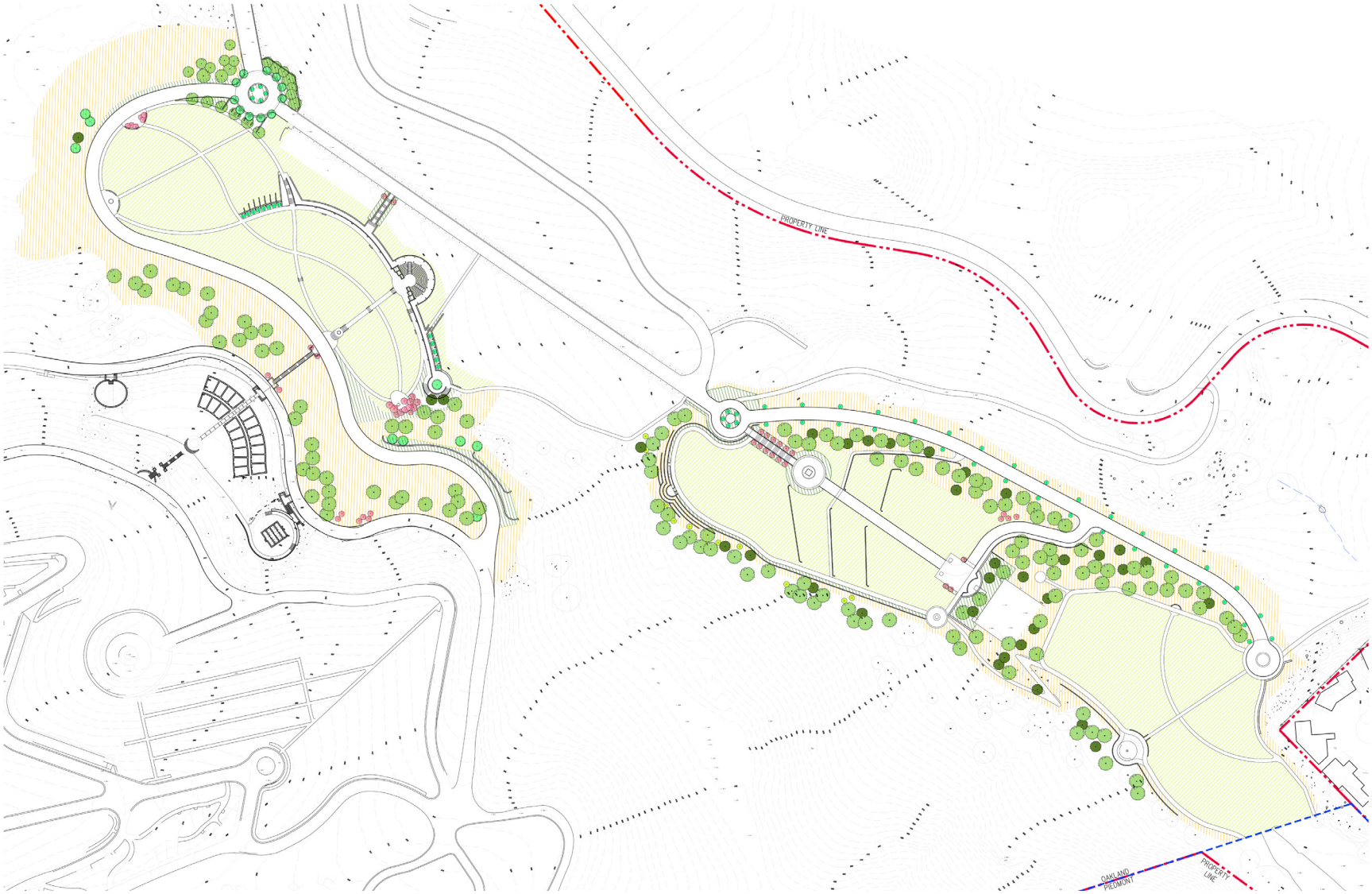


Figure 3-11
Project Landscape Plan

Source: SWA

The slopes and open areas surrounding the burial lawns will be re-seeded after grading with native grasses and wild flowers and interspersed with evergreen and deciduous trees planted in natural-appearing clusters (rather than linear rows), with accent shrubs and groundcover.

Landscape structures will include retaining walls that serve to hold back the slope behind them, and that are also designed to accommodate new mausoleum and/or columbaria interment spaces along the front faces. The retaining walls will be constructed of concrete but will have stone chambers and decorative niches placed along the front of the wall, similar to other existing retaining walls/mausoleum walls throughout the Cemetery. At Plot 82, the wall will also include a small outdoor amphitheater for family gatherings and small ceremonies. Use of the amphitheater is expected to be limited to the types of funeral and burial-related gatherings as currently occur throughout the Cemetery, and as an area for respite and contemplation for visitors. No large public or civic events (such as those that might include use of amplified sound equipment) are expected to occur at the amphitheater without a separate and specific permit for such an event being issued by the City.

Construction Operations and Phasing

Grading and Construction

All grading operations conducted for the Project are intended to result in a mass balance, such that no off-hauling of soils and no import of soils will occur. Should any materials that are unsuitable for use as re-compacted engineered fill be discovered during the grading operations, these materials will be off-hauled and appropriately disposed.

The grading operations are expected to occur for approximately four (4) months. Specific details of the grading and construction operation are shown below in **Table 3-1**.

Table 3-1: Construction Schedule

Week	Phase	At Plot 82	At Plot 98 and Panhandle
1	Phase 1		Prepare Plot 98 and Panhandle (4.5 acres) to accommodate new fill using scrapers and dozers, with the large equipment used for up to 8 hours per day for approximately 3 days
	Phase 2	Demo existing road through Plot 82 (900 linear feet) using a loader and dump truck, with the large equipment used for up to 8 hours per day for approximately 3 days	
2 3	Phase 3	Drill rock at Plot 82 (1.4 acres) using a pneumatic backhoe drill or jackhammer (8 hours per day for up to 5 days) and crush rock into smaller pieces using a ram hoe (8 hours per day for up to 5 days)	
4	Phase 4	Cut and doze temporary haul road between Plot 82 and Plot 98/Panhandle (800 linear feet) using a dozer and grader, with the large equipment used for up to 8 hours per day for approximately 2 days	
5 6 7 8 9	Phases 5 and 6	Over-excavate Plot 82 (100,000 + CY) and build keyways and benches to rough grade, scrape excess soil and rock and haul to Plot 98 and Panhandle, using as many as 3 scrapers, a dozer, a compactor and a water truck, with the larger equipment used for up to 8 hours per day for approximately 25 days	Haul, dump and spread excess soils (100,000 CY) from Plot 82 at Plot 98 and Panhandle using 3 scrapers, a dozer, a water truck (for dust control) and a compactor, with the large equipment used up to 8 hours per day for approximately 25 days
10	Phase 7	Grade Plot 82 (2.7 acres) using a dozer and a compactor, with the larger equipment used for up to 8 hours per day for approximately 3 days	
11	Phase 8		Grade Plot 98 and Panhandle (4.5 acres), building keyways and benches, and retaining walls as necessary, using a dozer and a compactor, with the large equipment used up to 8 hours per day for approximately 5 days
12	Phases 9, 10, and 11	Build niche/wall at Plot 82 (600 linear feet) using a cement mixer and hand tools, estimated at a 15 day duration	Re-vegetate Plot 98 and Panhandle (4.5 acres) using minimal equipment, with the duration lasting approximately 2 days
13 14		Build new road thru Plot 82 (900 linear feet) including storm drain and irrigation system, using a grader, compactor, loader and backhoe, with the larger equipment used for up to 4 hours per day for approximately 15 days	
15		Finish grade Plot 82 (2.7 acres) using a loader, a grader and a compactor, with the larger equipment used for up to 8 hours per day for approximately 5 days	
16		Landscape installation (tree planting, grass, etc.) with minimal heavy equipment needed (2.7 acres), estimated to last 7 days	

Assumptions:

1,500 CY per day per scraper per 8 hour work day

CAT 637 scraper being pushed by a D9 dozer (assume 3 scrapers with 1 dozer)

CAT 825 compactor + two water trucks (to control dust)

14g Motor Grader to maintain haul road

Source: Sandis Engineering and Surveying, 2015

Operational Phasing

Because of the unique grading plan required for development of the Project, all grading operations described above will be completed at one time, with all cut and fill placed on the site as a single operation. Additionally, Mountain View Cemetery seeks approval of a single conditional use permit to enable expansion of cemetery use at each of the identified burial sites, extending into perpetuity. However, final design plans and individual plot sales and development are expected to be implemented in phases for operational and economic purposes. Opening of Plot 82, including installation of irrigations systems and landscaping, will comprise Phase 1. Phase 2 will include final development of Plot 98, expected to be initiated as such time as sales of individual plots in Plot 82 begin to reach capacity, but potentially sooner. The opening of the Panhandle site for burial use will be the final phase of site development pursuant to the Project.

Mountain View Cemetery Association's business plans anticipate sales of individual burial plots at a rate of upwards to 400 plots per year (greater than current annual plot sales) because of the exceptional scenic beauty of these burial sites. With a design capacity of at least 6,300 individual plots among the three development sites, the Project would provide Mountain View Cemetery with approximately 15 years of operational capacity.

Operations

Once the grading operations are complete, activities at the new burial sites will be the same as the majority of the cemetery, primarily a pastoral and scenic area with occasional services and visitors.

Project Objectives

In general, the purpose of the Project is to accommodate the Cemetery's future needs for additional burial sites by utilizing the undeveloped portion of the Cemetery. The specific Project objectives are as follows:

- Create at least 7.3 acres of new burial sites, or at least 6,300 new interment sites, which are moderately flat and angled to offer panoramic views of the San Francisco Bay and skyline.
- Connect new burial sites to one another and to existing burial sites via on-site roadways, and provide for parking, pedestrian drop-off, pedestrian pathways, and maintenance access to sites.
- Relocate all removed soil within the Cemetery, balancing cut and fill on site.
- Develop new burial areas in phases (i.e. over 15 years) to allow create of internment sites to meet demand.

Uses of this EIR

This EIR is intended to provide environmental review for all City of Oakland approvals and actions necessary for this Project. A number of City permits and approvals would be required before the development of the Project could proceed, and as Lead Agency for the Project, the City of Oakland would be responsible for the approvals required for development. Since the Project does not propose to expand cemetery use within the City of Piedmont's jurisdiction, it is not expected that any type of zoning permits or approvals will be required from the City of Piedmont for this project.

Expected City Permits and Approvals

The Project is expected to require approvals from the City of Oakland including, but not limited to:

- Conditional Use Permit: According to the City Planning Code, cemetery use is considered an "extensive impact use," requiring approval of a Conditional Use Permit for expansion. Under the City of Oakland Standard Conditions of Approval, permits expire after two years unless a different termination date is prescribed. It is anticipated that a modification to the Standard Conditions of Approval to accommodate build-out of the project over a 15-year period will be requested as part of the Conditional Use Permit.
- Design Review: The Project is subject to the City of Oakland's regular design review process, as it includes new construction requiring a CUP. This process may include review by the City's Landmarks Board.
- Grading permits: City of Oakland grading permits will be required for the proposed Project. Applications for these grading permits may be submitted after zoning approval, or concurrent with the CUP application.
- Building Permits: Pursuant to the City of Oakland Building Code, the Project's proposed retaining walls and mausoleum and/or columbaria walls will each require building permits prior to construction.
- Tree Removal permits: The Project's proposed sub-surface excavations and finish grading operations will necessitate removal of certain existing trees. Tree surveys have been conducted that include the entire Project site, plus additional areas beyond the outer boundaries of all expected grading activities, but that are in proximity to the Project site and that contain trees defined as "protected" under the City ordinance. The tree surveys include the precise location, health and suitability of existing trees, and a determination as to which of these trees will need to be removed to accommodate the Project, and which trees will remain and require protective measures to ensure their preservation. Based on the results of that survey, Tree Removal permits for all qualifying trees proposed to be removed have been submitted.
- Creek permit: According to Section 13.16.120 of the OMC, the Project site is considered a "creekside property" because the Cemetery has creeks and riparian corridors crossing the property. Before any work may commence at the Project site, the applicant will be required to obtain a creek protection permit. The closest regulated feature that would be defined under the Creek Ordinance is an ephemeral drainage located immediately north (on the downhill side) of the Project site. The distance between the identified limit of Project-related grading activity and this regulated feature is approximately 140 feet. Projects that are located more than 100 feet from the centerline of a creek are classified as Category II projects, and the Project is required to obtain City approval of a Category II creek permit, including a site plan clearly illustrating the relationship and distance of the Project to the creek centerline and top of the creek bank.

Other Agencies

The Project is also expected to require certain permits and/or approvals from other outside agencies. These other agencies, acting as responsible agencies and relying on this EIR for their decision-making process include, but are not limited to:

- San Francisco Regional Water Quality Control Board (RWQCB): Acceptance of a Notice of Intent to comply with the requirements of the Construction General Permit issued by the (SWRCB). The project applicant shall submit a Notice of Intent (NOI), Stormwater Pollution Prevention Plan (SWPPP), and other required permit registration documents to SWRCB.

4

Setting, Impacts, Standard Conditions of Approval, and Mitigation Measures

The following chapters contain an analysis of those environmental topics relevant to the Project, and constitute the major portion of this Draft EIR. Chapters 4.1 through 4.8 describe the existing setting for topics analyzed in this EIR relevant to the proposed Project, the potential impacts that could result from implementation of the Project, relevant City policies and Standard Conditions of Approval that would minimize potential adverse effects that could result from implementation of the Project, and additional mitigation measures if necessary to reduce environmental impacts of the Project. Chapter 4.9 provides a discussion and analysis of those environmental topics which are not anticipated to rise to a level of significance and are not evaluated elsewhere in the EIR.

Environmental Topics Evaluated in this EIR

The February 2015 Notice of Preparation (NOP) for this EIR indicated that the Project was not anticipated to result in significant long-term operational impacts. Mountain View Cemetery is an existing cemetery that has been in use since 1863 as a site for burials and related services. The Project is intended to enable the Cemetery to continue to provide these same services into the future, with no substantial change to the existing or baseline operational condition. As such, it is not anticipated the Project will have significant environmental impacts related to operational issues such as greenhouse gas emissions and climate change, land use and planning, population and housing, public services, recreation, traffic and transportation, utilities and service systems, agricultural and forest resources, or mineral resources. However, since the NOP for this EIR did not include an Initial Study Checklist addressing these issues, they are addressed in this Draft EIR under Chapter 4.9 titled “Other, Less than Significant Effects.”

The potential for environmental effects to result from implementation of the Project is primarily limited to those effects associated with the construction and grading operations proposed to create new burial and internment sites. As indicated in the NOP, the following environmental topics are addressed in this EIR:

- Aesthetics (Chapter 4.1) – addressing both construction-period and long-term issues
- Air quality (Chapter 4.2) – primarily focused on construction-period emissions
- Biological resources (Chapter 4.3) – focused on construction-period effects
- Cultural and historic (Chapter 4.4) – addressing both construction-period and long-term issues
- Geology and soils (Chapter 4.5) – primarily focused on construction-period earthwork and grading operations, as well as long-term slope stability
- Hazards and hazardous materials (Chapter 4.6) – addressing construction-period exposure to hazards and hazardous materials, as well as long-term risks associated with wildfire hazards

- Hydrology and water quality (Chapter 4.7) – addressing construction-period erosion and sedimentation, as well as long-term water use and water quality issues
- Noise (Chapter 4.8) – addressing both construction-period noise as well as increased noise exposure resulting from Cemetery use in closer proximity to existing residents.

This EIR also includes a section addressing all other less-than-significant effects (Section 4.9).

Format of Topic Sections

Each environmental topic chapter generally includes three main sections: Physical Setting; Regulatory Setting; and Impacts, Standard Conditions of Approval and Mitigation Measures.

Physical Setting

These sections detail the physical conditions in and around the Project site related to the environmental topic.

Regulatory Setting

These sections summarize applicable federal, State and local regulations and policies pertinent to each environmental issue area. Implementation of these applicable regulations may provide for partial or full mitigation of potential environmental impacts. Local regulations of the City of Oakland include City Uniformly Applied Development Standards and Standard Conditions of Approval which are uniformly applied to all projects in the City and imposed as conditions of approval (see discussion below).

Impacts, Standard Conditions of Approval and Mitigation Measures

These sections begin with a list of the City's adopted CEQA Thresholds of Significance, by which potential impacts are measured or compared. Individual environmental impact analyses are then structured to include: 1) an impact statement; 2) an analysis or description of the potential impact as specifically applicable to the Project; 3) identification of applicable existing regulations and City of Oakland Standard Conditions of Approval that may be capable of reducing and/or avoiding otherwise potentially significant impacts (see further discussion of Standard Conditions of Approval, below); and 4) identification of mitigation measures (where available and necessary) to further reduce significant effects. This analysis concludes with an explanation of whether the impact can be avoided or reduced to a less-than-significant level with implementation of Standard Conditions of Approval or mitigation measures, or if the impact would remain significant and unavoidable.

Determination of Significance

Under CEQA, a significant effect is defined as a substantial or potentially substantial adverse change in the physical environment. Each impact section begins with the criteria of significance which serve as the thresholds for determining whether an impact is significant. The criteria of significance used in this EIR are derived from the City's adopted CEQA Thresholds of Significance.[1] The Thresholds are offered as guidance in preparing environmental review documents. The City requires use of these Thresholds unless the location of the project or other unique factors warrants the use of different thresholds. The

[1] Version dated October 28, 2013

Thresholds are intended to implement and supplement provisions in the CEQA Guidelines for determining the significance of environmental effects, and include provisions of CEQA Guidelines, Sections 15064, 15064.5, 15065, 15382 and Appendix G. The Thresholds are intended to be used in conjunction with the City's Uniformly Applied Development Standards and Standard Conditions of Approval (see discussion below), which are required of projects as conditions of approval, regardless of the determination regarding environmental impacts.

The proposed Project is evaluated against each Threshold to determine whether it would result in a potentially significant impact, either during the construction period and/or during Project operations. For each topic area the proposed Project is also evaluated for cumulatively considerable impacts. Potential impacts are identified by level of significance, as follows:

- **(LTS)** – Less-Than-Significant impact. The Project would cause an environmental effect, but that effect would not exceed the City's threshold of significance.
- **(LTS with SCA)** – Less-Than-Significant impact with implementation of uniformly applied development standards or Standard Conditions of Approval (SCAs). The proposed Project would not cause an adverse impact due to the required implementation of SCA's, which are assumed to be incorporated as requirements of Project approvals.
- **(LTS with MM)** – Less-Than-Significant with Mitigation Measures**.** The Project would cause an adverse environmental impact, but that impact would be reduced to a less than significant level with implementation of recommended mitigation measures as identified in this EIR.
- **(SU)** - Significant and Unavoidable impact. The Project would cause an adverse impact that exceeds the threshold of significance and cannot be avoided or reduced through implementation of SCAs or recommended mitigation measures.

Uniformly Applied Development Standards and Standard Conditions of Approval

The City's Thresholds are intended to be used in conjunction with the City's Uniformly Applied Development Standards and Conditions of Approval (SCAs). These SCAs are incorporated into projects as conditions of approval regardless of the determination of a project's environmental impacts. As applicable, SCAs are adopted as requirements of an individual project when it is approved by the City and are designed to, and will avoid or substantially reduce a project's environmental effects.

In reviewing project applications, the City determines which SCAs are applied based upon the zoning district, community plan, and the type(s) of permits/approvals required for the project. Depending on the specific characteristics of the project type and/or project site, the City determines which SCAs apply to a specific project. For example, SCAs related to creek protection permits are only applicable to projects on creek side properties. Because these SCAs are mandatory City requirements, the impact analysis assumes that they will be imposed and implemented by the Project. If an SCA would reduce a potentially significant impact to less than significant, the impact is determined to be less than significant and no mitigation is imposed.

The SCAs incorporate development policies and standards from various adopted plans, policies, and ordinances such as the Oakland Planning and Municipal Codes; Oakland Creek Protection, Stormwater Water Management and Discharge Control and Tree Protection Ordinances; Oakland grading regulations; National Pollutant Discharge Elimination System (NPDES) permit requirements; Housing Element-related mitigation measures; California Building Code and Uniform Fire Code; and others. Each of these plans, policies and ordinances has previously been found to substantially mitigate environmental effects. Where there are peculiar circumstances associated with the Project or the

Project site that will result in significant environmental impacts despite implementation of the SCAs, the City will determine whether there are feasible mitigation measures to reduce these impacts to less-than-significant levels.

The listed SCAs for each environmental topic are preceded by the conditions under which the SCA applies (e.g., pursuant to grading or building permits). The SCAs are derived from:

- *Standard Conditions of Approval*, Department of Planning and Building, Bureau of Planning, adopted by City Council on 11/03/08 (Ordinance No. 12899 C.M.S.), revised July 22, 2015.

Effects of the Environment on the Project

CEQA requires the analysis of potential adverse effects of the project on the environment. Potential effects of the environment on the project are legally not required to be analyzed or mitigated under CEQA. However, this EIR nevertheless analyzes certain potential effects of the environment on the Project in order to provide this information to the public and decision-makers. Where a potentially significant effect of the environment on the Project is identified, this EIR, as appropriate, identifies SCAs and/or Project-specific, non-CEQA recommendations to address these issues.

Cumulative Analysis Context

CEQA defines cumulative as "two or more individual effects which, when considered together, are considerable, or which can compound or increase other environmental impacts." Section 15130 of the CEQA Guidelines requires that an EIR evaluate potential cumulative environmental impacts when the project's incremental effect is cumulatively considerable. 'Cumulatively considerable' means that the incremental effects of an individual project (even if individually less than significant) are considerable when viewed in connection with the effects of other past projects, the effects of other current projects, and the effects of probable future projects. These impacts can result from a combination of the Project together with other projects causing related impacts. The cumulative impact from several projects is the change in the environment which results from the incremental impact of the Project, when added to other closely related past, present, and reasonably foreseeable probable future projects.

The methodology used in this EIR for assessing cumulative impacts varies, depending on the specific topic being analyzed. For example, the geographic and temporal (time-related) parameters related to a cumulative analysis of air quality impacts are not necessarily the same as those for a cumulative analysis of noise or aesthetic impacts. This is because the geographic area that relates to air quality generally is much larger and regional in character (i.e., the Air Basin) than the geographic area that could be impacted by potential cumulative noise or aesthetic impacts. Cumulative noise and aesthetic impacts are inherently more localized than air quality and transportation impacts, which are more regional in nature. Accordingly, the parameters of the respective cumulative analyses in this document are determined by the degree to which impacts from this Project are likely to occur in combination with other development projects.

For cumulative topics analyzed in this EIR which have a close geographic cumulative context, a "list method" of past, present and reasonably foreseeable future projects, based on the City's latest list of Major Development Projects, is used. The cumulative discussions that follow explain the geographic scope of the area affected by each cumulative effect, and draw on the information in the cumulative growth scenario maintained by the City, consistent with the defined geographic area.

List of Other Cumulative Projects within Immediate Proximity to the Project site:

- Safeway Redevelopment project at 51st and Pleasant Valley Road (under construction)
- Senior housing project and the apartment project located on Broadway, at both sides of the intersection at 51st Avenue (under construction and approved, respectively)
- Small mixed-use project on Piedmont Avenue above 51st Street (under construction)
- Other internal Mountain View Cemetery projects and improvements near the Cemetery gates (approved)

Other City-Wide Cumulative Projects:

- Broadway Valdez District Specific Plan
- Central Estuary Area Plan
- Coliseum Area Specific Plan
- Harrison Street/Oakland Avenue Community Transportation Plan
- International Boulevard Transit-Oriented Development Project
- Lake Merritt Station Area Plan
- West Oakland Specific Plan

4.1

Aesthetics

This section provides background information on aesthetic resources located within the Project Area. It describes the relevant environmental and regulatory settings, evaluates potential impacts to aesthetic resources that would result from implementation of the Project, and identifies Standard Conditions of Approval (SCAs) or mitigation measures that would avoid or minimize potential impacts, when appropriate. The analysis and discussion in this section of the EIR is based primarily on the following products, which are incorporated into this section of the EIR:

- Environmental Vision, *Mountain View Cemetery Expansion Project Photos and Photo-Simulations*, June 2015.

Environmental Setting

Visual Character and Quality of Public Views

The Project site of approximately 7.5 acres is included within the 226-acre Mountain View Cemetery and contains a variety of aesthetic settings from various vantage points (**Figure 4.1-1**), as described below. Photographs of existing conditions from these vantage points (even numbered Figures 4.1-2 through 4.1-12) are provided later in this chapter and adjacent to simulated views of the Project, so that direct comparisons can be viewed.

Distant Views of the Site

The topography of Mountain View Cemetery rises from approximately 160 feet above mean sea level at its main entrance at the end of Piedmont Avenue, to elevations of as high as 650 feet at its upper hillsides and ridgelines. Because of its height, the easterly or upper approximately one-third of the Cemetery is visible in mid-ground vistas from as far away as Grizzly Peak above the Highway 24 tunnel to the northeast (Figure 4.1-2), is intermittently visible from Highway 24 from the I-580 interchange to approximately Broadway to the west, and also intermittently visible from I-580 at Grand to the south (Figure 4.1-4). The Cemetery's upper hillsides and ridgeline are seen as undeveloped open areas rising amid the lower developed portions of Oakland and Piedmont. The grove of eucalyptus trees clustered around the top of Hill 500 is a prominent landmark which locates the Project site from these distant views.

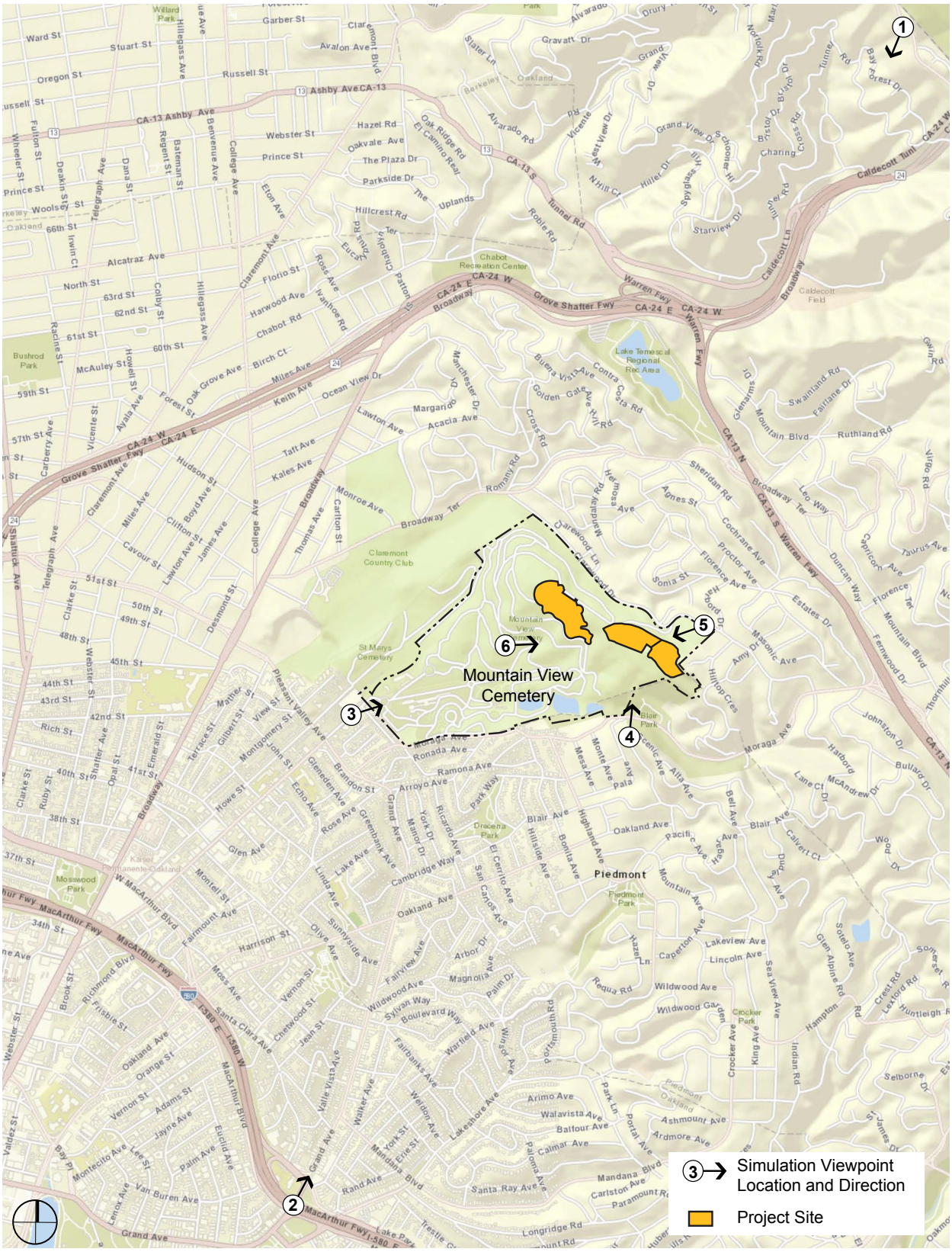


Figure 4.1-1
Selected Viewpoint Locations

Source: Environmental Vision

Mid-Range Views across the Site

The upper portion of the Cemetery, including the Project site, is also visible from several nearby vantage points within the Oakland Hills.

- Views up and toward the Project site are prominent from the Piedmont Avenue entrance to the Cemetery, near its terminus between Pleasant Valley Avenue and the Cemetery gates (see Figure 4.1-6);
- Views directly across the Project site are particularly prominent from Scenic Drive in the City of Piedmont, directly to the south of the site (see Figure 4.1-8);
- Views of the back side of the ridgeline, opposite from the Project site, are prominent from Harbord Drive to the east, and from Proctor Avenue to the northeast (see Figures 4.1-10).

Generally, these mid-range views look out and across intervening homes, fences and roadways, and power lines within the neighborhoods and along nearby streets are seen in the upper portions of these views.

Internal Views of the Project Site

The upper hillside and ridgeline of the Project site forms a backdrop for views looking eastward (uphill) from internal locations within the Cemetery. From these internal viewpoints, the hillsides and ridgeline forms a horizon line, with the Project site below and the sky above (see Figure 4.1-12). From these internal views, the Project site is generally "framed" by the grove of eucalyptus trees at Hill 500 to the north, and a sloping ridgeline swale that rises up again to the higher elevations of trees and homes at Stark Knoll Place to the east. Mausoleums, crypts and cemetery headstones form the fore- and near-ground views within the cemetery. There are no existing overhead power lines or poles in views from any of these internal view locations, and generally only trees break the ridgeline silhouette.

Scenic Vistas from the Site

The Project site rises prominently in a foreground hillside within the Oakland Hills, and provides broad panoramic views out across the Cities of Piedmont and Oakland to the San Francisco Bay. Distant views of San Francisco, the Golden Gate Bridge and Mt. Tamalpais to the west are afforded from these upper elevations of the Project site. Eastward views over the ridgeline to the Oakland Hills are generally not seen from the Project site until viewers reach the ridgeline and are able to look back over the ridgeline to the east.

Scenic Highways

The City of Oakland General Plan's Scenic Highways Element defines scenic routes as "distinctively attractive roadways that traverse the City, and the visual corridors which surround them." Scenic routes include officially designated State scenic highways, municipally designated City roadways or informally recognized local scenic byways.[1]

- Interstate 580 extends 12 miles through Oakland, from the San Leandro city limits to the San Francisco-Oakland Bay Bridge. The segment of I-580 from the San Leandro city limit to State Route

[1] City of Oakland, City of Oakland General Plan Scenic Highways Element, September 1974, p. 1.

24 (post miles 34.5 to 45.1) is an officially designated State Scenic Highway. The entire length of I-580 within Oakland is identified as a designated scenic route in the City of Oakland General Plan.

- The City's other designated Scenic Route is the Skyline Boulevard/ Grizzly Peak Boulevard/Tunnel Road route through the Oakland Hills. Project Area is readily visible from both I-580 and Grizzly Peak Boulevard.

- State Route 24 is eligible for, but not officially recognized as part of the State Scenic Highway System.[2] Caltrans has only designated it as a Scenic Highway between the eastern end of the Caldecott Tunnel and I-680 in Contra Costa County.[3]

Light and Glare

There are no existing sources of nighttime light within the Project site, nor anywhere within the Cemetery other than near the Administration building near the lower entry gates. Existing nighttime lighting in the area includes those common to developed areas, including street and freeway lights, building lighting, illuminated signs, vehicle headlamps and interior lighting visible through windows.

Existing sources of glare include reflection of sunlight and artificial light off of nearby windows in the day, and glare from inadequately shielded or improperly directed light sources at night.

Regulatory Setting

State

California Scenic Highway Program

The California Scenic Highway Program protects scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to identified scenic highways. "Officially Designated State Scenic Highways" must have a scenic corridor protection program, or its equivalent adopted by the local jurisdiction, to preserve the scenic quality of the corridor and address land use, development density, earthmoving, landscaping, building design, and outdoor advertising, including billboards, within the corridor. Within Oakland, I-580 from the San Leandro city limit to State Route 24 (post miles 34.5 to 45.1) is an officially designated State scenic highway. There are no officially designated or eligible State scenic highways within or immediately adjacent to the Project Area.

California Solar Shade Control Act

Under the California Solar Shade Control Act, no property owner shall allow a tree or shrub to be placed or to grow so as to cast a shadow greater than 10 percent at any one time between the hours of 10 a.m. and 2 p.m. over an existing solar collector on an adjacent property, used for water heating, space heating or cooling, or power generation. These limitations apply to the placement of new trees or shrubs, and do not apply to trees and shrubs that already cast a shadow upon that solar collector. The location of a new solar collector is required to comply with local building and setback regulations, but

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[2] CA Codes (Street and Highway Code sections 260-284

[3] California Department of Transportation, December 7, 2007, Officially Designated State Scenic Highways and Historic Parkways, accessed at http://www.dot.ca.gov/hq/LandArch/scenic_highways

must be setback not less than five feet from the property line, and must be no less than 10 feet above the ground.[4]

Local

General Plan

Land Use and Transportation Element

The following City of Oakland General Plan Land Use and Transportation Element policies are relevant to the aesthetics impacts of the proposed Project:

- *Policy W3.4: Preserving Views and Vistas.* Buildings and facilities should respect scenic viewsheds and enhance opportunities for visual access of the waterfront and its activities.
- *Policy T6.5: Protecting Scenic Routes.* The City should protect and encourage enhancement of the distinctive character of scenic routes within the City, through prohibition of billboards, design review, and other means.
- *Policy N9.5: Marking Significant Sites.* Identify locations of interest and historic significance by markers, signs, public art, landscape, installations, or by other means.

Open Space, Conservation and Recreation Element

The Open Space, Conservation and Recreation Element (OSCAR) promotes the preservation and good design of open space (both public and private), and the protection of natural resources to preserve and improve aesthetic qualities in Oakland. The following OSCAR policies are relevant to the aesthetics, shadow and wind impacts of the proposed Project:

- *Objective OS-10: Scenic Resources.* Protect scenic views and improve visual quality.
- *Policy OS-10.1: View Protection*. Protect the character of existing scenic views in Oakland, paying particular attention to: (a) views of the Oakland Hills from the flatlands; (b) views of downtown and Lake Merritt; (c) views of the shoreline; and (d) panoramic views from Skyline Boulevard, Grizzly Peak Road, and other hillside locations.
- *Policy OS-10.2: Minimizing Adverse Visual Impacts*. Encourage site planning for new development which minimizes adverse visual impacts and takes advantage of opportunities for new vistas and scenic enhancement.
- *Objective OS-12: Street Trees.* "Green" Oakland's residential neighborhoods and commercial areas with street trees.
- *Policy OS-12.1: Street Tree Selection.* Incorporate a broad and varied range of tree species which is reflected on a city-maintained list of approved trees. Street tree selection should respond to the general environmental conditions at the planting site, including climate and micro-climate, soil types, topography, existing tree planting, maintenance of adequate distance between street trees and other features, the character of existing development, and the size and context of the tree planting area.

[4] California Codes, Public Resource Code Sections 25980-25986. The California Public Resources Code can be found at http://www.leginfo.ca.gov/calaw.html

- *Policy CO-7.4*: Discourage the removal of large trees on already developed sites unless removal is required for biological, public safety, or public works reasons.

Oakland Municipal Code

The following provisions of the Oakland Municipal Code are relevant to the aesthetics impacts of the Project:

Title 12: Streets, Sidewalks and Public Places

- *Chapter 12.36: Protected Trees*. It is the interest of the City of Oakland and the community to protect and preserve trees by regulating their removal; to prevent unnecessary tree loss and minimize environmental damage from improper tree removal; to encourage appropriate tree replacement plantings; to effectively enforce tree preservation regulations; and to promote the appreciation and understanding of trees.

Title 17: Planning

Under the Planning Code, The Project is subject to the City's design review process. Design Review provisions of the Planning Code that are specifically relevant to the Project include:

- *Chapter 17.124: Landscaping and Screening Standards*. This chapter prescribes standards for development and maintenance of planting, fences, and walls; for the conservation and protection of property; and through improvements of the appearance of individual properties, neighborhoods, and the City.
- *Chapter 17.136: Design Review Procedure*. In accordance with Chapter 17.136 of the Oakland Planning Code, the Project is subject to Design review. Design review considers the visible features of a project and the project's relationship to its physical surroundings. Although independent of CEQA and the EIR process, design review is focused on ensuring quality design, and on avoiding potentially adverse aesthetic effects. Projects are evaluated based on site, landscaping, height, bulk, arrangement, texture, materials, colors, appurtenances, potential shadowing effects on adjacent properties, and other characteristics.

Standard Conditions of Approval

The City's Standard Conditions of Approval relevant to this aesthetics, shadow and wind chapter are listed below. These Standard Conditions of Approval would be adopted as mandatory requirements of each individual future project within the Project Area as it is approved by the City, and would ensure that significant impacts would not occur.

SCA #17: Landscape Plan

a. **Landscape Plan Required**. Requirement: The project applicant shall submit a final Landscape Plan for City review and approval that is consistent with the approved Landscape Plan. The Landscape Plan shall be included with the set of drawings submitted for the construction-related permit and shall comply with the landscape requirements of chapter 17.124 of the Planning Code.

   When Required: Prior to approval of construction-related permit

   Initial Approval: Bureau of Planning

   Monitoring/Inspection: N/A

b. **Landscape Installation**. Requirement: The project applicant shall implement the approved Landscape Plan unless a bond, cash deposit, letter of credit, or other equivalent instrument acceptable to the

Director of City Planning, is provided. The financial instrument shall equal the greater of $2,500 or the estimated cost of implementing the Landscape Plan based on a licensed contractor's bid.

When Required: Prior to building permit final

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Building

c. **Landscape Maintenance**. Requirement: All required planting shall be permanently maintained in good growing condition and, whenever necessary, replaced with new plant materials to ensure continued compliance with applicable landscaping requirements. The property owner shall be responsible for maintaining planting in adjacent public rights-of-way. All required fences, walls, and irrigation systems shall be permanently maintained in good condition and, whenever necessary, repaired or replaced.

When Required: Ongoing

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

SCA #18: Lighting. Requirement: Proposed new exterior lighting fixtures shall be adequately shielded to a point below the light bulb and reflector to prevent unnecessary glare onto adjacent properties.

When Required: Prior to building permit final

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

SCA #27: Tree Permit

a. **Tree Permit Required**. Requirement: Pursuant to the City's Tree Protection Ordinance (OMC chapter 12.36), the project applicant shall obtain a tree permit and abide by the conditions of that permit.

When Required: Prior to approval of construction-related permit

Initial Approval: Permit approval by Public Works Department, Tree Division; evidence of approval submitted to Bureau of Building

Monitoring/Inspection: Bureau of Building

b. **Tree Protection during Construction.** Requirement: Adequate protection shall be provided during the construction period for any trees which are to remain standing, including the following, plus any recommendations of an arborist:

1. Before the start of any clearing, excavation, construction, or other work on the site, every protected tree deemed to be potentially endangered by said site work shall be securely fenced off at a distance from the base of the tree to be determined by the project's consulting arborist. Such fences shall remain in place for duration of all such work. All trees to be removed shall be clearly marked. A scheme shall be established for the removal and disposal of logs, brush, earth and other debris which will avoid injury to any protected tree.
2. Where proposed development or other site work is to encroach upon the protected perimeter of any protected tree, special measures shall be incorporated to allow the roots to breathe and obtain water and nutrients. Any excavation, cutting, filing, or compaction of the existing ground surface within the protected perimeter shall be minimized. No change in existing ground level shall occur within a distance to be determined by the project's consulting arborist from the base of any protected tree at any time. No burning or use of equipment with an open flame shall occur near or within the protected perimeter of any protected tree.

3. No storage or dumping of oil, gas, chemicals, or other substances that may be harmful to trees shall occur within the distance to be determined by the project's consulting arborist from the base of any protected trees, or any other location on the site from which such substances might enter the protected perimeter. No heavy construction equipment or construction materials shall be operated or stored within a distance from the base of any protected trees to be determined by the project's consulting arborist. Wires, ropes, or other devices shall not be attached to any protected tree, except as needed for support of the tree. No sign, other than a tag showing the botanical classification, shall be attached to any protected tree.

4. Periodically during construction, the leaves of protected trees shall be thoroughly sprayed with water to prevent buildup of dust and other pollution that would inhibit leaf transpiration.

5. If any damage to a protected tree should occur during or as a result of work on the site, the project applicant shall immediately notify the Public Works Department and the project's consulting arborist shall make a recommendation to the City Tree Reviewer as to whether the damaged tree can be preserved. If, in the professional opinion of the Tree Reviewer, such tree cannot be preserved in a healthy state, the Tree Reviewer shall require replacement of any tree removed with another tree or trees on the same site deemed adequate by the Tree Reviewer to compensate for the loss of the tree that is removed.

6. All debris created as a result of any tree removal work shall be removed by the project applicant from the property within two weeks of debris creation, and such debris shall be properly disposed of by the project applicant in accordance with all applicable laws, ordinances, and regulations.

   When Required: During construction

   Initial Approval: Public Works Department, Tree Division

   Monitoring/Inspection: Bureau of Building

c. **Tree Replacement Plantings**. Requirement: Replacement plantings shall be required for tree removals for the purposes of erosion control, groundwater replenishment, visual screening, wildlife habitat, and preventing excessive loss of shade, in accordance with the following criteria:

7. No tree replacement shall be required for the removal of nonnative species, for the removal of trees which is required for the benefit of remaining trees, or where insufficient planting area exists for a mature tree of the species being considered.

8. Replacement tree species shall consist of *Sequoia sempervirens* (Coast Redwood), *Quercus agrifolia* (Coast Live Oak), *Arbutus menziesii* (Madrone), *Aesculus californica* (California Buckeye), *Umbellularia californica* (California Bay Laurel), or other tree species acceptable to the Tree Division.

9. Replacement trees shall be at least twenty-four (24) inch box size, unless a smaller size is recommended by the arborist, except that three fifteen (15) gallon size trees may be substituted for each twenty-four (24) inch box size tree where appropriate.

10. Minimum planting areas must be available on site as follows:

    For *Sequoia sempervirens*, three hundred fifteen (315) square feet per tree;

    For other species listed, seven hundred (700) square feet per tree.

11. In the event that replacement trees are required but cannot be planted due to site constraints, an in lieu fee in accordance with the City's Master Fee Schedule may be substituted for required replacement plantings, with all such revenues applied toward tree planting in city parks, streets and medians.

12. The project applicant shall install the plantings and maintain the plantings until established. The Tree Reviewer of the Tree Division of the Public Works Department may require a landscape plan showing the replacement plantings and the method of irrigation. Any replacement plantings which fail to become established within one year of planting shall be replanted at the project applicant's expense.

    When Required: Prior to building permit final

    Initial Approval: Public Works Department, Tree Division

    Monitoring/Inspection: Bureau of Building

Impacts, Standard Conditions of Approval and Mitigation Measures

This section discusses potential impacts to aesthetics that could result from implementation of the proposed Project. It presents the thresholds of significance, describes the approach to the analysis, and identifies potential impacts and mitigation measures, as appropriate.

Thresholds of Significance

The proposed Project would have a significant impact on the environment if it would:

1. Have a substantial adverse effect on a public scenic vista [NOTE: Only impacts to scenic views enjoyed by members of the public generally (but not private views) are potentially significant];
2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, located within a state or locally designated scenic highway;
3. Substantially degrade the existing visual character or quality of the site and its surroundings;[5]
4. Create a new source of substantial light or glare which would substantially and adversely affect day or nighttime views in the area;
5. Introduce landscape that would now or in the future cast substantial shadows on existing solar collectors (in conflict with California Public Resource Code sections 25980-25986);
6. Cast shadow that substantially impairs the function of a building using passive solar heat collection, solar collectors for hot water heating, or photovoltaic solar collectors;
7. Cast shadow that substantially impairs the beneficial use of any public or quasi-public park, lawn, garden, or open space;
8. Cast shadow on an historic resource, as defined by CEQA Guidelines section 15064.5(a), such that the shadow would materially impair the resource's historic significance by materially altering those physical characteristics of the resource that convey its historical significance and that justify its inclusion on or eligibility for listing in the National Register of Historic Places, California Register of Historical Resources, Local Register of historical resources, or a historical resource survey form (DPR Form 523) with a rating of 1-5;

[5] For projects requiring design review, briefly evaluate the project's consistency with the applicable design review criteria. Projects consistent with the design review criteria will generally be found to result in a less than significant impact.

9. Require an exception (variance) to the policies and regulations in the General Plan, Planning Code, or Uniform Building Code, and the exception causes a fundamental conflict with policies and regulations in the General Plan, Planning Code, and Uniform Building Code addressing the provision of adequate light related to appropriate uses; or
10. Create winds that exceed 36 mph for more than one hour during daylight hours during the year. [6]

The Project does not include any substantial vertical elements (other than new trees) that would cast substantial shadows on existing solar collectors, that would impair the function of a building using passive solar heat devices, that could impair the beneficial use of any public or quasi-public park, lawn, garden, or open space; or materially impair an historic resource. Thresholds 5 through 8 are not applicable.

The Project does not require an exception to any policies or regulations of the General Plan, Planning Code, or Uniform Building Code and would not fundamentally conflict with any such policies and regulations addressing the provision of adequate light, and so Threshold 9 is not applicable.

The Project does not propose any structures 100 feet or greater in height and is not located adjacent to a substantial water body or within the Downtown, and so Threshold 10 is not applicable.

Methodology

To illustrate the changes in views to the and across the Project site with and without the Project, accurate, computer-generated simulations of the Project's proposed landform changes and design elements were superimposed into photographs of existing selected views. These simulations approximate the Project's impact on scenic vistas and visual character.

Scenic Vista

The following discussion addresses Threshold 1.

Impact Aesthetics-1: Development of the Project would not have a substantial adverse effect on scenic views or vistas generally enjoyed by members of the public. **(LTS)**

Much of the upper portions of the Cemetery were substantially disturbed in the past as a result of prior quarry operations and placement of substantial amounts of artificial fill. Over time, these previously disturbed areas have been replaced by the re-establishment of open grasslands and wooded areas. The Project will transform portions of the upper Cemetery that are within the Project site from restored open grasslands and woodlands to a more manicured yet still open and pastoral cemetery use. The Project's few new structures (the retaining wall/crypt wall at Plot 82 and the associated amphitheater,

[6] The wind analysis only needs to be done if the project's height is 100 feet or greater (measured to the roof) and one of the following conditions exist: (a) the project is located adjacent to a substantial water body (i.e., Oakland Estuary, Lake Merritt or San Francisco Bay); or (b) the project is located in Downtown. Downtown is defined in the Land Use and Transportation Element of the General Plan (page 67) as the area generally bounded by West Grand Avenue to the north, Lake Merritt and Channel Park to the east, the Oakland Estuary to the south and I-980/Brush Street to the west. The wind analysis must consider the project's contribution to wind impacts to on- and off-site public and private spaces. Only impacts to public spaces (on- and off-site) and off-site private spaces are considered CEQA impacts. Although impacts to on-site private spaces are considered a planning-related non-CEQA issue, such potential impacts still must be analyzed.

as well as the other retaining walls at Plot 98 and the Panhandle) represent the main new visual elements introduced at the site. However, these walls will not extend or protrude into the ridgeline horizon, and instead will be incorporated into the hillside with existing grade above. Grave site markers at the new expansion sites will not include large mausoleums or larger structures, but will only include traditional smaller-sized headstones. These headstones may lie horizontally on the ground surface (such as at existing Plot 77) or be placed to stand vertically, in which case they would only rise a few feet above the ground surface. The headstones and grave site markers would not protrude into the skyline or above the ridgetop.

The manicured and irrigated lawn areas will represent a general change in color on the hillside during summer and fall seasons, seen a green grassy slopes rather than as golden brown native grasslands. This change would not substantially affect views or vistas.

The grading efforts at the Project site, involving the movement of up to 100,000 cubic yard of earth material, will have several effects on the existing landform:

- At Plot 82, the existing varied topography, including several locations of steeply pitched hillsides, will be transformed into a more gradually pitched slope by removing rock and earth. From a distance, this earthwork will be virtually unnoticed because it will all occur below the ridgeline and will not alter the visible shape of the horizon. The existing hillside folds and internal slopes along the main hillside face are not apparent from distant views. From closer views, the topographic changes will be more noticeable, but will not materially alter scenic views or vistas.

- At Plot 98 and the Panhandle, the landform transformation will include adding up to 12 feet of new fill at certain locations along the main hillside face, at the base of the steeply pitched Stark Knoll hillside in the Panhandle, and along the top ridgeline. This fill will raise the base elevation of the ridgeline and will be perceived in views looking up to the ridgeline from the west and south, but will not substantially affect scenic views or vistas form these directions. For views from the east, the increased grade elevation will marginally increase the lower frame of views out across the site of views to the San Francisco Bay and beyond.

Distant Views

Scenic views from the following prominent public vantage-points have been selected as representative of typical distant public vistas to and across the Project site, and photographed to document existing scenic vistas:

- from Grizzly Peak Road, approximately 1.9 miles to the northeast, and

- from I-580 at Grand Avenue, approximately 1.7 miles to the southwest

To illustrate the changes in distant scenic vistas, simulations of the Project were superimposed into the photographs of existing distant views (see **Figures 4.1-2 and -3, and 4.1-4 and -5**). These simulations approximate the Project's impact on distant scenic vistas. As indicated in these images, the Project site would remain visible, the ridgelines would not be substantially altered, the large trees at Hill 500 and at the upper portions of the Panhandle would remain as prominent visual landmarks, and the scenic vistas across the Project site would be uninterrupted. These views would also be increasingly screened over time as Project landscaping matures.



Figure 4.1-2
Distant View of the Site from Grizzly Peak Road

Source Photo: Enviornmental Vision



Figure 4.1-3
Simulated View of Project from Grizzly Peak Road

Source: Environmental Vision



Figure 4.1-4
Distant View of Site from I-580 at Grand Avenue

Source Photo: Environmental Vision



Figure 4.1-5
Simulated View of Project from I-580 at Grand Avenue

Source: Environmental Vision

Mid-Range Views

Scenic views from the following prominent mid-range public vantage-points have also been selected as representative public vistas to and across the Project site, and photographed to document existing scenic vistas:

- from Piedmont Avenue near the Cemetery entry gate looking east, approximately 3,700 feet to the west
- from Scenic Avenue looking north, approximately 1,000 feet south of the Panhandle and 2,000 feet south of Plot 82, and
- From Clarewood Drive near Harbord Drive looking southwest, approximately 1,000 feet north of the Panhandle and 2,000 feet northeast of Plot 82

To illustrate the changes in mid-range scenic vistas, simulations of the Project were superimposed into these photographs (see **Figures 4.1-6 and -7, 4.1-8 and –9, and 4.1-10 and-11**). These simulations approximate the Project's impact on these mid-range views of the site. As indicated in these images, the Project site would remain visible from each of these mid-range vantage points, the ridgelines would not be substantially altered, views of the upper Oakland Hills from Scenic Drive would remain visible above the Project. Changes in landform and appearance of the hillside would be noticeable from both Scenic and Clarewood, but not in such a manner as to materially alter views. Many of the existing trees would be removed and replaced with new landscape, and these changes would also be noticeable but not adverse, particularly as these views would be increasingly screened over time as Project landscaping matures. The more prominent trees at Hill 500 and at the upper portions of the Panhandle would remain as prominent visual landmarks.

Internal Cemetery Views

A view to and across the Project site from an internal location within the Cemetery has also been selected as representative of internal views, and photographed to document existing scenic vistas from within the Cemetery. This view is from the Mountain View Cemetery near Plot 33 (within the historic Olmstead-designed portion of the Cemetery) looking east, toward the Project site.

To illustrate the changes in internal views from within the Cemetery, a simulation of the Project was superimposed into this photograph (see **Figures 4.1-12 and -13**). This simulation approximates the Project's impact on internal views from the historic Olmstead-designed portion of the Cemetery. As indicated in this image, the Project site would remain visible, the ridgelines would not be substantially altered, changes in landform and appearance of the hillside would be noticeable, and many of the existing trees would be removed and replaced with new landscape. As with other mid-range views, these changes would not be adverse, particularly as this view would be increasingly screened over time as Project landscaping matures.

Conclusions

The visual simulations shown above indicate that the Project will not substantially affect scenic vistas of and across the Project site. Although the Project will add new landscape elements that will be seen in vistas from various public vantage points, future views of and across the Project site will be quite similar to existing views of the surrounding area, the Project will not block or alter panoramic views of the San Francisco Bay to the west, or alter vistas of the scenic Oakland Hills from the west. For these reasons, the Project's impact on scenic vistas is less than significant.

Mitigation Measures

None needed

Visual Character and Quality

The following discussion addresses Threshold 3.

Impact Aesthetics-2: The Project would not substantially degrade the existing visual character or quality of the site and its surroundings. **(LTS)**

As described above under Impact Aesthetics-1, the Project will transform the Project site from open natural grassland and woodlands to a more manicured yet still open and pastoral cemetery use. However, this change will be consistent with the visual character and quality of portions of the Cemetery that have already been developed and that are immediately adjacent to the Project site (i.e., existing Plots 49, 76, 77 and 80) as shown in **Figure 4.1-14 and -15**. The Project will maintain and expand on the existing visual character and quality of these improved portions of the Cemetery.

The Project's few new structures (i.e., the retaining wall/crypt wall at Plot 82 and the associated amphitheater, as well as the other retaining walls at Plot 98 and the Panhandle) will not be out of context with the character and quality of other Cemetery improvements, but instead will be similar in design and form to other such structures elsewhere in the Cemetery. Grave site markers at the Project sites will consist of traditional smaller-sized headstones, and will also be similar to other elements of the existing visual character and quality of the Cemetery.

Overall, the Mountain View Cemetery is recognized as a place of high scenic character and quality, and the Project represents a continuation of those same characteristics. The Project's impact on visual character and quality is less than significant.

Mitigation Measures

None needed



Figure 4.1-6
Mid-Range Views across the Site from Piedmont Avenue near the Cemetery Entry Gate

Source Photo: Environmental Vision



Figure 4.1-7
Simulated View of Project from Piedmont Avenue near the Cemetery Entry Gate

Source: Environmental Vision



Figure 4.1-8
Mid-Range Views across the Site, from Scenic Avenue (looking north)

Source Photo: Environmental Vision



Figure 4.1-9
Simulated View of Project from Scenic Avenue (looking north)

Source: Environmental Vision



Figure 4.1-10
Mid-Range View of Site, from Clarewood Drive near Harbord Drive (looking southwest)

Source Photo: Environmental Vision



Figure 4.1-11
Simulated View of Project from Clarewood Drive near Harbord Drive (looking southwest)

Source: Environmental Vision



Figure 4.1-12
Internal Views of the Project Site from within the Cemetery

Source Photo: Environmental Vision



Figure 4.1-13
Simulated View of Project from the Historic portion of Mountain View Cemetery

Source: Environmental Vision

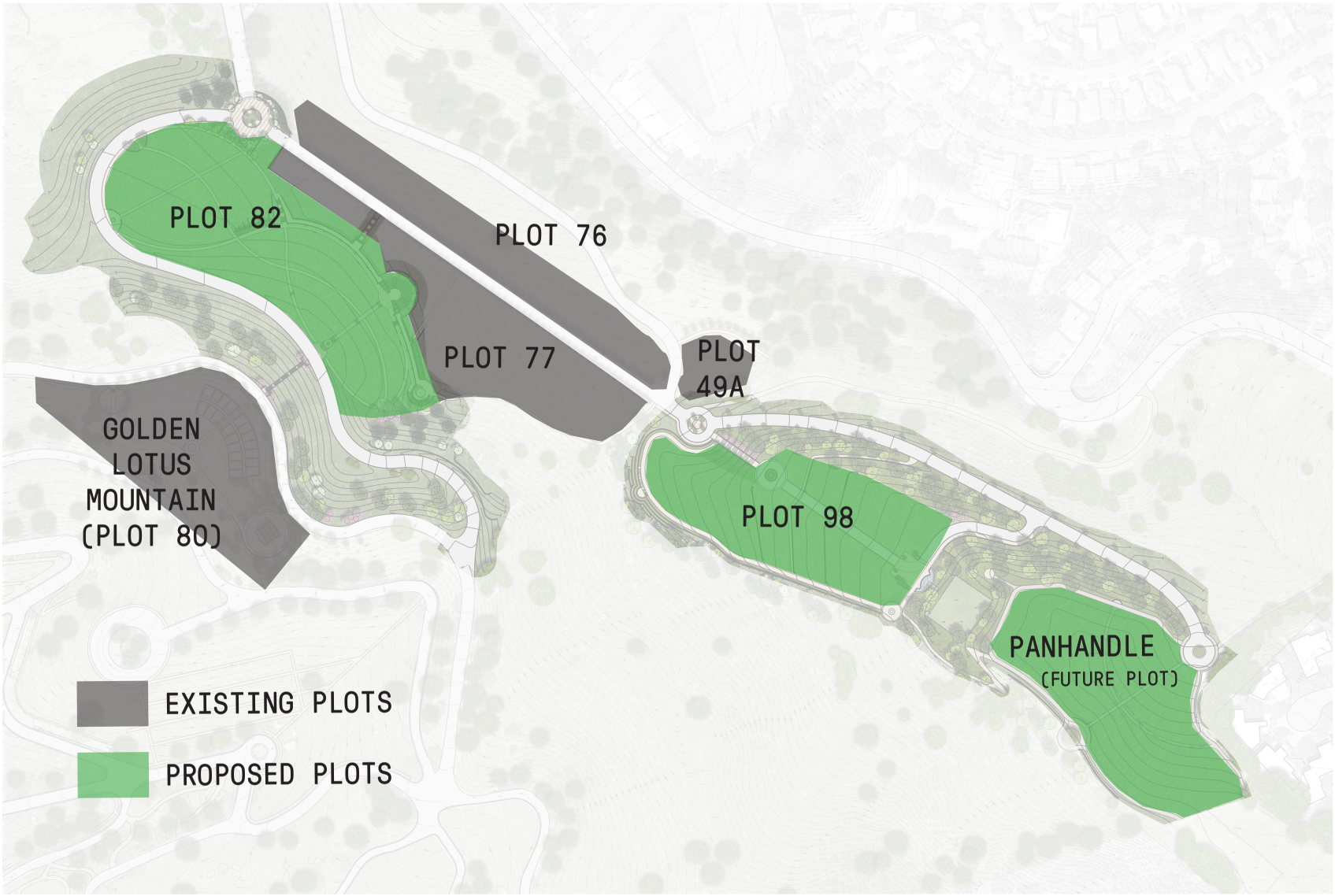


Figure 4.1-14
Developed and Undeveloped Portions of the Upper Cemetery Property

Source: SWA

Scenic Resources

The following discussion addresses Threshold 2.

Impact Aesthetics-3: The Project would remove scenic trees from the site, including trees that are specifically visible from state and locally designated scenic routes. Pursuant to City SCAs, the Project will be required to replace all removed protected trees at a ratio consistent with City ordinance, and implementation of this requirement will reduce the effects of scenic tree loss to a level of less than significant. **(LTS with SCAs)**

The vegetative cover for the majority of the Project site is dominated by non-native grasses and forbs, with some native grass species scattered through the grassland. Sapling coast live oaks are forming dense thickets and replacing grassland cover in some locations, as well as seedlings and saplings of invasive tree species such as blue gum, black acacia and silver wattle. Coast live oak occurs as scattered trees throughout the Project site, together with other native and non-native tree species. A stand of primarily coast live oaks in the eastern portion of the Project site, on the former quarry slopes, forms a continuous tree cover.

The Arborist reports provide an inventory of 430 trees located within the Project site and its immediate surroundings. A total of 15 different tree species were identified in the inventories, with the most common species being coast live oak, and the second most common species being blue gum eucalyptus. Of the 430 total inventoried trees on or immediately near the Project site, it is estimated that 193 trees are within the limits of proposed grading (or their canopy extends across the limits of proposed grading), and would be removed by the Project, of which 155 trees qualify as protected trees under the City's Tree Preservation Ordinance, 117 of which are native trees (nearly all oaks). An additional 144 trees are located in close enough proximity to grading and development that they could be lost as a result of disturbance ("at risk") unless tree protection measures are imposed on grading and construction.

Standard Conditions of Approval

The City of Oakland's Standard Conditions of Approval will apply to the Project and its effects on tree resources. These SCAs include requirements to secure a Tree Removal permit, provide replacement tree plantings to compensate for the protected native trees removed to accommodate the Project, and to provide adequate protection of those trees to be preserved during construction (SCA #27). Adequate land area is present on the Project site and adjacent lands under control by the applicant to meet the minimum planting requirements called for under SCA #27. The Project's proposed Landscape Plan (see **Figure 4.1-15**) indicates the number, type and location of replacement tree plantings. The Project's Landscape Plan (pursuant to SCA #17) will be subject to the City of Oakland's Design Review process, which will consider all of the Project's visible features and their relationship to the physical surroundings. Although independent of CEQA and the EIR process, the Design Review process is focused on ensuring quality design and on avoiding potentially adverse aesthetic effects.

The loss of as many as 193 trees would be a significant visual impact on the scenic resources of the site. However, implementation of applicable SCAs to the Project will require replacement tree planting at a ratio of one new 24-inch box size tree for each native tree removed, or three 15-gallon size trees for each native tree removed where appropriate.



Figure 4.1-15
Project's Proposed Landscape Plan

Source: SWA

The Biology chapter of this Draft EIR identifies additional recommendations pursuant to SCA 27 that are applicable to the Project's final grading plan, and that require specific tree protection measures for "at risk" trees located near the Project's proposed grading and construction activity, additional refinements to the final grading plan that seek to protect and preserve additional trees near the margins of Project grading activity,[7] and replacement tree plantings for trees to be removed. With implementation of SCA #27 and its Project-specific recommendations, impacts on scenic resources would be reduced to a level of less than significant.

Mitigation Measures

None needed

Light and Glare

The following discussion addresses Threshold 4.

Impact Aesthetics 4: The Project would not create new sources of substantial light or glare that would substantially and adversely affect day or nighttime views in the area. **(No Impact)**

Other than the Cemetery entrance and Administration Building area, most of the Cemetery does not have streetlights or other lighting, and is dark at night. The Project does not propose to add any new night time lighting within the expanded areas of the Cemetery and no new sources of light or glare would be created. Lighting and glare effects would be less than significant.

Mitigation Measures

None needed

[7] The Alternatives chapter of this Draft EIR also identifies a "Reduced Project" which scales back the extent of overall grading and reduces the number of trees to be removed.

Cumulative Analysis

Cumulative Impact Aesthetic-5: The Project's proposed cemetery improvements, when combined with other past, present, recent or reasonably foreseeable future development projects in the vicinity, would alter the overall cumulative aesthetic character of the Oakland Hills by removing existing vegetation and altering existing landforms. However, given the relatively modest extent of new structures proposed by the Project (i.e., the retaining wall/crypt wall at Plot 82 and the associated amphitheater, as well as the other retaining walls at Plot 98 and the Panhandle) and the tree replacement plan proposed, the Project would not substantially contribute to a cumulatively adverse change in the visual character of the Oakland Hills or a substantial contribution to overall cumulative tree loss. The Project's contribution to the potential overall aesthetic character of the Oakland Hills would not constitute a demonstrably negative cumulative aesthetic effect, and the cumulative visual impact would be less than significant. (**LTS**)

The Project is consistent with the City's General Plan land use designation for the site and represents an extension or continuation of existing uses at the Cemetery. The Project, like most other past, present, existing, pending and reasonably foreseeable future development projects, is subject to the City's environmental review and Design Review process.

Because of the general environmental sensitivity of properties in the Oakland Hills that surround the Project site (including the presence of hillside creeks, sensitive biological resources, natural biological communities, sensitive wildlife habitat, steep slopes, etc.), there is little, if any reasonably anticipated future development in the immediate vicinity of the Project (specifically within the upper hillside portions of the Oakland Hills in Oakland or Piedmont). As indicated in Chapter 4.0 of this Draft EIR, cumulative development within the vicinity is generally anticipated at lower elevations along Broadway near Pleasant Valley Drive. These cumulative development projects at lower elevations are substantially different in character and are far removed from the actual Project site such that they would not contribute to cumulative aesthetic effects related to the Project.

The City's Design Review process considers the design treatment and relationship of projects to the surrounding built and natural environment, and is intended to ensure no significant adverse aesthetic impacts would result. All future development that could occur in the vicinity of the Project site would be required to adhere to established guidelines, standards, policies and criteria that address building appearance, height, bulk, configuration and suitability to the environmental context. In particular, the City's Design Review criteria set forth in the Oakland Planning Code primarily considers a project's appropriateness to its physical setting. The Design Review process and the City's Standard Conditions of Approval would adequately address localized visual quality and compatibility, including tree loss and replacement, and would ensure that future projects, taken together, would not result in significant adverse cumulative aesthetic effects.

4.2

Air Quality

This chapter provides an overview of the existing air quality conditions, a summary of applicable local, state, and federal air quality regulations and guidelines, and an analysis of the potential air quality impacts associated with the Project. The analysis is consistent with current recommendations of the Bay Area Air Quality Management District (BAAQMD) and the California Air Resources Board (CARB). Mitigation measures are recommended, as necessary, to reduce significant air quality impacts.

Environmental Setting

Regional Climate, Topography, and Meteorology

The Project site is located in the City of Oakland in Alameda County, which falls within the boundaries of the San Francisco Bay Area Air Basin (SFBAAB or Basin). The Basin encompasses a nine-county region, including all of Alameda, Contra Costa, Santa Clara, San Francisco, San Mateo, Marin and Napa counties, and the southern portions of Solano and Sonoma counties. Within the Basin, 11 subregions have been defined based on their unique climatology and topography. The Project is located within the Northern Alameda County and Western Contra Costa Counties sub-region. This sub-region stretches from Richmond to San Leandro and is bound by San Francisco Bay to the west and by the Oakland-Berkeley Hills to the east.

In this area, marine air traveling through the Golden Gate and across San Francisco is a dominant weather factor. The Oakland-Berkeley Hills cause the westerly flow of air to split off to the north and south of Oakland, which causes diminished wind speeds. The air pollution potential in this sub-region is relatively low for portions close to the Bay, due to the largely good ventilation and less influx of pollutants from upwind sources.[1] The prevailing winds for the region are from the west. Temperatures have a narrow range due to the proximity of the moderating marine area; maximum summer temperatures average in the mid-70s, with minimums in the mid-50s. Winter highs are in the mid- to high-50s, with lows in the low- to mid-40s.

Existing Air Quality

Criteria Pollutants

Existing air quality conditions in the area surrounding the Project site can be characterized in terms of the primary ambient air quality standards that the State of California and the federal government have established for several different pollutants known as “criteria” pollutants. These primary standards have been set to protect public health. The criteria pollutants include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and inhalable particulate matter less than 10 microns in diameter (PM_{10}) and less than 2.5 microns in diameter ($PM_{2.5}$), and lead. For each criteria pollutant,

[1] BAAQMD. CEQA Air Quality Guidelines. June 2012. Appendix C

those areas having pollutant levels less than the standards are called attainment areas (that is, these areas attain the air quality standard), and those with pollutant levels greater than the standards are called nonattainment areas (that is, these areas do not attain the air quality standard).

The United States Environmental Protection Agency (USEPA) has designated the SFBAAB as non-attainment for the federal 8-hour O_3 standard, the 24-hour $PM_{2.5}$ standard, and the annual $PM_{2.5}$ primary standard. The USEPA has designated the SFBAAB as unclassifiable[2] for NO_2, PM_{10}, and lead, and as attainment of the federal CO and SO_2 standards.[3] The State has designated the SFBAAB as in serious nonattainment of the State 1-hour O_3 standard and in nonattainment of the State PM_{10} and $PM_{2.5}$ standards. The SFBAAB has also been designated as being in attainment of the State CO, NO_2, SO_2, and lead standards.

Pollutants of Concern

The pollutants of greatest concern in the Basin are O_3, PM_{10}, $PM_{2.5}$, and CO.

- The SFBAAB does not meet federal or State attainment standards for O_3, or smog. O_3 is not emitted directly into the environment, but is formed in the atmosphere by complex chemical reactions between reactive organic gases (ROGs) and oxides of nitrogen (NO_x) in the presence of sunlight. O_3 formation is greatest on warm, windless, sunny days. The main sources of NO_x and ROG, often referred to as ozone precursors, are combustion processes (including motor vehicle engines); the evaporation of solvents, paints, and fuels; and biogenic sources. Automobiles are the single largest source of ozone precursors in the SFBAAB. O_3 levels usually build up during the day and peak in the afternoon hours. Short-term exposure can irritate the eyes and cause constriction of the airways. Besides causing shortness of breath, it can aggravate existing respiratory diseases such as asthma, bronchitis and emphysema. Chronic exposure to high ozone levels can permanently damage lung tissue. O_3 can also damage plants and trees, and materials such as rubber and fabrics.
- The SFBAAB does not meet federal or State attainment standards for $PM_{2.5}$ and does not meet the State standards for PM_{10}. Particulate matter (PM) refers to a wide range of solid or liquid particles in the atmosphere including smoke, dust, aerosols, and metallic oxides. Respirable particulate matter with an aerodynamic diameter of 10 micrometers or less is referred to as PM_{10}. $PM_{2.5}$ includes a subgroup of finer particles that have an aerodynamic diameter of 2.5 micrometers or less. In the SFBAAB most particulate matter is caused by combustion, factories, construction, grading, demolition, agricultural activities, and motor vehicles. Motor vehicles are currently responsible for about half of particulates in the SFBAAB. Wood burning in fireplaces and stoves is another large source of fine particulates. Extended exposure to particulate matter can increase the risk of chronic respiratory disease. $PM_{2.5}$ poses an increased health risk because the particles can deposit deep in the lungs and contain substances that are particularly harmful to human health.
- Although the SFBAAB is in attainment of both State and federal CO standards, CO is a pollutant of concern because the number of motor vehicles and vehicle miles traveled in the area continue to

[2] Areas are designated as unclassifiable when EPA cannot designate the area as meeting or not meeting the standards based on available information. CAA Section 107(d)(1)(A)(iii). Unclassifiable areas are treated the same as attainment areas under the Clean Air Act.

[3] The SFBAAB was previously designated as a CO nonattainment area. Since the area was re-designated, it is subject to federal Clean Air Act requirements for maintaining attainment, discussed in the Clean Air Act section of this document.

grow, and the potential for elevated levels of CO remains. CO is an odorless, colorless gas that is formed by the incomplete combustion of fuels. The single largest source of CO in the SFBAAB is motor vehicles. Emissions are highest during cold starts, hard acceleration, stop-and-go driving, and when a vehicle is moving at low speeds. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease or anemia, as well as fetuses. Even healthy people exposed to high CO concentrations can experience headaches, dizziness, fatigue, unconsciousness, and even death.

- While attainment of the NO_2 standard has not been a problem in the Bay Area, NO_x emissions are of concern as a precursor to O_3.
- ROGs are not criteria pollutants, but their emissions are of concern as ROG are also precursors to O_3.
- SO_2 is no longer considered a problem pollutant in the State, because the ambient levels are fairly low, and the State has attained this standard for some time. SO_2 emissions have decreased substantially over the past 30 years due to improved industrial source controls and use of natural gas instead of fuel oil for electricity generation. In addition, SO_2 emissions from mobile sources have decreased due to lower sulfur content in fuels.

Ambient Concentrations

The existing air quality conditions in the Project area can be characterized based on monitoring data collected in the region. The CARB and BAAQMD maintain pollutant-monitoring stations throughout Alameda County, and local ambient air quality data from Alameda County for the years 2011 through 2014 (as available) are summarized in **Table 4.2-1**.

Table 4.2-1: Ambient Air Quality Monitoring Data - Oakland

Pollutant	State Std.	Natl. Std.	Monitoring Data By Year			
			2011	2012	2013	2014
Ozone Hourly						
Highest 1-hour average, ppm	0.09	NA	0.057	0.061	0.071	0.072
Days over State Standard			0	0	0	0
Ozone 8-hour						
Highest 8-hour average, ppm	0.07	0.075	0.048	0.048	0.059	0.059
Days over National Standard			0	0	0	0
Days over State Standard			0	0	0	0
Carbon Monoxide (CO) 8-hour						
Highest 8-hour average, ppm	9.0	9.0	2.65	2.4	NA	NA
Days over National Standard			0	0	-	-
Days over State Standard			0	0	-	-
Nitrogen Dioxide (NO_2)						
Highest 1-hour concentration, ppm	0.18	0.10	0.062	0.053	0.064	0.056
Days over National Standard			0	0	0	0
Days over State Standard			0	0	0	0
Sulfur Dioxide (SO_2)						
Highest 24-hourconcentration, ppm	0.04	0.14	0.003	0.008	0.007	NA
Days over National Standard			0	0	0	-
Days over State Standard			0	0	0	-
$PM_{2.5}$						
Highest 24-hour average, µg/m^3	NA	35	43.1	33.6	42.7	38.8
Est. days over National Standard			0	1	2	1

All pollutant data are from West Oakland, except for 2012 PM2.5, which is from International Boulevard. PM10 data was not available near the Plan Area.

ppm = parts per million; µg/m^3 = micrograms per cubic meter.

NA = Not Available or Not Applicable.

Source: CARB, 2015

The West Oakland monitoring station is the closest station to the Project site for which a comprehensive set of data is available. As seen from these data, the national $PM_{2.5}$ 24-hour standard was exceeded on a total of 4 days over the 4 year period of data; otherwise there were no other violations of California Ambient Air Quality Standards (CAAQS) or National Ambient Air Quality Standards (NAAQS).

Criteria Pollutant Emissions - Alameda County

According to Alameda County's emissions inventory, total mobile sources (on-road and off-road) are the largest contributor to the estimated annual average air pollutant levels of ROG (46%), CO (92%), NO_x (91%), and oxides of sulfur (SO_x; 53%). Area-wide sources (e.g., solvent evaporation from equipment cleaning operations; on-site fuel combustion for space and water heating (e.g., boilers); landscape maintenance equipment such as lawnmowers and leaf blowers) account for approximately 82 percent of Alameda County's PM_{10} emissions and 61 percent of the County's $PM_{2.5}$ emissions.[4]

Although mobile source emissions constitute the majority of the 2010 ROG, CO, NO_x, and SO_x inventory, both in the SFBAAB and in Alameda County, corresponding emissions from this source category have decreased greatly since the 1970s due to more stringent federal and State emission controls on mobile sources and fuels. Examples of vehicle emissions standards include CARB's low-emission vehicle (LEV) standards, [5] CARB's heavy-duty engine standards, [6] and USEPA's corporate average fuel economy (CAFE) standards for passenger car and light duty trucks.[7] Examples of cleaner fuel standards include the elimination of lead from gasoline, and lowering of sulfur content in fuels.[8]

Toxic Air Contaminants (TACs)

In California, TACs are defined by the CARB as those air pollutants that "may cause or contribute to an increase in deaths or in serious illness, or which may pose a present or potential hazard to human health."[9] To date, CARB has identified more than 21 TACs and adopted USEPA's list of hazardous air pollutants (HAPs) as TACs.[10] USEPA defines HAPs as "pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects." Currently, there are 187 identified HAPs.[11]

Significant sources of TACs in the environment are industrial processes, such as petroleum refining, chemical manufacturing, electric utilities, metal mining/refining and chrome plating; commercial operations, such as gasoline stations and dry cleaners; and transportation activities, particularly diesel-powered vehicles, including trains, buses, and trucks. In 1998, the CARB identified PM from diesel-powered engines as a TAC. Compared to other air toxics that the CARB has identified and regulated, diesel particulate matter (DPM) emissions are estimated to be responsible for about 70 percent of the total ambient air toxics risk.[12]

Unlike criteria pollutants, the concentrations of individual TACs are not regulated per se; however, concentrations of TACs may be regulated indirectly based on results from a health risk assessment

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4 CARB, Almanac Emission Projection Data http://www.arb.ca.gov/app/emsinv/emssumcat.php. .

5 CARB, Low-Emission Vehicle Program, http://www.arb.ca.gov/msprog/levprog/levprog.htm.

6 CARB, Truck and Bus Regulation. http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm.

7 USEPA, Fuel Economy and Emissions Program. http://www.epa.gov/fueleconomy/.

8 USEPA, Fuel and Fuel Additives. http://www.epa.gov/otaq/fuels/index.htm.

9 CARB, Glossary of Air Pollution Terms. http://www.arb.ca.gov/html/gloss.htm#T.

10 CARB, Toxic Air Contaminant Identification List. http://www.arb.ca.gov/toxics/id/taclist.htm.

11 USEPA, Toxic Air Pollutants. http://www.epa.gov/oar/toxicair/newtoxics.html.

12 CARB, 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. October.

(HRA). An HRA is a scientifically-based tool used to determine if exposure to chemicals(s) pose a significant risk to human health.

According to the California Almanac of Emissions and Air Quality,[13] the majority of the estimated health risk from TACs in ambient air is attributed to relatively few compounds, the most dominant being particulate matter exhaust from diesel-fueled engines (DPM).[14] DPM is a complex mixture of hydrocarbons, particulates, gases, and other compounds. DPM is emitted by diesel-fueled internal combustion engines, and the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Both California's Office of Environmental Health Hazard (OEHHA) and the USEPA consider DPM to be a carcinogen. The cancer potency factor derived by Cal/EPA for DPM is highly uncertain in both the estimation of response and dose. Based on two recent scientific studies,[15,16] IARC recently re-classified DPM as Carcinogenic to Humans, placing it in Group 1.[17] This classification means that the agency has determined that there is "sufficient evidence of carcinogenicity" of a substance in humans; it represents the strongest weight-of-evidence rating in IARC's carcinogen classification scheme. The USEPA, OEHHA, and IARC also recognize that exposure to DPM may cause non-cancer effects such as change(s) in lung function and airway inflammation.[18] DPM is a component of PM, and recent scientific data have linked prolonged exposure to PM to premature mortality, respiratory effects, and cardiovascular disease.

Existing Sources and Sensitive Receptors

There are few existing air pollutant sources located within the vicinity of the upper portions of the Cemetery near the Project site. Per the BAAQMD Recommended Methods for Screening and Modeling Local Risks and Hazards,[19] a 1,000-foot radius is generally recommended around the Project site to identify existing emission sources that may contribute to the cumulative impact of new sources. Using the BAAQMD Stationary Source Screening Tool for Alameda County,[20] there is only 1 existing source within a 1,000-foot radius of where the proposed new extension of the Cemetery is proposed to be

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13 CARB. 2009. The California Almanac of Emissions and Air Quality, Chapter 4: Air Basin Trends and Forecasts – Criteria Air Pollutants.

14 CARB. 2009. The California Almanac of Emissions and Air Quality, Appendix C: Emissions, Air Quality, and Health Risk for Ten Toxic Air Contaminants.

15 Silverman DT, Samanic CM, Lubin JH, Blair AE, Stewart PA, Vermeulen R, Coble JB, Rothman N, Schleiff PL, Travis WD, Ziegler RG, Wacholder S, Attfield MD. 2011. The Diesel Exhaust in Miners Study: A Nested Case-Control Study of Lung Cancer and Diesel Exhaust. J Natl Cancer Inst.

16 Attfield MD, Schleiff PL, Lubin JH, Blair A, Stewart PA, Vermeulen R, Coble JB, Silverman DT. 2011. The Diesel Exhaust in Miners Study: A Cohort Mortality Study with Emphasis on Lung Cancer. J Natl Cancer Inst.

17 International Agency for Research on Cancer (IARC). 2012. Press Release No. 213. IARC: Diesel Engine Exhaust Carcinogenic. June.

18 Office of Environmental Health Hazard Assessment (OEHHA). 1998. Findings of the Scientific Review Panel on The Report on Diesel Exhaust, as adopted at the Panel's April 22, 1998, meeting. April; OEHHA (2002). Air Toxics Hot Spots Program Risk Assessment Guidelines: Part II Technical Support Document for Describing Available Cancer Potency Factors. California Environmental Protection Agency (Cal/EPA). December; United States Environmental Protection Agency (USEPA). 2011 Integrated Risk Information System (IRIS). United States Environmental Protection Agency. http://www.epa.gov/iris/

19 BAAQMD. 2012. Recommended Methods for Screening and Modeling Local Risks and Hazards. May.

20 BAAQMD. Accessed August 2013. Stationary Source Screening Tool. http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx.

constructed; the City of Piedmont Corporation Yard at 898 Red Rock Road (no existing data available). All other the existing stationary and mobile sources are further than 1,000 feet from the Project site. These more distant existing stationary and mobile sources include other Mountain View Cemetery facilities near Piedmont Avenue (3,500 feet away from the proposed new construction site), the Claremont County Club (4,500 feet away), the car service center at 5865 Broadway (2,00 feet away) and Highway 13 (2,900 feet away).

Sensitive receptors are locations where individuals with increased sensitivity to the health effects of air pollutants, such as children, hospital patients, and the elderly are usually present. Typical sensitive receptors include schools, school yards, daycare centers, parks, playgrounds, nursing homes, hospitals, and residential communities. Sensitive receptors in the area include Saint Theresa's Church and school along Clarewood Drive, homes along Clarewood Drive, residences along the Stark Knoll Place cul-de-sac northeast of the Panhandle hill, residences along Maxwelton Road at the farthest eastern end of the Panhandle, as well as homes along Abbott Lane and Pala Avenue south and west of the Project site.

Regulatory Setting

Federal Regulations

Federal Clean Air Act

The federal Clean Air Act (CAA), enacted largely in its current form in 1970 and amended in 1977 and 1990, establishes the framework for federal air pollution control. The act directed the USEPA to establish ambient air quality standards. An area that does not meet the federal standard for a pollutant is called a "nonattainment" area for that pollutant. For federal nonattainment areas, the federal CAA requires states to develop and adopt State Implementation Plans (SIPs), which are air quality plans showing how air quality standards will be attained. The Federal Clean Air Act Amendments of 1990 (FCAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. USEPA has responsibility to review all State SIPs to determine conformation to the mandates of the FCAAA, and to determine if implementation will achieve air quality goals. If the USEPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area that imposes additional control measures. Failure to submit an approvable SIP or to implement the plan within the mandated timeframe may result in sanctions being denied to transportation funding and stationary air pollution sources in the air basin. In California, SIPs are prepared and adopted by the local or regional air districts (in the Bay Area, by the BAAQMD) and are reviewed and submitted to the USEPA by CARB.

Federal HAP Regulations

Title III of the FCAAA requires the USEPA to promulgate national emissions standards for hazardous air pollutants (NESHAPs), which can set different requirements for major and area sources. Major sources are defined as stationary sources with potential to emit more than 10 tons per year (tpy) of any HAP or more than 25 tpy of any combination of HAPs; all other sources regulated under Title III of the FCAAA are considered area sources. The FCAAA also required USEPA to issue vehicle or fuel standards containing reasonable requirements to control HAP emissions, applying at a minimum to benzene and formaldehyde. Performance criteria were established to limit mobile source emissions of toxics, including benzene, formaldehyde, and 1,3-butadiene. In addition, Section 219 of the FCAAA also

required the use of reformulated gasoline in selected U.S. cities (those with the most severe ozone nonattainment conditions) to further reduce mobile-source emissions, including air toxics.

Mobile Off-Road Engines (Construction Phase)

During the construction phase, emissions will be generated from off-road construction equipment such as loaders, graders, and dozers, as well as heavy-duty trucks. To reduce emissions from non-road diesel equipment, EPA established a series of emission standards, called Tiers, for new non-road diesel engines, culminating in the 2004 Non-Road Tier 4 Final Rule.[21,22] The Tier standards apply to non-road engines such as engines found in construction, general industrial, and terminal equipment, but not locomotives or marine engines rated above 37 kilowatt (kW) (50 horsepower [HP]). The Tier 1, Tier 2, Tier 3, and Tier 4 standards require compliance with progressively more stringent emission standards. Tiers 1 through 3 have already been phased in, beginning in 1996 through 2008. The Non-Road Tier 4 standards are currently being phased in starting with smaller engines in 2008 until all but the very largest diesel engines meet NO_x and PM standards in 2015.

Diesel Fuel Requirements

In addition to the above source-specific standards that are typically met through emissions control technologies, USEPA also directly regulates the diesel fuel used in many of these sources.

The Non-road Tier 4 Final Rule for non-road diesel engines also established fuel sulfur limits in order to integrate engine and fuel controls as a system to gain the greatest emission reductions. The rule required low sulfur (500 ppm) diesel fuel to be phased in starting in 2007, and requires ULSD (15 ppm) to be phased in over 2010-2012 for non-road, locomotive, and marine engines. The Tier 4 engine and fuel standards require 90 percent reductions in DPM and NO_x exhaust as compared to previous engine models. With the exception of line-haul locomotives, the California Diesel Fuel Regulations (described below) generally pre-empt this rule for other sources such as construction equipment.

State Regulations

California Clean Air Act (CAA)

The California CAA of 1988 focuses on attainment of the California Ambient Air Quality Standards (CAAQS), which, for certain pollutants and averaging periods, is more stringent than the comparable federal standards. Responsibility for achieving California standards is placed on the CARB and local air pollution control districts through district-level air quality management plans.

The California CAA requires designation of attainment and nonattainment areas with respect to CAAQS. The California CAA also requires that local and regional air districts expeditiously adopt and prepare an air quality attainment plan if the district violates State air quality standards for CO, SO_2, NO_2, or O_3. No locally prepared attainment plans are in place for areas that violate the State PM_{10} standards, because attainment plans are not required for those areas. The California CAA requires that the State air quality standards be met as expeditiously as practicable, but, unlike the Federal CAA, does not set precise

[21] USEPA, 1998. Control of Emissions of Air Pollution from Nonroad Diesel Engines, Final Rule. Title 40 Code of Federal Regulations, Parts 9, 86, and 89. October.

[22] USEPA, 2004. Control of Emissions of Air Pollution from Nonroad Diesel Engines and Fuel, Final Rule. Title 40 Code of Federal Regulations, Parts 9, 69, 80, 86, 89, 94, 1039, 1048, 1051, 1065, and 1068. June.

attainment deadlines. Instead, the Act established increasingly stringent requirements for areas that will require more time to achieve the standards.

CARB is primarily responsible for developing and implementing air pollution control plans to achieve and maintain the NAAQS. The CARB is primarily responsible for statewide pollution sources and produces a major part of the SIP. Local air districts are still relied upon to provide additional strategies for sources under their jurisdiction. The CARB combines this data and submits the completed SIP to USEPA. Other CARB duties include monitoring air quality, in conjunction with air monitoring networks maintained by air pollution control and air quality management districts; establishing CAAQS, which in many cases are more stringent than the NAAQS; determining and updating area designations and maps; and setting emissions standards for new mobile sources, consumer products, small utility engines, and off-road vehicles.

State TAC Regulations

TACs in California are primarily regulated through the Tanner Air Toxics Act (Assembly Bill [AB] 1807). AB 1807 sets forth a formal procedure for CARB to designate substances as TACs. To date, CARB has adopted USEPA's list of HAPs as TACs and identified more than 21 additional TACS.[23] Once a TAC is identified, CARB then adopts an Airborne Toxics Control Measure (ATCM) for sources that emit that a particular TAC. If there is a concentration below which health effects are not likely, the control measure must reduce exposure below that threshold. If there is no safe concentration, the measure must incorporate best available control technologies (T-BACT) to minimize emissions.

ARB adopted a comprehensive Risk Reduction Plan in 2000, after identifying DPM as a TAC.[24] Pursuant to this Plan, CARB adopted diesel-exhaust control measures and stringent emission standards for various on-road mobile sources of emissions and off-road diesel equipment (e.g., tractors, generators). In 2007, a low-sulfur diesel fuel requirement and tighter emission standards for heavy- duty diesel trucks was put into effect, to be followed in 2011 by the same standards being applied to off-road diesel equipment. Mobile-source emissions of TACs (e.g., benzene, 1,3-butadiene, DPM) decreased significantly over the last decade and will be reduced further in California through a progression of regulatory measures (e.g., Low-Emission Vehicle/Clean Fuels and Phase II reformulated gasoline regulations) and control technologies. With implementation of CARB's Risk Reduction Plan, DPM concentrations are expected to be reduced by 85 percent in 2020 from the estimated year-2000 level. As emissions are reduced, it is expected that risks associated with exposure to the emissions will also be reduced.

Mobile Off-Road Engines (Construction Phase)

During the construction phase, emissions will be generated from off-road construction equipment such as loaders, graders, and cranes, as well as heavy-duty trucks. Engines designated as non-road engines by USEPA are known as off-road engines in California state regulations implemented by CARB. Similar to the USEPA Non-road Diesel Rule, the CARB Off-Road Emissions Regulation for Compression-Ignition Engines and Equipment,[25] applies to diesel engines such as those found in construction equipment. Initially adopted in 2000 and amended in 2004, the regulation establishes Tier emission standards, test

[23] CARB, accessed 2015. Toxic Air Contaminant Identification List. http://www.arb.ca.gov/toxics/id/taclist.htm.

[24] CARB, 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. Stationary Source Division and Mobile Source Division. October.

[25] CARB, Off-Road Compression-Ignition (Diesel) Engines and Equipment. http://arb.ca.gov/msprog/offroad/orcomp/orcomp.htm.

procedures, and warranty and certification requirements. For some model years and engine sizes, the CARB Tier emission standards are more stringent than the USEPA standards.

CARB In-Use Off-Road Diesel Vehicle Regulation

In July 2007 CARB adopted the In-Use Off-Road Diesel Vehicle Regulation and amended it in December 2011.[26,27] The regulation requires owners of off-road mobile equipment powered by diesel engines 25 HP or larger to meet the fleet average or BACT requirements for NO_x and PM emissions by January 1 of each year. The regulation also establishes idling restrictions, limitations on buying and selling older off-road diesel vehicles (Tier 0), reporting requirements, and retrofit and replacement requirements. The requirements and compliance dates vary by fleet size, with performance requirements for large fleets beginning in 2014, medium fleets in 2017, and small fleets in 2019. Requirements regarding idling, disclosure, reporting, and labeling took effect in 2008 and 2009. In September 2013 the USEPA granted CARB authorization to enforce all provisions of the In-Use Off-Road Diesel Vehicle Regulation, including the regulation's performance requirements. Enforcement of the restrictions on adding Tier 0 and 1 vehicles began January 1, 2014. Enforcement of the first fleet average requirements for large fleets (> 5,000 total fleet horsepower) began in July 2014.[28]

Emergency Generators

CARB regulates emergency generators through the airborne toxic control measure (ATCM) for Stationary Compression Ignition Engines. Portable diesel engines with a rating of greater than 50 brake horse power are subject to CARB's Portable Engine ATCM.[29] The ATCM establishes fleet-wide standards for portable diesel engines. The most recent standards went into effect on January 1, 2013 and range between 0.15 and 0.3 g/bhp, depending on the horsepower of the engine.

Diesel Fuel Requirements

In addition to the above source-specific standards that are typically met through emissions control technologies, CARB also directly regulates the diesel fuel used in many of these sources. These California regulations establish the same fuel sulfur content limits as the federal diesel fuel regulations described above (15 ppm or 0.0015%); however, the California fuel regulations accelerate the effective dates of the requirements for non-highway applications within California by three to five years.

In 1988, CARB proposed an initial diesel fuel regulation limiting *the* sulfur content and aromatic hydrocarbon content of diesel fuel for motor vehicles. In 1998, CARB identified particulate emissions from diesel-fueled engines as a TAC. CARB developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles[30] and the Risk Management Guidance for the

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26 CARB, 2011. Regulation for In-Use Off-Road Diesel-Fueled Fleets. Title 13, California Code of Regulations, Section 2449.

27 CARB, In-Use Off-Road Diesel Vehicle Regulation. http://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm.

28 CARB Regulator Advisory. Enforcement of the In-use Off-Road Vehicle Regulation. Mail-out #MSCD 13-25. September 2013. http://www.arb.ca.gov/msprog/mailouts/msc1325/msc1325.pdf.

29 CARB. Final Regulation Order, Airborne Toxic Control Measure for Diesel Particular Matter from Portable Engines Rated at 50 Horsepower and Greater. http://www.arb.ca.gov/portable/perp/perpatcm.pdf.

30 CARB, Final Diesel Risk Reduction Plan with Appendices. http://www.arb.ca.gov/diesel/documents/rrpapp.htm.

Permitting of New Stationary Diesel-Fueled Engines[31] and approved these documents in September 2000. These documents proposed to reduce diesel particulate emissions and the associated health risk by 75 percent in 2010 and by 85 percent in 2020, and to require the use of state-of-the-art catalyzed diesel particulate filters and ultra-low sulfur diesel fuel. The 1988 initial diesel fuel regulation was subsequently amended, and additional regulations were passed. The following are current standards for diesel fuel in California:[32]

- *Sulfur Content of Diesel Fuel*[33] – This standard prohibited the sale of vehicular diesel fuel with a sulfur content exceeding 500 ppm by weight after 1993. Starting in 2006, the sulfur limit was reduced to 15 ppm to be phased in over June through September 2006.
- *Aromatic Hydrocarbon Content of Diesel Fuel*[34] – This standard prohibited the sale or supply of any diesel fuel after 1993 if the aromatic hydrocarbon content exceeds 10 percent by volume.
- *Lubricity of Diesel Fuel*[35]– This standard prohibits the sale or supply of any diesel fuel unless the fuel meets minimum lubricity level.

California Green Building Standards Code (CALGreen)

CALGreen is the green building code specific to the state of California, adopted in January 2010 and effective as of January 2011 for residential and non-residential new construction projects. This code aims to improve safety, health and general welfare of the public in California by reducing the negative impacts of construction and buildings on the environment and encouraging sustainable construction practices. Through the promotion of sustainable planning and design, energy efficiency, water efficiency and conversion, material conversion and resources efficiency and environmental quality, CALGreen aims to support a high standard for green buildings in California and lower the overall impacts that buildings pose on the environment. The code is composed of mandatory measures that must be implemented by local jurisdictions as well as voluntary measures called Tiers.

Regional Regulations -Bay Area Air Quality Management District

BAAQMD attains and maintains air quality conditions in the SFBAAB through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of BAAQMD includes the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, and issuance of permits for stationary sources of air pollution. BAAQMD also inspects stationary sources of air pollution and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by the federal CAA, FCAAA, and the California CAA.

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31 CARB, Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines. http://www.arb.ca.gov/diesel/documents/rmg.htm.

32 Title 13, CCR, Sections 2281, 2282, 2284

33 CARB, 2004. Amendments to the California Diesel Fuel Regulations, Sulfur Content of Diesel Fuel. Title 13 California Code of Regulations, Section 2281. August.

34 CARB, 2004. Amendments to the California Diesel Fuel Regulations, Aromatic Hydrocarbon Content of Diesel Fuel. Title 13 California Code of Regulations, Section 2282. August.

35 CARB, 2004. Amendments to the California Diesel Fuel Regulations, Lubricity of Diesel Fuel. Title 13 California Code of Regulations, Section 2284. August.

In 2011, BAAQMD released the update to its CEQA Guidelines. This is an advisory document that provides the lead agency, consultants, and project applicants with uniform procedures for addressing air quality in environmental documents. The guidelines also identified CEQA thresholds of significance for toxic air contaminants and $PM_{2.5}$. The updated guidelines were challenged in the case *California Building Industry Association v. Bay Area Air Quality Management District*. On March 5, 2012, the Alameda County Superior Court ruled that the BAAQMD's adoption of thresholds of significance was a "project" under CEQA, and ordered the BAAQMD to set aside the thresholds until it complied with CEQA requirements.[36] In view of this court order, the BAAQMD ceased recommending that their thresholds be used as a generally applicable measure of a project's significant air quality impacts, and instead recommended that lead agencies determine appropriate air quality thresholds of significance based on substantial evidence in the record. On August 13, 2013, the California First District Court of Appeal reversed the Superior Court's decision, ruling that adoption of CEQA significance thresholds does not constitute a "project" under CEQA, and therefore does not require CEQA review.[37] The California Supreme Court subsequently reversed and remanded the Court of Appeal's decision (No. S213478, filed December 17, 2015). The BAAQMD has not yet taken action to reinstate the CEQA thresholds or otherwise respond to the Court's decision.

In accordance with State CEQA guidelines, in the absence of specific local government or agency thresholds, lead agencies must make significance determinations based on the substantial evidence in the record for each project. The significance thresholds for this project have been adopted by the City of Oakland and are listed in the Impact section of this chapter.

Air Quality Plans for Criteria Air Pollutants

BAAQMD prepares plans to attain ambient air quality standards in the SFBAAB. In coordination with the Metropolitan Transportation Commission (MTC) and ABAG, the BAAQMD has prepared both federal and State air quality plans to bring the SFBAAB into attainment with federal and State O_3 standards. The Bay Area does not attain either the federal or State O_3 standards. Currently, there are three plans for the Bay Area:

- 2001 Ozone Attainment Plan, which describes the Bay Area's strategy for compliance with the federal 1-hour O_3 standard. Although the USEPA revoked the federal 1-hour O_3 standard on June 15, 2005, the emission reduction commitments in the plan are still being carried out by the BAAQMD.
- 2005 Bay Area Ozone Strategy, which reviews the region's progress in reducing ozone levels. The plan describes current conditions and charts a course for future actions to further reduce O_3 and O_3 precursor levels in the Bay Area and achieve compliance with the State 1-hour O_3 standard. Control strategies identified in the plan include stationary source measures, mobile source measures, and transportation control measures.
- 2010 Clean Air Plan, which provides control strategies to reduce O_3, PM, air toxics, and greenhouse gases (GHGs) and specifically addresses nonattainment of the State O_3 standards in the SFBAAB. The purpose of the 2010 Clean Air Plan is to:

[36] Alameda County Superior Court, 2012. California Building Industry Association v. Bay Area Air Quality Management District, Case RG10548693. March 5, 2012. Website: http://apps.alameda.courts.ca.gov/domainweb/html/casesumbody.html.

[37] California Court of Appeals First District, 2013. California Building Industry Association v. Bay Area Air Quality Management District, Case A135335 and A136212. Website: http://www.courts.ca.gov/opinions/documents/A135335.PDF.

- Update the Bay Area 2005 Ozone Strategy in accordance with the requirements of the California CAA to implement - all feasible measures- to reduce O_3;
- Provide a control strategy to reduce O_3, PM, air toxics, and GHGs in a single, integrated plan;
- Review progress in improving air quality in recent years;
- Establish emission control measures to be adopted or implemented in the 2009-2012 timeframe.

The Bay Area also does not attain the State PM_{10} and $PM_{2.5}$ standards. As explained above; the 2010 Clean Air Plan is an integrated plan which also provides a comprehensive program of control strategies for PM in the Bay Area. This includes measures to reduce emissions and ambient concentrations of PM, as well as population exposure to PM.[38] The control strategy serves as the backbone of the Air District's current PM control program. The 2010 Plan includes 55 control measures to reduce emissions of PM, PM precursors and other air pollutants from a wide variety of emission sources[39]. The control measures can be classified into five main categories:

- Stationary Source Measures (SSMs)
- Mobile Source Measures (MSMs)
- Transportation Control Measures (TCMs)
- Land Use and Local Impact Measures (LUMs)
- Energy and Climate Measures (ECMs)

In addition to the 2010 Clean Air Plan, BAAQMD has also initiated the Community Air Risk Evaluation (CARE) program in 2004. This program has helped identify communities in the Bay Area that are disproportionately impacted by local emission sources. The CARE program serves as a foundation for the District's efforts to reduce population exposure to TACs, including DPM. Further details regarding the CARE program are provided under the TACs local regulation discussion below.

Local Air Toxic Regulations and Policies

At the local level, air pollution control or management districts may adopt and enforce CARB control measures. BAAQMD limits emissions and public exposure to TACs through a number of programs. Under BAAQMD Rule 2-1 (General Permit Requirements), Rule 2-2 (New Source Review [NSR]), and Rule 2-5 (NSR of Toxic Air Contaminants), all sources that have the potential to emit TACs are required to obtain permits from BAAQMD. Permits may be granted if the sources are constructed and operated in accordance with applicable regulations, including NSR standards and ATCM. BAAQMD prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions, and on the proximity of the facilities to sensitive receptors.

New Source Review

The BAAQMD's New Source Review regulations predominantly apply to non-attainment pollutants. The purpose of the New Source Review rule is to provide for the review of new and modified sources and

[38] BAAQMD. 2012. Understanding Particulate Matter: Protecting Public Health in the San Francisco Bay Area. November.

[39] BAAQMD, accessed 2015. Particulate matter (PM) Planning. http://www.baaqmd.gov/Divisions/Planning-and-Research/Plans/PM-Planning.aspx.

provide mechanisms, including the use of best available control technology for both criteria and toxic air pollutants, and emissions offsets by which authorities to construct such sources could be granted. The New Source Review regulations also include Prevention of Significant Deterioration (PSD) rules for attainment pollutants. PSD rules are designed to ensure that the emission sources will not cause or interfere with the attainment or maintenance of ambient air quality standards.

With respect to the construction phase of the Project, applicable BAAQMD regulations would relate to portable equipment (e.g., Portland concrete batch plants, and gasoline- or diesel-powered engines used in pumps, compressors, graders, dozers, etc.), architectural coatings, and paving materials. Equipment used during project construction would be subject to the requirements of BAAQMD Regulation 2 (Permits), Rule 1 (General Requirements) with respect to portable equipment unless exempt under Rule 2-1-105 (Exemption, Registered Statewide Portable Equipment); BAAQMD Regulation 8 (Organic Compounds), Rule 3 (Architectural Coatings); and BAAQMD Regulation 8 (Organic Compounds), Rule 15 (Emulsified and Liquid Asphalts).

Odors

Although offensive odors rarely cause any physical harm, they can be very unpleasant and often can generate citizen complaints to local governments and BAAQMD. BAAQMD's Regulation 7 (Odorous Substances) places general limitations on odorous substances and specific emission limitations on certain odorous compounds in the SFBAAB. This regulation does not apply until the Air Pollution Control Officer (APCO) receives, within a 90-day period, 10 or more odor complaints alleging that a person or entity has caused odors at or beyond the source's property line, which are perceived to be objectionable by the complainants in the normal course of their work, travel, or residence. When this regulation becomes effective as a result of complaints, the limits specified in the regulation remain effective until such time as no complaints have been received by the APCO for 1 year. The limits specified by this regulation become applicable again if the APCO receives odor complaints from five or more complainants within a 90-day period.

Local Regulations

City of Oakland General Plan

Land Use and Transportation Element (LUTE). The LUTE of the Oakland General Plan contains numerous policies that address issues related to air quality. Generally, these policies seek to provide for new mixed use, transit-oriented development that encourages public transit use and increases pedestrian and bicycle trips at major transportation nodes; linking transportation facilities and infrastructure improvements to recreational uses, job centers, commercial nodes, and social services; promoting strategies to address traffic congestion; encouraging transit and other alternatives modes of travel; incorporating parking facilities for cars and bicycles into the design of projects in a manner that encourages and promotes safe pedestrian activity; and encouraging infill development. The majority of these polices are not directly applicable to the Project.

The LUTE also accounts for the air quality considerations of land use compatibility decisions with an objective to minimize land use compatibility conflicts by protecting existing activities from the intrusion of potentially incompatible land uses, and minimizing the potential for new or existing industrial or commercial uses to create nuisance impacts on surrounding residential land uses should be minimized through appropriate siting and efficient implementation and enforcement of environmental and development controls.

The **Open Space, Conservation and Recreation Element** (OSCAR) Element of the Oakland General Plan (Oakland, 1996) contains the following air quality policies that address criteria pollutants and would apply to the Project

- Policy CO-12.5: Use of Best Available Control Technology: Require new industry to use best available control technology to remove pollutants, including filtering, washing, or electrostatic treatment of emissions.
- Policy CO-12.6: Control of Dust Emissions: Require construction, demolition and grading practices which minimize dust emissions.

City of Oakland Municipal Code

Pursuant to the City of Oakland Municipal Code, Title 15 Buildings and Construction, Chapter 15.36 Demolition Permits, 15.36.100 Dust Control Measures, includes the following language:

> *'Best Management Practices' shall be used throughout all phases of work, including suspension of work, to alleviate or prevent fugitive dust nuisance and the discharge of smoke or any other air contaminants into the atmosphere in such quantity as will violate any city or regional air pollution control rules, regulations, ordinances, or statutes. Water or dust palliatives or combinations of both shall be applied continuously and in sufficient quantity during the performance of work and at other times as required. Dust nuisance shall also be abated by cleaning and sweeping or other means as necessary. A dust control plan may be required as condition of permit issuance or at other times as may be deemed necessary to assure compliance with this section. Failure to control effectively or abate fugitive dust nuisance or the discharge of smoke or any other air contaminants into the atmosphere may result in suspension or revocation of the permit, in addition to any other applicable enforcement actions or remedies. (Ord. 12152 § 1, 1999)*

Oakland Green Building Ordinance

The Green Building Ordinance was adopted by the City of Oakland in 2005, in conjunction with the Sustainable Communities Initiative of 1998, in order to maintain high standards of green development and new construction throughout the City. This ordinance requires green performance in major civic projects and provides policies to assist private development projects in improving green performance.

In October of 2010, the city adopted the Green Building Ordinance for Private Development Projects. The ordinance affects a wide range of projects from new construction of single- and multi-family residential as well as non-residential projects, additions and alterations, modifications or demolition of historic resources, construction of affordable housing and mixed-use projects, as well as projects requiring a landscape plan. Both the City's local ordinance and CALGreen are now in effect.

City of Oakland Conditions of Approval and Uniformly Applied Development Standards

The City‘s Standard Conditions of Approval are incorporated into projects regardless of a project‘s environmental determination. As applicable, the Standard Conditions of Approval are adopted as requirements of an individual project when it is approved by the City and are designed to, and will, substantially mitigate environmental effects. For the proposed project, the relevant standard conditions regarding air quality would be incorporated as part of the project. If a Standard Condition of Approval would reduce a potentially significant impact to less than significant, the impact will be determined to be less than significant and no mitigation is imposed. Where there are impacts associated with a project

site that will result in significant environmental impacts despite implementation of the Standard Conditions of Approval, additional mitigation measures are recommended.

The City's Standard Conditions of Approval relevant to this Project's air quality impacts are shown below for reference. The SCA below applies to all construction projects:

> **SCA #19: Construction-Related Air Pollution Controls (Dust and Equipment Emissions)**. Requirement: The project applicant shall implement all of the following applicable air pollution control measures during construction of the project:
>
> BASIC CONTROLS that apply to ALL construction sites:
>
> a. Water all exposed surfaces of active construction areas at least twice daily. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever feasible.
>
> b. Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).
>
> c. 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.
>
> d. Pave all roadways, driveways, sidewalks, etc. within one month of site grading or as soon as feasible. In addition, building pads should be laid within one month of grading or as soon as feasible unless seeding or soil binders are used.
>
> e. Enclose, cover, water twice daily, or apply (non-toxic) soil stabilizers to exposed stockpiles (dirt, sand, etc.).
>
> f. Limit vehicle speeds on unpaved roads to 15 miles per hour.
>
> g. Idling times on all diesel-fueled commercial vehicles over 10,000 lbs. shall 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 the California Code of Regulations). Clear signage to this effect shall be provided for construction workers at all access points.
>
> h. Idling times on all diesel-fueled off-road vehicles over 25 horsepower shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes and fleet operators must develop a written policy as required by Title 23, Section 2449, of the California Code of Regulations ("California Air Resources Board Off-Road Diesel Regulations").
>
> i. All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
>
> j. Portable equipment shall be powered by electricity if available. If electricity is not available, propane or natural gas shall be used if feasible. Diesel engines shall only be used if electricity is not available and it is not feasible to use propane or natural gas.
>
> ENHANCED CONTROLS: All "Basic" controls listed above plus the following controls if the project involves extensive site preparation (i.e., the construction site is four acres or more in size), and extensive soil transport (i.e., 10,000 or more cubic yards of soil import/export).
>
> k. All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.

l. All excavation, grading, and demolition activities shall be suspended when average wind speeds exceed 20 mph.

m. Install sandbags or other erosion control measures to prevent silt runoff to public roadways.

n. Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for one month or more).

o. Designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holidays and weekend periods when work may not be in progress.

p. Install appropriate wind breaks (e.g., trees, fences) on the windward side(s) of actively disturbed areas of the construction site to minimize wind-blown dust. Wind breaks must have a maximum 50 percent air porosity.

q. Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.

r. Activities such as excavation, grading, and other ground-disturbing construction activities shall be phased to minimize the amount of disturbed surface area at any one time.

s. All trucks and equipment, including tires, shall be washed off prior to leaving the site.

t. Site accesses to a distance of 100 feet from the paved road shall be treated with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel.

u. All equipment to be used on the construction site and subject to the requirements of Title 13, Section 2449, of the California Code of Regulations ("California Air Resources Board Off-Road Diesel Regulations") must meet emissions and performance requirements one year in advance of any fleet deadlines. Upon request by the City, the project applicant shall provide written documentation that fleet requirements have been met.

v. Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., BAAQMD Regulation 8, Rule 3: Architectural Coatings).

w. All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control Technology for emission reductions of NO_x and PM.

x. Off-road heavy diesel engines shall meet the California Air Resources Board's most recent certification standard.

y. Post a publicly-visible large on-site sign that includes the contact name and phone number for the project complaint manager responsible for responding to dust complaints and the telephone numbers of the City's Code Enforcement unit and the Bay Area Air Quality Management District. When contacted, the project complaint manager shall respond and take corrective action within 48 hours.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

The following condition may apply to the Projects as it involves construction and grading, and may be located in an area of naturally-occurring asbestos, serpentine soils, and/or ultramafic rock.

SCA #24: Naturally-Occurring Asbestos. Requirement: The project applicant shall comply with all applicable laws and regulations regarding construction in areas of naturally-occurring asbestos, including but not limited to, the Bay Area Air Quality Management District's (BAAQMD) Asbestos Airborne Toxic Control Measures for Construction, Grading, Quarrying, and Surface Mining Operations (implementing California Code of Regulations, section 93105, as may be amended) requiring preparation and

implementation of an Asbestos Dust Mitigation Plan to minimize public exposure to naturally-occurring asbestos. Evidence of compliance shall be submitted to the City upon request.

When Required: Prior to approval of construction-related permit

Initial Approval: Applicable regulatory agency with jurisdiction

Monitoring/Inspection: Applicable regulatory agency with jurisdiction

Impacts, Standard Conditions of Approval and Mitigation Measures

Thresholds of Significance

The City of Oakland CEQA Thresholds of Significance Guidelines was used to assess the impact of the Coliseum City Specific Plan on air quality. The approval and development of the Coliseum City Specific Plan would have a significant air quality impact if it were to:

1. During project construction result in average daily emissions of 54 pounds per day of ROG, NO_x, or $PM_{2.5}$ or 82 pounds per day of PM_{10};
2. During project operation result in average daily emissions of 54 pounds per day of ROG, NO_x, or $PM_{2.5}$ or 82 pounds per day of PM_{10}; or result in maximum annual emissions of 10 tons per year of ROG, NO_x, or $PM_{2.5}$ or 15 tons per year of PM_{10};
3. Contribute to carbon monoxide (CO) concentrations exceeding the California Ambient Air Quality Standards (CAAQS) of nine parts per million (ppm) averaged over eight hours and 20 ppm for one hour.
4. For new sources of Toxic Air Contaminants (TACs)[40], during either project construction or project operation expose sensitive receptors to substantial levels of TACs under project conditions resulting in:
   - an increase in cancer risk level greater than 10 in one million,
   - a non-cancer risk (chronic or acute) hazard index greater than 1.0, or
   - an increase of annual average $PM_{2.5}$ of greater than 0.3 micrograms per cubic meter;

   Or, under cumulative conditions, resulting in:
   - a cancer risk level greater than 100 in a million,
   - a non-cancer risk (chronic or acute) hazard index greater than 10.0, or
   - annual average $PM_{2.5}$ of greater than 0.8 micrograms per cubic
5. Expose new sensitive receptors to substantial ambient levels of Toxic Air Contaminants (TACs)[41] resulting in

[40] Pursuant to the BAAQMD CEQA Guidelines, when siting new TAC sources consider receptors located within 1,000 feet. For this threshold, sensitive receptors include residential uses, schools, parks, daycare centers, nursing homes, and medical centers. The cumulative analysis should consider the combined risk from all TAC sources

[41] Pursuant to the BAAQMD CEQA Guidelines, when siting new sensitive receptors consider TAC sources located within 1,000 feet including, but not limited to, stationary sources, freeways, major roadways (10,000 or

- a cancer risk level greater than 100 in a million,
- a non-cancer risk (chronic or acute) hazard index greater than 10.0, or
- annual average $PM_{2.5}$ of greater than 0.8 micrograms per cubic meter; or

6. Frequently and for a substantial duration, create or expose sensitive receptors to substantial objectionable odors affecting a substantial number of people[42]

Approach to Analysis

The City's Thresholds for Air Quality are generally based upon the BAAQMD 2011 CEQA Guidelines and Thresholds, and recommend evaluation of air quality impacts consistent with the most recent BAAQMD Guidelines. The analysis of potential air quality impacts uses the project-level methodology identified by the BAAQMD, outlined in the BAAQMD 2012 CEQA Guidelines to evaluate impacts from development of the Project.

Construction Period Fugitive Dust

The following discussion addresses Threshold 1, specific to construction-generated dust.

Impact Air-1: During construction, the Project will generate fugitive dust from grading, hauling and construction activities. Fugitive dust will be effectively reduced to a level of less than significant with implementation of required City of Oakland Standard Conditions of Approval. **(LTS with SCA)**

Construction activities pursuant to the Project include roadway demolition, site preparation, earth-moving and general construction activities. These construction activities would generate short-term emissions of fugitive dust. Construction-related fugitive dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil, and the weather. In the absence of mitigation, construction activities may result in significant quantities of dust and, as a result, local visibility and PM_{10} and $PM_{2.5}$ concentrations may be adversely affected on a temporary and intermittent basis. In addition, the fugitive dust generated by construction would include larger particles that would fall out of the atmosphere within several hundred feet of the site and could result in nuisance-type impacts.

Standard Conditions of Approval

The City of Oakland considers implementation of effective and comprehensive dust control measures (Best Management Practices) recommended by the BAAQMD as the threshold of significance for fugitive dust emissions (both PM_{10} and $PM_{2.5}$); if a project complies with specified dust control measures, it would not result in a significant impact related to construction period dust emissions. In order to be protective of the health of nearby residences as well as to reduce dust emissions that could affect

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greater vehicles per day), truck distribution centers, airports, seaports, ferry terminals, and rail lines. For this threshold, sensitive receptors include residential uses, schools, parks, daycare centers, nursing homes, and medical centers.

[42] For this threshold, sensitive receptors include residential uses, schools, daycare centers, nursing homes, and medical centers (but not parks).

regional air quality, the Project is required to implement BAAQMD recommended construction period dust control measures pursuant to the City's Standard Conditions of Approval, and to comply with the requirements found under the City Municipal Code (Section 15.36.100; Dust Control Measures). These measures include both "Basic" and "Enhanced" measures for the Project since the Project meets several of the criteria for enhanced measures. The City's Standard Conditions of Approval SCA #19 is consistent with both the "Basic" and "Enhanced" measures recommended by the BAAQMD.

Furthermore, to reduce the potential for asbestos-laden dust emissions, the Project is required to implement SCA #24: Naturally Occurring Asbestos, which requires certified asbestos removal in accordance with the BAAQMD Asbestos Airborne Toxic Control Measures for Construction and Grading.

Implementation of these SCAs would ensure that the impact of construction-period fugitive dust remains at a less than significant level.

Construction-Period Emissions of Criteria Pollutants

The following discussion also addresses Threshold 1, specific to criteria pollutants.

Impact Air-2: During construction, the Project will generate regional ozone precursor emissions and regional particulate matter emissions from construction equipment exhaust. However, these emissions will not exceed City of Oakland's established construction-period thresholds. (**LTS**)

Construction activity at the Project site would generate air emissions through the use of heavy-duty construction equipment. Mobile source emissions (primarily NO_x), would be generated from the use of construction equipment such as excavators, bulldozers, and scrapers. The assessment of construction-period emissions of criteria air pollutants recognizes that construction emissions can vary substantially from day to day, depending on the level of activity and the specific type of operation.

Criteria pollutant emissions from construction were calculated using the latest version of the California Emissions Estimator Model (CalEEMod™). CalEEMod™ is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. The use of CalEEMod™ is consistent with guidance issued by BAAQMD. Project specific construction schedules, equipment lists and vehicle trip data for the Project from the Project Description (see Chapter 3 of this Draft EIR) was used as available, and default data provided by CalEEMod™ were used if Project-specific information was unknown. Default data (e.g., emission factors, trip lengths, meteorology, and source inventory) have been provided by the various California Air Districts to account for local requirements and conditions.

Off-road equipment emissions were evaluated assuming that all off-road equipment use diesel fuel. Because diesel equipment usually contributes higher health risks for exposed populations than equipment using gasoline or other alternative fuel, the approach is considered conservative for DPM and risk estimation. Emissions from all phases of Project construction including site preparation, rough and final grading, retaining wall construction and landscaping were estimated. CalEEMod™ runs are included as **Appendix 4.2**.

To estimate average daily construction emissions, total construction emissions were calculated for the duration of the total construction period (assumed to be an 18-week period, or 122 total days) and then averaged over the total number of days during the construction period. Daily construction-related

criteria pollutant emissions resulting from construction are presented in **Table 4.2-2.** As indicated in this table, construction-period emissions of criteria air pollutants would not exceed applicable thresholds, and the impact would be less than significant.

Table 4.2-2: Criteria Air Pollutant Emissions – Construction

Pollutant	Total Emissions (tons)	Average Daily Emissions (pounds/day)	Construction Threshold (pounds/day)	Above Threshold?
ROG	0.29	6.3	54	No
NO_x	3.26	53	54	No
PM_{10} (exhaust)	0.15	3.4	82	No
$PM_{2.5}$ (exhaust)	0.14	3.1	54	No

Abbreviations:
NO_x – nitrogen oxides
PM = particulate matter
ROG = reactive organic gases
Sources:
CalEEModTM version 2013.2.2. Available online at: www.CalEEMod.com

Standard Conditions of Approval

Although the Project's construction-period emissions of criteria pollutants are not expected to exceed applicable threshold criteria, the Project will be required to incorporate the emission reductions included in SCA #19. These measures, including but not limited to the following, will be implemented:

- Idling time of diesel powered construction equipment shall be minimized to two minutes.
- The Project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NO_x reduction and 45 percent PM reduction compared to the most recent CARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.

With implementation of the required 20% NO_x emission reductions as itemized in SCA #19, the emissions of NO_x (which neared the 54 pounds per day threshold level, at 52 pounds per day) would be reduced to approximately 43 pounds per day, further separating these emissions form the threshold level.

Mitigation Measures

None needed

Construction Period Toxic Air Contaminant (TAC) Emissions

The following discussion addresses Threshold 4, specific to construction-period effects.

Impact Air-3: TAC emissions resulting from construction activity at the Project site would not result in an increase in cancer risk level for the maximum exposed individual of greater than 10 in one million, would not exceed the chronic health hazard index of 1, and would not exceed the annual average $PM_{2.5}$ concentration threshold of 0.3 µg/m^3. (**LTS)**

Construction activities at the Project site would result in DPM and $PM_{2.5}$ emissions due to exhaust emissions from equipment such as graders, bulldozers and trucks. These emissions could result in elevated concentrations of DPM and $PM_{2.5}$ at nearby receptors. Due to the variable nature of construction activity, the generation of TAC emissions would be temporary, especially considering the relatively short amount of time such equipment will be within an influential distance that would result in the exposure of sensitive receptors to substantial concentrations.

Construction-related emissions of DPM and $PM_{2.5}$ were quantified based on the output from CalEEMod™ and then entered into the AERSCREEN version 14147 screening model to conservatively estimate the concentration level of emissions.[43] For this analysis, all off-road construction equipment was assumed to be diesel powered.

The AERSCREEN output file identifies that the maximum 1-hour DPM concentration (of 3.159 µg/m^3) would occur at a distance of approximately 425 meters (approximately 1,400 feet) from the center of the construction activity. Sensitive receptors within this distance include Saint Theresa's Church and school along Clarewood Drive, homes along Truitt Lane near Clarewood Drive, residences along the Stark Knoll Place cul-de-sac northeast of the Panhandle hill, residences along Maxwelton Road at the far east end of the Panhandle, as well as homes along Abbott Lane and Pala Avenue south and west of the Project site. Each of these sensitive land uses will be exposed to construction period emissions based on their distance from the emission sources, wind direction and other climatic conditions.

Based upon the conservative assumptions included in the AERSCREEN model and the associated health risk calculations, neither the cancer risks, chronic health risks or diesel particulate concentrations associated with construction-period TAC emissions from the Project would exceed threshold levels, as indicated below in **Table 4.2-3** (see also detailed calculations and methodology in **Appendix 4.2**).

[43] The US EPA and BAAQMD recommend AERSCREEN, which is based on AERMOD (EPA's preferred near-field dispersion model), and replaces SCREEN3 as the recommended screening model based on the Guideline on Air Quality Models.

Table 4.2-3: Construction Period Health Impacts

	Cancer risk per million [1]	Chronic Health Index	$PM_{2.5}$ Concentration ($\mu g/m^3$)
At location of maximum 1-hr. concentration, occurring at 425 meters from the center of construction site:	0.387 (adult) 3.870 (child)	0.063	0.291
Threshold	10	1	0.3
Greater than Threshold?	No	No	No

Abbreviations:
$PM_{2.5}$ = Fine Particulate Matter Less than 2.5 Micrometer in Diameter
µg = microgram
m^3 = cubic meter

Standard Conditions of Approval

Implementation of SCA #19 requires construction-related best management practices (e.g., reduced diesel engine idling time, and 45% reductions in DPM emissions through such means as low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and add-on devices such as particulate filters), which would further reduce construction-related emissions and associated health risks.

Mitigation Measures

None needed

Operational Emissions

The following discussion addresses Thresholds 2, 3, and 4 related to emissions during operations.

Impact Air-4: The Project will not result in significant new operational emissions of criteria pollutants, carbon monoxide (CO) concentrations, or new sources of toxic air contaminants. (**LTS**)

As an expansion of an existing cemetery use, there is nothing about the Project that would generate substantial levels of operational criteria pollutants or toxic air contaminants. Emissions from routine landscape maintenance and grave site excavation equipment (i.e., lawn mowers and backhoes) would not rise to a level of significance.

Exposure of New Sensitive Receptors

The following discussion addresses Threshold 5.

Impact Air-5: The Project would not expose new sensitive receptors to substantial levels of toxic air contaminants (TACs). (**No Impact**)

As a cemetery, the Project does not include any new sensitive receptors, and the site is not located in an area where visitors to the Cemetery may be exposed to air pollutant levels that result in an unacceptable cancer risk or hazard.

Cumulative Air Quality Impacts

Cumulative Impact Air-5: The Project would not result in a considerable contribution to a significant cumulative impact on air quality, and cumulative air quality impacts would be less than significant. (**LTS**)

The geographic context considered for cumulative air quality impacts is the regional San Francisco Bay Area Air Basin (SFAAB), which is considered a non-attainment area for both State and federal ambient air quality standards for ozone and particulate matter. Past, present and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is generally sufficient in size, by itself, to result in non-attainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality. If a project's emissions are considered significant, its contribution to the cumulative impact is cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. According to City of Oakland significance thresholds, any proposed project that would individually have a significant air quality impact would also be considered to have a significant cumulative air quality impact. However, since the Project would not result in a significant air quality impact, the Project would not individually contribute significantly to a cumulatively considerable impact to air quality, and the cumulative impact would be considered less than significant.

Cumulative emissions from potential off-site sources within 1,000 feet from a project boundary are used to assess cumulative construction-period and operational health risk. As indicated in the Setting discussion, there is only 1 existing stationary source within 1,000 feet of the Project site (the Piedmont corporation yard on Red Rock) and its emissions, combined with the Project's construction emissions, would not exceed the cumulative health risk thresholds (cancer risk level greater than 100 in a million, a non-cancer risk hazard index greater than 10.0, or annual average $PM_{2.5}$ concentrations of greater than 0.8 micrograms per cubic meter). No other known significant construction projects are known or are projected to occur simultaneously with the Project's construction.

Mitigation Measures

None needed

4.3

Biological Resources

This chapter describes the biological resources that occur or which have the potential to occur at the Project site or in the vicinity, and evaluates the potential Project-related impacts on these resources. This chapter also identifies City of Oakland Standard Conditions of Approval and (where necessary) mitigation measures to reduce or avoid adverse impacts to biological resources.

The analysis and discussion in this chapter of the EIR is based primarily on research, field work and analysis conducted by professional biological consultants at the firm Environmental Collaborative. Documents and research reviewed for this chapter of the EIR includes the *Open Space, Conservation, and Recreation (OSCAR) Element* of the City of Oakland General Plan (City of Oakland, 1996); the *National Wetland Inventory* maintained by the U.S. Fish and Wildlife Service (USFWS); and the occurrence data of the *California Natural Diversity Data Base* (CNDDB).[1]

Environmental Setting

Methodology

Biological resources associated with the Project site were identified through a review of available background information, field reconnaissance surveys and habitat suitability analysis for special-status species, as well as follow-up systematic surveys for special-status plant species.

An *Arborist Report*[2] prepared for the applicant (**Appendix 4.3A**) was also reviewed. The *Arborist Report* contains an explanation of methods, description of trees within the Project site, conclusions regarding their suitability for preservation, and evaluation of impacts and recommendations, and tree preservation guidelines. The adequacy of this *Arborist Report* was reviewed by the EIR biologist, as discussed further below.

Field reconnaissance surveys were initially conducted by the EIR biologist on April 17 and October 15, 2013 to determine the existing vegetation and wildlife resources, presence or absence of any sensitive resources such as jurisdictional waters, and the suitability of the Project site to support occurrences of special-status species. Based on the habitat suitability analysis and review of available information, it was determined that supplemental surveys for special-status plant species should be conducted to verify their presence or absence. Systematic surveys were conducted by a qualified botanist in conformance with the CDFW rare plant survey guidelines on May 17 and July 16, 2014. No other detailed surveys were considered necessary based on an absence of suitable habitat for special-status animal species, lack of indicators for jurisdictional wetlands, or other sensitive biological resources.

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1 The CNDDB is a branch of the California Department of Fish and Wildlife (CDFW) and provides updated, mapped information on special-status species and sensitive natural communities.

2 HortScience, January 2015

Vegetation and Wildlife Habitat

The Project site is located in the Oakland Hills and is part of the larger Mountain View Cemetery property. Most of the Project site has been disturbed by past grading and improvements associated with the cemetery operations and a quarry that once operated at the eastern edge of the property. Historic grazing practices over the past century, the spread of invasive plant species, and removal of stands of invasive blue gum eucalyptus (*Eucalyptus globlulus*) have also altered the existing vegetation cover on the Project site.

Non-native grassland, irrigated turf, and paved roadways and former parking areas form the predominant cover over most of the site. Scattered native coast live oak (*Quercus agrifolia*) occur throughout the site and, together with other native tree species, form a dense woodland cover on the former quarry slopes at the eastern edge of the Project site. Planted and naturalized non-native tree species are also scattered throughout the Project site, such as blue gum eucalyptus, red iron bark (*Eucalyptus sideroxylon*), plum (*Prunus domestica*), Monterey pine (*Pinus radiata*), blue atlas cedar (*Cedrus atlantica*), blackwood acacia (*Acacia melanoxylon*), and California pepper (*Schinus molle*).

Non-Native Grasslands

Vegetative cover is dominated by non-native ruderal (weedy) grasses and forbs, such as wild oats (*Avena spp.*), ripgut brome (*Bromus diandrus*), English plantain (*Plantago lanceolata*), filaree (*Erodium* spp.), and wild radish (*Raphanus sativus*). Native species are scattered through a few locations in the grassland and include California brome (*Bromus carinatus* var. *carinatus*), wild buckwheat (*Eriogonum nudum*), California poppy (*Eschscholzia californica*), lupine (*Lupinus* spp.), soap plant (*Chlorogalum pomeridianum*), and mule ears (*Wyethia angustifolia*), among others. These native plant species do not occur in high enough numbers for the minimum cover typically considered to qualify as a native grassland. Coyote brush (*Baccharis pilularis*) and sapling coast live oaks are forming dense thickets and replacing grassland cover in some locations. Scattered clumps of invasive non-native sweet fennel (*Foeniculum vulgare*) and French broom (*Genista monspessulana*) are beginning to spread through some areas of the grasslands, as well as seedlings and saplings of invasive tree species such as blue gum, black acacia and silver wattle (*Acacia dealbata*). Dense clumps of Himalayan blackberry (*Rubus armeniacus*) occur at the northeastern edge of the Project site where the Cemetery previously removed former dense stands of blue gum as part of fire fuel management activities.

Wildlife associated with the grasslands on the Project site are common to non-native grasslands and suburban habitat, consisting of numerous species of birds, Botta's pocket gopher, black-tailed jackrabbit, stripped skunk, and mule deer. Bird species observed or suspected to use the open grasslands, shrubs and sapling trees on the Project site for foraging include scrub jay, mourning dove, brown towhee, American gold finch, house finch, white-crowned sparrow, English sparrow, and European starling. Several raptors (birds of prey) may occasionally forage through the area, including American kestrel, red-tailed hawk, red-shouldered hawk, and turkey vulture. No evidence of any bird nesting or large mammal denning activity was observed on the Project site. This includes absence of any den openings, signs of scat, pellets, white-wash, or stick and debris remains from nests.

Woodland and Tree Cover

Coast live oak occurs as scattered trees and saplings throughout the Project site, together with other native and non-native tree species. Only the stand of primarily coast live oaks in the eastern portion of the Project site, on the former quarry slopes, forms a continuous tree cover that could be considered oak woodlands. Tree cover in this area is dominated by coast live oak, but other tree species are present as well, such as big leaf maple (*Acer macrophylum*) and Monterey pine. Several of these coast live oaks

have trunk diameters of 20 inches or more diameter at breast height (dbh). Two other stands of primarily coast live oak occur in the southeastern portion of the Project site along the main access road, but these trees tend to be much smaller in size with trunk diameters generally under 15 inches dbh.

The native oaks and other trees provide roosting, foraging and possible nesting substrate for numerous species of birds, some of which also forage in the nearby grasslands. Common bird species which utilize the woodland and scattered tree cover on the Project site and surrounding area include scrub jay, nuthatches, warblers and woodpeckers. The seasonal crop of oak acorns provides an important source of food for larger birds, deer and raccoon, which occasionally forage in the area. Late winter flowers of blue gum provide a nectar source for Anna hummingbirds, and possible nesting substrate for raptors (birds of prey) and other bird species, although no evidence of any nests was observed during the field reconnaissance surveys.

Arborist's Report

The *Arborist Report* prepared by HortScience in January 2015 provides an inventory of two hundred and thirty (230) trees within the Project's anticipated limits of grading plus an additional 30 feet beyond the proposed grading limits. The tree inventory includes all trees that qualify as a possible protected tree under the City's Tree Protection Ordinance, including oaks having a dbh of 4 inches or greater and all other tree species having a dbh of 9 inches or greater. A total of 15 different tree species were identified in the inventory for the *Arborist Report.* The most frequently encountered tree species was coast live oak, with 153 trees (or 69 percent of the trees inventoried). Coast live oaks ranged in size from 4 to 36 inches dbh. The majority were young, with 101 measuring 12 inches or less in diameter, 45 measuring from 12 to 24 inches dbh and the remaining seven measuring 25-36 inches in diameter. Eighty-seven (87) of the coast live oaks were rated in fair condition, 58 were in good condition and eight (8) were in poor condition. Many of the oaks, especially those in the southeastern portion of the Project site appeared to have been impacted by a fire at some point in the past, which resulted in trunk wounds and other structural defects affecting their health and structure. Blue gum eucalyptus was the second most commonly encountered species, with a total of 27 trees in the inventory. Most of these eucalyptus are located in the northwestern portion of the Project site, part of a larger grove of blue gums in this area. The majority of the trees on the Project site were in fair condition (123 trees, or 55 percent) or good condition (80 trees, or 36 percent), with 19 trees (or 9 percent) rated in poor condition.

Supplemental Arborists Report

A *Supplemental Arborist Report* (see **Appendix 4.3B**) was prepared by Valley Crest in June 2015. This supplemental report was conducted to identify trees that were not fully addressed in the original HortScience report, but which had the potential to be impacted by the Project. The Supplemental Arborists Report specifically surveyed trees located within the following specific locations:

- Haul Road area between Plot 82 and Plot 98. Within this area, the survey identified a total of 14 trees, all coast live oaks with dbh of greater than 4 inches (protected trees). All of these trees are in good to fair condition, and included large specimens ranging from 22 to 46 inches dbh.
- Below the water tank. Within this area, the Supplemental Arborist's report identified a total of 26 trees, all coast live oaks with dbh of greater than 4 inches (protected trees). All of these trees are in good to fair condition with the exception of 2 tree rated as poor, and included large specimens ranging from 24 up to as large as 95 inches dbh.
- Along the Stark Knoll Hill. Although the base of this hillside was included in the original tree survey, the Supplemental Arborists Report inventoried all of the trees that are located along the upper

elevations, the side slopes and the lower elevations of this hillside. Trees in this area are closely grouped together into a thick vegetative cover, with trunks separated by only a foot or two in many locations. Within this area (including the hillside from the Clarewood Bowl area, around the corner of the hill and to the City of Oakland boundary), the Supplemental Arborist's report identified a total of 150 trees, almost all coast live oaks interspersed with pines, ash and maple trees. Of the total 150 trees in this area, 112 trees are considered protected trees. Most all of these trees are in good to fair condition, with the exception of 6 trees rated as poor. Tree sizes in this area are generally smaller 5 to 15 inches dbh, with a few larger specimens ranging from 24 to 36 inches dbh, plus two large oaks (60 and 86 inches dbh) and a large (41 inch dbh) maple.

See **Figures 4.3-1 and 4.3-2** for an existing tree inventory.

Special-Status Species

Review of records maintained by the CNDDB indicate that a number of special-status plant and animal species have been reported from the surrounding area of Oakland and the Berkeley Hills. Special-status species are plants and animals that are legally protected under state and/or federal Endangered Species Acts or other regulations, as well as other species that are considered by the scientific community and trustee agencies to be rare enough to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning locations, communal roosts and other essential habitat. Species with legal protection under the Endangered Species Acts often represent major constraints to development, particularly when they are wide ranging or highly sensitive to habitat disturbance and where proposed development would result in a "take" of these species.

Figure 4.3-3 shows the known occurrences of 24 special-status plant and 24 special-status animal species reported by the CNDDB from within approximately three miles of the Project site. The Project site generally lacks the essential habitat characteristics necessary to support these special-status species, such as coastal saltmarsh, freshwater marsh and open water, riparian woodlands and scrub, chaparral, serpentine substrate, and remnant native grasslands. The following provides a summary of the special-status species of greatest concern in the Oakland Hills, and conclusions regarding potential for occurrence on the Project site.

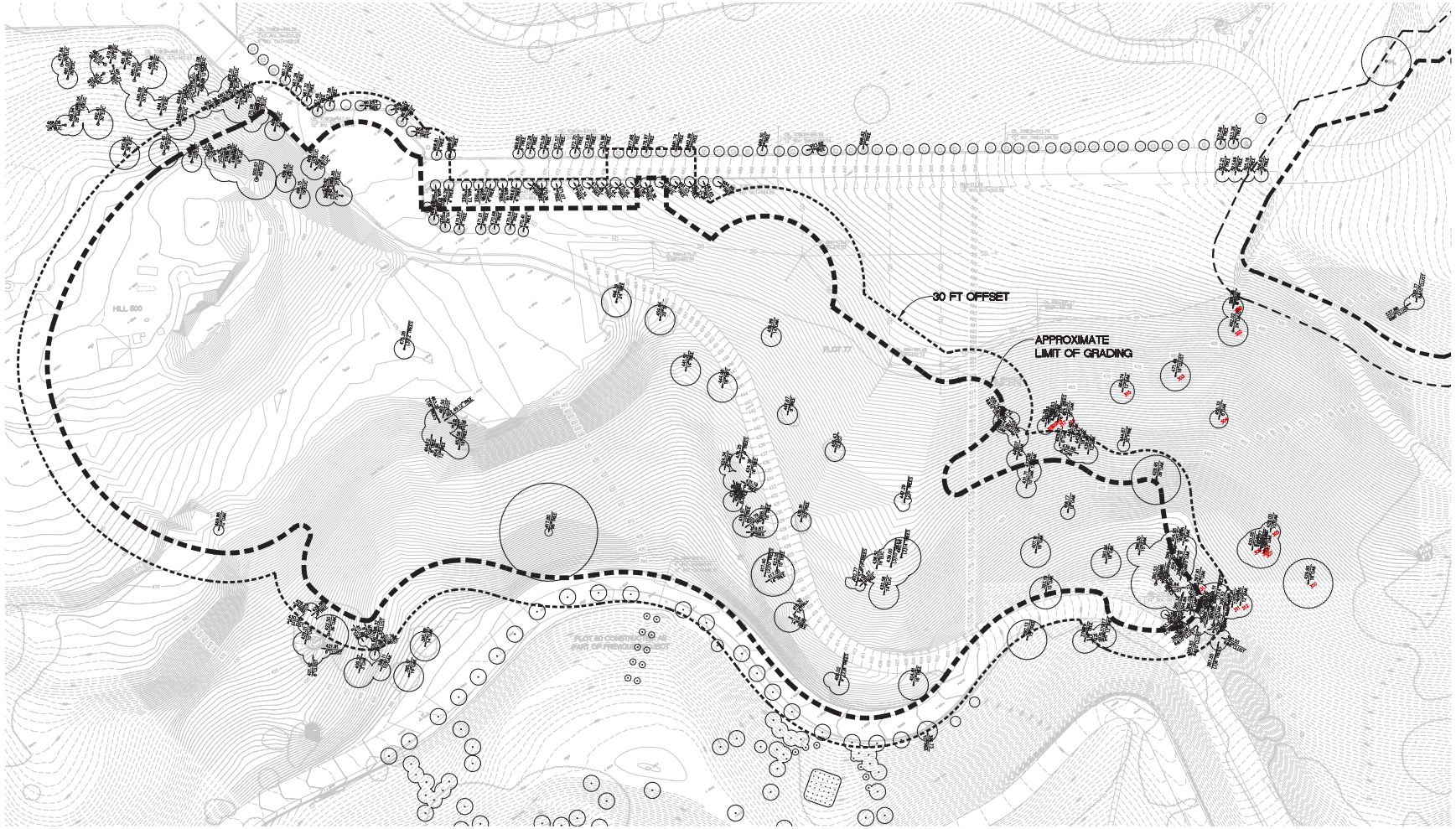


Figure 4.3-1
Tree Inventory, Plot 82 Site

Source: Hort Science 2015, Supplemented by Valley Crest 2015

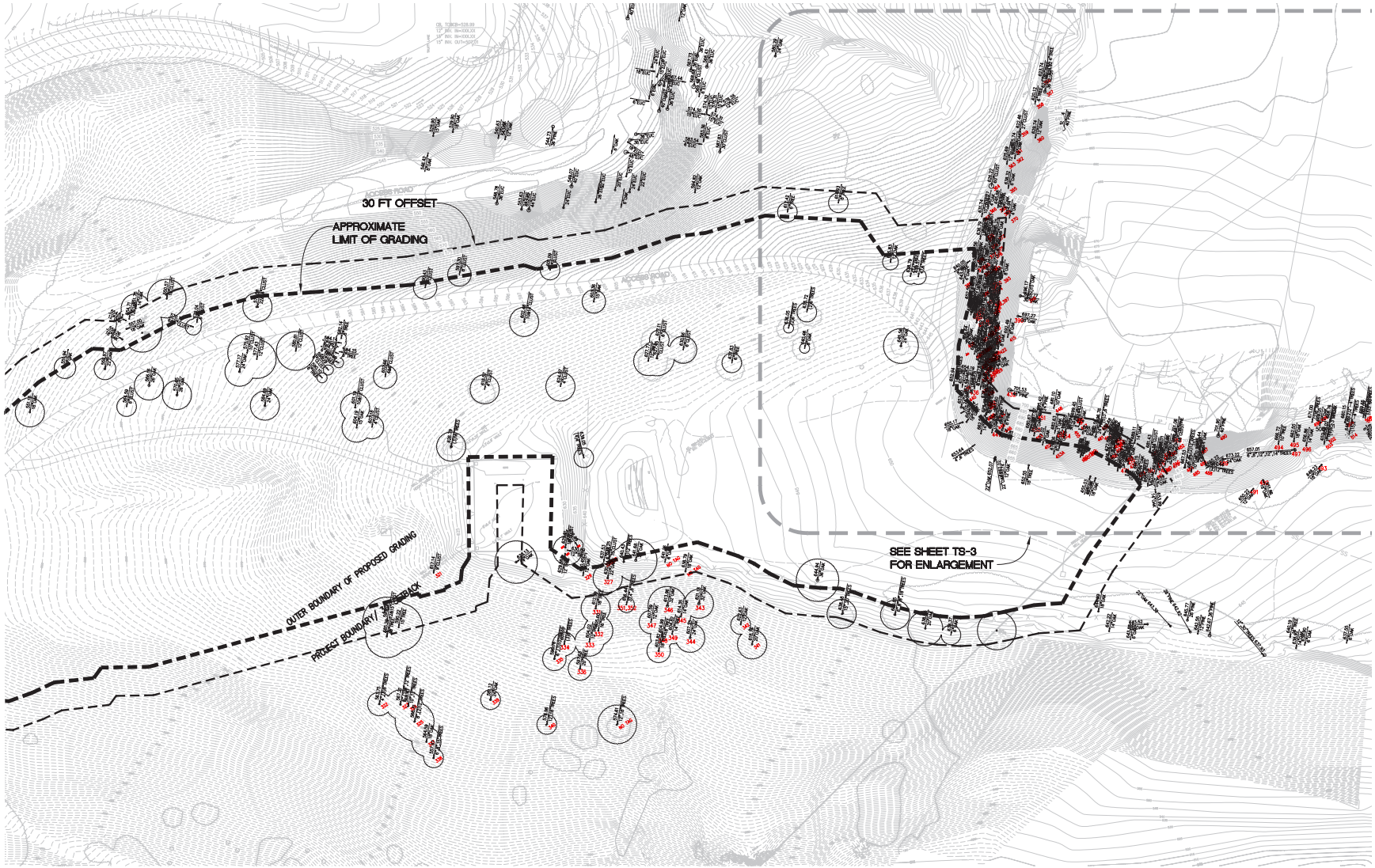


Figure 4.3-2
Tree Inventory, Plot 98 and Panhandle Site

Source: Hort Science 2015, Supplemented by Valley Crest 2015

Special-Status Plants

Numerous special-status plant species are known from the Oakland Hills, such as Diablo helianthella (*Helianthella castenea*), robust monardella (*Monardella villosa* ssp. *globosa*), Santa Cruz tarplant (*Holocarpha macradenia*), western leatherwood (*Dirca occidentalis*), bent-flowered fiddleneck (*Amsinkia lunaris*), pallid manzanita (*Arctostaphylos pallida*), most-beautiful jewel-flower (*Streptanthus albidus* ssp. *peramoenus*), alkali milk-vetch (*Astragalus tener* var. *tener*), Persidio clarkia (*Clarkia franciscana*), and fragrant fritillary (*Fritillaria liliacea*), among others. These species have varied legal status, and most are considered rare in California (list 1B) by the CNPS.

Special-status plant species can occasionally be found in what is otherwise considered non-native grasslands habitat such as found on the Project site. For this reason, systematic surveys were conducted in 2013 and 2014 to confirm absence of any special-stats plant species from the Project site. A list of suspected species considered to have a remote potential for occurrence on the Project site was prepared (see **Appendix 4.3C**), and surveys were conducted by a qualified botanist during the flowering period, as called for in the CDFW survey guidelines.

A list of plant species encountered during the systematic surveys was prepared (see also Appendix 4.3C), but no special-status plant species were detected or are believed to be present on the Project site, based on the results of the survey effort.

Special-Status Animal Species

Special-status animal species known or suspected from the Oakland Hills include Alameda whipsnake (*Masticophis lateralis euryxanthus*), California red-legged frog (*Rana draytonii*), Berkeley kangaroo rat (*Dipodomys heermanni berkeleyensis*), bay checkerspot butterfly (*Euphydryes editha bayensis*), callippe silverspot butterfly (*Speyeria callippe callippee*), monarch butterfly (*Danaus plexippus*), western pond turtle (*Emys marmorata*), and several species of raptors and bats.

Suitable habitat for special-status animal species is generally absent from the Project site due to the extent of past disturbance, surrounding development and human activity, and the absence of conditions necessary to support these species. This includes absence of freshwater marsh and riparian habitat necessary for breeding by California red-legged frog, native grassland and scrub habitat necessary to support Berkeley kangaroo rat, native serpentine grassland and larval host plant species for bay checkerspot butterfly, native grassland with larval host plant species for callippe silverspot butterfly, scrub/chaparral habitat with sunning areas and prey species necessary to support Alameda whipsnake, and dense stands of blue gum eucalyptus necessary to support overwintering areas for monarch butterfly. Additional information on the species of particular concern in the Oakland Hills is summarized below.

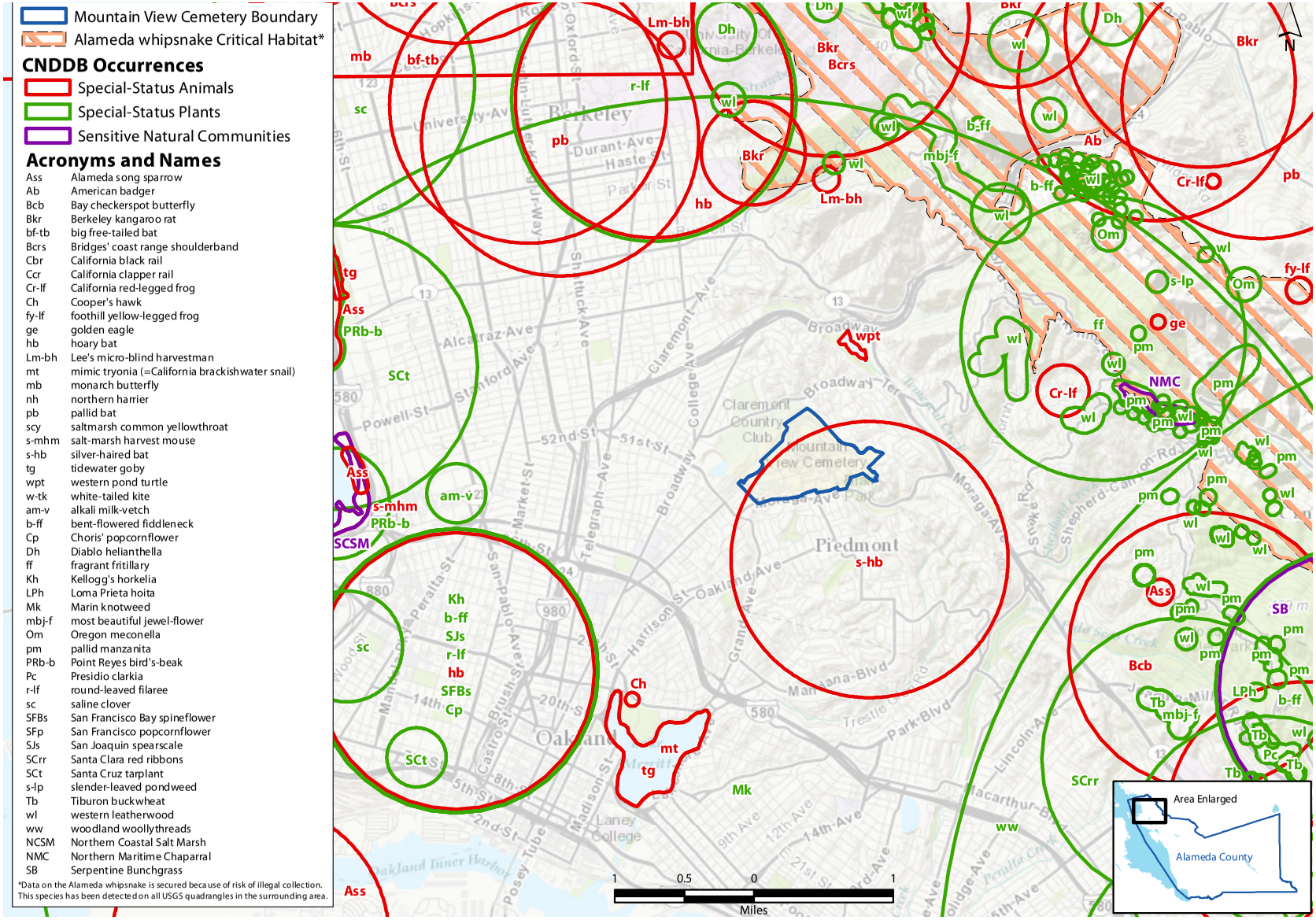


Figure 4.3-3
Known Occurrences Special-status Plants and Animals

Source: Environmental Collaborative, 2015

Silver-haired bat

As indicated in Figure 4.3-3, general occurrence of silver-haired bat (*Lasionycteris noctivagans*) extends over the Mountain View Cemetery property, based on an historic record from 1920 recorded in "Piedmont." This species has no formal listing under the state or federal Endangered Species Acts, but is ranked as having a medium priority by the Western Bat Working Group, a consortium comprised of agencies, organizations and individuals interested in bat research, management and conservation from the 13 western states and provinces. Silver-haired bats prefer temperate, northern hardwoods with ponds or streams nearby. A typical day roost for this species is behind loose tree bark. Hollow snags and bird nests also provide daytime roosting areas for silver-haired bats. Less common daytime roosts include buildings, such as open sheds and garages. Little is known about the maternity roosts for this species, but they presumably include trees with suitable cavities.

Given the distance from permanent water and relatively young age of most of the trees with little exfoliating bark and no observed cavities, suitable habitat for this species is presumed absent on the Project site.

Alameda Whipsnake

Critical habitat for the state and federally-threatened Alameda whipsnake (*Masticophis lateralis euryxanthus*) occurs approximately two miles east of the Project site (see Figure 4.3-3),and is part of the critical habitat units mapped by the USFWS in the Oakland Hills and other lands in the East Bay Area believed to comprise the essential habitat for this species. Typical habitat characteristics for Alameda whipsnake consists of stands of chaparral and scrub habitat that contain abundant prey species such as western fence lizard, with abundant areas for sunning and other behaviors. This species is known to utilize adjacent areas of grassland, woodland and riparian habitats, but chaparral and scrub habitats are essential for occupation in an area.

Given the absence of chaparral and areas of well-developed scrub from the Project site and immediate vicinity, the lack of any records for this species in the immediate vicinity and dense urban development and freeway corridors separating it from the closest critical habitat, Alameda whipsnake is not suspected to occur on the Project site.

California Red-Legged Frog

California red-legged frog is a federally-threatened species, and is considered a Species of Special Concern (SSC) by the CDFW. It typically occurs in aquatic habitat of streams and ponds, but can disperse considerable distances in search of breeding and aestivation sites. Continued loss of upland dispersal habitat, fragmentation of remaining breeding locations, competition and predation by bullfrog, and degradation of aquatic habitat are primary concerns regarding protection and recovery of this species. According to the CNNDB records, an occurrence of California red-legged frog was reported from the upper Temescal Creek watershed from "Thornhill Pond" sometime in the 1940's, approximately 1.5 miles east of the Project site (see Figure 4.3-3). It is unknown whether a population of California red-legged frog still occurs in that pond, which is on private property. However, there are no CNDDB occurrence records for this species on the west side of Highway 13.

Suitable habitat for this species is absent from the Project site, which contains no freshwater marsh or other aquatic habitat. The ponds along the southern edge of the Mountain View Cemetery property provide marginally suitable habitat for this species, but the network of paved roadways, irrigated turf, and ornamental landscaping, and steep hillside slopes separate these ponds from the upland location of the Project site. There are no ponds or other attractive aquatic features that would induce individuals of

this species to disperse in the direction of the Project site, if an undetected population somehow survives in the existing network of ponds on the Mountain View Cemetery property.

Western Pond Turtle

Western pond turtle has no State or federal listing under the Endangered Species Acts, but is recognized as a Species of Special Concern (SSC) by the CDFW. They are associated with permanent aquatic habitat with haul out areas used for basking. Numerous individuals were observed in the ponds along the southern edge of the Mountain View Cemetery property.

Although western pond turtle are known to disperse considerable distances from aquatic habitat in search of nesting locations, the developed nature of the existing cemetery and steep hillside slopes make the Project site unsuitable for egg laying and this species is not suspected to occur on or disperse across the Project site.

Nesting Birds

There is a remote possibility that one more species of birds protected under the federal Migratory Bird Treaty Act and State Fish and Game Code could possibly nest in the planted trees in the southwestern portion of the site. No evidence of any nesting was observed during the field reconnaissance surveys conducted in 2013. However, there is a possibility that new bird nests could be established in advance of construction. These include possible nesting in trees, shrubs and even areas of natural dense grassland where human access is limited.

Sensitive Natural Communities

Sensitive natural communities are natural community types considered by the CDFW to have a high inventory priority because of their rarity and vulnerability to disturbance and loss. No sensitive natural community types are present on the Project site. **Figure 4.3-4** shows the known occurrences of sensitive natural communities mapped by the CNDDB in the surrounding area. These occurrences consist of northern coastal salt marsh along the fringe of San Francisco Bay, and stands of northern maritime chaparral and serpentine bunchgrass grasslands in the Oakland Hills to the east of the Project site.

Suitable substrate and other habitat conditions for these sensitive natural community types are absent on the Project site. The non-native grasslands lack a high enough density of native grass species. The association of oak woodland is not recognized as a sensitive natural community type by the CNDDB because it is dominated by the common coast live oak. Although not considered a sensitive natural community type, trees on the Project site meeting the definition of “protected tree” are regulated under the City’s Tree Protection Ordinance.

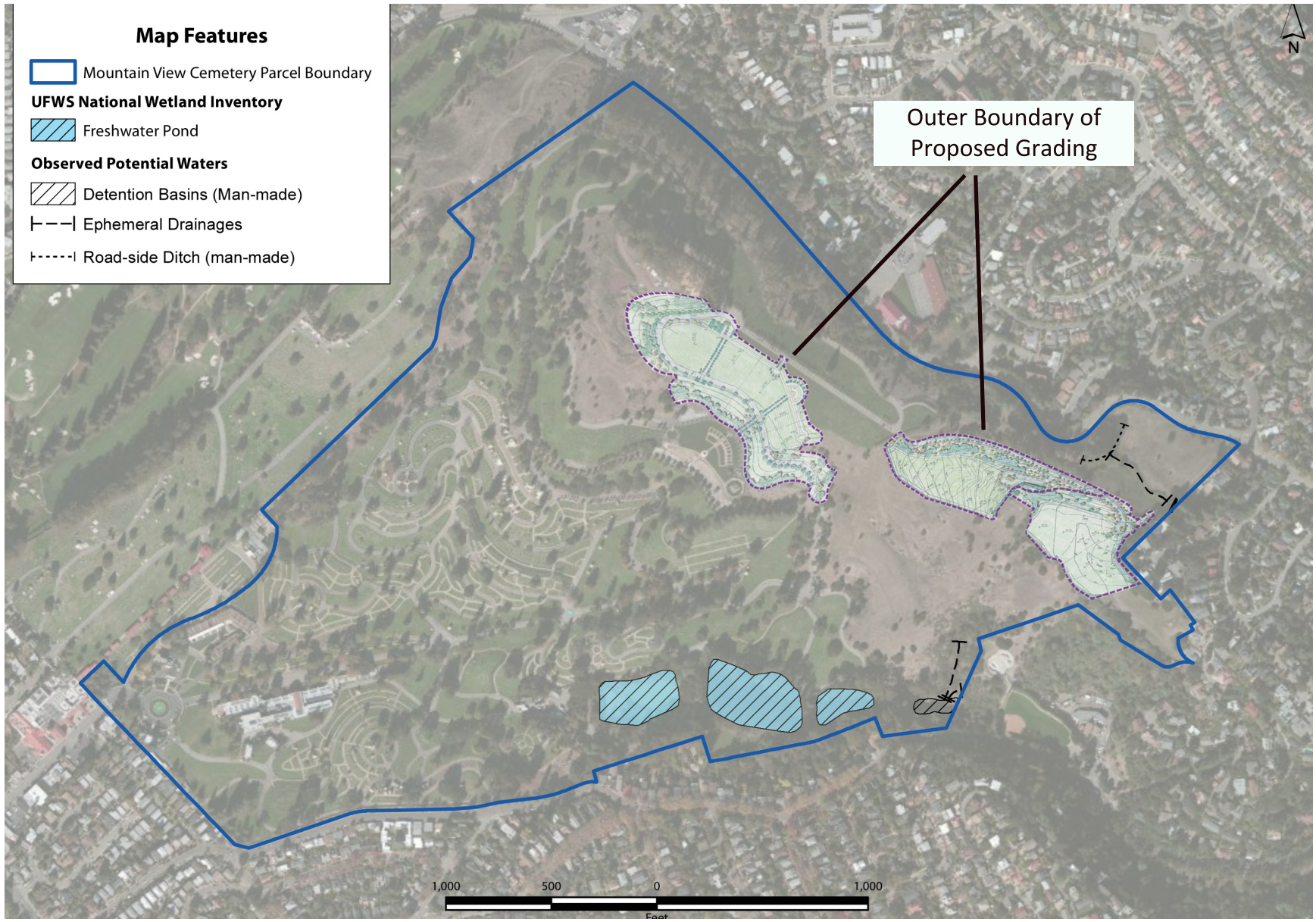


Figure 4.3-4
Sensitive Natural Communities

Source: Environmental Collaborative, 2015

Jurisdictional Waters

Wetlands are generally considered to be areas that are periodically or permanently inundated by surface or ground water, and support vegetation adapted to life in saturated soil. These areas can include marshlands, streams, seeps, and seasonal wetland features, among other types. Wetlands are recognized as important features on a regional and national level due to their high inherent value to fish and wildlife, use as storage areas for storm and flood waters, and water recharge, filtration and purification functions.

The CDFW, the U.S. Army Corps of Engineers (Corps) and California Regional Water Quality Control Board (RWQCB) have jurisdiction over modifications to wetlands and other "waters of the United States." Jurisdiction of the Corps is established through provisions of Section 404 of the Clean Water Act, which prohibits the discharge of dredged or fill material without a permit. Regional Water Quality Control Board jurisdiction is established through Section 401 of the Clean Water Act, which requires certification or waiver to control discharges in water quality, as well as jurisdiction over State waters regulated under the Porter-Cologne Act. Jurisdictional authority of the CDFW over wetland areas is established under Section 1600 of the State Fish and Game Code, which pertains to activities that would disrupt the natural flow or alter the channel, bed or bank of any lake, river or stream.

A preliminary wetland assessment of the Project site was conducted during the field reconnaissance surveys. Several freshwater ponds and ephemeral drainages were encountered on the Mountain View Cemetery property that may be jurisdictional features. These features were mapped and are also indicated on Figure 4.3-2). However, no evidence of any jurisdictional wetlands, un-vegetated other waters, or drainage channels were observed within the Project site.

Regulatory Setting

This section summarizes key federal, State, and local regulations pertaining to biological resources that are applicable to the proposed Project.

Federal Regulations

The federal laws that regulate the treatment of biological resources include the federal Endangered Species Act, the Migratory Bird Treaty Act, and the Clean Water Act. However, only those related to the Migratory Bird Treaty Act are applicable to the Project site given the absence of jurisdictional wetlands or essential habitat for special-status species on the Project site.

Migratory Bird Treaty Act

The U.S. Fish and Wildlife Service (USFWS) is responsible for implementing the Migratory Bird Treaty Act (MBTA). The MBTA implements a series of treaties between the United States, Mexico, and Canada that provide for the international protection of migratory birds. Wording in the MBTA makes it clear that most actions that result in "taking" or possession (permanent or temporary) of a protected species can be a violation of the Act. The word "take" is defined as meaning "pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect." The provisions of the MBTA are nearly absolute; "except as permitted by regulations" is the only exception. Examples of permitted actions that do not violate the law are the possession of a hunting license to pursue specific game birds, legitimate research activities, display in zoological gardens, bird-banding, and similar activities.

State Regulations

State laws regulating biological resources include the California Endangered Species Act, the California Fish and Game Code, and the California Native Plant Protection Act. However, only pertinent code sections related to the protection of bird nests in active use are relevant to the Project site, given the absence of any State-listed species or regulated streams.

California Fish and Game Code

Under the California Fish and Game Code, the CDFW provides protection from "take" for a variety of species, including Fully Protected species. "Fully protected" is a legal protective designation administered by the CDFW, intended to conserve wildlife species that are at risk of extinction within California. Lists have been created for birds, mammals, fish, amphibians, and reptiles. The California Fish and Game Code sections dealing with Fully Protected species state that these animals "may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected" species. In 2003, the code sections dealing with fully protected species were amended to allow CDFW to authorize taking resulting from recovery activities for state-listed species.

Section 3503 of the California Fish and Game Code prohibits the take, possession, or needless destruction of the nest or eggs of any bird. Subsection 3503.5 specifically prohibits the take, possession, or destruction of any birds in the orders Falconiformes (hawks and eagles) or Strigiformes (owls) and their nests. These provisions, along with the federal Migratory Bird Treaty Act, essentially serve to protect nesting native birds.

Local Regulations

The City of Oakland General Plan and provisions in the City of Oakland Municipal Code provide for the protection of important biological and wetland resources. In addition, the City has established Standard Conditions of Approval that are adopted as part of the approval of development applications where sensitive biological resources could be adversely affected. Information on these local policies, regulations and Standard Conditions of Approval are reviewed below.

City of Oakland General Plan

The Open Space, Conservation, and Recreation (OSCAR) Element of the Oakland General Plan (City of Oakland, 1996) includes objectives, policies and actions related to the protection of plant and animal resources. The following are the key relevant policies pertaining to biological resources:

- *Policy CO-7.1: Protection of Native Plant Communities.* Protect native plant communities, especially oak woodlands, redwood forests, native perennial grasslands, and riparian woodlands, from the potential adverse impacts of development. Manage development in a way which prevents or mitigates adverse impacts to these communities.
- *Policy CO-7.2: Native Plant Restoration.* Encourage efforts to restore native plant communities in areas where they have been compromised by development or invasive species, provided that such efforts do not increase an area's susceptibility to wildfire.
- *Policy CO-7.3: Forested Character.* Make every effort to maintain the wooded or forested character of tree-covered lots when development occurs on such lots.
- *Policy CO-7.4: Tree Removal.* Discourage the removal of large trees on already developed sites unless removal is required for biological, public safety, or public works reasons.

- *Policy CO-8.1: Mitigation of Development Impacts.* Work with federal, state, and regional agencies on an on-going basis to determine mitigation measures for development which could potentially impact wetlands. Strongly discourage development with un-mitigatable adverse impacts.
- *Policy CO-9.1: Habitat Protection.* Protect rare, endangered, and threatened species by conserving and enhancing their habitat and requiring mitigation of potential adverse impacts when development occurs within habitat areas.
- *Policy CO-11.1: Protection from Urbanization.* Protect wildlife from the hazards of urbanization, including loss of habitat and predation by domestic animals.
- *Policy CO-11.2: Migratory Corridors.* Protect and enhance migratory corridors for wildlife. Where such corridors are privately owned, require new development to retain native habitat or take other measures which help sustain local wildlife population and migratory patterns.

City of Oakland Municipal Code

The City of Oakland Municipal Code includes provisions related the protection of creeks and trees. These are summarized below.

Creek Protection Ordinance

Title 13, Chapter 13.16 of the City of Oakland Municipal Code establishes a number of guidelines to protect Oakland's creeks by reducing and controlling stormwater pollution, preserving and enhancing creekside vegetation and wildlife, and controlling erosion and sedimentation.

In 1997, the City stormwater ordinance was revised to provide stronger provisions to safeguard creeks. The ordinance, now called the "Creek Protection, Stormwater Management, and Discharge Control Ordinance," includes permitting guidelines for development and construction projects taking place on creekside property. The ordinance prohibits activities that would result in the discharge of pollutants to Oakland's waterways or damaging of the creeks, creek functions, or habitat. The ordinance aims to reduce pollutants in stormwater by regulating grading, excavation, and filling activities. The ordinance requires that all construction projects develop a site map, grading plan, and drainage plan prior to approval.

Tree Protection Ordinance

Title 12, Chapter 12.36 of the City of Oakland Municipal Code identifies protected trees that require a permit for removal. According to the ordinance, a tree removal permit must be obtained to remove a "protected tree." A protected tree consists of any coast live oak measuring four inches in diameter at breast height (dbh) or any other tree species measuring nine inches dbh or larger, except non-native eucalyptus and Monterey pine (*Pinus radiata*). Monterey pine trees must be protected only on City property and in development-related situations where more than five Monterey pine trees per acre are proposed to be removed. Except as noted in the ordinance, eucalyptus and Monterey pine are not protected by the ordinance.

Replacement tree plantings are typically required where native tree species are removed. Native protected trees proposed for removal must be replaced at a ratio of 1:1 if the replacement tree is a 24-inch box size, and 3:1 if the replacement trees are 15-gallon size trees. Protected trees located within 30 feet of construction must be identified. Adequate protection must also be provided during the construction period for any trees that are to remain in the vicinity of proposed development.

City of Oakland Standard Conditions of Approval

The City's Standard Conditions of Approval (SCAs) relevant to biological resources that would be impacted by implementation of the proposed Project are listed below. All applicable SCAs would be adopted as part of the proposed Project to reduce impacts to biological resources.

Applicable Biology-specific SCAs

The following SCAs are those with the most direct relevance to biological resource impact reduction. Standard Conditions of Approval pertaining to creek protection, tree removal on creekside properties, and Alameda whipsnake are not listed below as the proposed Project is not anticipated to affect these particular resources.

This SCA applies to all projects that require removal of any unprotected tree:

> **SCA #26: Tree Removal during Bird Breeding Season**. Requirement: To the extent feasible, removal of any tree and/or other vegetation suitable for nesting of birds shall not occur during the bird breeding season of February 1 to August 15 (or during December 15 to August 15 for trees located in or near marsh, wetland, or aquatic habitats). If tree removal must occur during the bird breeding season, all trees to be removed shall be surveyed by a qualified biologist to verify the presence or absence of nesting raptors or other birds. Pre-removal surveys shall be conducted within 15 days prior to the start of work and shall be submitted to the City for review and approval. If the survey indicates the potential presence of nesting raptors or other birds, the biologist shall determine an appropriately sized buffer around the nest in which no work will be allowed until the young have successfully fledged. The size of the nest buffer will be determined by the biologist in consultation with the California Department of Fish and Wildlife, and will be based to a large extent on the nesting species and its sensitivity to disturbance. In general, buffer sizes of 200 feet for raptors and 50 feet for other birds should suffice to prevent disturbance to birds nesting in the urban environment, but these buffers may be increased or decreased, as appropriate, depending on the bird species and the level of disturbance anticipated near the nest.
>
> When Required: Prior to removal of trees
>
> Initial Approval: Bureau of Building
>
> Monitoring/Inspection: Bureau of Building

These SCAs apply to all projects that involve a Tree Protection/Removal Permit for removal of a protected tree:

> **SCA #27: Tree Permit**
>
> a. Tree Permit Required .Requirement: Pursuant to the City's Tree Protection Ordinance (OMC chapter 12.36), the project applicant shall obtain a tree permit and abide by the conditions of that permit.
>
> When Required: Prior to approval of construction-related permit
>
> Initial Approval: Permit approval by Public Works Department, Tree Division; evidence of approval submitted to Bureau of Building
>
> Monitoring/Inspection: Bureau of Building
>
> b. Tree Protection during Construction. Requirement: Adequate protection shall be provided during the construction period for any trees which are to remain standing, including the following, plus any recommendations of an arborist:
>
> 1. Before the start of any clearing, excavation, construction, or other work on the site, every protected tree deemed to be potentially endangered by said site work shall be securely fenced off at a distance from the base of the tree to be determined by the project's consulting arborist. Such fences shall remain in place for duration of all such work. All trees to be removed shall be

clearly marked. A scheme shall be established for the removal and disposal of logs, brush, earth and other debris which will avoid injury to any protected tree.

2. Where proposed development or other site work is to encroach upon the protected perimeter of any protected tree, special measures shall be incorporated to allow the roots to breathe and obtain water and nutrients. Any excavation, cutting, filing, or compaction of the existing ground surface within the protected perimeter shall be minimized. No change in existing ground level shall occur within a distance to be determined by the project's consulting arborist from the base of any protected tree at any time. No burning or use of equipment with an open flame shall occur near or within the protected perimeter of any protected tree.

3. No storage or dumping of oil, gas, chemicals, or other substances that may be harmful to trees shall occur within the distance to be determined by the project's consulting arborist from the base of any protected trees, or any other location on the site from which such substances might enter the protected perimeter. No heavy construction equipment or construction materials shall be operated or stored within a distance from the base of any protected trees to be determined by the project's consulting arborist. Wires, ropes, or other devices shall not be attached to any protected tree, except as needed for support of the tree. No sign, other than a tag showing the botanical classification, shall be attached to any protected tree.

4. Periodically during construction, the leaves of protected trees shall be thoroughly sprayed with water to prevent buildup of dust and other pollution that would inhibit leaf transpiration.

5. If any damage to a protected tree should occur during or as a result of work on the site, the project applicant shall immediately notify the Public Works Department and the project's consulting arborist shall make a recommendation to the City Tree Reviewer as to whether the damaged tree can be preserved. If, in the professional opinion of the Tree Reviewer, such tree cannot be preserved in a healthy state, the Tree Reviewer shall require replacement of any tree removed with another tree or trees on the same site deemed adequate by the Tree Reviewer to compensate for the loss of the tree that is removed.

6. All debris created as a result of any tree removal work shall be removed by the project applicant from the property within two weeks of debris creation, and such debris shall be properly disposed of by the project applicant in accordance with all applicable laws, ordinances, and regulations.

   When Required: During construction

   Initial Approval: Public Works Department, Tree Division

   Monitoring/Inspection: Bureau of Building

c. Tree Replacement Plantings. Requirement: Replacement plantings shall be required for tree removals for the purposes of erosion control, groundwater replenishment, visual screening, wildlife habitat, and preventing excessive loss of shade, in accordance with the following criteria:

   1. No tree replacement shall be required for the removal of nonnative species, for the removal of trees which is required for the benefit of remaining trees, or where insufficient planting area exists for a mature tree of the species being considered.

   2. Replacement tree species shall consist of Sequoia sempervirens (Coast Redwood), Quercus agrifolia (Coast Live Oak), Arbutus menziesii (Madrone), Aesculus californica (California Buckeye), Umbellularia californica (California Bay Laurel), or other tree species acceptable to the Tree Division.

   3. Replacement trees shall be at least twenty-four (24) inch box size, unless a smaller size is recommended by the arborist, except that three fifteen (15) gallon size trees may be substituted for each twenty-four (24) inch box size tree where appropriate.

4. Minimum planting areas must be available on site as follows:
   i. For Sequoia sempervirens, three hundred fifteen (315) square feet per tree;
   ii. For other species listed, seven hundred (700) square feet per tree.
5. In the event that replacement trees are required but cannot be planted due to site constraints, an in lieu fee in accordance with the City's Master Fee Schedule may be substituted for required replacement plantings, with all such revenues applied toward tree planting in city parks, streets and medians.
6. The project applicant shall install the plantings and maintain the plantings until established. The Tree Reviewer of the Tree Division of the Public Works Department may require a landscape plan showing the replacement plantings and the method of irrigation. Any replacement plantings which fail to become established within one year of planting shall be replanted at the project applicant's expense.

   When Required: Prior to building permit final

   Initial Approval: Public Works Department, Tree Division

   Monitoring/Inspection: Bureau of Building

Please also see the Hydrology and Water Quality chapter of this EIR for other water quality-based SCAs that are also protective of biological resources.

Impacts, Standard Conditions of Approval and Mitigation Measures

This section discusses potential impacts to biological resources that could result from implementation of the proposed Project. It presents the thresholds of significance, and identifies potential impacts, applicable Standard Conditions of Approval and mitigation measures, as appropriate. Implementation of the Project will be subject to the City's SCAs. This biological resource analysis presented below includes the application of the SCAs to reduce potentially significant impacts to a less than significant level, and the identification of additional mitigation measures in instances when the SCAs would not fully mitigate potentially significant impacts.

Thresholds of Significance

The proposed Project would have a significant impact on the environment if it would:

1. 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 or U.S. Fish and Wildlife Service;
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
3. Have a substantial adverse effect on federally protected wetlands (as defined by section 404 of the Clean Water Act) or state protected wetlands, through direct removal, filling, hydrological interruption, or other means;
4. Substantially interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites;

5. Fundamentally conflict with any applicable habitat conservation plan or natural community conservation plan;
6. Fundamentally conflict with the City of Oakland Tree Protection Ordinance (Oakland Municipal Code (OMC) Chapter 12.36) by removal of protected trees under certain circumstances [3]; or
7. Fundamentally conflict with the City of Oakland Creek Protection Ordinance (OMC Chapter 13.16) intended to protect biological resources.[4]

Threshold 7 is addressed in Chapter 4.7: Hydrology, pursuant to Threshold 9 of that chapter.

Special Status Species

The following discussion addresses Threshold 1.

Impact Bio-1: The Project will not 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 or the U.S. Fish and Wildlife Service. (**LTS with SCAs**)

The proposed Project is not expected to have any adverse impacts on special-status species. Systematic surveys have confirmed absence of any special-status plant species on the Project site, and no adverse impacts are therefore anticipated. The habitat suitability analysis conducted as part of this EIR determined that suitable habitat for special-status animal species is absent from the Project site, including listed species such as California red-legged frog and Alameda whipsnake, and no adverse impacts are therefore anticipated.

There is a possibility that one or more species of birds protected under the federal MBTA could establish nests in trees and other vegetation that could be affected by construction activities. Destruction of a bird nest in active use or disturbance that could result in the abandonment of a nest with eggs or young would be a violation of the MBTA and State Fish and Game Code.

Standard Conditions of Approval

The Project will be required to implement City's Standard Conditions of Approval SCA #26: Tree Removal during Breeding Season, to protect possible nesting habitat. This SCA requires that a preconstruction

[3] Factors to be considered in determining significance include the number, type, size, location and condition of (a) the protected trees to be removed and/or impacted by construction and (b) protected trees to remain with special consideration given to native trees. Protected trees include *Quercus agrifolia* (California or coast live oak) measuring four inches dbh or larger and any other tree measuring nine inches dbh or larger except eucalyptus and *Pinus radiata* (Monterey pine); provided, however, that Monterey pine trees on City property and in development-related situations where more than five Monterey pine trees per acre are proposed to be removed are considered to be protected trees.

[4] Although there are no specific, numeric/quantitative criteria to assess impacts, factors to be considered in determining significance include whether there is substantial degradation of riparian and/or aquatic habitat through (a) discharging a substantial amount of pollutants into a creek, (b) significantly modifying the natural flow of the water, (c) depositing substantial amounts of new material into a creek or causing substantial bank erosion or instability, or (d) adversely impacting the riparian corridor by significantly altering vegetation or wildlife habitat.

survey be conducted if vegetation removal and construction is to be initiated during the breeding/nesting season (from March 15 through August 15), and will serve to mitigate potential impacts on bird species of concern to less-than-significant levels. Compliance with these provisions is typically achieved by timing initial vegetation removal outside the bird nesting season, or conducting a preconstruction survey if construction work cannot be scheduled outside this window.

With implementation of this SCA, potentially significant adverse impacts on nesting birds would be reduced to a less-than-significant level.

Mitigation Measures

None needed.

Riparian Habitat and Other Sensitive Natural Communities

The following discussion addresses Threshold 2.

Impact Bio-2: The Project will not have a substantial adverse impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service. **(LTS)**

No riparian, native grasslands or other sensitive natural community types occur on the Project site. The grasslands which characterize the Project site do not qualify as native grasslands. Similarly, the scattered woodlands are characterized by relatively common coast live oak and do not comprise a natural community type considered to be sensitive. The trees themselves are regulated under the City's Tree Preservation Ordinance (as evaluated further below) when the trunk size reaches a minimum diameter. Individual trees do not represent a sensitive natural community type.

Mitigation Measures

None required

Wetlands

The following discussion addresses Threshold 3.

Impact Bio-3: The Project will not have a substantial adverse effect on federally protected wetlands (as defined by Section 404 of the Clean Water Act) or state protected wetlands, through direct removal, filling, hydrological interruption, or other means. (**LTS**)

Based on the results of the preliminary wetland assessment performed for Mountain View Cemetery property, no potential jurisdictional wetlands or other waters occur on the Project site, and no direct impacts are therefore anticipated, and the impact is less than significant.

The closest potential jurisdictional waters consists of an ephemeral drainage, located within Mountain View Cemetery property but more than 100 feet to the north of the Project's anticipated limits of grading (**Figure 4.3-5**). The removal of existing vegetative cover, grading, and modifications to existing surface runoff patterns associated with construction on the Project site would not directly affect this drainage, as it is approximately 140 feet distant from the nearest edge of proposed construction.

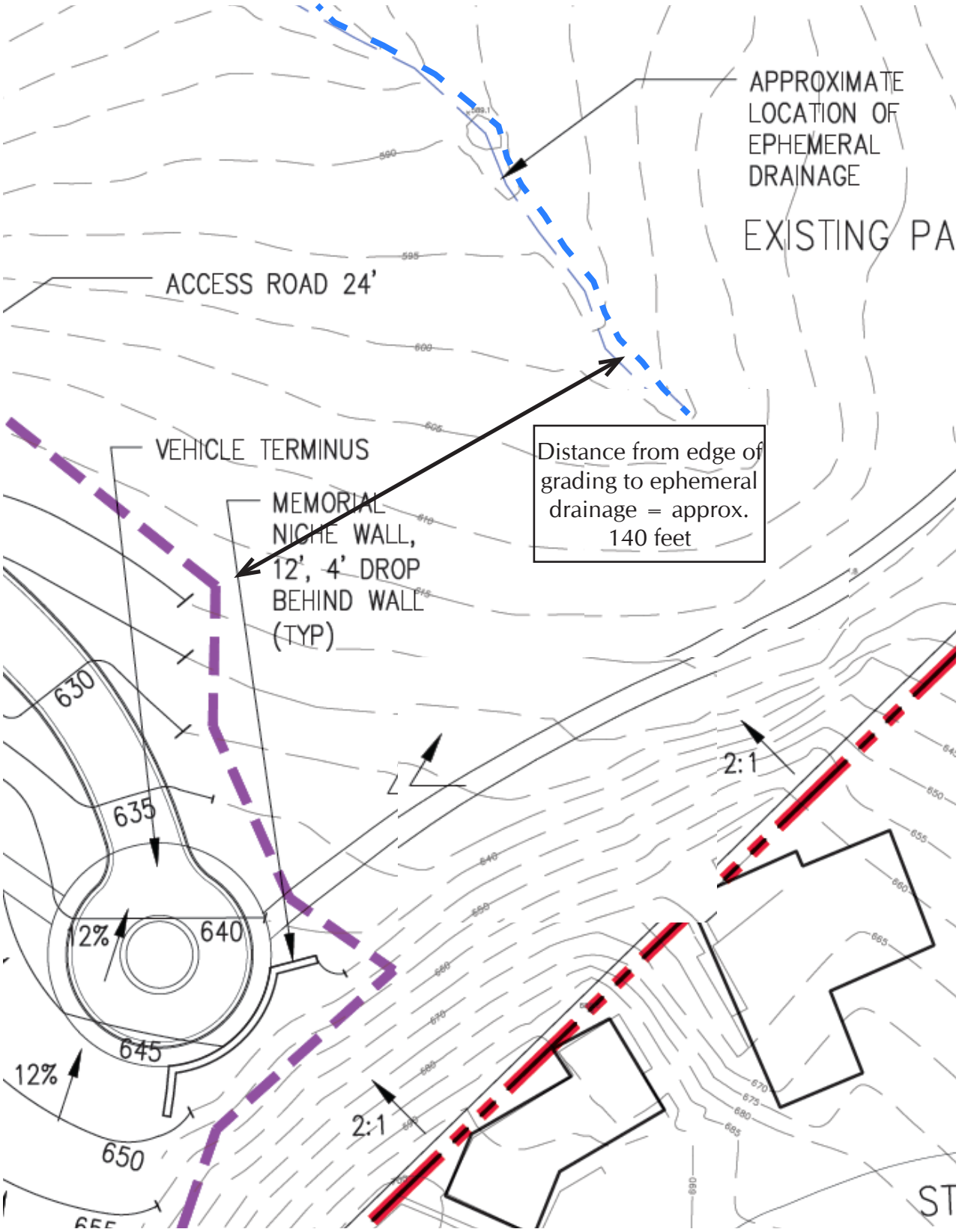


Figure 4.3-5
Project Grading Relative to Existing Drainage / Creek

Source: SWA

Construction activity could potentially result in indirect impacts to this drainage due to the potential for erosion and resulting sedimentation of the drainage and other receiving waters located down gradient (Please see Chapter 4.8: Hydrology for a more complete discussion of indirect hydrology impacts).

Standard Conditions of Approval

The Project will be required to implement of a number of City Standard Conditions of Approval related to stormwater pollution prevention and water quality protection, including best management practices (BMPs) necessary to ensure that potential indirect effects of sedimentation to the nearby ephemeral drainage would also be reduced to a level of less than significant, as more specifically described and discussed in the Hydrology chapter of this EIR.

Mitigation Measures

None required

Species Movement, Migration, or Nursery Sites

The following discussion addresses Threshold 4.

Impact Bio-4: The Project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. (**LTS with SCAs**)

The Project site is not identified as a Potential Wildlife Corridor in the City's General Plan (per Figure 14 of the OSCAR Element), and no substantial adverse impacts are anticipated.

Implementation of the proposed Project would result in modifications to existing wildlife habitat in areas affected by grading and development. Existing non-native grassland and trees within the limits of proposed grading would be removed, and replaced with areas of turf, landscaping and replacement tree plantings. Wildlife within the limits of proposed grading would either disperse to the adjacent natural areas on the Mountain View property or could be lost during initial grubbing and grading activities. However, these would be more common and less mobile wildlife that are abundant in the non-native grasslands, and their temporary disruption and possible loss would not be considered a significant impact. Wildlife species common to the Project site would begin to utilize the disturbed areas once revegetation, landscaping, and replacement tree plantings becomes established. No fencing or other obstructions are proposed as part of the Project that would disrupt or interfere substantially with the movement of any native resident or migratory wildlife species, established wildlife corridors, or native wildlife nurseries.

Standard Conditions of Approval

Implementation of SCA #26: Tree Removal during Breeding Season would ensure that any nesting birds are adequately protected during construction.

Mitigation Measures

None needed

Applicable Conservation Plans

The following discussion addresses Threshold 5.

Impact Bio-5: The Project would not fundamentally conflict with an applicable habitat conservation plan or natural community conservation plan. **(No Impact)**

There are no applicable habitat conservation plans or natural community conservation plans covering the Project site or vicinity. Accordingly, the proposed Project would have no impact on any approved conservation plans.

Mitigation Measures

None required

Conflicts with City of Oakland Tree Protection Ordinance

The following discussion addresses Threshold 6.

Impact Bio-6: The Project would not fundamentally conflict with the City of Oakland's Tree Protection Ordinance by removing protected trees under certain circumstances. Factors considered in determining significance include the number, type, size, location and condition of the protected trees to be removed and/or impacted by construction, the number of protected trees to remain, and the proposed replacement with appropriate new tree species. **(LTS with SCAs)**

Protected Tree Ordinance

Title 12, Chapter 12.36 of the City of Oakland Municipal Code contains the rules and regulations pertaining to the protection and removal of trees within the City. According to the section 12.36.010 of the Protected Tree Ordinance, the intent of the ordinance is to recognize that:

> *Among the features that contribute to the attractiveness and livability of the city are its trees, both indigenous and introduced, growing as single specimens, in clusters, or in woodland situations. These trees have significant psychological and tangible benefits for both residents and visitors to the city. Trees contribute to the visual framework of the city by providing scale, color, silhouette and mass. Trees contribute to the climate of the city by reducing heat buildup and providing shade, moisture, and wind control. Trees contribute to the protection of other natural resources by providing erosion control for the soil, oxygen for the air, replenishment of groundwater, and habitat for wildlife. Trees contribute to the economy of the city by sustaining property values and reducing the cost of drainage systems for surface water. Trees provide screens and buffers to separate land uses, landmarks of the city's history, and a critical element of nature in the midst of urban settlement. For all these reasons, it is in the interest of the public health, safety and welfare of the Oakland community to protect and preserve trees by regulating their removal; to prevent unnecessary tree loss and minimize environmental damage from improper tree removal; to encourage appropriate tree replacement plantings; to effectively enforce tree preservation regulations; and to promote the appreciation and understanding of trees.*

Section 12.36.050 provides the criteria for tree removal permit review. In order to grant a tree removal permit, the City must determine that removal is necessary in order to accomplish any one of the following objectives:

1. To insure the public health and safety as it relates to the health of the tree, potential hazard to life or property, proximity to existing or proposed structures, or interference with utilities or sewers;
2. To avoid an unconstitutional regulatory taking of property;
3. To take reasonable advantage of views, including such measures as are mandated by the resolution of a view claim in accordance with the view preservation ordinance (Chapter 15.52 of this code);
4. To pursue accepted, professional practices of forestry or landscape design. Submission of a landscape plan acceptable to the Director of Parks and Recreation shall constitute compliance with this criterion; and/or
5. To implement the vegetation management prescriptions in the S-11 site development review zone.

A finding of any one of the following situations is grounds for denial of a tree removal permit:

1. Removal of a healthy tree of a protected species could be avoided by reasonable re-design of the site plan prior to construction, or trimming, thinning, tree surgery or other reasonable treatment.
2. Adequate provisions for drainage, erosion control, land stability or windscreen have not been made in situations where such problems are anticipated as a result of the removal.
3. The tree to be removed is a member of a group of trees in which each tree is dependent upon the others for survival.
4. The value of the tree is greater than the cost of its preservation to the property owner. The value of the tree shall be measured by the Tree Reviewer using the criteria established by the International Society of Arboriculture, and the cost of preservation shall include any additional design and construction expenses required thereby. This criterion shall apply only to development-related permit applications.

Project's Proposed/Potential Tree Removal

The existing Plot 82 site contains variable terrain, much of which is too steep to be suitable for cemetery burial purposes. The Project's proposed grading plan calls for the removal of approximately 100,000 cubic yards of dirt from the Plot 82 portion of the site to create a more gradually sloped, near level site that will be suitable for cemetery use. The dirt that is excavated and removed from the Plot 82 site is proposed to be used as fill material to raise the existing elevation of the Plot 98 and Panhandle sites, and to re-grade these areas to gradually sloped, near level areas also suitable for cemetery use.

Areas of known and potential landslides are present within and adjacent to each of the Plot 82, Plot 98, and Panhandle sites, and substantial portions of these sites are underlain with unconsolidated silty clay with sand and rock fragments that are susceptible to landslides and earth movement (see Chapter 4.5: Geology). Although many of these landslide-prone areas are located beyond the footprint and downslope of the Project's proposed new burial sites, some of these slide areas have the potential to give way if they were subject to strong seismic shaking, undercut by grading activity, or subject to excessive moisture. The Project's geotechnical engineer has recommended a number of grading practices to fully address site stability concerns, with particular attention to corrective actions necessary at locations where land stability problems exist. Detailed recommendations for retaining structures, resistance to lateral loading, slope design, and specifications for fill will require the Project to provide for slope buttressing to resist future movement of existing landslides and provide a stable site for construction of crypt walls and burial sites. Generally, these recommendations include the following:

- Keyways will be over-excavated at the toe of proposed slopes to remove soil and weaker materials, and wide, near-level pads or benches will be created at the base of these over-excavations to receive new fill material.
- Sub-surface drains will be installed at the base of these keyways to collect subsurface water and reduce water pressure.
- Engineered fill will be placed back in to the over-excavated areas in level lifts, up to the proposed finished grade. The fill will be methodically compacted as it is replaced to ensure stability.
- Retaining walls and retaining structures will be provided in areas where existing landslides extend partially into the proposed development sites.

The extensive earthwork that is proposed includes removal and relocation of surface soils, and the resulting engineering recommendations for slope stability call for over-excavation of the proposed new burial site areas to address slope stability issues. The maximum depth of cut for soil removal at Plot 82 is estimated to be approximately 15 to 18 feet. At Plot 98 and the Panhandle, the over-excavation of unconsolidated soils and artificial fill is estimated at depths of approximately 10 or more feet below existing grade for construction of sub-grade keyways and benches, with all of the over-excavated soil and additional fill from Plot 82 placed back onto these sites such that finished grade will generally be 5 to 10 feet higher than existing grade.

Direct Effects of the Project on Trees

As a direct result of the Project's proposed grading and earthwork activity, any trees that are within the limits of proposed grading will not be able to be retained. In many locations within Plot 82, the existing grade at which certain trees are rooted will be excavated by 15 to 18 feet. Conversely, existing grade at which certain trees are located in Plot 98 and the Panhandle will be excavated to 10 feet below grade and then back-filled by as much as 5 to 10 feet above existing grade. It is not possible to retain most of those trees within the proposed limits of these grading activities.

To assess the extent to which the Project would result in tree removal, it was conservatively assumed that any tree that is located within the limits of proposed grading, including those trees whose existing canopy overlaps into the proposed grading area, would need to be removed. This assumption is consistent with the Tree Ordinance's definition of a 'protected perimeter', which is defined as the "*area of land located underneath any protected tree which extends either to the outer limits of the branches of such tree (the drip line) or such greater distance as may be established by the Office of Parks and Recreation in order to prevent damage to such tree*" (Municipal Code, Chapter 12.36.020).

A summary of the anticipated tree removal, by Project area, is discussed below and summarized in **Table 4.3-1**.

Table 4.3-1: Proposed Tree Removal and Protection

	Plot 82	Plot 98	Panhandle	Stark Knoll Hill	Haul Route	Slide Repair	Piedmont	Total:
Tree Removal Proposed:								
Protected Oaks	48	27	24	14	0	0	0	113
Protected Oaks, poor cond.	3	1	1	6	0	0	0	11
Protected, Other Species	11	6	10	7	0	0	0	34
subtotal	***62***	***34***	***35***	***27***	***0***	***0***	***0***	***158***
Non-Protected Species	23	0	4	7	0	0	0	34
subtotal	***23***	***0***	***4***	***7***	***0***	***0***	***0***	***34***
Total:	**85**	**34**	**39**	**34**	**0**	**0**	**0**	**192**
"At Risk" Trees, Intended to be Preserved								
Protected Trees (mostly oaks)	27	10	9	50	6	26	0	128
Non-Protected Trees	11	0	0	11	0	0	0	22
subtotal	***38***	***10***	***9***	***61***	***6***	***26***	***0***	***150***
Trees Beyond "Risk" Zone - Preserved								
	8	**1**	**6**	**25**	**8**	**0**	**30**	**78**
Total Trees Surveyed:	**131**	**45**	**54**	**120**	**14**	**26**	**30**	**420**

- Plot 82. Within the identified limits of grading for Plot 82, there are a total of 85 trees that are conservatively assumed to be removed by the Project. Of this total, 48 trees are protected Coast Live Oak, 11 are protected trees of other species (including pines, cedars and plums), and 3 are native oaks which the arborist has indicated as being in “poor” condition (in poor health or with significant structural defects that cannot be abated with treatment, and that are expected to decline regardless of management). Additionally, 23 non-protected trees (either blue gum or red iron bark eucalyptus) are also proposed for removal.
- Plot 98. Within the identified limits of grading for Plot 98, there are a total of 34 trees that are conservatively assumed to be removed by the Project. Of this total, 27 trees are protected Coast Live Oak, 6 are protected trees of other species (including pines, cedars and plums), and 1 is an oak indicated as being in “poor” condition and recommended for removal.
- Panhandle. Within the identified limits of grading for the Panhandle, there are a total of 39 trees conservatively assumed to be removed by the Project. Of these, 24 trees are protected Coast Live Oak, 10 are protected trees of other species (including pines, elderberries and maples), and 1 is an oak in “poor” condition. The additional trees to be removed include 4 non-protected blackwood acacia trees.
- Stark Knoll Hill. The grading concept for the Panhandle provides for the placement of approximately 12 feet of new fill against the base of the Stark Knoll hillside. This hillside is densely vegetated with trees and shrubs. Although each tree along this hillside has been surveyed and tagged as part of the Project’s tree survey efforts, it is difficult to accurately estimate the status of each and every tree on the hillside. For purposes of analysis, it is conservatively assumed that any tree whose trunk is located at or below 12 feet from the base of the hillside will be covered by the proposed new fill, and removed. Based on the grading plan, there are a total of 34 trees that are located within the assumed fill area at the base of the Stark Knoll hillside and conservatively assumed to be removed

by the Project. Of this total, 14 trees are protected Coast Live Oak, and 7 are protected trees of other species (mostly Monterrey pines), and 6 are native oaks which the arborist has indicated as being in "poor" condition. Of the additional 7 trees to be removed, these trees are considered non-protected trees (mostly smaller oaks of less than 4 inches dbh).

Figures 4.3-6 and 4.3-7 show the location of each of the trees that are identified for removal as a result on the Project, and their location in relation to the anticipated limits of grading.

Additional "At Risk" Trees

The *Supplemental Arborist Report*[5] identified 150 trees within the vicinity of the Project site that are outside of the Project's proposed limits of grading and thus intended to be preserved, but that are in close enough proximity to the Project's grading operations and slope remediation efforts (i.e., within 30 feet) that they could be lost as an indirect result of disturbance. These potentially "at risk" trees include the following, as shown on Figures 4.3-6 and 4.3-7 and also summarized in Table 4.3-1**.**

- Plot 82: Within 30 feet of the limits of grading of Plot 82, there are 27 Coast live oak trees and 11 eucalyptus trees that are potentially at risk due to their proximity to grading operations. Generally, these trees are located on the adjoining slope of Hill 500, are located along the existing roadway separating Plot 82 form the lower Plot 77, and at the easterly edge of Plot 82 just below existing Plot 77.
- Plot 98: Within 30 feet of the limits of grading of Plot 98, there are 10 Coast live oak trees that are potentially at risk due to their proximity to grading operations.
- Panhandle: Within 30 feet of the limits of grading of the Panhandle, there are 9 Coast live oak trees that are potentially at risk due to their proximity to grading operations.
- Stark Knoll Hill: For purposes of this analysis, it is conservatively assumed that any tree whose trunk is located more than 12 feet above the base of this hillside will not be covered by proposed new fill, and thus can be preserved. There are a total of 61 trees that are located above the assumed fill area at the base of the Stark Knoll hillside (50 protected oaks and other trees, and 11 smaller oaks with a dbh of less than 4 inches, and thus not defined as "protected"). These trees are in close enough proximity to proposed grading operations that they may be "at risk" due to root zone damage, inadvertent direct impacts from heavy equipment, and soil sloughing during grading operations.
- Haul Route between Plot 82 and Plot 98. Within the general area identified as the likely haul route for grading operations between Plot 82 and Plot 98, there are 6 protected Coast live oaks located in close enough proximity to potential haul route alignments that they could be lost as a result of grading disturbance.
- Below the water tank at Plot 98. Within the general area below the water tank at Plot 98, there are a total of 26 protected oak trees. Although none of these 26 trees are identified for removal, all of them are immediately downhill from areas identified in the geologist's report as being subject to landslides or unstable soils and could be lost as a result of slope remediation efforts.

[5] HortScience 2015, *Draft Arborist Report, Mountain View Cemetery, Oakland, CA*, prepared for Mountain View Cemetery, February

Additional Trees not "At Risk"

The tree surveys that were conducted for the Project identified all trees within 30 feet of proposed construction activity (as required by the City's Tree Permit forms). A number of additional trees are located outside of the required 30-foot distance but in relative proximity to grading activity, or are trees generally associated with those trees within the required survey limits. These trees were also surveyed. In total, there are 78 trees that were included in the tree survey, but that are distant enough from the Project that they are not considered to be at risk from Project construction and grading. This includes all of the 30 trees included within the tree survey efforts that are located within the City of Piedmont's jurisdiction.

Standard Conditions of Approval

The City of Oakland's Standard Conditions of Approval will apply to the Project and its effects on tree resources. These SCAs (primarily SCA #27: Tree Permit) include requirements to secure a Tree Removal permit, to provide adequate protection of trees to be preserved during construction, and to provide replacement tree plantings to compensate for the protected trees to be removed, and ensure that the Project will comply with the City's Tree Protection Ordinance.

Tree Protection Measures

Of the 420 total inventoried trees, the Project is conservatively estimated to place as many as 150 trees "at risk" due to their location in proximity (i.e., within 30 feet) of grading and construction activities of the Project. An additional 78 of the surveyed trees are located far enough away from grading operations such that they are beyond the "at risk" zone. Approximately 61 of the "at risk" trees are located on the Stark Knoll hillside above the proposed fill height, 56 of these trees are located near the edge of proposed grading but not within the grading limits, 26 trees are located down-slope of identified landslide-prone areas, and 6 trees are located in the area of the likely haul route for grading operations between Plot 82 and Plot 98.

Pursuant to SCA #27 sub-part b, the Project will be required to develop a Tree Protection Plan to demonstrate that adequate protection measures will be provided during the construction period to ensure that all of the 150 "at risk" trees, as well as the 78 trees beyond the "at risk" zone will be protected and preserved. These protection measures shall include, but are not limited to:

- security fencing around the base of the tree (at a distance from the trunk to be determined by a consulting arborist);
- developing a construction operations plan that provides for the careful removal and disposal of brush, earth and other debris;
- avoiding any excavation, cutting, filing or compaction of the existing ground surface within the protected perimeter;
- retaining the existing ground level around the base of all protected trees; and
- using smaller equipment (potentially including hand tools) for any earthwork immediately uphill or downhill form a protected tree.

With implementation of these required measures pursuant to SCA #27 wherever feasible, all of the 150 "at risk" trees will be able to be preserved.

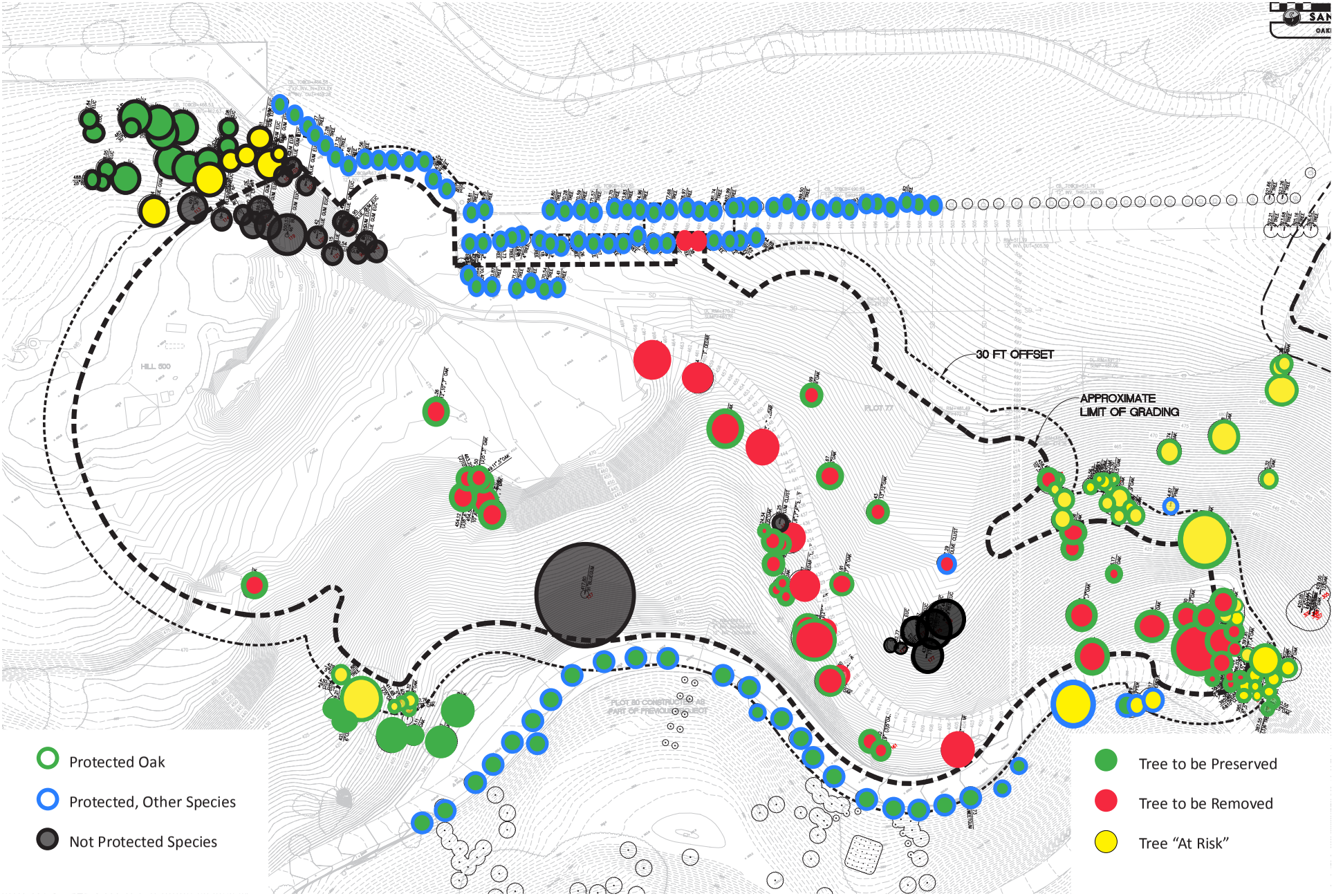


Figure 4.3-6
Status of Tree Preservation and Removal, Plot 82

Tree canopies approximated, based on aerial photography.
Tree Surveys (Hortscience - Feb. 2015 and Valley Crest - June 2015)

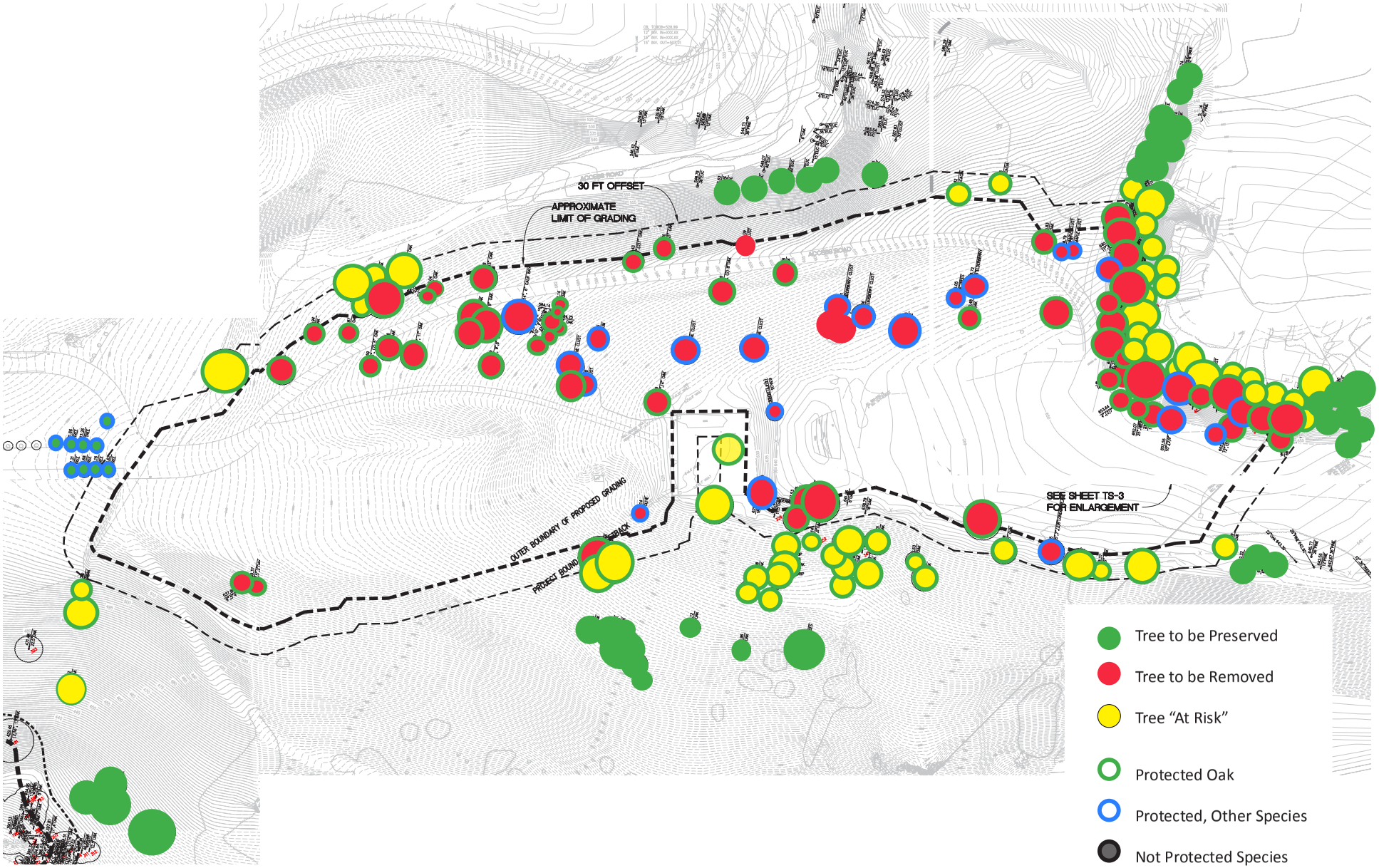


Figure 4.3-7
Status of Tree Preservation and Removal, Plot 98 and Panhandle

Tree canopies approximated, based on aerial photography. Tree Surveys (Hortscience - Feb. 2015 and Valley Crest - June 2015)

The City's Tree Protection Ordinance includes criteria for "findings" necessary prior to issuance of a tree removal permit. These findings must indicate, among other factors, that a tree removal permit will not be issued if: (a) removal of a healthy tree of a protected species can be avoided by reasonable redesign of the site plan prior to construction; and (b) if the value of the tree (or trees) to be removed exceeds the cost of tree preservation, using criteria established by the International Society of Arboriculture. These criteria apply to development-related permit applications, such as the Project.

While not required to reduce a significant CEQA impact, the following measures are recommended in furtherance of SCA #27 to seek additional tree protection and preservation efforts when preparing final grading plans for the Project. These recommendations are Project-specific details of how SCA #27 will be implemented to further comply with the Tree Ordinance's findings pertaining to reasonable re-design efforts as a means of further protecting healthy trees:

Recommendations for Implementation of SCA #27: Additional Tree Preservation Efforts. During preparation of final grading plans for the proposed Project, the applicant's landscape architect and geotechnical engineer shall work collaboratively to seek, where possible, reasonable Project redesign strategies that can effectively result in the preservation and protection of additional trees, specifically including the following:

Plot 82:

a. At the westerly portion of Plot 82 near the terminus of the retaining/crypt wall, attempt to reduce the extent of cut below the existing Plot 77 slope, such that additional tree preservation in this area can be achieved. Specific trees that could potentially be preserved in this area include oak trees #180, 184 and 185.

b. At the most westerly portion of Plot 82 and immediately upslope of the existing road, attempt to reduce the extent of cut just above the existing road such that additional tree preservation in this area can be achieved. Specific trees that could potentially be preserved in this area include oak trees #197 through #206.

c. At the most southerly portion of Plot 82, efforts shall be attempted to contour the proposed cut and fill just above the existing road, such that the prominent 91-inch dbh eucalyptus tree (#137) at this location can be achieved. Although this eucalyptus is not considered a protected tree, its size and spreading canopy serves to provide existing erosion control, visual screening and shade, and is a dominant tree in the existing landscape.

Plot 98 and Panhandle:

d. Along the unimproved portion of the ridge road immediately north of Plot 98, seek to reduce extra roadway grading and improvements beyond the edge of pavement, and/or design the proposed fill slope in this area such that additional tree preservation can be achieved. Specific trees that could potentially be preserved along the perimeter of the upper road alignment include oak trees #2-4, 11, 14, 16-17 and 21 in the westerly portion of Plot 98, #37 and 38 in the central portion, and #48 in the eastern portion of the Panhandle.

e. At the southerly edge of Plot 98 near the existing water tank, seek to design the proposed retaining wall in this area such that it is uphill and does not intrude into the

root zone of oak trees #86, 87 and 327 near the water tank, #92 west of the water tank, and #85 east of the water tank.

These specific recommendations for additional tree preservation and protection that could potentially be achieved through minor redesign measures incorporated into the Project's final grading plans, and are consistent with the City's Tree Protection Ordinance criteria which require consideration of reasonable redesign of projects prior to issuance of a tree removal permit, and SCA #27 sub-part b requiring adequate protection during the construction period for all trees that are assumed to be preserved.

Tree Replacement Planting

Pursuant to SCA #27, sub-part c, replacement tree plantings are required for all removal of all "protected" native trees. The replacement tree plantings shall provide for erosion control, groundwater replenishment, visual screening, wildlife habitat and preventing excessive loss of shade. Of the 420 total inventoried trees, the Project is conservatively estimated to result in removal of 113 protected native trees (mostly all Coast live oaks). Consistent with the requirements of the Tree Preservation Ordinance and SCA #27 subpart c, the Project proposes to replace these removed native trees with as many as 143 new, 24-inch box trees selected from the City-approved list of allowable species, thus meeting or exceeding the City's required replacement ratio of 1:1 replacement of protected native trees.

Additionally, the Project will result in removal of 34 mature trees of other non-native species comprised of eucalyptus and acacia. Many of the eucalyptus trees proposed for removal are relatively large trees that are part of a grove associated with adjacent Hill 500, immediately west of the Project site. These species are not recognized as protected trees in the City's Tree Preservation Ordinance because of their high fire fuel loads, and compensatory mitigation is not required. The Blackwood acacia trees proposed for removal are highly invasive species with a moderate ranking from the California Invasive Plant Council (given their threat to natural habitat) and are not recommended for preservation.

SCA #27 requires replacement tree species to be comprised of *Sequoia sempervirens* (Coast Redwood), *Quercus agrifolia* (Coast Live Oak), *Arbutus menziesii* (Madrone), *Aesculus californica* (California Buckeye), *Umbellularia californica* (California Bay Laurel), or other tree species acceptable to the Tree Division. The Project's proposed Landscaping Plan (**Figures 4.3-8** and **4.3-9**) proposes to plant new trees that may include the following evergreen canopy species: Coast live oak, Canyon live oak, Mesa oak, Island oak, and Coast redwoods; as well as the following types of deciduous canopy species: California buckeye, Oregon white oak, California black oak and Valley oak.

SCA #27 also requires that replacement trees shall be at least 24-inch box size (unless a smaller size is recommended by the arborist), or that three 15-gallon size trees may be substituted for each 24-inch box size tree where appropriate. The Project's proposed Landscaping Plan proposes to plant a total of 143 new, 24-inch box size trees from the City-approved list of allowable species, which exceeds the City's required replacement ratio for replacement of 113 protected native trees (oaks).

SCA #27 also requires that the minimum planting area available on site must allow for a spacing of 315 square feet per tree for *Sequoia sempervirens*, and 700 square feet per tree for other species. Adequate land area is present on the Project site and on immediately adjacent lands within the Cemetery to meet the minimum planting requirements called for under this SCA.

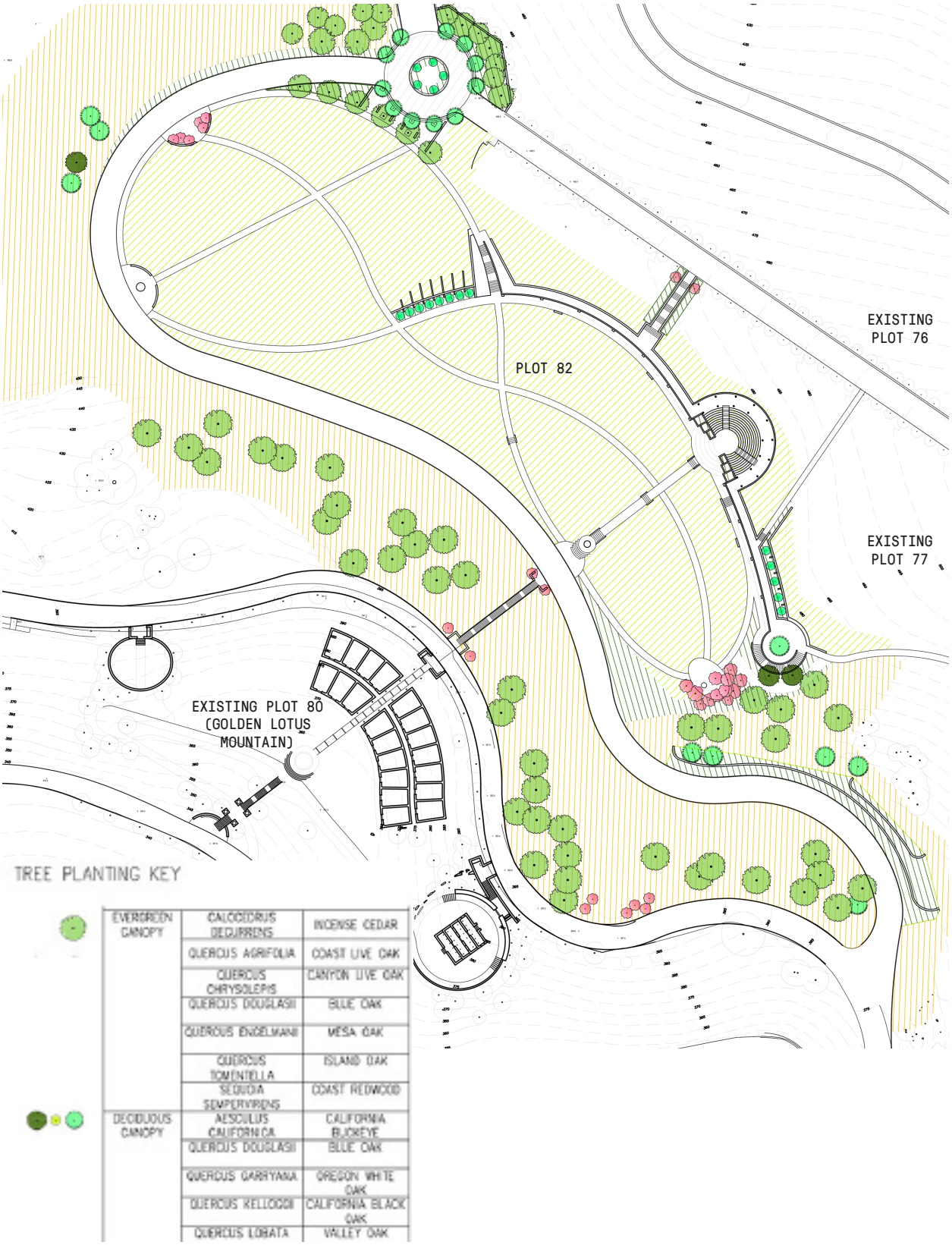


Figure 4.3-8
Project Landscape Plan and Tree Replacement, Plot 82

Source: SWA

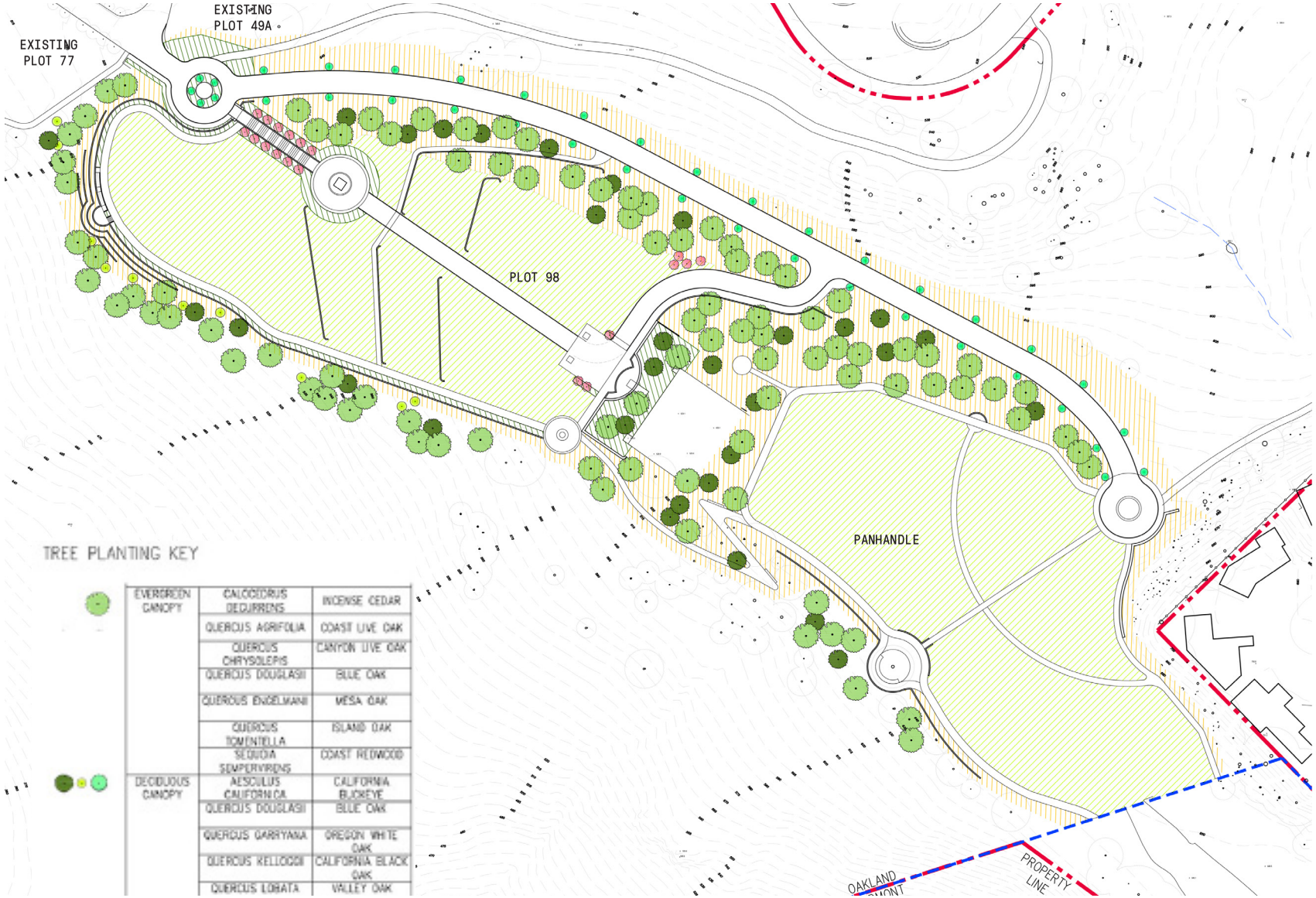


Figure 4.3-9
Project Landscape Plan and Tree Replacement, Plot 98 and Panhandle

Source: SWA

Finally, SCA #27 also requires that the Cemetery shall be responsible for installing the new plantings and maintaining the plantings until established. Any replacement plantings which fail to become established within one year of planting shall be replanted at the Project applicant's expense.

Taken together, the tree protections and replacement plantings required pursuant to SCA #27 (including those recommendations for implementation of SCA #27 identified above) provide for consistency with the City of Oakland's Tree Protection Ordinance in consideration of the number, type, size, location and condition of the trees to be removed, the number of protected trees to remain, and the proposed replacement with appropriate new tree species. Impacts related to potential conflicts with the Tree Protection Ordinance are thereby reduced to less than significant.

Mitigation Measures

None required

Cumulative Biological Resource Impacts

Impact Bio-8: Construction activity associated with the Project, in combination with other past, present, existing, approved, pending and reasonably foreseeable future projects would result in impacts on special-status species, sensitive habitats, wildlife movement corridors, wetlands, and other significant biological resources. **(LTS)**

Based on the habitat suitability analysis and supplemental surveys for special-status plant species, the Project site has been determined absent of suitable habitat for special-status animal species, and lacks indicators for jurisdictional wetlands or other sensitive biological resources. As such, the Project would have no adverse impacts on biological resources that would incrementally contribute to cumulative impacts on special-status species, sensitive habitats, wildlife movement corridors, wetlands, or other significant biological resources.

Although the Project will result in removal of a substantial number of existing trees, including trees protected by the City Tree Protection Ordinance, the Project will be required to provide for replacement of such removed trees. Any other past, present, existing, approved, pending and reasonably foreseeable future development that may result in cumulative tree removal will also be required to comply with City requirements for tree replacement, such that the cumulative effects of tree removal will be fully mitigated.

Overall, development of the Project (with implementation of all applicable SCAs and recommendations for implementation of SCA #27), when combined with effects of other past, present, pending and reasonably foreseeable future projects within the geographic context, would not result in significant cumulative effects on biological resources.

4.4

Cultural and Historic Resources

This section provides background information on cultural and historic resources located within the Project Area. It describes the relevant environmental and regulatory settings, evaluates potential impacts to these resources that would result from implementation of the proposed Project, and identifies Standard Conditions of Approval (SCAs) or mitigation measures that would avoid or minimize potential impacts, when appropriate. The Project does not include any alterations within the existing developed portions of the Cemetery or the historic Frederick Law Olmsted landscape. Located within the undeveloped eastern hillside portions of the property, the Project would not alter any existing historic buildings or other character-defining contributing features to the Mountain View Cemetery historic district.

The analysis and discussion in this section of the EIR is based primarily on the following reports and assessments, which are incorporated by reference and included in the Appendix to this EIR:

- Page & Turnbull, *Mountain View Cemetery Expansion Project Evaluation,* November 2014 (Appendix 4.4A), and
- William Self Associates, Inc., Cultural Resources Assessment Report, Mountain View Cemetery Burial Expansion Project, December 2014 (Appendix 4.4B)

Prehistoric and Historic Setting

The following section presents a summary of the paleontological, prehistoric, ethnographic, and historic settings pertaining to the Project Area. These settings will be used to evaluate the paleontological and prehistoric and historic period archaeological sensitivity, as well as built historic resources located within the Project Area.

The San Francisco Bay region is defined by the San Francisco Peninsula on the southwest, the Marin Peninsula on the northwest, and the Berkeley Hills and the Diablo Range on the east. The heart of the region is the San Francisco Bay system, which occupies a late Pliocene trough that flooded repeatedly during the Pleistocene interglacials, the last flooding occurring approximately 10,000 years ago. This trough extends to the south, where it forms the Santa Clara and San Benito valleys, and to the north where it forms the Petaluma, Napa, and Sonoma valleys. About 15,000 years ago the coastal shoreline extended more than 15 miles west of today's coastline. The California River flowed through the gorge that is now the Golden Gate and across what is today's submerged continental shelf, finally reaching the ocean far west of today's coastline.[1]

Approximately 8,000 years ago, with the rising sea levels associated with the melting of continental glaciers, marine waters began to invade the San Francisco trough, creating a lush and bountiful marshland environment on the shores surrounding a newly-created bay. Elk, deer, and waterfowl inhabited the marshlands and surrounding environs. The waters of the bay and ocean produced

[1] Moratto, 1984

abalone, oyster, mussels, clams, salmon, sturgeon, sea bass, shark, perch, and many other fish species. Tule and marsh grasses provided raw material for a variety of implements fashioned by the earliest inhabitants. The flanks of the coastal mountain ranges provide the biotic zone of the coastal grasslands. These mountain ranges are the product of tectonic activity caused by the collision of the Pacific continental plate and the continent of North America. A variety of geological composition and soil variability are the result of this activity. The geologic foundation underlying the coastal grasslands is largely granite bedrock intermixed with large areas of sedimentary shale, sandstones and composites of igneous rock. Mineral resources for both tool manufacture and trade were abundant. Obsidian, prized for projectile points and blades, was available to the north at Anadel and Napa's Glass Mountain. Franciscan chert was found locally in streambeds and rock outcroppings while banded Monterey chert could be found in coastal deposits to the south.

Native grasses covered the middle-elevation hillsides in the coastal areas prior to the late 18th century. The grasses now covering the coastal grassland region are not the same as those that would have been found in the area 250 years ago. Although the types of animals inhabiting the coastal regions before the influx of humans are largely known, the type of plants that may have occupied the coastal grassland is not as well defined.

Prehistoric Setting

Research into local prehistoric cultures began in the early 1900s with the work of N. C. Nelson of the University of California at Berkeley. Nelson documented 425 shellmounds along the Bay shore and adjacent coast when the Bay was still ringed by salt marshes three to five miles wide. He maintained that the intensive use of shellfish, a subsistence strategy reflected in both coastal and bay shoreline middens, indicated a general economic unity in the region during prehistoric times, and he introduced the idea of a distinct San Francisco Bay archaeological region.[2] Three sites, in particular, provided the basis for the first model of cultural succession in Central California, the Emeryville Shellmound, the Ellis Landing Site, and the Fernandez Site.

Numerous professional or academic-sponsored archaeological investigations conducted since then have suggested alternative ways of classifying the prehistory of California, including systems that emphasize culture rather than temporal periods throughout California prehistory. Most recently, Milliken et al. developed what they term a "hybrid system" for the San Francisco Bay Area, combining temporal sequences with cultural sequences. Milliken et al.'s San Francisco Bay Area Cultural Sequence includes:

- *Early Holocene (Lower Archaic) from 8000 to 3500 B.C.*: A "generalized mobile forager" pattern marked by the use of milling slabs and handstones and the manufacture of large, wide-stemmed and leaf-shaped projectile points emerged around the periphery of the Bay Area during the Early Holocene Period
- *Early Period (Middle Archaic) from 3500 to 500 B.C.*: Beginning around 3500 B.C., evidence of sedentism, interpreted to signify a regional symbolic integration of peoples, and increased regional trade emerged.
- *Lower Middle Period (Initial Upper Archaic) from 500 B.C. to A.D. 430*: Milliken et al. identify "a major disruption in symbolic integration systems" circa 500 B.C., marking the beginning of the Lower Middle Period. The period from 200 B.C. to A.D. 430 is described by Milliken et al. as marking a 'cultural climax' within the San Francisco Bay Area.

[2] Nelson, 1909

- Upper Middle Period (Late Upper Archaic) from A.D. 430 to 1050: The Upper Middle Period is marked by the collapse of the bead trade in central California, an increase in the occurrence of sea otter bones in those sites that were not abandoned, and the spread of an extended burial mortuary pattern characteristic of the Meganos complex into the interior East Bay.
- *Initial Late Period (Lower Emergent) from A.D. 1050 to 1550*: The Initial Late Period, is characterized by increased manufacture of status objects, the development of ceremonial integration, and status ascription.
- *Terminal Late Period, post-A.D. 1550*: The Terminal Late Period continued until European settlement of the area.

No archaeological evidence dating to pre-8000 B.C. has been located in the Bay Area. Milliken et al. posit that this dearth of archaeological material may be related to subsequent environmental changes that submerged sites, buried sites beneath alluvial deposits, or destroyed sites through stream erosion. [3]

Ethnographic Setting

This section provides a brief summary of the ethnography of the Project vicinity, and is intended to provide a general background only.

The Project Area lies within the region occupied by the Ohlone or Costanoan group of Native Americans at the time of historic contact with Europeans.[4] Although the term Costanoan is derived from the Spanish word Costaños, or "coast people," its application as a means of identifying this population is based in linguistics. Modern descendants of the Costanoan prefer to be known as Ohlone. The name Ohlone is derived from the Oljon group, which occupied the San Gregorio watershed in San Mateo County.[5] The two terms (Costanoan and Ohlone) are used interchangeably in much of the ethnographic literature. On the basis of linguistic evidence, it has been suggested that the ancestors of the Ohlone arrived in the San Francisco Bay area about A.D. 500, having moved south and west from the Sacramento-San Joaquin Delta.

Tribal groups formed independent political entities, each occupying specific territories defined by physiographic features. Each group controlled access to the natural resources of its territory, which also included one or more permanent villages and numerous smaller campsites used as needed during a seasonal round of resource exploitation. Chochenyo, or East Bay Costanoan was the language spoken by the estimated 2,000 people who occupied the "east shore of San Francisco Bay between Richmond and Mission San Jose, and probably also in the Livermore Valley."[6] Extended families lived in domed structures thatched with tule, grass, wild alfalfa, or ferns. Semi-subterranean sweathouses were built into pits excavated in stream banks and covered with a structure against the bank. The tule raft, propelled by double- bladed paddles, was used to navigate across San Francisco Bay. Mussels were an important staple in the Ohlone diet, as were acorns of the coast live oak, valley oak, tanbark oak, and California black oak. Seeds and berries, roots and grasses, and the meat of deer, elk, grizzly, rabbit, and squirrel formed the Ohlone diet. Careful management of the land through controlled burning served to ensure a plentiful, reliable source of all these foods.

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3 Milliken et al., 2007

4 Kroeber, 1970

5 Bocek, 1986

6 Levy, 1978

The Ohlone usually cremated a corpse immediately upon death but, if there were no relatives to gather wood for the funeral pyre, interment occurred. Mortuary goods comprised most of the personal belongings of the deceased.

The arrival of the Spanish in 1775 led to a rapid and major reduction in native California populations. Diseases, declining birth rates, and the effects of the mission system served to largely eradicate the aboriginal ways of life. Brought into the missions, the surviving Ohlone, along with the Esselen, Yokuts, and Miwok, were transformed from hunters and gatherers into agricultural laborers.[7] Following secularization of the mission system in the 1830s, numerous ranchos were established in the 1840s. Generally, the few Indians who remained were then forced, by necessity, to work on the ranchos. In the 1990s, some Ohlone groups (e.g., the Muwekma, Amah, and Esselen further south) submitted petitions for federal recognition.[8] Many Ohlone are active in preserving and reviving elements of their traditional culture and are active participants in the monitoring and excavation of archaeological sites.

Historic Context

The historic period in the eastern San Francisco Bay region began with the Fages-Crespi expedition of 1770. The Fages party explored the eastern shore of San Francisco Bay, eventually reaching the location of modern Fremont, where they traded with the local Costanoans. Members of the expedition eventually sighted the entrance to San Francisco Bay from the Oakland Hills. In 1772, a second Fages expedition traveled from Monterey through what are now Milpitas, San Lorenzo, Oakland, and Berkeley, finally reaching Pinole on March 28, 1772. In 1776, the Anza-Font expedition traveled through the same area and also traded with residents of native villages encountered along the way. The most significant impact of the European presence on the local California natives, however, was not felt until the Spanish missions were established in the region. [9]

In 1775, Captain Juan Manuel Ayala's expedition studied the San Francisco Bay and ventured up the Sacramento and San Joaquin rivers. The first mission in the region was established the following year with the completion of Mission San Francisco de Asis (Mission Dolores) in San Francisco. Mission Santa Clara followed in 1777, and Mission San Jose in 1797. The Mission era lasted approximately 60 years and proved to be the downfall of the native inhabitants of the region, who were brought to the missions to be assimilated into a new culture as well as to provide labor for the missionaries. Diseases introduced by the early explorers and missionaries, and the contagions associated with the forced communal life at the missions killed a large number of local peoples, while changes in land use made traditional hunting and gathering practices increasingly difficult. It is estimated that by 1832, the Costanoan population had been reduced from a high of over 10,000 in 1770 to less than 2,000.[10]

In 1820, Sergeant Luis Maria Peralta received a grant of “10 square leagues” of land in the East Bay in recognition of his military service in California. Peralta named his grant Rancho San Antonio. It comprised the land that lay from the water's edge to the crest of the Oakland hills, between San Leandro Creek to the south and El Cerrito Creek to the north, completely encompassing modern-day Oakland, Berkeley, Emeryville, Piedmont, Albany, Alameda, and a portion of San Leandro. Following the U.S. takeover of Alta California from Mexico in 1848, rancho lands began to be divided up and generally

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7 Levy, 1978; and Shoup et al., 1995

8 Esselen Nation, 2007; and Muwekma Ohlone Tribe, 2007

9 Cook, 1957

10 Ibid

overrun by Anglo immigration to the area that was coincident with the land boom following the Gold Rush of 1849. Rancho San Antonio suffered the fate of most Mexican land grants in northern California, with squatters taking quasi-legal title to lands, and the courts denying title to the original grantees. [11]

Early surveyors mapped parts of Oakland just after the time that Peralta's dominance began to give way to recently-settled American interests. The 1856 Survey of the Coast of the United States depicts the area that would become known as downtown and West Oakland. Although streets had been laid out near Broadway, much of the dry land remained covered in groves of oaks and was relatively unpopulated. Marshland extended as far north as modern- day Fifth Street in several locations, and Gibbons Pier, located at the end of Seventh Street, was the only sign of the industry to come. Oakland's early growth was concentrated near the wharves and rail lines that eventually transformed the rural outpost into a transportation center for both passengers and goods. The first growth period followed the completion of the San Francisco & Oakland Railroad (SF&ORR) along Seventh Street in 1863, connecting Oakland to San Francisco by way of San Jose and enticing real estate speculators who saw the area as ideal for development. The Central Pacific Railroad would locate the western terminus of its transcontinental route at Oakland Point, and buildings were clustered at the foot of Broadway as well as at the end of the alignment of Seventh Street, where wharves extended into the bay. City streets had been surveyed, although many blocks remained wooded or had become home to only small numbers of people. The large lots characteristic of a more rural settlement pattern were still present, and the northeastern portions of the city were growing far slower than downtown and West Oakland.

By the turn-of-the-century, electric railways connected the most densely populated areas of Oakland to the outlying suburbs. One of these electric railways ran up Piedmont Avenue in Oakland and served the neighborhood of Piedmont, then a resort known as Piedmont Park. Its mineral springs and hotel catered to tourists and locals looking for a respite from city life. The Piedmont Land Company was largely responsible for transforming the small resort destination into a suburban neighborhood during the final decades of the 19th and the early 20th centuries.[12]

After the 1906 Earthquake, Oakland experienced a housing construction boom; bungalows replaced the remaining hayfields in Rockridge, Claremont, and the district north to the Berkeley border. By 1915, the USGS Concord topographic map depicts the Cemetery as increasingly surrounded by suburban development. The land to the southeast had been designated as the Thornhill neighborhood, while the neighborhood to the south was designated as Piedmont. In the 1920s, the demand continued, spurred by the post-war prosperity and by the opening of new real estate tracts made easily reachable by the automobile. Piedmont, Montclair, Trestle Glen, and the Lakeshore district were among neighborhoods that experienced their greatest growth at this time.

World War II brought another round of increased shipbuilding, and it also saw the construction of the Oakland Army Base and the Naval Supply Center. As the outlying areas of Oakland continued to fill with new immigrants and residents who had left the city center, the oldest areas of downtown struggled, as automobiles and trucks began to dominate the transportation market that had defined Oakland's early growth.

[11] Hendry and Bowman, 1940; in Sher, 1994

[12] Bagwell, 1982

Site-Specific History of the Project Area

Historic ownership of the Project Area began with the 1820 San Antonio Land Grant, which was held by Sergeant Luis Maria Peralta. There is no evidence that the Project Area was developed at that time. The 1857 Alameda County Map shows no development within the Project Area, but depicts two unnamed streams running through and near the Project Area.[13] These formed the headwaters for a larger creek that drained into a marsh that would later become Lake Merritt.

By 1857, Oakland had begun to encounter problems with the issue of dealing with its dead. After the village of Oakland was founded in 1852, the first graveyard was established east of Oak Street, and in 1857 the graves were moved when the city limits expanded and began to envelope it.[14] The graves were moved to a cemetery east of Broadway from about Seventeenth to Nineteenth streets (Broadway Cemetery), which was considered to be located far outside of town and provided ample space. In 1863, Isaac H. Brayton and Edward Tompkins, the men tasked with running Broadway Cemetery, petitioned the city to close it, arguing that interments should no longer be permitted within the city limits.[15] Broadway Cemetery was closed soon after, when Mountain View Cemetery was established in 1865. Broadway Cemetery remained relatively undisturbed until 1877, when the city had grown around it and its removal became a priority. The process of removing the burials and relocating them was done inefficiently, and resulted in buried remains being encountered for years to come.[16] While some care had been taken to establish the first two cemeteries away from dense concentrations of people, these were still urban cemeteries and the concept of an urban cemetery was beginning to clash with changing sensibilities about the treatment of the dead and the growing popularity of rural cemeteries.

The Mountain View Cemetery Association was established in December of 1863 in order to make plans for a new cemetery which would be permanent, separated from downtown Oakland, and provide an opportunity for Oakland to establish itself as a modern city. The Association elected a Board of Trustees and bought 220 acres in the Berkeley-Oakland hills from Reverend Isaac H. Brayton, a board member.[17] According to historian Beth Bagwell, the founders of the Association "envisioned Oakland's future as a great metropolis and wanted fitting resting places for its illustrious leading citizens, including themselves."[18]

This desire may have been the impetus behind hiring Frederick Law Olmsted to plan the layout of the property. By 1863, Olmsted had already designed Central Park in New York City and was in California working to convince Congress to protect Yosemite as a national park. At that time, he had not yet designed a burial ground, and the Cemetery represented his first independent commission.[19]. Olmsted was hired by the Association in October of 1865. Olmsted designed the Cemetery around a central avenue, diamond-shaped pattern in the western, lower elevations of the cemetery, and curving paths which followed the slopes in the eastern, then-upper portion of the property (**Figure 4.4-1**).

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13 Page and Turnbull, 2014 (see **Appendix 4.4A**)

14 Bagwell, 1982

15 Baker, 1914

16 Bagwell, 1982

17 Supernowicz, 2013

18 Bagwell, 1982

19 Evanosky, 2007



Figure 4.4-1
1865 Olmsted Plan, Mountain View Cemetery

Source: WSA, 2014

His design did not attempt to reproduce the "forest cemeteries" of the east coast, in part because of the different vegetation available in the West. Olmsted noted "scarcely anywhere in the world except in actual deserts, is the indigenous vegetation so limited in variety as in the country about San Francisco."[20] Olmsted wove together geometric design with the organic undulation of the landscape, combining "formal and picturesque styles" which "called forth the defense of both natural and synthetic designs."[21] Olmsted's original design did not include the Project area.

Mountain View Cemetery was dedicated on May 25, 1865 and the first interment was that of Jane Weir, in July of that year. The graves from Oakland's Broadway cemetery were moved to the Cemetery. By 1876, 2,000 people had been interred at the Cemetery, and today it is the final resting place for more than 160,000 people. The growth of the Cemetery and its surrounding neighborhood can be traced through a number of historical maps of the area.[22]

- The 1878 Alameda County Farm Map[23] shows the boundaries of Mountain View Cemetery, which only included a portion of the Project Area at the time. To the east of the Mountain View Cemetery was the land of J.C. Hays, to the north was Saint Mary's Catholic Cemetery and the Rock Ridge quarry area, and to the south were the steep hills of the Piedmont Tract and the Piedmont Springs Hotel.
- The 15' Concord quadrangle of the 1897 USGS Topographic Map depicts not only the topography and roads in the Project vicinity, but also shows structures. No structures are located within the Project Area. The boundaries of the Cemetery are not delineated, however, within the 1878 Cemetery boundary, a structure is depicted that apparently dammed Hayes Creek, creating a reservoir of water for the landscaped area of the Cemetery. Also around this time, a mausoleum was erected. The 1897 map depicts no other structures within the Cemetery. Moraga Road, running along the southern boundary of the Cemetery, appears to partially cross the Project Area in two places. The 1897 topographic map also shows the village of Piedmont developing around the Piedmont Springs to the south. The City of Oakland, to the southwest, was developing quickly at this time.
- The 1903 Sanborn Fire Insurance Map does not depict the Project Area, but does depict the western portion of the Cemetery, adjacent to Piedmont Avenue. Notably, in 1903 the "Northern City Boundary Line" for Oakland was depicted just south of the Cemetery's gates. The majority of Mountain View Cemetery was annexed by Oakland, along with much of East Oakland, in 1909. A small portion of the Cemetery was already within the boundary of the City of Piedmont.
- The 1915 Concord 15' Quad of the USGS Topographic map depicts the Project Area in detail, and while Mountain View and Saint Mary's cemeteries are not labeled separately, the Cemetery boundaries and the layout of the Cemetery, with the roads and paths that Olmsted had designed is clear (refer to Appendix 4.4A). No roads or buildings were present in the Project Area, according to the 1915 map.

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[20] Olmsted 1865, as quoted in Barth, 1988

[21] Sloane, 1991

[22] Each of the historic maps described below can be seen in **Appendix 4.4:** William Self Associates, In., Cultural Resource Assessment Report, December 2014

[23] Thompson and West, Historical Atlas Map of Alameda County, 1878

- The 1952 Sanborn Fire Insurance Map does not depict the Project Area, but does depict several structures within the Cemetery that differ from the 1915 depiction of the Cemetery, and closely resemble the layout of the administrative and funerary structures present today.
- By the time the 1959 Concord USGS 15' Topographic Map was prepared, neighborhoods surrounded the Project Area on all sides. The 1959 map depicts the Cemetery boundaries much as they exist today. The roads and paths that traverse the Cemetery are represented in detail, as are some of the buildings that are still present, including the administrative offices, the chapels and the mausoleum, and an additional cemetery building near a set of three ponds. The Cemetery's boundaries in 1959 included the Project Area, and several cemetery access roads crossed the Project Area.

Existing Conditions

Historic Resources of the Mountain View Cemetery-Chapel of the Chimes District

The 226-acre Mountain View Cemetery was initially established in 1863 and was designed by renowned landscape architect Frederick Law Olmsted the following year. Of note are the connected Gothic Chapel and Tower Chapel, and the Crematorium, designed by Weeks and Day and mostly built between 1929 and 1939. There is also a columbarium/mausoleum built in 1929 with additions through 1963.

Individual Buildings

The 1994 Oakland Cultural Heritage Survey (OCHS) surveyed those buildings within the Cemetery that were included in the City's "Unreinforced Masonry Buildings" list, and also identified a larger Mountain View Cemetery-Chapel of the Chimes District (**Figure 4.4-2**). Significant individual buildings are shown on **Figure 4.4-3**.

Administration Building

This building, located at 5000 Piedmont Avenue, is a Gothic Revival funerary building in the Mountain View Cemetery-Chapel of the Chimes District. It is one story, T-shaped plan with a pavilion and wings, on a multi-block Cemetery parcel. It has a hip roof, gable-roofed shallow angled bays on either side of a raised monumental entry with a deep concrete arch, and quoins at the building corners and all the edges of windows and bays. The bays have ornate concrete balconettes above, and slit windows and coping on the gable ends. Exterior walls are dark red brick with white mortar and much white cast concrete ornament. The roof is slate, the foundation is concrete and the structure is brick bearing wall. The building has a concrete base, tall leaded glass windows, and two decorated brick and concrete chimneys. Its present use is as the Mountain View Cemetery administrative office. Supportive elements include long-time occupancy and the similar chapel building. The building is in excellent condition and its integrity is excellent. This property appears eligible for the National Register as a contributor to the District, and has an OCHS rating of "A1+."[24]

[24] City of Oakland, Oakland Cultural Heritage Survey, DPR Form 523 Serial No. 1459, 1994

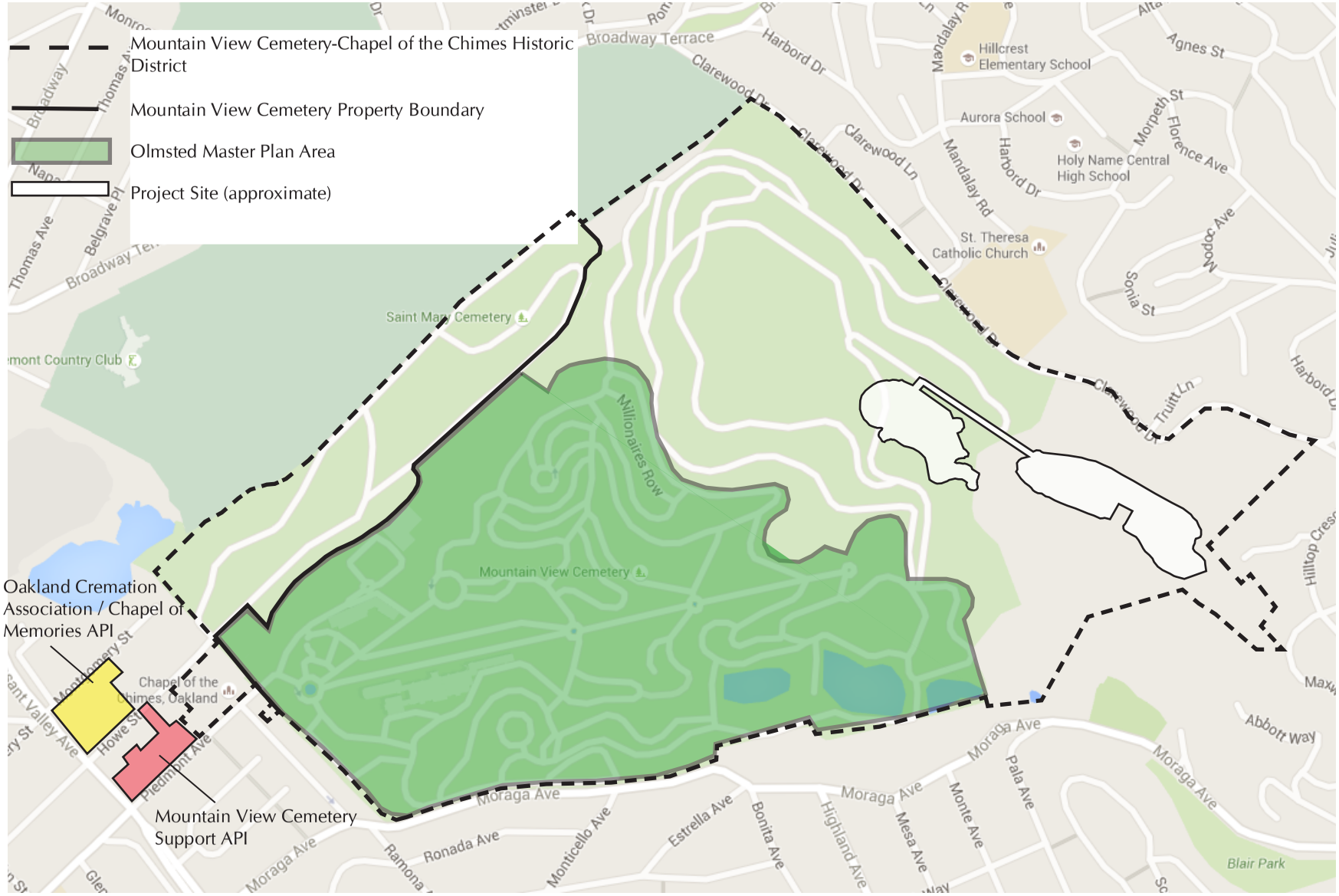


Figure 4.4-2
Mountain View Cemetery-Chapel of the Chimes Historic District

Source: Page & Turnbull 2014, WSA 2014, OCHS



Chapel of the Chimes , 4499 Piedmont Avenue



Mtn. View Chapel and Crematory Building



Mountain View Administration Building, 5000 Piedmont Avenue

Figure 4.4-3
Historic Buildings in Vicinity

Chapel(s) and Crematory Building

This building, located at 5000 Piedmont Avenue, is a Gothic Revival funerary building in the Mountain View Cemetery-Chapel of the Chimes District. It is a high, one story, L-plan, on a multi-block cemetery parcel. It has a cross-gabled roof, square tower with elaborate Gothic cast concrete ornaments, tall pointed-arch windows, and two monumental arched entry vestibules. Exterior walls are dark red brick with 1arge amounts of cast concrete ornament. The roof is slate, the foundation is concrete, and the structure is brick bearing wall and reinforced concrete. Sanborn maps describe it as 12" brick walls with a rear crematorium wing of fireproof construction. The building has stained glass, concrete coping and buttresses, and quoins. Interiors are also notable. The present use is as the Mountain View Cemetery Chapel. Supportive elements include landscaping, long -term occupancy, and the similar office building about 250 feet away. Surroundings are open land and cemetery. The building is in excellent condition and its integrity is excellent. This property appears eligible for the National Register as a contributor to the District, and has an OCHS rating of "A1+."[25]

St. Mary's Cemetery Office Building

The St. Mary's Cemetery Office (lodge) building is a very good example of a Romanesque revival funerary building · utilitarian building, It was built in 1893 by architect Bryan J. Clinch and builder McIntyre & Johnson. Historically the building reflects civic institutions and activities, and immigrants and ethnic communities in Oakland. St. Mary's Cemetery, Oakland's Catholic cemetery, occupied this site adjoining the larger Mountain View Cemetery from about 1865 on. Its burials include members of the Peralta family and Oakland's large Irish, Italian, and Portuguese communities. The complex at the entrance to the 42-acre cemetery also includes an arched gate (Bryan Clinch, 1893) and a superintendent's residence behind the office. Bryan J. Clinch (c.1842·1906) was a leading late-19th century Catholic church architect in Northern California, and author of "California and its Missions." The Oakland Cultural Heritage Survey rates this property B1+ (B, major importance, landmark quality), particularly for its design quality and designer. It is a contributor to the National Register quality Mountain View Cemetery-Chapel of the Chimes district. Its Survey rating makes it a historic property under Oakland's Historic Preservation Element. This property appears eligible for the National Register as a contributor to the District, and has an OCHS rating of "B1+." "B" properties are of major importance.[26]

Chapel of the Chimes

Adjoining Mountain View Cemetery and part of the Mountain View Cemetery-Chapel of the Chimes District is the Chapel of the Chimes, located at 4499 Piedmont Avenue. Originally known as the California Crematorium and Columbarium, the OCHS describes this building as an outstanding example of a Romanesque revival funerary building. Its present form dates from 1927, architect Julia Morgan and builder Conner and Conner. The building is a 1 and 2-story structure with multiple low-gabled tile roofs at several levels, large round-arch windows with cast concrete tracery, and a pyramid-roofed bell tower with open arches. The 1920s building visible from the street incorporates a 1909 building at its center and has numerous rear additions from the 1940-90s, all with distinctive period interiors. The architect, Julia Morgan, was California's first licensed woman architect, trained at UC and the Ecole de Beaux Arts. Her large San Francisco firm produced some 800 buildings over a 50-year career, with emphasis on institutional and residential buildings. The OCHS rates the Chapel of the Chimes property A1+ (of highest

[25] Ibid, Serial No. 1460

[26] Ibid, Serial No. 1423

importance) for its design quality and materials and type/style, its historical associations, and designer. It is a primary contributor to the Mountain View Cemetery-Chapel of the Chimes historic district. The building appears individually eligible for the National Register of Historic Places.[27]

Area of Primary Importance

Mountain View Cemetery is an Area of Primary Importance (API) as assessed by the Oakland Cultural Heritage Survey (OCHS), which informs the Historic Preservation element of the City's General Plan. Additionally, Mountain View Cemetery is on Oakland's Local Register of Historical Resources (Local Register). According to the Historic Preservation Element of the City of Oakland General Plan, APIs are areas that have been identified by an intensive survey as having a high proportion of individual properties with ratings of "C" or higher. At least two-thirds of the properties within an API must be contributory to the API (i.e., they reflect the API's principle historical or architectural themes). APIs appear eligible for the National Register of Historic Places either as districts or as historically related complexes. In general, properties with excellent or good integrity which are of the period of significance and are otherwise compatible contribute to National Register districts.

In 1998, a city-wide reconnaissance survey defined the Cemetery property, along with the Administration, Chapel(s), Chapel of the Chimes, and St. Mary's office building, as the Mountain View Cemetery-Chapel of the Chimes District. The OCHS assigned a preliminary rating of API (Area of Primary Importance) to the historic district, and confirmed ratings of A1+ assigned in 1994 to the Administration Building (1930) and Chapel and Crematorium Building (1929-1939 with additions through 1963) which are within the Cemetery. The numerical rating of "1" indicates an Area of Primary Importance (API), and the "+" indicates that the buildings which are contributors to the district. The Cemetery represents an Area of Primary Importance, or National Register quality district.[28]

Statement of Historic Significance and Character-Defining Features of the District

The California Department of Parks and Recreation (DPR) forms prepared by the OCHS for the Cemetery District and individual buildings do not use detailed criteria in evaluating the property for historic significance, as they were being evaluated as part of a reconnaissance survey and assigned OCHS ratings. For this analysis, Page & Turnbull (the preparers of the historic resource assessment) adopted a previous statement of the Cemetery's historic significance prepared for the City of Oakland for a previous 2003 project.[29] That previous assessment concluded that the Cemetery would be significant under National Register of Historic Places Criterion "A: (Events), for its association with the evolving history of cemetery development and other physical development in Oakland; and Criterion C: (Architecture), for its picturesque master plan by reputed landscape architect Frederick Law Olmsted as well as its buildings, structures and objects of high artistic value. That previous 2003 assessment outlined a number of character-defining features (**Figure 4.4-4**) that were articulated in the DPR forms completed by OCHS:

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[27] City of Oakland, Oakland Cultural Heritage Survey, DPR Form 523, 1996

[28] City of Oakland, Oakland Cultural Heritage Survey, DPR Form 523 Mountain View Cemetery District, 1998

[29] Garavaglia Architecture, "Substantial Adverse Change/Material Impairment Review: Mountain View Cemetery Mausoleum Project," 23 May 2003, page7









Figure 4.4-4
Character-Defining Features of the Cemetery

- Located within the lower Oakland Hills (below Piedmont) on 200+ acres in a naturalistic manner of design by Frederick Law Olmsted (1864), with winding roads, picturesque vistas, a gated entrance and circular fountain
- Significant individual contributor buildings including the Administration/Office Building, the St. Mary's Office/Lodge Building, the Chapel and Crematorium Building, and the Chapel of the Chimes (described above)
- Columbarium and Mausoleum: The large neoclassical columbarium and mausoleum is beyond the circular fountain. It is one and two stories, granite, with tall rectangular pilasters. The central entry is arched and recessed with columns. It was built in 1929 with additions through 1963. Interior corridors are lined in marble with arched and domed skylights of stained glass. A small chapel is immediately inside the entrance, and there are several interior fountains and pools
- Newer garden mausoleum with reflecting pool
- "Millionaires Row" at top of cemetery with nineteenth century mausoleums: Near the top of the Cemetery is "Millionaires Row," a double row of large nineteenth century mausoleums holding the remains of many of the Bay Area's early and most prominent families. These tombs represent a large range of style including Greek Revival, Gothic Revival, Romanesque, pyramid and the elaborate 70' Cogswell obelisk. Some are known to have been designed by prominent Oakland architects.
- Gravestones: Grave stones span more than 130 years and represent a full range of style and funerary symbolism, including weeping angels, urns, drapes, cherubs and broken shafts. An avenue dedicated to Civil War soldiers is lined with cannon balls

The undeveloped hills at the east end, or upper portions of the Cemetery (where the Project is located), were not identified as character-defining features of the District, but do provide a scenic setting for the historic portions of the Cemetery below (see Chapter 4.1: Aesthetics for further discussion of scenic resources). At the eastern end of the cemetery, the Project sites (i.e., Plots 82, 98, and the Panhandle) were not within the boundary of the original Olmsted Master Plan, but were portions of the original land purchase and later quarry purchase. Plot 82 is largely undeveloped but has a maintenance staging area with one prefabricated metal shed. The Panhandle has shallow concrete amphitheater steps that appear to have been installed between 1946 and 1959, based on historic aerial photographs, but have always sat within an undeveloped site. The steps do not appear to contribute to the Mountain View Cemetery Historic District. A concrete foundation above an underground water tank also exists in the notch between Plot 98 and the Panhandle. Aside from these and paved roads, there is little development in the Project area.

Adjacent Historic Resources

Mountain View Cemetery Support ASI

With the opening of the Mountain View and St. Mary's cemeteries, the blocks closest to the gates of the Cemetery almost immediately attracted monument shops and residents who worked at the Cemetery, as well as several plant nurseries, and other businesses reliant on cemetery trades and customers. This cluster of cemetery-related business occurred at the end of Piedmont Avenue and the adjacent Howe Street. Because of their historical connections to the cemeteries, this area is delineated as a support area (an Area of Secondary Importance, or ASI) to the Mountain View/Chapel of the Chimes API. The Mountain View Cemetery Support District is a historically related early 20th century mixed-use and commercial district that consisted of approximately 19 buildings (some of which no longer remain) on part of three blocks lining the Piedmont Avenue approach to Mountain View Cemetery (see **Table 4.4-**

1). Buildings within the district are varied in size, age and design, with most buildings dating from the 1900s – 1920s. The main property type is early-20th century commercial building, but it also includes period revival funerary buildings and 19th and early 20th century housing.

Table 4.4-1: Buildings Contributing to the Mountain View Cemetery Support District

OHP #	Address	Date of Construction
143305	4401 Piedmont Ave	1900
143306	4409 Piedmont Ave	1900
143307	4420 Piedmont Ave	Not Available.
143308	4425 Piedmont Ave	1930
143309	4429 Piedmont Ave	1870
143310	4432 Piedmont Ave	1920
143311	4435 Piedmont Ave	1910
143312	4436 Piedmont Ave	1910
143313	4437 Piedmont Ave	1900
143314	4446 Piedmont Ave	1910
143315	4449 Piedmont Ave	1918
143316	4450 Piedmont Ave	1910
143317	4454 Piedmont Ave	Not Available
143318	4466 Piedmont Ave	1910
143319	4468 Piedmont Ave	1900
143320	4498 Piedmont Ave	Not Available
143321	4486 Piedmont Ave	1933

Historic Buildings

Four (4) historic buildings have been recorded within ¼-mile of the Cemetery, as indicated in **Table 4.4-2**.

Table 4.4-2: Other Historic Properties within ¼-mile Radius of Mountain View Cemetery

Primary #	Resource Name	Resource Type	Age	Attributes	Recording Events
P-01-000694	Holy Names Central High School (Serial#1437)	Building	Historic	Educational Building	1994 Oakland Cultural Heritage Survey
P-01-000711	Saint Mary's Lodge Building (Serial #1423)	Building, Element of MVC District	Historic	Funerary Building	1994 Oakland Cultural Heritage Survey
P-01-000883	Maccario (Henry & Caroline) Florist Shop	Building	Historic	Multiple Family Property; 1-3 story commercial building	1994 Oakland Cultural Heritage Survey
P-01-000884	Rabinowitz (I.) Mortuary - Cole Honey Plant	Building	Historic	Originally Funerary, now Other (Industrial)	1994 Oakland Cultural Heritage Survey

Archaeological Sites

Literature and Records Search

A records search conducted at the Northwest Information Center (NWIC) at Sonoma State University, Rohnert Park, indicates that the Project Area has not been previously surveyed for archaeological resources. No archaeological sites have been previously recorded within the Project Area, though one potential cultural resource is located within the Cemetery property. Site P-01-010791 was identified by the NWIC as a prehistoric archaeological site within the Cemetery. The site was recorded in 2006 by local historian Richard Schwartz as a shell scatter "at least 200 ft. in diameter." Schwarz suggested that although the density of shell was not high (no density or shell count was given), it appeared similar to "the density that is often found in areas that have been disturbed and graded as this site has."[30]

Field Reconnaissance

No prehistoric or historic cultural resources were observed during a pedestrian field reconnaissance of the Project Area. Should any previously unknown historical resources be discovered during construction, their potential significance would have to be determined in relation to the criteria for eligibility for the California Register of Historical Resources.

WSA archaeologist conducted a pedestrian survey of the Project Area on October 22, 2014. The surveyed area included new Plot 82, Plot 98, and the Panhandle (**Figure 4.4-5**). All three areas were surveyed at a maximum transect interval of 15-meters. The ground surface was investigated for signs of archaeological resources, such as stone tools, faunal bone, dark soil containing shell, burnt bone, or charcoal, old bottles and cans, and building foundations or other structural remnants.

[30] Schwartz, 2006



Figure 4.4-5
Archaeological Resources Survey Area

Source: WSA, 2014

New Plot 82 comprises an area of 2.68 acres, and is the westernmost of the three plots. At the northwest end is a construction yard, which is at the highest point of the plot. While leaf litter and grasses obscured visibility in some places, for the most part visibility was very good, ranging from 60-90%. The soils were light brown/gray, dry, loamy clayey silt, very loose on the hillsides. Rodent burrows were present throughout the hillside and these burrows were inspected for cultural material. Based on observation of the exposed burrows, there appears to be several feet of colluvium soil at the bases of the slopes. During the survey, some pieces of glass and ceramic shards were observed, but the fragments appeared modern and occurred in sparse scatters, with no dense concentration. No other cultural material was observed.

Plot 98 comprises an area of 2.04 acres, located between Plot 82 and the Panhandle. The soil color ranged from a light brown, to yellow, to grayish; but the soil type is the same loosely consolidated loamy clayey silt with fractured bedrock. There is a lot of ground disturbance towards the western end of the plot, including a paved road that skirts the plot along its northern edge and terminates at the eastern edge of the Panhandle. Trash was observed in high numbers, but no diagnostic cultural material was observed.

The Panhandle plot is 2.41 acres in size, and is the easternmost of the three plots; it butts up against Plot 98. The soil is the same as in Plot 98 There were no cultural resources or associated structures observed.

Native American Consultation

On October 10, 2014, WSA contacted the Native American Heritage Commission (NAHC) by email to request information on known Native American sacred lands within the Project Area and to request a listing of individuals or groups with a cultural affiliation to the Project Area. The NAHC search of the sacred land file failed to indicate the presence of Native American cultural resources in the immediate Project Area. A list of ten Native American individuals who may have an interest in the Project was included in the response. Letters were sent to each of the ten individuals identified by the NAHC, requesting comment on this Project, with follow-up phone calls. Responses included:

- Recommendation that cultural sensitivity training be undertaken for the construction crew, and archaeological and Native American monitors be present on site if necessary,[31] and
- if anything is found, that the NAHC be contacted.[32]

Regulatory Setting

The regulatory framework that mandates consideration of cultural and historic resources in project planning includes federal, state, and local governments. Paleontological resources include the fossilized remains of plants and animals and other evidence of past life, such as preserved animal tracks and burrows. Cultural resources include prehistoric and historic period archaeological sites; buildings, structures, districts, and objects over 45 years old; and sites of traditional and/or cultural importance to various groups. Cultural resources may be determined significant by applying national, state, or local criteria, either individually or in combination. The regulations and criteria applicable to cultural and historic resources are discussed below.

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[31] Michelle Zimmer, Chairperson of the Amah Mutsun Tribal Band

[32] Rosemary Cambra, Chairperson of The Muwekma Ohlone Indian Tribe of the San Francisco Bay Area

Federal

National Register of Historic Places

Properties listed in or determined eligible for listing in the National Register of Historic Places (NRHP) are considered historical resources under CEQA. The NRHP is the nationwide inventory of districts, sites, buildings, structures, or objects that are significant in prehistory or history at the national, state, or local level. Significance is determined using the NRHP's four Criteria for Evaluation in 36 Code of Federal Regulations (CFR) 60.4, which state that a historic property is any district, site, building, structure, or object that:

- Is associated with events that made a significant contribution to the broad patterns of our history (Criterion A);
- Is associated with the lives of persons significant to our past (Criterion B);
- Embodies the distinctive characteristics of a type, period, or method of construction; or that represents the work of a master, or that possesses high artistic values; or that represent a significant and distinguishable entity whose components may lack individual distinction (Criterion C); and/or,
- Has yielded, or may be likely to yield, information important in prehistory or history (Criterion D).

Archaeologists generally evaluate archaeological resources using Criterion D in order to determine their potential to yield information. Criterion D emphasizes the importance of the information encompassed in an archaeological site rather than its inherent value as a surviving example of a particular architectural type or its historical association with an important person or event.

If the State Historic Preservation Office (SHPO) determines that a cultural resource is eligible for inclusion in the NRHP, then it is automatically listed in the California Register of Historical Resources (CRHR). If a resource does not retain the level of integrity necessitated by the NRHP, it may still be eligible for the CRHR, which allows for a lower level of integrity (see below).

National Register of Historic Places Criteria for Historic Districts

A historic property can be listed in the NRHP both individually and as a contributor to a historic district. The NRHP defines a historic district as possessing a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development. Therefore, a resource can contribute to a historic district by belonging to a group of identifiably linked properties or features that collectively convey their significance under the NRHP criteria. A historic district can be eligible even if all the components lack individual distinction, provided that the grouping achieves significance as a whole within its historic context.

National Register of Historic Places Seven Aspects of Integrity

Cultural resources integrity is determined using the NRHP's seven aspects of integrity at 36 CFR 60.4, which state that a historic property must not only be shown to be significant under the NRHP criteria, but it also must retain integrity appropriate to its significance. The seven aspects of integrity include location, design, setting, materials, workmanship, feeling, and association. A property must meet one or more of the Criteria for Evaluation before a determination can be made about its integrity.

State

California Environment Quality Act

The California Environment Quality Act (CEQA) Statutes and Guidelines (Title 14 of the California Code of Regulations 15064.5) include procedures for identifying, analyzing, and disclosing potential adverse impacts to historical resources, which include all resources listed in or formally determined eligible for the NRHP, the CRHR, or local registers. CEQA further defines a "historical resource" as a resource that meets any of the following criteria:

- A resource listed in, or determined to be eligible for listing in, the NRHP or CRHR.
- A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code (PRC), unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- A resource identified as significant (e.g., rated 1-5) in a historical resource survey meeting the requirements of PRC Section 5024.1(g) (Department of Parks and Recreation [DPR] Form 523), unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the determination is supported by substantial evidence in light of the whole record. Generally, a resource is considered "historically significant" if it meets the criteria for listing on the CRHR.

California Register of Historical Resources

Properties listed in or determined eligible for listing in CRHR are also considered to be historical resources under CEQA. The CRHR is a state-wide program of similar scope to the NRHP. It is a listing of resources that are significant within the context of California's history and includes all resources listed in or formally determined eligible for the NRHP. In addition, properties designated under municipal or county ordinances are also eligible for listing in the CRHR. A historical resource must be significant at the local, state, or national level under one or more of the following four criteria (Criteria 1-4) defined in the California Code of Regulations (CCR) Title 14, Chapter 11.5, Section 4850:

- It is associated with events or patterns of events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States (Criterion 1);
- It is associated with the lives of persons important to local, California, or national history (Criterion 2);
- It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values (Criterion 3);
- It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation (Criterion 4).

The CRHR criteria are similar to the NRHP criteria, and are tied to CEQA, as any resource that meets the above criteria is considered a historical resource under CEQA.

California Register of Historical Resources Seven Aspects of Integrity

The CRHR defines integrity similar to the NRHP and uses the same seven aspects of integrity of location, design, setting, materials, workmanship, feeling, and association. A resource that does not retain a sufficient level of integrity for listing in the NRHP, however, may still be eligible for listing in the CRHR if it maintains the potential to yield significant scientific or historical information or specific data or it was moved to prevent its demolition. The new location must be compatible with the original character, use, orientation, and setting (California Office of Historic Preservation 2001).

Regulations Concerning Discovery of Human Remains

California Public Resources Code §5097.98 (notification of Native American human remains, descendants; disposition of human remains and associated grave goods) mandates that the lead agency adhere to the following regulations when a project results in the identification or disturbance of Native American human remains:

- Whenever the Native American Heritage Commission (NAHC) receives notification of a discovery of Native American human remains from a county coroner pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code, it shall immediately notify those persons it believes to be most likely descended from the deceased Native American. The descendants may, with the permission of the owner of the land, or his or her authorized representative, inspect the site of the discovery of the Native American remains and may recommend to the owner or the person responsible for the excavation work means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The descendants shall complete their inspection and make their recommendation within 24 hours of their notification by the commission. The recommendation may include the scientific removal and nondestructive analysis of human remains and items associated with Native American burials.
- Whenever the NAHC is unable to identify a descendent, or the descendent identified fails to make a recommendation, or the landowner or his or her authorized representative rejects the recommendation of the descendent, and the mediation provided for in subdivision (k) of Section 5097.94 fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance.
- Notwithstanding the provisions of Section 5097.9, the provisions of this section, including those actions taken by the landowner or his or her authorized representative to implement this section and any action taken to implement an agreement developed pursuant to subdivision (l) of Section 5097.94, shall be exempt from the requirements of the California Environmental Quality Act [Division 13 (commencing with Section 21000)].
- Notwithstanding the provisions of Section 30244, the provisions of this section, including those actions taken by the landowner or his or her authorized representative to implement this section, and any action taken to implement an agreement developed pursuant to subdivision (1) of Section 5097.94 shall be exempt from the requirements of the California Coastal Act of 1976 [Division 20 (commencing with Section 30000)].

Senate Bill 18

Senate Bill (SB) 18 requires local governments to consult with Native American tribes when adopting or amending general plans or specific plans. The legislation provides the opportunity for tribes to

participate in local land use decisions early in the planning process in order to protect or mitigate impacts to cultural resources. According to the *Tribal Consultation Guidelines: Supplement to General Plan Guidelines* (California Office of Planning and Research 2005), local governments must implement the following procedures:

- Prior to the adoption or any amendment of a general plan or specific plan, a local government must notify the appropriate tribes (on the contact list maintained by the NAHC) of the opportunity to conduct consultations for the purpose of preserving, or mitigating impacts to, cultural places located on land within the local government's jurisdiction that is affected by the proposed plan adoption or amendment. Tribes have 90 days from the date on which they receive notification to request consultation, unless a shorter timeframe has been agreed to by the tribe (Government Code §65352.3).
- Prior to the adoption or substantial amendment of a general plan or specific plan, a local government must refer the proposed action to those tribes that are on the NAHC contact list and have traditional lands located within the city or county's jurisdiction. The referral must allow a 45-day comment period (Government Code §65352). Notice must be sent regardless of whether prior consultation has taken place. Such notice does not initiate a new consultation process.
- Local government must send a notice of a public hearing, at least 10 days prior to the hearing, to tribes who have filed a written request for such notice (Government Code §65092).

Under SB 18, local governments must consult with tribes under two circumstances:

- On or after March 1, 2005, local governments must consult with tribes that have requested consultation in accordance with Government Code §65352.3. The purpose of this consultation is to preserve, or mitigate impacts to, cultural places that may be affected by a general plan or specific plan amendment or adoption.
- On or after March 1, 2005, local governments must consult with tribes before designating open space, if the affected land contains a cultural place and if the affected tribe has requested public notice under Government Code §65092. The purpose of this consultation is to protect the identity of the cultural place and to develop treatment with appropriate dignity of the cultural place in any corresponding management plan (Government Code §65562.5).

Paleontological Resources

The primary California state environmental law protecting paleontological resources, or fossils, is CEQA (Public Resources Code Section 21000 et seq.). CEQA requires that public agencies and private interests identify the environmental consequences of their proposed projects on any object or site of significance to the scientific annals of California (Division I, California Public Resources Code Section 5020.1 [b]).

Under the CEQA Guidelines section 15064.5 (a) (2), public agencies must treat paleontological resources as significant unless the preponderance of evidence demonstrates that they are not historically or culturally significant. This position is held because fossils are uncommon and only rarely will a fossil locality yield a statistically significant number of specimens representing the same species. In fact, some types of fossils, such as all fossil vertebrates, are so uncommon that, in most cases, each fossil specimen found will provide additional important information about the characteristics or distribution of the species it represents.

Due to the rarity of fossils and the scientific information they provide, a resource can be considered significant if it meets any of the following criteria (Society of Vertebrate Paleontology [SVP] 1995, Scott and Springer 2003):

- The paleontological resource provides data on the evolutionary relationships and developmental trends among organisms, both living and extinct.
- The paleontological resource provides data useful in determining the age(s) of the geologic unit or stratigraphy, as well as timing of associated geological events.
- The paleontological resource provides paleoecological information pertaining to biological community development and zoological/botanical biota interaction of the past.
- The paleontological resource demonstrates unusual or spectacular circumstances in the history of life.
- The paleontological resource is not abundant or found in other geographic locations and may be in danger of being depleted or destroyed by the elements or vandalism.
- The paleontological resource is considered a type or topotype specimen.

Thus, the SVP (1995) identifies vertebrate fossils, large (macro) or small (micro), any associated invertebrate fossils, plant fossils, trace fossils (animal tracks and/or burrows), or any other data that provides taphonomic, taxonomic, phylogenetic, ecologic, and/or stratigraphic information as significant, nonrenewable paleontological resources.

Paleontological resources must be identifiable to determine if any of the criteria above is applicable. Proper identification of paleontological resources is often difficult in the field, therefore the salvaging, preparation, and analysis of paleontological resources is necessary to determine their significance (SVP 1995). Additionally, many significant microvertebrate fossils (e.g., small mammal, bird, reptile, or fish remains) are generally not visible to the naked eye in the field and are salvaged and identified by the processing of sediment concentrate collected from productive, paleontologically sensitive, geologic units that have been wet-screened in the field (SVP 1995; Scott and Springer 2003). To be scientifically valid, significance determinations must be made by, or made under, the supervision of a qualified paleontologist (SVP 1995).

In common with other environmental disciplines such as archaeology and biology (specifically in regard to listed species), the SVP (1995) considers any fossil specimen significant, unless demonstrated otherwise, and, therefore, protected by environmental statutes. An individual fossil specimen is considered scientifically significant if it is:

- Identifiable;
- Complete;
- Well preserved;
- Age diagnostic;
- Useful in paleo-environmental reconstruction;
- A type or topotypic specimen;
- A member of a rare species;
- A species that is part of a diverse assemblage; or
- A skeletal element different from, or a specimen more complete than, those now available for that species.

All identifiable vertebrate fossils are considered scientifically important due to their potential use in providing relative age determinations and paleo-environmental reconstructions for the sediments in

which they occur. Although fossil plants are usually considered of lesser importance since they are less helpful in age determination, they are actually more sensitive indicators of their environment and as sedentary organisms, are more valuable than mobile animals for paleo-environmental reconstructions. For marine sediments, invertebrate and marine algal fossils, including microfossils, are scientifically important for the same reasons that land mammal and/or land plant fossils are valuable in terrestrial deposits (Miller 1971). The value or importance of different fossil groups varies depending on the age and depositional environment of the geologic unit that contains the fossils.

Local Regulations

City of Oakland General Plan Historic Preservation Element

Adopted in 1994 and amended in 1998, the City of Oakland's Historic Preservation Element of the General Plan delineates a broad "Historic Preservation Strategy" to "provide a broad, multifaceted historic preservation strategy that addresses a wide variety of properties, and is intended to help revitalize Oakland's districts and neighborhoods and secure other preservation benefits" (City of Oakland 1998). The Historic Preservation Element establishes two broad goals:

Goal 1: To use historic preservation to foster the economic vitality and quality of life in Oakland by:

- Stressing the positive community attributes expressed by well-maintained older properties;
- Maintaining and enhancing throughout the City the historic character, distinct charm, and special sense of place provided by older properties;
- Establishing and retaining positive continuity with the past thereby promoting pride, a sense of stability and progress, and positive feelings for the future;
- Stabilizing neighborhoods, enhancing property values, conserving housing stock, increasing public and private economic and financial benefits, and promoting tourist trade and interest through preservation and quality maintenance of significant older properties;
- Preserving and encouraging a city of varied architectural styles and environmental character reflecting the distinct phases of Oakland's cultural, social, ethnic, economic, political, and architectural history; and
- Enriching the quality of human life in its educational, spiritual, social, and cultural dimensions through continued exposure to tangible reminders of the past.

Goal 2: To preserve, protect, enhance, perpetuate, use, and prevent the unnecessary destruction or impairment of properties or physical features of special character or special historic, cultural, educational, architectural or aesthetic interest or value. Such properties or physical features include buildings, building components, structures, objects, districts, sites, natural features related to human presence, and activities taking place on or within such properties or physical features.

The Historic Preservation Element also describes policies for the identifying, designating, and preserving Oakland's cultural resources. These policies seek to minimize significant impacts to historical resources. Historic Preservation Element policies that are relevant to the proposed Project are listed below (see City of Oakland Planning Code discussion below for regulations implementing certain Historic Element policy recommendations).

Policy 3.1 Avoid or Minimize Adverse Historic Preservation Impacts Related to Discretionary City Actions: This City will make reasonable efforts to avoid or minimize adverse effects on the Character-

Defining Elements of existing or Potential Designated Historic Properties (PDHPs), which could result from private or public projects requiring discretionary actions.

Policy 3.5 Historic Preservation and Discretionary Permit Approvals:

- For additions or alterations to Heritage Properties or Potential Designated Historic Properties requiring discretionary City permits, the City will make a finding that: 1) the design matches or is compatible with, but not necessarily identical to, the property's existing or historical design; or 2) the proposed design comprehensively modifies and is at least equal in quality to the existing design and is compatible with the character of the neighborhood; or 3) the existing design is undistinguished and does not warrant retention and the proposed design is compatible with the character of the neighborhood.
- For any project involving complete demolition of Heritage Properties or Potential Designated Historic Properties requiring discretionary City permits, the City will make a finding that: 1) the design quality of the proposed project is at least equal to that of the original structure and is compatible with the character of the neighborhood; or 2) the public benefits of the proposed project outweigh the benefit of retaining the original structure; or 3) the existing design is undistinguished and does not warrant retention and the proposed design is compatible with the character of the neighborhood.

Policy 3.8 Definition of "Local Register of Historical Resources" and the Historic Preservation "Significant Effects" for Environmental Review Purposes: For purposes of environmental review under CEQA, the following properties will constitute the City of Oakland's Local Register of Historical Resources:

- All Designated Historic Properties, and
- Those Potential Designated Historic Properties that have an existing rating of "A" or "B" or are located within an Area of Primary Importance.
- Oakland Landmarks,
- S-7 Preservation Combining Zone properties, and
- Preservation Study List properties.

Action 3.8.1 Include Historic Preservation Impacts in City's Environmental Review Regulations:

- Include Policy 3.8's definitions of "Local Register of Historical Resources" and historic preservation "significant effect" in the City's Environmental Review Regulations.
- Amend the Regulations to include specific measures that may be considered to mitigate significant effects to a Historical Resource. Measures appropriate to mitigate significant effects to a Historical Resource may include one or more of the following measures depending on the extent of the proposed addition or alteration:[33]
  - Modification of those elements of the Project design adversely affecting the character elements of the property.
  - Relocation of the affected Historical Resource to a location consistent with its historical or architectural character.

[33] The lead agency will determine whether proposed mitigation measures are adequate to reduce effects to a historical resource to a less than significant level on a case by case basis.

- If the above measures are not found to be feasible, the following measures may be considered:
  - Modification of the Project design to include restoration of the remaining historic character of the property.
  - Modification of the Project design to incorporate or replicate elements of the building's original architectural design.
  - Salvage and preservation of significant features and materials of the structure in a local museum or within the new project.
  - Measures to protect the Historical Resource from effects of on-site or other construction activities.
  - Documentation in a Historic American Buildings Survey report or other appropriate format: photographs, oral history, video, etc.
  - Placement of a plaque, commemorative marker, or artistic or interpretive display on the site providing information on the historical significance of the resource.
  - Contribution to a Facade Improvement Fund, the Historic Preservation Revolving Loan Fund, the Oakland Cultural Heritage Survey, or other program appropriate to the character of the resource.

Policy 4.1 Archaeological Resources: To protect significant archaeological resources, the City will take special measures for discretionary projects involving ground disturbances located in archaeologically sensitive areas.

City of Oakland Cultural Heritage Survey

The City of Oakland Planning Department maintains the Oakland Cultural Heritage Survey (OCHS), which is a citywide inventory of historic buildings and districts. In 1997, Planning Department staff completed a windshield survey of every street in Oakland and assigned buildings an estimated construction date and preliminary rating of historical or architectural interest. Additionally, approximately 20,000 properties have been researched and documented through intensive-level surveys. The ratings provide guidance to City staff and property owners in design review and compliance with the Planning Code.

The ratings are based on the following criteria outlined in the Historic Preservation Element (City of Oakland 1998: Appendix C):

1. Visual Quality/Design: Exterior and interior design; construction and materials; style and type; supporting elements (e.g., landscaping, ancillary structures, feeling and association, signs, long-term use); and importance of the architect, designer, or builder.
2. History/Association: Construction date and association with individuals, organizations, events, or patterns of neighborhood, citywide, state, or national importance.
3. Context: Familiarity and continuity of the building within a district.
4. Integrity/Reversibility: Condition, exterior and interior alterations, structural removals, and site.

- Survey ratings describe both the individual building (indicated by a letter rating) and the surrounding context or district (indicated by a number rating). The OCHS rates individual properties using letters A through E and * or F (City of Oakland 1998):
- **A: Highest importance:** Outstanding architectural example or extreme historical importance. These properties are clearly eligible for individual listing in the NRHP.

- **B: Major importance:** Especially fine architectural example or major historical importance. These properties may also be eligible for individual listing in the NRHP but are regarded as less important than those rated as A.
- **C: Secondary importance:** Superior or visually important example or very early (pre-1906). These properties may have historical, visual, or architectural value but do not appear to be eligible for individual listing in the NRHP.
- **D: Minor importance:** Representative example. These properties are not distinctive but rather a typical or representative example of an important style, type, convention, or historical pattern.
- **E: Of no particular interest**. These properties are not representative examples of an important style, type, convention, or historical pattern.
- *** or F: Not rated:** Less than 45 years old or modernized.

Properties may also be assigned a contingency rating indicated by a lowercase letter following the primary rating indicated by an uppercase letter (e.g., "Fa" or "Eb"), meaning they may receive the higher rating in certain situations (e.g., they are restored or reach a certain age or new research is uncovered).

District status is indicated by the numbers 1 through 3:

- **1: In an Area of Primary Importance (API) or NRHP quality district.** At least two-thirds of the properties located within the API must be contributors.
- **2: In an Area of Secondary Importance (ASI) or district of local interest.** ASIs do not appear to be eligible for listing in the NRHP. At least two-thirds of the properties located within the ASI must be contributors.
- 3: Not in an identified district.
- For properties located in districts, a "+" after the number rating indicates a contributor, a "-" after the number rating indicates a non-contributor and a "*" after the number rating indicates a contingency contributor. Similar to individual properties, a contingency contributor may become a contributor if it is restored or other conditions change.

City of Oakland Local Register of Historical Resources

The Historic Preservation Element Policy 3.8 defines the Local Register of Historical Resources as including all Designated Historic Properties (DHPs) and those PDHPs that have an OCHS rating of A or B or are located within an API (City of Oakland 1998). The City of Oakland considers resources listed in the Local Register of Historical Resources to be historical resources under CEQA.

- **Designated Historic Properties (DHPs):** DHPs include Oakland Landmarks, S-7 and S-20 Preservation Combining Zones (i.e., historic preservation zoning districts), and Preservation Study List and Heritage Properties.
- **Potential Designated Historic Properties (PDHPs)**: PDHPs are properties with an OCHS existing or contingency rating of C or higher or properties that are contributors or potential contributors to an API (rating of 1+ or 1*) or ASI (rating of 2+ or 2*). PDHPs warrant consideration for preservation but do not necessarily meet the threshold for historical resources under CEQA. Only those PDHPs with an OCHS rating of A or B or located within an API (i.e., those on the Local Register) are automatically considered historical resources under CEQA.

Mountain View Cemetery and the individual historic buildings within it fall under the second type of resources that are considered historical resources for environmental review by the City of Oakland.

City of Oakland Planning Code

The City of Oakland's Planning Code contains the following regulations for certain types of projects involving historical resources, based on policies in the Historic Preservation Element:

Planning Code Section 17.136.075 Regulations for Demolition or Removal of Designated Historic Properties and PDHPs.

This section codifies the Historic Preservation Element and other regulations for approval of demolition or removal permits. With the exception of structures declared to be a public nuisance by the Building Official or City Council, Regular Design Review of the demolition or removal of a Designated Historic Property or PDHP shall only be approved after the Regular Design Review of a replacement project at the subject site has been approved; however, demolition of nuisance structures must still undergo Regular Design Review for demolition. Regular Design Review approval for the demolition or removal of any Local Register property may be granted only if the proposal conforms to the general design review criteria, all other applicable design review criteria, and additional criteria set forth in the chapter. Demolition findings and extensive documentation requirements are further spelled out in the Planning Department's "Demolition Findings for Category I/II/III Historic Properties." The Director of City Planning may postpone issuance of a demolition permit for up to 120 days from the date of permit application following Design Review approval.

Planning Code Section 17.136.075(B)

Category I Historic Properties: This section requires Design Review for the demolition or removal of any Landmark, Heritage Property, structure rated A or B by the Oakland Cultural Heritage Survey, or structure on the City's Preservation Study List that is not in an S-7 or S-20 zone or API. Approval may be granted only if the proposal conforms to the general design review criteria, all other applicable design review criteria, and the following additional criteria:

1. The applicant demonstrates that: a) the existing property has no reasonable use or cannot generate a reasonable economic return and that the development replacing it will provide such use or generate such return, or b) the applicant demonstrates that the structure constitutes a hazard and is economically infeasible to rehabilitate on its present site. For this finding, a hazard constitutes a threat to health and safety that is not immediate;
2. The design quality of the replacement facility is equal or superior to that of the existing facility; and
3. It is economically, functionally, architecturally, or structurally infeasible to incorporate the historic structure into the proposed development.

Planning Code Section 17.136.075(C)

Category II Historic Properties: This section requires Regular Design Review for the demolition or removal of any structure in an S-7 or S-20 zone or API. Approval may be granted only if the proposal conforms to the general design review criteria, all other applicable design review criteria, and the following additional criteria:

1. For the demolition of contributors to an S-7 or S-20 zone or API:

a. The applicant demonstrates that: i) the existing property has no reasonable use or cannot generate a reasonable economic return and that the development replacing it will provide such use or generates such return, or ii) the applicant demonstrates that the structure constitutes a hazard and is economically

infeasible to rehabilitate on its present site. For this criterion, a hazard constitutes a threat to health and safety that is not immediate; and

b. It is economically, functionally architecturally, or structurally infeasible to incorporate the historic structure into the proposed development.

2. For the demolition of non-contributors to an S-7 zone, S-20 zone, or API: The existing structure is either: i) seriously deteriorated or a hazard; or ii) the existing design is undistinguished and does not warrant retention. For this finding, a hazard constitutes a threat to health and safety that is not immediate;

3. For the demolition of any structure in an S-7 zone, S-20 zone or API:

a. The design quality of the replacement structure is equal or superior to that of the existing structure; and

b. The design of the replacement project is compatible with the character of the district, and there is no erosion of design quality at the replacement project site and in the surrounding area. Specific findings are spelled out.

Planning Code Section 17.136.075(D)

Category III Historic Properties: This section requires Design Review Approval for the demolition or removal of any structure that is rated C by the by the Oakland Cultural Heritage Survey or that contributes to an ASI as determined by OCHS. (Under Historic Preservation Element Policy 3.5, this requirement applies to all PDHPs, including those resources with a contingency C rating and those identified as a contingency contributor to an ASI.) Approval may be granted only if the proposal conforms to the following general design review criteria (based on Historic Preservation Element Policy 3.5):

1. The design quality of the proposed replacement project is at least equal to that of the original structure and the proposed replacement project is compatible with the character of the neighborhood; or

2. The public benefits of the proposed replacement project outweigh the benefit of retaining the original structure and the proposed replacement project is compatible with the character of the neighborhood; or

3. The existing design is undistinguished and does not warrant retention and the proposed design is compatible with the character of the neighborhood.

City of Oakland Municipal Code Article III – Green Building Compliance Standards (Section 18.02.100)

This regulation requires all buildings or projects to comply with the requirements of the California Building Energy Efficiency Standards (Title 24, Part 6) of the California Building Code and includes special provisions for historic buildings. Applicants for any new construction projects resulting in removal of a historical resource or large additions and alterations to historical resources must consult with a Historic Preservation Planner and seek LEED and Green Building certification, in addition to other specific requirements. The code also offers various incentives, such as lowered green building requirements when avoiding demolition of historic buildings, and higher green building requirements when demolishing historic buildings.

City of Oakland Standard Conditions of Approval

The City's Standard Conditions of Approval (SCAs) relevant to cultural and historic resources that would be impacted by implementation of the proposed Project are listed below. All applicable SCAs would be adopted as part of the proposed Project to eliminate significant impacts to cultural and historic resources.

This SCA applies to all projects that involve a grading permit:

> **SCA #29: Archaeological and Paleontological Resources – Discovery during Construction**. Requirement: Pursuant to CEQA Guidelines section 15064.5(f), in the event that any historic or prehistoric subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and the project applicant shall notify the City and consult with a qualified archaeologist or paleontologist, as applicable, to assess the significance of the find. In the case of discovery of paleontological resources, the assessment shall be done in accordance with the Society of Vertebrate Paleontology standards. If any find is determined to be significant, appropriate avoidance measures recommended by the consultant and approved by the City must be followed unless avoidance is determined unnecessary or infeasible by the City. Feasibility of avoidance shall be determined with consideration of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery, excavation) shall be instituted. Work may proceed on other parts of the project site while measures for the cultural resources are implemented.
>
> a. In the event of data recovery of archaeological resources, the project applicant shall submit an Archaeological Research Design and Treatment Plan (ARDTP) prepared by a qualified archaeologist for review and approval by the City. The ARDTP is required to identify how the proposed data recovery program would preserve the significant information the archaeological resource is expected to contain. The ARDTP shall identify the scientific/historic research questions applicable to the expected resource, the data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. The ARDTP shall include the analysis and specify the curation and storage methods. Data recovery, in general, shall be limited to the portions of the archaeological resource that could be impacted by the proposed project. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practicable. Because the intent of the ARDTP is to save as much of the archaeological resource as possible, including moving the resource, if feasible, preparation and implementation of the ARDTP would reduce the potential adverse impact to less than significant. The project applicant shall implement the ARDTP at his/her expense.
>
> b. In the event of excavation of paleontological resources, the project applicant shall submit an excavation plan prepared by a qualified paleontologist to the City for review and approval. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and/or a report prepared by a qualified paleontologist, as appropriate, according to current professional standards and at the expense of the project applicant.
>
> When Required: During construction
>
> Initial Approval: N/A
>
> Monitoring/Inspection: Bureau of Building

The SCA below applies to all projects that require a grading permit and are located in a sensitive archaeologically area. Archaeologically sensitive areas include areas in which previous CEQA documents or other information identified a higher likelihood of archaeological finds. This SCA further implements (and is in addition to) the SCA for Archeological Resources (SCA #29, above).

SCA #30: Archaeologically Sensitive Areas – Pre-Construction Measures. Requirement: The project applicant shall implement either Provision A (Intensive Pre-Construction Study) or Provision B (Construction ALERT Sheet) concerning archaeological resources.

Provision A: Intensive Pre-Construction Study.

a. The project applicant shall retain a qualified archaeologist to conduct a site-specific, intensive archaeological resources study for review and approval by the City prior to soil-disturbing activities occurring on the project site. The purpose of the site-specific, intensive archaeological resources study is to identify early the potential presence of history-period archaeological resources on the project site. At a minimum, the study shall include:

    1. Subsurface presence/absence studies of the project site. Field studies may include, but are not limited to, auguring and other common methods used to identify the presence of archaeological resources.

    2. A report disseminating the results of this research.

    3. Recommendations for any additional measures that could be necessary to mitigate any adverse impacts to recorded and/or inadvertently discovered cultural resources.

If the results of the study indicate a high potential presence of historic-period archaeological resources on the project site, or a potential resource is discovered, the project applicant shall hire a qualified archaeologist to monitor any ground disturbing activities on the project site during construction and prepare an ALERT sheet pursuant to Provision B below that details what could potentially be found at the project site. Archaeological monitoring would include briefing construction personnel about the type of artifacts that may be present (as referenced in the ALERT sheet, required per Provision B below) and the procedures to follow if any artifacts are encountered, field recording and sampling in accordance with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation, notifying the appropriate officials if human remains or cultural resources are discovered, and preparing a report to document negative findings after construction is completed if no archaeological resources are discovered during construction.

Provision B: Construction ALERT Sheet.

b. The project applicant shall prepare a construction "ALERT" sheet developed by a qualified archaeologist for review and approval by the City prior to soil-disturbing activities occurring on the project site. The ALERT sheet shall contain, at a minimum, visuals that depict each type of artifact that could be encountered on the project site. Training by the qualified archaeologist shall be provided to the project's prime contractor, any project subcontractor firms (including demolition, excavation, grading, foundation, and pile driving), and utility firms involved in soil-disturbing activities within the project site.

    4. The ALERT sheet shall state, in addition to the basic archaeological resource protection measures contained in other standard conditions of approval, all work must stop and the City's Environmental Review Officer contacted in the event of discovery of the following cultural materials: concentrations of shellfish remains; evidence of fire (ashes, charcoal, burnt earth, fire-cracked rocks); concentrations of bones; recognizable Native American artifacts (arrowheads, shell beads, stone mortars [bowls], humanly shaped rock); building foundation remains; trash pits, privies (outhouse holes); floor remains; wells; concentrations of bottles, broken dishes, shoes, buttons, cut animal bones, hardware, household items, barrels, etc.; thick layers of burned building debris (charcoal, nails, fused glass, burned plaster, burned dishes); wood structural remains (building, ship, wharf); clay roof/floor tiles; stone walls or footings; or gravestones.

    5. Prior to any soil-disturbing activities, each contractor shall be responsible for ensuring that the ALERT sheet is circulated to all field personnel, including machine operators, field crew, pile

drivers, and supervisory personnel. The ALERT sheet shall also be posted in a visible location at the project site.

When Required: Prior to approval of construction-related permit; during construction

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

The following SCA applies to all projects involving construction.

SCA #31: Human Remains – Discovery during Construction. Requirement: Pursuant to CEQA Guidelines section 15064.5(e)(1), in the event that human skeletal remains are uncovered at the project site during construction activities, all work shall immediately halt and the project applicant shall notify the City and the Alameda County Coroner. If the County Coroner determines that an investigation of the cause of death is required or that the remains are Native American, all work shall cease within 50 feet of the remains until appropriate arrangements are made. In the event that the remains are Native American, the City shall contact the California Native American Heritage Commission (NAHC), pursuant to subdivision (c) of section 7050.5 of the California Health and Safety Code. If the agencies determine that avoidance is not feasible, then an alternative plan shall be prepared with specific steps and timeframe required to resume construction activities. Monitoring, data recovery, determination of significance, and avoidance measures (if applicable) shall be completed expeditiously and at the expense of the project applicant.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

This SCA applies to all projects that involve construction that is adjacent to a CEQA Historical Resource or a PDHP.

SCA #66: Vibration Impacts on Adjacent Historic Structures or Vibration-Sensitive Activities. Requirement: The project applicant shall submit a Vibration Analysis prepared by an acoustical and/or structural engineer or other appropriate qualified professional for City review and approval that establishes pre-construction baseline conditions and threshold levels of vibration that could damage the structure and/or substantially interfere with activities located at adjacent historic resources within or near the Cemetery. The Vibration Analysis shall identify design means and methods of construction that shall be utilized in order to not exceed the thresholds. The applicant shall implement the recommendations during construction.

When Required: Prior to construction

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

Impacts, Standard Conditions of Approval and Mitigation Measures

This section discusses potential impacts to cultural resources that could result from implementation of the proposed Project. It presents the thresholds of significance, describes the approach to the analysis, and identifies potential impacts and mitigation measures, as appropriate.

Thresholds of Significance

The proposed Project would have a significant impact on the environment if it would:

1. Cause a substantial adverse change in the significance of an historical resource as defined in CEQA Guidelines section 15064.5. Specifically, a substantial adverse change includes physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be "materially impaired." The significance of an historical resource is "materially impaired" when a project demolishes or materially alters, in an adverse manner, those physical characteristics of the resource that convey its historical significance and that justify its inclusion on, or eligibility for inclusion on an historical resource list (including the California Register of Historical Resources, the National Register of Historical Resources, Local Register, or historical resources survey form (DPR Form 523) with a rating of 1-5);
2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines section 15064.5;
3. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
4. Disturb any human remains, including those interred outside of formal cemeteries.

Approach to Analysis

Implementation of the proposed Project will be subject to the City's SCAs, as outlined above. This cultural and historic resource analysis includes application of applicable SCAs to reduce potentially significant impacts to a less than significant level, and the identification of additional mitigation measures in instances when the SCAs would not fully mitigate potentially significant impacts.

Definition of Historic Resource

In the City of Oakland, an historical resource under CEQA is a resource that meets any of the following Thresholds of Significance:

1. A resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources;
2. A resource included in Oakland's Local Register of historical resources, unless the preponderance of evidence demonstrates that it is not historically or culturally significant;
3. A resource identified as significant (e.g., rated 1-5) in a historical resource survey recorded on Department of Parks and Recreation Form 523, unless the preponderance of evidence demonstrates that it is not historically or culturally significant;
4. Any object, building, structure, site, area, place, record, or manuscript which the Oakland City Council determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the determination is supported by substantial evidence in light of the whole record. Generally, a resource is considered "historically significant" if it meets the criteria for listing on the California Register of Historical Resources (CEQA Guidelines section 15064.5); or
5. A resource that is determined by the City Council to be historically or culturally significant even though it does not meet the other four criteria listed here.

A "local register of historical resources" means a list of properties officially designated or recognized as historically significant by a local government pursuant to a local ordinance or resolution, unless the preponderance of evidence demonstrates otherwise. In March 1994, the Oakland City Council adopted a Historic Preservation Element of the General Plan (amended July 21, 1998). The Historic Preservation Element sets out a graduated system of ratings and designations resulting from the Oakland Cultural

Heritage Survey (OCHS) and Oakland Zoning Regulations. The Element provides Policy 3.8: "Definition of 'Local Register of Historical Resources' and Historic Preservation 'Significant Effects' for Environmental Review Purposes" related to identifying historic resources under CEQA:

> *For purposes of environmental review under the California Environmental Quality Act, the following properties will constitute the City of Oakland's Local Register of Historical Resources:*

1. All Designated Historic Properties (Landmarks, Heritage Properties, Study List Properties, Preservation Districts, and S-7 and S-20 Preservation Combining Zone Properties); and
2. Those Potential Designated Historic Properties that have an existing rating of "A" or "B" or are located within an Area of Primary Importance.

Consequently, Mountain View Cemetery and the identified individual buildings within it fall under the second type of resources that are considered historical resources for environmental review by the City of Oakland.

Historical Resources

The following discussion addresses Threshold 1.

Impact Cultural-1: The Project as designed complies with the Secretary of the Interior's Standards for Rehabilitation, and does not affect the eligibility of the Mountain View Cemetery for listing in any local, state, or national historical registers. According to Section 15126.4(b)(1) of the CEQA Guidelines, if a project complies with the Secretary's Standards, the project's impact will generally be considered mitigated below a level of significance and thus is not significant. Because the proposed Project complies with the Secretary's Standards, it does not cause a significant adverse impact under CEQA. (**LTS**)

As indicated in the Setting section above, the Mountain View Cemetery is an Oakland institution dating to 1863, and its original design was prepared by the renowned landscape architect Frederick Law Olmsted. This original Olmsted-designed portion of the Cemetery includes the central avenue and diamond-shaped roadway patterns in the western lower elevations of the Cemetery, and the curving paths which follow the slopes in the more central (then upper portion) of the property. Olmsted's design did not include the very upper portions of the hillside and ridgeline where the Project is located. These upper portions of the current Cemetery property were subsequently acquired by the Cemetery during the years between 1915 and 1952, including acquisition of a former quarry operation in the areas now described as Plot 98 and the Panhandle. The 1998 Oakland Cultural Heritage Survey defines the entire Cemetery property, along with the Administration Building, the Chapel Building, the Chapel of the Chimes, and the St. Mary's Office Building as the Mountain View Cemetery-Chapel of the Chimes Historic District. The District is an Area of Primary Importance (API), eligible for listing on the NRHP and the CRHR.

As further described below, the Project does not include any alterations within the existing developed portions of the Cemetery. Located within the undeveloped eastern hillside portions of the property, the Project would not alter any existing historic buildings or other character-defining contributing features to the historic District or the historic Frederick Law Olmsted landscape. The proposed grading and landscape design for the Project would not directly or indirectly affect any contributing features to the historic district or individually significant buildings. Similar to other portions of Mountain View Cemetery where new burial areas have been added or redesigned over its 150 year existence, the Project is

somewhat separated from the most historic westerly portions of the Cemetery. While the Project's design is intended to take cues from the historic naturalistic Olmsted design of curving roads and walkways, its modern design features would not create a false sense of history, nor would it add conjectural historical features to the cemetery plan or design. Based on these considerations as more fully assessed below, the Project would not have a significant adverse effect on the Mountain View Cemetery-Chapel of the Chimes Historic District or any of its contributing elements.

Secretary of the Interior's Standards

The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (Secretary's Standards) provide guidance for working with historic properties. The Secretary's Standards are used by federal agencies and local government bodies across the country to evaluate proposed rehabilitative work on historic properties. The Secretary's Standards are a useful analytic tool for understanding and describing the potential impacts of substantial changes to historic resources. Compliance with the Secretary's Standards does not determine whether a project would cause a substantial adverse change in the significance of an historic resource. Rather, projects that comply with the Secretary's Standards benefit from a regulatory presumption under CEQA that they would have a less-than-significant adverse impact on an historic resource. Projects that do not comply with the Secretary's Standards may or may not cause a substantial adverse change in the significance of an historic resource.

The Secretary's Standards offers four sets of standards to guide the treatment of historic properties: Preservation, Rehabilitation, Restoration, and Reconstruction. The four distinct treatments are defined as follows:

- Preservation: The Standards for Preservation "require retention of the greatest amount of historic fabric, along with the building's historic form, features, and detailing as they have evolved over time."
- Rehabilitation: The Standards for Rehabilitation "acknowledge the need to alter or add to a historic building to meet continuing new uses while retaining the building's historic character."
- Restoration: The Standards for Restoration "allow for the depiction of a building at a particular time in its history by preserving materials from the period of significance and removing materials from other periods."
- Reconstruction: The Standards for Reconstruction "establish a limited framework for re-creating a vanished or non-surviving building with new materials, primarily for interpretive purposes."[34]

Project's Consistency with Standards for Rehabilitation

Typically, one set of standards is chosen for a project based on the project scope. In this case, the proposed Project scope includes expansion of the cemetery to meet its continued use. Therefore, the Standards for Rehabilitation are applied, as discussed below. The following analysis applies each of the Standards for Rehabilitation to the proposed Project at Mountain View Cemetery.

[34] Kay D. Weeks and Anne E. Grimmer, The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings (Washington, D.C.: U.S. Department of the Interior, 1995), 2.

Rehabilitation Standard 1:

> *A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces and spatial relationships.*

- Grading and proposed improvements to the three plots of land are intended for the expansion of burial and interment plots within the Mountain View Cemetery boundaries, on land that has been reserved for this specific purpose. Therefore, the property will continue to be used as it was historically.

As designed, the Project will be in compliance with Rehabilitation Standard 1.

Rehabilitation Standard 2:

> *The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize the property will be avoided.*

- The historic character of the Cemetery will be retained and preserved in the construction of this proposed expansion and grading project. The Project location is a distance from the character-defining buildings near the entrance to the Cemetery, and will not affect them in any way.
- The Project design will retain the naturalistic design, winding roads, and picturesque vistas that characterize the property. Relatively minor changes will be made to existing roads and the grading plan will work to enhance the picturesque vistas from these new plots. This area is not completely undeveloped, as Plots 75 and 76 at the center-east edge of the site, located between Plots 82 and 98, were already landscaped and used for burial/interment during the 1970s. The grading and development of the three subject sites will therefore be consistent with the character of adjacent Plots 75 and 76.
- Bands of undeveloped hill will still exist between portions of the established cemetery and the new plots, namely north of Plot 82 and south/southwest of Plot 98 and the Panhandle, retaining some of the current appearance of undeveloped hill at the east end of the property (though this has not specifically been identified as a character-defining historic feature).

As designed, the Project will be in compliance with Rehabilitation Standard 2.

Rehabilitation Standard 3:

> *Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historical properties, will not be undertaken.*

- The Project will not create a false sense of history, nor will it add conjectural historical features to the cemetery plan or design. The new plots will be somewhat separated from the most historic western portions of the cemetery.
- While the designs will take cues from the historic naturalistic curving roads and walkways and will continue the upward topographical slope to the east, each plot will have a contained design and will have modern design features for interment (such as the retaining/crypt wall or above-ground mausoleum or columbaria) that cannot be confused with the historic 1864 Olmsted portion of the cemetery or older twentieth century additions.
- As designed, the proposed project will be in compliance with Rehabilitation Standard 3.

Rehabilitation Standard 4:

> *Changes to a property that have acquired significance in their own right will be retained and preserved.*

- The original portion of Mountain View Cemetery and its buildings have been altered and new plot areas have been added or redesigned over its 150 year existence, and some of these areas have acquired significance in their own right. The Cemetery property as a whole was identified as a historic district in the 1998 OCHS survey. However, the Project, located at the undeveloped eastern portions of the Cemetery will not alter any existing buildings or burial/interment areas.
- All existing developed portions of the property will be preserved during the undertaking of this Project.

As designed, the Project will be in compliance with Rehabilitation Standard 4.

Rehabilitation Standard 5:

> *Distinctive materials, features, finishes and construction techniques or examples of craftsmanship that characterize a property will be preserved.*

- As explained in Standard 2, grading and landscape design at three plots within the undeveloped eastern portions of the property will not affect any surrounding contributing features to the historic district or individually significant buildings such that their materials, features, finishes, and construction techniques would be impacted.
- All existing buildings and features will be preserved during the construction of the Project.

As designed, the Project will be in compliance with Rehabilitation Standard 5.

Rehabilitation Standard 6:

> *Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.*

- The Project does not include alterations to existing historic features.

Standard 6 is not applicable.

Rehabilitation Standard 7:

> *Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.*

- The Project does not entail the cleaning or repair of historic materials.

Standard 7 is not applicable.

Rehabilitation Standard 8:

> *Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measure will be undertaken.*

- The Project does include excavation work as part of the grading scheme. There is no ethnographic information, historical literature, or reports available for the immediate area at the Northwest

Information Center of the Office of Historic Preservation that may have identified any archeological material.

- Nevertheless, City SCAs require investigation and mitigation of any archeological remains that may be found.

Using proper mitigation procedures, the Project will be in compliance with Rehabilitation Standard 8 (see further discussion under Impact Cultural-2, below).

Rehabilitation Standard 9:

> *New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale, proportion, and massing to protect the integrity of the property and environment.*

- The Project includes grading and development of currently undeveloped land at the eastern portion of the cemetery in order to expand the available area of burial/interment. Grading will be of a cut-and-fill method, shifting soil within the site in order to create gentle to moderately sloped areas that will provide a vista to the west. The designs for Plots 82 and 98 will feature retaining walls, lawns, and walking/maintenance paths, with modified or improved perimeter roads. The design for the Panhandle has not yet been determined, as it is the final phase of the overall Project. None of these actions will destroy historic materials, features, and spatial relationships that characterize the property.
- The Project's location is a distance from the character-defining buildings near the entrance to the cemetery and distinctive monuments and plots throughout, and will not affect them.
- The Project design will retain the naturalistic design, winding roads, and picturesque vistas that characterize the property but will be slightly removed from the established cemetery via bands of undeveloped hill at the north end of Plot 82 and southwest of Plot 98 and the Panhandle.
- Modern design features for interment, such as the retaining/crypt wall or any above-ground mausoleum or columbaria, will also differentiate these plots from the historic 1864 Olmsted portion of the cemetery or other earlier twentieth century additions. Nevertheless, the extended use as a cemetery necessitates a similar palate of materials, features, scale, and proportion for the designs of the plots as is used in the rest of the cemetery.
- This land is already part of the cemetery property, so while changes will be made to the grading and the plots will be landscaped, general spatial relationships between the cemetery as a whole and its surrounding residential environment will not change.

As designed, the Project will be in compliance with Rehabilitation Standard 9.

Rehabilitation Standard 10:

> *New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.*

- The Project does not include any alterations within the existing developed portions of the cemetery.

As designed, the Project will be in compliance with Rehabilitation Standard 10.

Standard Conditions of Approval

None applicable. The Project does not involve any demolition or alteration of historic resources.

Mitigation Measures

None needed.

The Project would not alter the existing developed portions of the Cemetery, its location within the undeveloped eastern hillside portions of the property are far enough removed from existing historic buildings and other character-defining features of the historic district that it would not directly or indirectly affect any historic resources, and its design and construction will be conducted in a manner consistent with the Secretary of the Interior's Standards. According to Section 15126.4 (b) (1) of the CEQA Guidelines: "Where maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation or reconstruction of the historical resource will be conducted in a manner consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, the Project's impact on the historical resource will generally be considered mitigated below a level of significance and thus is not significant." Because the Project would not have a substantial adverse effect on a historic resource, no mitigation measures are required.

Archaeological or Paleontological Resources

The following discussion addresses Thresholds 2 and 3.

Impact Cultural-2: The Project area is unlikely to yield archaeological information important in history or prehistory, and the Project is unlikely to directly or indirectly destroy a unique archaeological resource or site, or cause a substantial adverse change in the significance of currently undiscovered archaeological resources. (**LTS with SCAs**)

For purposes of this impact, only archaeological and paleontological resources within the Project area are considered. The Project area is unlikely to yield archaeological information important in history or prehistory. No evidence of prehistoric archaeological material was identified in the Project area, and the features that were at the Project site do not bear a close association with historically relevant Cemetery activities.

In the broader area of the Cemetery, local historian Richard Schwartz previously recorded a sparse shell scatter.[35] Located in a different topographical area of the Cemetery, this resource does not affect the Project area. P-0101791 would require formal archaeological analysis in order to determine it if contributes to the Cemetery's significance and its eligibility for listing on the CRHR.

In addition to being devoid of exposed prehistoric artifacts, much of the Project area is located on steep terrain, and it is likely that any archaeological sites that may have once been present have since been displaced by wind and water erosion of the Berkeley-Oakland hillsides. The Project area does not contribute to the Cemetery's eligibility for the CRHR under Criterion 4 as applicable to archaeological resources.

[35] Schwartz 2006; P-01-01791

Standard Conditions of Approval

Although the likelihood of encountering intact archaeological deposits is considered low, there is the possibility that archaeological material may be located during construction activities. Site preparation, grading, and construction activities could adversely impact previously undiscovered archeological resources. Implementation of the City of Oakland's SCA #29 would reduce potential impacts to undiscovered archeological resources to a less than significant level.

SCA #29 also requires that, in the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and the project applicant and/or lead agency shall consult with a qualified archaeologist or paleontologist to assess the significance of the find. SCA#29 similarly requires that, in the event of an unanticipated discovery of a paleontological resource during construction, excavations within 50 feet of the find shall be temporarily halted or diverted until the discovery is examined by a qualified paleontologist. The qualified paleontologist shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find.

Mitigation Measures

None needed.

Human Remains

The following discussion addresses Threshold 4.

Impact Cultural-3: The Project area is unlikely to disturb any human remains, including those interred inside or outside of formal cemeteries. (**LTS with SCAs**)

Ground disturbing activities associated with site preparation, grading, and construction activities could disturb human remains. The potential to uncover Native American human remains exists in locations throughout California. In the Mountain View Cemetery specifically, it is possible that unmarked historic graves are present as well.

Standard Conditions of Approval

Although not anticipated, human remains may be identified during site-preparation and grading activities, resulting in a significant impact to Native American and/or Euro American interments. Implementation of the City of Oakland's SCA #31 would reduce potential impacts to unanticipated human remains to a less than significant level. SCA #31 requires that, in the event that human skeletal remains are uncovered at the project site during construction or ground-breaking activities, all work shall immediately halt and the Alameda County Coroner shall be contacted to evaluate the remains, and following the procedures and protocols pursuant to Section 15064.5 (e)(1) of the CEQA Guidelines.

Mitigation Measures

None needed.

Cumulative Cultural Resource Impacts

Cumulative Impact Cultural-4: The Project, when considered together with other individual effects, would not cause or contribute to any historic resource impacts that are cumulatively considerable. The incremental impact of the Project, when added to other closely related past, present, and reasonably foreseeable probable future projects would not result in a cumulative significant impact taking place over a period of time. (**LTS**)

The Project does not adversely impact historic resources associated with Mountain View Cemetery. No other projects or potential projects in or near the Cemetery are known that would add to a cumulative impact. Therefore, the Project does not appear to have any cumulative historic impacts as defined by CEQA.

With required implementation of SCA #29 and SCA #31, the Project would not contribute to significant cumulative impacts on archaeological resources, paleontological resources or human remains, and these impacts would be less than cumulatively significant.

Mitigation Measures

None needed

4.5

Geology and Soils

This chapter provides background information on geologic and soils conditions within the Project Area and the relevant regulatory setting applicable to the site, evaluates potential geologic and soils impacts that could result from implementation of the proposed Project, and identifies Standard Conditions of Approval (SCAs) or mitigation measures that would avoid or minimize potential impacts, when appropriate.

The analysis and discussion in this section of the EIR is based primarily on the following reports and assessments, which are incorporated by reference and included in the Appendix to this EIR:

- Hultgren-Tillis Engineers, *Draft Geotechnical Evaluation of Plot 82, Plot 98 and Panhandle at Mountain View Cemetery*, December 23, 2014 (Appendix 4.5)

Environmental Setting

Regional Geology and Seismicity

The San Francisco Bay Area lies within the Coast Range geomorphic province, a series of discontinuous northwest tending mountain ranges, ridges, and intervening valleys characterized by complex folding and faulting. Such features in the eastern portion of the San Francisco Bay Area include the Diablo Range, Berkeley Hills and the East Bay Plain. The Project site is situated up-slope from the western base of the Berkeley Hills.

The bedrock of the Coast Ranges is primarily composed of ancient seafloor sediments and volcanic rocks. In most areas, these rocks have been significantly hardened, mineralized, folded and fractured by heat and pressure deep within the earth. This bedrock, broadly divided into the Franciscan Complex and Great Valley Sequence, forms most of the hills and mountains of the Bay Area. The East Bay Hills (or Oakland Hills) divide the Bay side terrain to the west from the inland hills and valleys surrounding Mt. Diablo in the east. The East Bay Hills are a faulted and folded blend of Mesozoic accretionary terrain (primarily the Franciscan Complex) and Cenozoic volcanic rocks.

Geologic and geomorphic structures within the San Francisco Bay Area are dominated by the San Andreas Fault, a right-lateral strike-slip fault that extends from the Gulf of California to Cape Mendocino. It forms a portion of the boundary between two independent tectonic plates: to the west is the Pacific plate which moves relative to the North American plate (located east of the fault). In the San Francisco Bay Area, movement across this plate boundary is concentrated on the San Andreas Fault. However, it is also distributed, to a lesser extent, across a number of other faults that include the Hayward, Calaveras and Concord, among others. Together, these faults are referred to as the San Andreas Fault system. Movement along the San Andreas Fault system has been ongoing for about the last 25 million years. The northwest trend of these faults within this fault system is largely responsible for the string northwest structural orientation of geologic and geomorphic features in the San Francisco Bay Area.

Tectonic activity along the fault system has resulted in several major earthquakes during the historic period, including the 1868 Hayward Earthquake, the 1906 San Francisco Earthquake, and the 1989 Loma

Prieta Earthquake.[1] According to a recent study completed by the Working Group on California Earthquake Probabilities (WGCEP) which assesses the probability of earthquakes in the San Francisco Bay Area, there is a 72% probability that an earthquake of Magnitude 6.7 or greater will strike within the next 30 years.[2]

Geology, Soils and Geologic Hazards

The following discussion describes the general geology of the Project site and identifies potential risks associated with such conditions. The primary sources of information for this section consist of publicly available maps and reports prepared by U.S. Geological Survey (USGS), the California Geological Survey (CGS; formerly the California Division of Mines and Geology), and the Natural Resource Conservation Service (NRCS).

Bedrock

Published geologic maps describe the ridge top area and most of the Cemetery property as underlain by a sequence of sedimentary, meta-sedimentary, and meta-volcanic rocks collectively mapped as the Franciscan Complex of Late Jurassic to Cretaceous age. Specifically, these rocks include well-bedded black shale and brown sandstone, very hard red radiolarian chert, and massive greenstone. Each of these rock types were encountered during field explorations.

Bedrock Structure

Bedding attitudes within the layered bedrock units at the site were measured in test pits and at bedrock exposures. The bedding orientation appears to be consistent with west-northwest strikes and north-northeast dips. The dip measurements ranged from 14 to 65 degrees. This bedrock structure is consistent with that shown on published geologic maps by others.

A prominent shear was previously mapped by others along the easterly portion of the Project site, near the Oakland/Piedmont boundary. This shear strikes north-northeast. The approximate location of this shear is shown on **Figure 4.5-1** as a "major shear." Other smaller shears were discovered at the site. In a road cut along Clarewood Drive is a northwest striking, southwest dipping shear within chert bedrock; and additional shears appear to be somewhat continuous across the Clarewood Area and within Plot 98 and the Panhandle. This shear strikes approximately east-west and dips to the south. The approximate locations of mapped shears are also shown on **Figure 4.5-1**.

[1] California Division of Mines and Geology, 2002. Fault Evaluation Reports Prepared Under the Alquist-Priolo Earthquake Fault Zoning Act, CGS CD 2002-01

[2] Working Group On California Earthquake Probabilities (WGCEP), 2015, The Uniform California Earthquake Rupture Forecast, Version 3 (UCERF3), U.S. Geological Survey Open-File Report 07-1437.

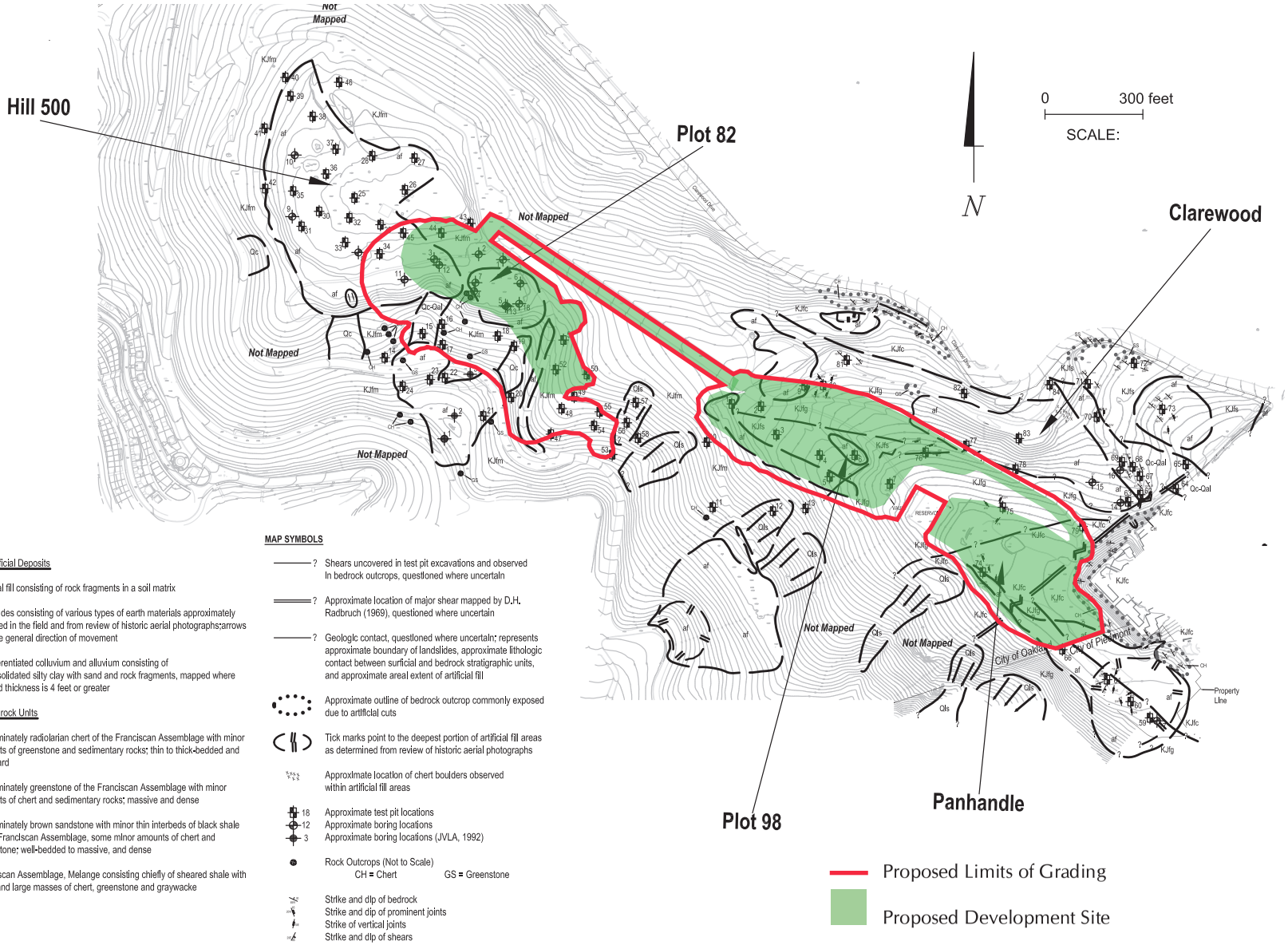


Figure 4.5-1
Geology Map of the Project Site

Source: Hultgren-Tillis Engineers, 2014

Landslides

Site specific mapping and a review of historic aerial photographs indicate the presence of several landslides along the southwest-facing slope located between the main portion of the Cemetery and the ridgeline at the north end of Plot 98. The landslides are typically located below existing grade, although the upper portion of the slides may encroach to or near the surface. The largest slide is located within the City of Piedmont within the property adjacent to the Cemetery. A small slope failure exists below one of the adjacent residential properties on a steep slope at the northeast end of the property, near the Clarewood Area. The approximate limits of the mapped landslides are shown on **Figure 4.5-2**.

Regional Seismicity and Seismic Design Parameters

The San Francisco Bay area is dominated by the northwest striking strike-slip San Andreas Fault and related seismically active faults, such as the Hayward, Calaveras, Concord, and Marsh Creek-Greenville faults. The Hayward, Calaveras, Concord, and Marsh Creek-Greenville faults are east of the site at approximately 0.7 miles, 9.5 miles, 14.0 miles, and 19.0 miles, respectively. The San Andreas Fault is approximately 18.0 miles west of the site.

The site is not located within a designated Earthquake Fault Zone, as defined by the State of California for areas along active faults. No known active faults pass through the site and the risk of fault rupture at the site is judged to be low. When a major displacement occurs on the nearby Hayward Fault, some secondary deformation may occur on existing shears or other structural features. The more serious seismic impact on the site will be strong ground shaking.

Soil liquefaction is a phenomenon in which loose, saturated granular soil undergoes reduction of internal strength as a result of increased pore water pressure, generated by shear strains within the soil mass. This behavior is most commonly induced by strong ground shaking associated with earthquakes. The subsurface materials at the site are mainly clay and bedrock, and the risk of liquefaction is concluded to be low.

Site-Specific Conditions

No springs or areas of seepage were noted within any portions of the Project site. Some seepage was noted in test pits and borings, and it is likely that groundwater conditions are seasonally variable and that perched groundwater is seasonally present within the near-surface.

Soil and groundwater conditions are expected to vary across the site over time, and depend on several factors including changes in moisture content resulting from seasonal precipitation and land use changes.

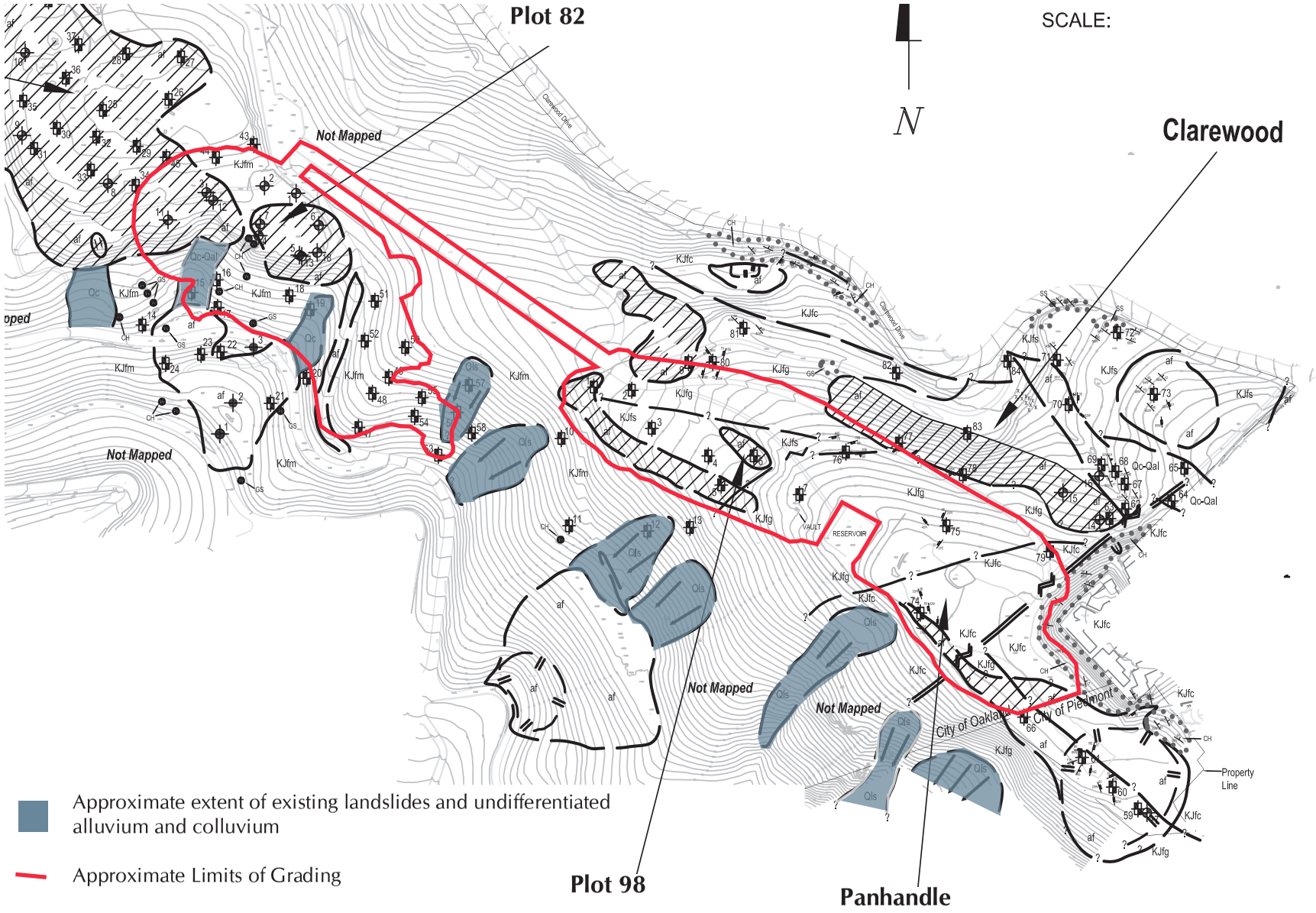


Figure 4.5-2
Approximate Locations of Areas of Known or Suspected Landslides

Source: Hultgren-Tillis Engineers, 2014

Hill 500

Hill 500 is located at the northwest end of the Project site. The surface is covered mainly by grasses, with some brush and trees, an existing small metal building, stockpiles of soil, wood chippings and grave boxes.

The Cemetery's 1952 topographic survey for the Hill 500 area indicates that this hill was graded (cut) to create a relatively level area. Fill was then placed on the top and on the slopes surrounding Hill 500, but the fill material was not compacted, and the existing slopes were not prepared to accept the fill. Debris consisting of wood (tree branches, stumps, tree trunks and wood chips) as well as other debris (glass bottles, plastic bottles, plastic bags, metal and paper products) was interspersed within this fill. The approximate limits of this fill and the fill areas near or within the Project site are shown on **Figure 4.5-3**. There is no documentation of the extent or quantity of trash and debris included within that fill material, but it is known that some of the trash was placed in concentrated zones, while most was mixed with the fill. More recently, the Cemetery removed the more concentrated zones of trash, and loosely backfilled the excavations.

Clay and/or bedrock underlie the fill, and in areas without fill, the site is covered by a thin layer of native clay underlain by bedrock. Bedrock within Hill 500 includes greenstone and chert. The greenstone varies from gray to brown, occasionally to closely fractured, and friable to moderately strong. The greenstone is typically moderately to deeply weathered within 10 to 20 feet of the original ground surface. Below that depth, the greenstone is often less weathered and ranges from weak to moderately strong. Several greenstone outcrops occur. These outcrops typically consist of occasionally fractured, moderately hard, moderately strong greenstone, which locally contains white silica or calcite veins.

Groundwater was encountered in borings at a depth of about 27 feet below grade.

Plot 82 Area

Plot 82 is located southeast of Hill 500, and consists of a relatively level area adjacent to the upper Cemetery road. Plot 82 slopes down steeply from the south to another cemetery roadway and Plot. The majority of Plot 82 was previously graded, with fill placed within two broad swales that originally existed in the eastern and western portions. The fill was completed by approximately 1983, and consists mainly of intermixed clay and rock fragments, and does not appear to be well compacted. The areas without fill consist of clay underlain by bedrock.

Surficial soil consisting of stiff to very stiff lean clay with some gravel overlies the bedrock throughout most of the Plot 82 site. These soils typically form a thin layer about 2 to 6 feet thick. Surface soil was encountered beneath fill borings, indicating that the surface soil was not removed prior to fill placement. The surface soils and fills are moderately expansive.

The Plot 82 site includes a large outcrop of chert near the center of the site, between the two zones of fill. The chert dips to the northeast into the slope. The chert is at depths of 6 to 14 feet, based on boring logs, and it is estimated that the chert has an apparent dip into the slope of 3:1 (horizontal to vertical).

Perched groundwater was encountered in the upper of borings. This water is probably the result of heavy rains. Groundwater seepage was not observed in the bedrock in the test borings.

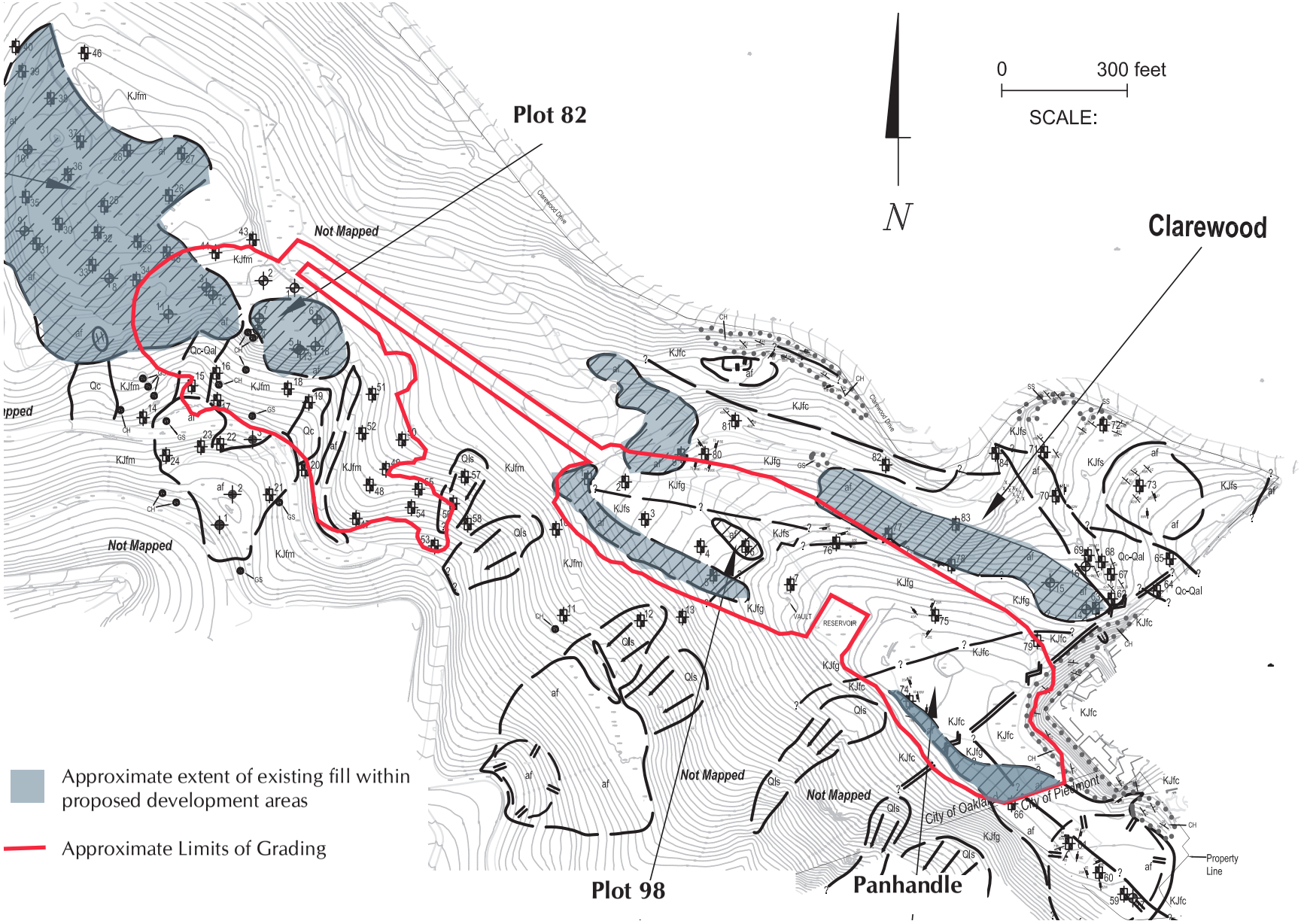


Figure 4.5-3
Approximate Locations of Known or Suspected Fill Material

Source: Hultgren-Tillis Engineers, 2014

Plot 98 and the Panhandle

Plot 98 and the Panhandle areas are largely undeveloped except for an existing water reservoir used as part of the cemetery irrigation system. The site slopes up to the southeast to a near level bench area within the Panhandle. The areas at the northeast edge of the Panhandle area, including the City of Piedmont area, have been extensively graded.

Reviews of historic aerial photographs indicate that the Cemetery property along the ridgeline adjacent to homes at Stark Knoll Place was substantially modified by massive quarry operations sometime between 1939 and 1950. Based on geologic mapping of outcrops, chert bedrock was likely the resource mined at the site. Chert is exposed in the slopes (see further discussion regarding the Stark Knoll hillside, below).

Portions of the area are covered by fill. Much of the fill is related to previous quarry activities. The existing fill is approximately 15 feet thick. No groundwater was encountered in borings or test pits. The areas without fill include a thin mantle of soil overlying bedrock. The bedrock consists of chert, greenstone, sandstone and shale.

Stark Knoll Hillside

A relatively large and steep slope exists at the perimeter of the Mountain View Cemetery property near the Panhandle area, separating the Cemetery property from the residences at the top of the slope on Stark Knoll Place. The Panhandle and the large bowl-shaped area extending north to Clarewood Drive were formerly part of a quarry. The quarry operation ceased sometime prior to 1950, and created steep slopes at the perimeter of the Cemetery property. The northeastern corner of the Cemetery property is characterized by a steep hillside that rises approximately 50 feet from the relatively flat Panhandle area. This hillside is at a slope of roughly 1:1 (horizontal to vertical) and the top of the slope is generally coincident with the property line. The slopes are covered by trees and other vegetation.

Houses have been constructed above the slope and property owners have noted that portions of this hillside have receded over the past 21 years (see **Appendix B**: Responses to the NOP). Based on a geology report (see **Appendix 4.5B**), this slope is within an area shown on geologic maps as chert. It is likely that the slope consisted of exposed chert when the quarry ceased operation. The slope includes areas with some loose debris and rock. The loose material has likely developed from weathering of the cut slope and from runoff from the properties above the slope. The slope has indications of some local sloughing and erosion, but no definitive signs of larger zones of instability.

Regulatory Setting

State

Alquist-Priolo Earthquake Fault Zoning Act

The California Legislature passed the Alquist-Priolo Earthquake Fault Zoning Act in 1972 to mitigate the hazard of surface faulting on structures intended for human occupancy and to prevent the construction of new buildings used for human occupancy on the surface trace of active faults.

There are no Alquist-Priolo Earthquake Fault Zones within the Project site, and the Act does not apply to cemetery use.

California Seismic Hazards Mapping Act

The California Seismic Hazards Mapping Act of 1990 (California Public Resources Code Sections 2690-2699.6) addresses seismic hazards other than surface rupture, such as liquefaction and seismically induced landslides. The Seismic Hazards Mapping Act specifies that the lead agency for a project may withhold development permits until geologic or soils investigations are conducted for specific sites, and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils.

California Building Code

Title 24 of the California Code of Regulations, also known as the California Building Standards Code (CBC), sets minimum requirements for building design and construction. In the context of earthquake hazards, the California Building Standards Code's design standards have a primary objective of assuring public safety and a secondary goal of minimizing property damage and maintaining function during and following seismic events.

Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. The purpose of the CBC is to establish minimum standards to safeguard the public health, safety and general welfare through structural strength, means of egress facilities, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction. The 2013 edition of the CBC provides requirements for general structural design and includes means for determining earthquake loads as well as other loads (such as wind loads) for inclusion into building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.[3]

CBC Grading Regulations

Appendix J of the CBC contain regulations that apply to grading, excavation and earthwork construction including fills and embankments. Other than certain exemptions (notably including cemetery graves), no grading may be performed without first having obtained a permit from the building official. The CBC Grading Ordinance provides regulations, standards and requirements for all grading activities that include excavations (generally providing that the slope of cut surfaces shall be no steeper than 2:1 [horizontal: vertical] unless a geotechnical report justifies a steeper slope); fills (including requirements for surface preparation, benching, material, compactions and maximum slope); setbacks for slope protection; drainage and terracing; and erosion control.

The CBC grading regulations for grading permits do not include the construction of retaining walls or other structures, which are instead governed by CBC Building Code regulations.

[3] *2013 California Building Code*, California Code of Regulations, Title 24, California Building Standards Commission, Sacramento, CA; Copyright July 2013

City of Oakland

City of Oakland General Plan

The Safety Element of the City of Oakland General Plan enumerates the following policies and actions designed to reduce risks associated with earthquakes that may affect the City of Oakland and that are relevant to the Project:

- **Geologic Hazards, Policy GE-1:** Develop and continue to enforce and carry out regulations and programs to reduce seismic hazards and hazards from seismically triggered phenomena.
  - ***Action GE-1.2*:** Enact regulations requiring the preparation of site-specific geologic or geotechnical reports for development proposals in areas subject to earthquake-induced liquefaction, settlement or severe ground shaking, and conditioning project approval on the incorporation of necessary mitigation measures.
- **Geologic Hazards, Policy GE-2:** Continue to enforce ordinances and implement programs that seek specifically to reduce landslide and erosion hazards.
  - ***Action GE-2.1:*** Continue to enforce provisions under the subdivision ordinance requiring that, under certain conditions, geotechnical reports be filed and soil hazards investigations be made to prevent grading from creating unstable slopes, and that any necessary corrective actions be taken.
  - ***Action GE-2.2:*** Continue to enforce the grading, erosion and sedimentation ordinance by requiring, under certain conditions, grading permits and plans to control erosion and sedimentation.
  - ***Action GE-2.6:*** Design fire-preventive vegetation-management techniques and practices for creek sides and high-slope areas that do not contribute to the landslide and erosion hazard.
- **Geologic Hazards, Policy GE-3:** Continue, enhance or develop regulations and programs designed to minimize seismically related structural hazards from new and existing buildings.
  - ***Action GE-3.1***: Adopt and amend as needed updated versions of the California Building Code so that optimal earthquake-protection standards are used in construction and renovation projects*.*
  - ***Action GE-3.2:*** Continue to enforce the unreinforced masonry ordinance to require that potentially hazardous unreinforced masonry buildings be retrofitted or be otherwise made to reduce the risk of death and injury from their collapse during an earthquake.
  - ***Action GE-3.3***: Continue to enforce the earthquake-damaged structures ordinance to ensure that buildings damaged by earthquakes are repaired to the extent practicable.
- **Geologic Hazards, Policy GE-4:** Work to reduce potential damage from earthquakes to "lifeline" utility and transportation systems.
  - ***Action GE-4.2:*** As knowledge about the mitigation of geologic hazards increases, encourage public and private utility providers to develop additional measures to further strengthen utility systems against damage from earthquakes, and review and comment on proposed mitigation measures.

Standard Conditions of Approval

The following SCA applies to all projects requiring a construction-related permit.

SCA #33: Construction-Related Permit(s) - Requirement: The project applicant shall obtain all required construction-related permits/approvals from the City. The project shall comply with all standards, requirements and conditions contained in construction-related codes, including but not limited to the Oakland Building Code and the Oakland Grading Regulations, to ensure structural integrity and safe construction.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

The following condition applies to all projects involving: 1) a subdivision (except condominium subdivisions and subdivisions between existing buildings with no new structures) per OMC sections 16.20.060 and 16.24.090 or; 2) a grading permit per OMC section 15.04.660. The SCA does not apply to projects located in an Earthquake Fault Zone or a Seismic Hazards Zone.

SCA #34: Soils Report - Requirement: The project applicant shall submit a soils report prepared by a registered geotechnical engineer for City review and approval. The soils report shall contain, at a minimum, field test results and observations regarding the nature, distribution and strength of existing soils, and recommendations for appropriate grading practices and project design. The project applicant shall implement the recommendations contained in the approved report during project design and construction.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

City of Oakland Municipal Code

The Safety Element of the City of Oakland's General Plan identifies policies and actions that apply to geologic hazards. The City implements these pertinent sections of the General Plan through enforcement of ordinances. Among these are ordinances that are applicable to the Project to minimize soil hazards, reduce soil erosion and protect stream quality, prevent grading from creating unstable slopes, and mitigate fault rupture hazards.

Building Codes

The Oakland City Council has adopted legislation to amend the 2013 triennial edition of the California Model Building Construction Codes to formally incorporate Oakland's established local building code standards and practices into the state codes for use in all building projects within Oakland. Oakland's amendments to the CBC include administrative amendments (such as adopting the City's Master Fee Schedule), and non-administrative (such as adopting special design standards in the Oakland Hills Fire Hazard Zone). All non-administrative amendments are no less restrictive than statewide regulations, and supported by resolution of findings based on local climate, topography and geology conditions. The 2013 Oakland Building Construction Code contains all of Oakland's amendments to the 2013 Edition of the California Building Standards Code.

According to Section 105.2 of the California Building Code (which has not been amended by local amendments), retaining walls that are not over 4 feet in height measured from the bottom of the footing to the top of the wall are exempt from building permit requirements, unless they support a surcharge or impound Class I, II or IIIA liquids. The City of Oakland's Permit Inspection Manual for Residential Repairs and Replacements provides that walls with 3 feet maximum retained earth and a

back-slope of not more than 6:1 (15% slope), not surcharged and not attached to a fence or adjoining foundation do not require a building permit.

Since the Project includes retaining walls that exceed both the 3-foot and 4-foot exemption criteria, building permits will be required for all such retaining walls and for the crypt wall at Plots 82 and the Panhandle.

Grading Ordinance (Chapter 15.04.660)

The Oakland Municipal Code, Title 15.04.660 adds the CBC Chapter 18b requirements for grading, excavations and fills to the City's Building Code. Section 1802B.1 requires a grading permit under a number of circumstances, including whenever the volume of excavation or fill will exceed fifty (50) cubic yards if the existing or resulting slope will exceed 20%, or if the vertical distance between the top and bottom of excavation or fill will exceed five feet at any location; and when the volume of excavation or fill will exceed five hundred (500) cubic yards on a parcel or contiguous parcels. The Project involves substantial earthmoving with excavation and fill of approximately 100,000 cubic yard of earth. A grading permit will be required of the Project. However, Section 1802B.1 provides that no grading permits are required for subsequent grading associated with cemetery graves.

If the proposed Project is approved by the City, all applicable grading permit requirements listed below would be required as conditions of approval of a grading permit to help ensure less-than-significant impacts from geologic and seismic conditions. These grading permit requirements are incorporated and required as part of the proposed Project, so they are not listed as mitigation measures. The Project's application(s) for grading permits must include, but is not limited to all of the following information:

Application Form. The following information is required on the application form:

a. A description of the property in sufficient detail to permit its identification and general location.

b. The name(s) and address(es) and phone number(s) of the owner or owners of the property.

c. The reason for the grading.

d. The amount in cubic yards of the proposed excavation and fill and the amount of the cumulative total of grading work.

e. The equipment and methods to be used in the work.

f. Whether any material will be hauled from or imported onto the site over public streets, and if so, the site from which or to which said material will be moved and the routes to be used.

g. The approximate starting and completion dates of the work to be covered by the Grading Permit.

h. An estimate of total cost of all work covered by the application.

i. Whether the grading is located within the Special Studies Zone, Seismic Hazard Zone, Flood Hazard Area, watercourse, or Land Stability Problem Area or a site containing expansive soils.

Vicinity Map, Site Map and Grading Plan. The vicinity map shall show the project site in relationship to the surrounding area's watercourses, water bodies and other significant geographic features, roads and other significant structures. The site map and grading plan shall be prepared by a Civil Engineer, are subject to approval of the City Engineer, and shall include all of the following:

a. A topographic and boundary survey of the site, as provided in Section 15.04.140 of this Code, for all sites to be graded containing up to and including five acres. Sites containing more than five acres shall have contours at intervals and a minimum scale subject to the approval of the City Engineer. Enough off-site contours shall be included to show how surface runoff of storm water will flow on to and off the site.

b. Proposed limits of cuts and fills, both temporary and permanent, and other earthwork clearly designated.

c. Proposed retaining structures.

d. Drainage Plan: to include existing, temporary, and final drainage facilities which shall be coordinated with erosion and sediment control plans. Supporting hydrology and hydraulic calculations for on-site and downstream systems shall be submitted when required.

e. Existing and proposed improvements to the site.

f. Existing off-site structures within fifteen feet of the site boundary and other off-site improvements which may be affected by the grading work.

g. Public and private easements of record.

h. A Soils Report, as hereinbefore defined, prepared by a registered design professional.

i. Typical sections of areas to be graded and profiles of all proposed traveled ways for vehicles and pedestrians.

j. Measures to be taken to protect against potential hazards arising during the progress of the grading work.

k. If the site is in the Special Studies Zone, the plan shall show any purported fault trace which may or does cross or affect the site to be graded.

l. All proposed corrective actions to be taken to alleviate existing site conditions detrimental to the improvements proposed including expansive soils, land stability problems, and seismic liquefaction and landslide.

m. The location of the base and diameter at breast height of all protected trees, and indication as to which protected trees, if any, may be subject to removal or damage during construction per Chapter 12.36 of the Oakland Municipal Code.

Erosion and Sedimentation Control Plan, where required by the City Engineer. Erosion Control and Sedimentation Control Plans shall be prepared by a Civil Engineer, are subject to approval of the City Engineer, and shall include all of the following:

a. Interim Measures. The plans shall include interim erosion and sedimentation control measures to be taken during wet seasons until permanent erosion and sedimentation control measures can adequately minimize erosion, excessive storm water runoff and sedimentation measures.

   1. The plans shall include all necessary measures to be taken to prevent excessive storm water runoff or carrying by storm water runoff of solid materials on to lands of adjacent property owners, public streets, or to watercourses as a result of conditions created by grading operations.

   2. The plan shall include, but not be limited to, such measures as short-term erosion control planting, waterproof slope covering, check dams, interceptor ditches, benches, storm drains, dissipation structures, diversion dikes, retarding berms and barriers, devices to trap, store and filter out sediment, and storm water retention basins. Off-site work by the Applicant may be necessary. The Applicant shall provide any off-site permission or easements necessary to present written proof thereof to the City Engineer. Erosion control work and sediment control work shall be coordinated with the grading work. A narrative description shall also be provided of measures to be taken, planting materials and specifications, and maintenance provision.

   3. There shall be a clear notation that the plans are subject to changes as changing conditions occur. Calculations of anticipated storm water runoff and sediment volumes shall be included, if required by the City Engineer.

b. Permanent Measures. The plans shall include permanent erosion and sedimentation control measures which shall be primarily oriented towards prevention of erosion and shall include, but not be limited to, such measures as permanent erosion control planting, paved ditches, planted swales, benches, storm drains, dissipation structures, rip rap, and storm water retention basins.

    4. A narrative description shall also be provided of measures to be taken, specifications for planting materials, fertilizers, planting and maintenance procedures.

    5. An estimate of the length of time which will be required for the planting to produce a permanent coverage which will be sufficient to provide the degree of erosion control protection for which it is designed

Soils Report. All Soils Reports shall be based, at least in part, on information obtained from on-site testing. The minimum contents of a Soils Report submitted pursuant to this chapter shall be as follows:

a. Logs of borings and/or profiles of test pits and trenches.

    1. Borings: The minimum number of borings acceptable, when not used in combination with test pits or trenches, shall be two, when in the opinion of the Soils Engineer such boring shall be sufficient to establish a soils profile suitable for the design of all footings, foundations and retaining structures. The depth of each boring shall be sufficient to provide adequate design criteria for all proposed structures. All boring logs shall be included in the soils report.

    2. Test Pits and Trenches: Test pits and trenches shall be of sufficient length and depth to establish a suitable soils profile for the design of all proposed structures. Soils profiles of all test pits and trenches shall be included in the soils report.

b. A plat shall be included which shows the relationship of all borings, test pits and trenches to the exterior boundary of the site. The plat shall also show the location of all proposed site improvements. All proposed improvements shall be labeled.

c. Copies of all data generated by field and/or laboratory testing to determine allowable soil bearing pressures, shear strength, active and passive pressures, maximum allowable slopes where applicable and any such other information which may be required for the proper design of foundations, retaining walls and other structures to be erected subsequent to or concurrent with work done under the Grading Permit.

d. A written report which shall include, but is not limited to the following:

    1. Site description.

    2. Local and site geology.

    3. Review of previous field and laboratory investigations on the site, if any.

    4. Review of information on or in the vicinity of the site on file with the City Engineer, if any.

    5. Site stability shall be addressed with particular attention to existing conditions and proposed corrective actions at locations where land stability problems exist.

    6. Conclusions and recommendations for foundations and retaining structures, resistance to lateral loading, slopes and specifications for fills and pavement design as required.

    7. Conclusions and recommendations for temporary and permanent erosion control and drainage. If not provided in a separate report they shall be appended to the required soils report.

Landscape Addendum to the erosion and sediment control plans by a licensed landscape architect when required by the Director of City Planning. A Landscape Addendum to the Grading Plans may be required at the discretion of City Planning. The landscaping plan, when required, shall be prepared by a licensed Landscape Architect to the current professional standards in landscape architecture and is subject to the approval of City Planning.

Proposed Dust Control Measures. "Best Management Practices" as developed by the City Engineer or an appropriate reference approved by the City Engineer, shall be used throughout all phases of construction. This includes any suspension of work, alleviation or prevention of any fugitive dust nuisance and the discharge of smoke or any other air contaminants into the atmosphere in such quantity as will violate any City of Oakland or regional air pollution control rules, regulations, ordinances, or statutes.

a. Water, dust palliatives or combinations of both shall be applied continuously and in sufficient quantity during the performance of work and at other times as required. Dust nuisance shall also be abated by cleaning, vacuuming and sweeping or other means as necessary.

b. A Dust Control Plan may be required as a condition of permit issuance or at other times as deemed necessary to assure compliance with this section. Failure to control effectively or abate fugitive dust nuisance or the discharge of smoke or any other air contaminants into the atmosphere may result in suspension or revocation of the permit, in addition to any otter applicable enforcement actions or remedies.

In granting any permit under this chapter, the City Engineer may attach conditions reasonably necessary to safeguard life, public and private property, and to ensure that the work will be carried out in an orderly manner in conformance with all regulations and without creating a public nuisance. Such conditions may include, but shall not be limited to:

- Limitations on the hours of operations, days of operations or the portion of the year in which the work may be performed.
- Restrictions as to the size and type of equipment to be used.
- Prohibition or restriction on the use of explosives.
- Designation of the routes over which the materials may be transported.
- Requirements as to the suppression of dust and prevention against spilling or tracking of dirt, and the prevention of excessive noise or other results offensive or injurious to the neighborhood and the general public, or any portion thereof.
- Regulations as to the use of public streets and places in the course of the work.
- Regulations for the repair and cleaning of streets and other public facilities if their safe, operable, and clean condition has been jeopardized.
- Requirements for safe and adequate drainage of the site.
- A requirement that approval of the City Engineer be secured before any work which has been commenced, may be discontinued.
- A requirement that personnel and equipment be provided at the site during storms to prevent damage to other property from flooding or the depositing of material washed from the site.
- Requirements for fences, barricades or other protective devices.
- Requirements pertaining to reshaping and planting the site, including the time limit for such work.

Building Services Division

In addition to compliance with building standards set forth by the 2009 IBC and 2010 CBC, a project applicant would be required to submit to the Oakland Building Services Division an engineering analysis accompanied by detailed engineering drawings for review and approval prior to excavation, grading, or construction activities on a project site. Specifically, an engineering analysis report and drawings of relevant grading or construction activities on a project site would be required to address constraints and

incorporate recommendations identified in geotechnical investigations. These required submittals and City reviews ensure that the buildings are designed and constructed in conformance with the seismic and other requirements of all applicable building code regulations, pursuant to standard City of Oakland procedures.

Impacts, Standard Conditions of Approval and Mitigation Measures

Thresholds of Significance

The proposed Project would have a significant impact on the environment if it would expose people or structures to geologic hazards, soils, and/or seismic conditions so unfavorable that they could not be overcome by special design using reasonable construction and maintenance practices. Specifically, the proposed Project would have a significant impact on the environment if it would:

1. Expose people or structures to substantial risk of loss, injury, or death involving:
   - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map or Seismic Hazards Map issued by the State Geologist for the area or based on other substantial evidence of a known fault [NOTE: Refer to California Geological Survey 42 and 117 and Public Resources Code section 2690 et. seq.];
   - Strong seismic ground shaking;
   - Seismic-related ground failure, including liquefaction, lateral spreading, subsidence, collapse; or
   - Landslides;
2. Result in substantial soil erosion or loss of topsoil, creating substantial risks to life, property, or creeks/waterways;
3. Be located on expansive soil, as defined in section 1802.3.2 of the California Building Code (2007, as it may be revised), creating substantial risks to life or property;
4. Be located above a well, pit, swamp, mound, tank vault, or unmarked sewer line, creating substantial risks to life or property;
5. Be located above landfills for which there is no approved closure and post-closure plan, or unknown fill soils, creating substantial risks to life or property; or
6. 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.

Approach to Analysis

The potential geologic, geotechnical, and seismic effects of the proposed Project can be considered from two points of view: (1) construction impacts; and, (2) geologic hazards to people or structures.

The basic criterion applied to the analysis of construction impacts is whether construction of the proposed Project will create unstable geologic conditions that would last beyond the short-term construction period. Construction of the Project at its proposed hillside location presents several geotechnical engineering concerns and considerations. These concerns include the presence of loosely compacted fill and debris within the fill, construction of new cut and fill slopes, and the presence of hard chert. These general concerns are discussed below, including specific geotechnical recommendations

made by the Project geotechnical engineer (Hultgren-Tillis, 2014) to fully address these concerns at each hillside area within the Project site.

The analysis of geologic hazards is based on the degree to which the site geology could produce hazards to people or structures from earthquakes, ground shaking, ground movement, fault rupture, or other geologic hazards, features or events. The Project is located in a seismically-sensitive area given its regional proximity to earthquake faults and the underlying soils in the Project Area. The Project Area also is underlain with soils – notably artificial fill – that could exhibit and result in further settlement, differential settlement or expansion. However, given the nature of the Project, as a cemetery use, it is unlikely that these conditions would expose people to substantial risk of loss, injury, or death. The geologic hazards addressed in this report instead primarily relate to the potential for structural damage to the Project's proposed structures, and potential off-site effects.

The presence of underground utilities, wells or other subsurface features present less than significant impacts. The proposed Project would experience no significant impact under the other thresholds of significance.

Unknown Fill Characteristics

The following discussion addresses Threshold 3.

Impact Geo-1: The Project will be constructed within areas containing unknown fill soils. These existing conditions could potentially jeopardize the long-term stability and permanence of the proposed cemetery use. (**LTS with SCAs**)

Fill soils cover much of the areas proposed to be developed for cemetery use. The approximate limits of fill near the three sites proposed for development (Plot 82, Plot 98 and the Panhandle) are shown on Figure 4.5-3. The fill at Hill 500 (generally above Plot 82) contains debris consisting primarily of wood and some common trash. Portions of this fill may extend into the Plot 82 site. Debris was not found in borings or test pits conducted at other areas within the Project site (Plot 98 or the Panhandle), and it is unknown whether any debris was placed in the fill at these other locations.

Data from borings and test pits, including depths of the existing fill, is shown in **Appendix 4.5**. Based on analysis of the boring and test pit data, it has been concluded that the existing fill soils as they presently exist on site are not suitable for the proposed cemetery use. Areas of loosely compacted fill material and debris could exhibit and result in further settlement, differential settlement or expansion, and do not provide adequate stability in the event of strong ground shaking or disturbance during grading. Placement of future below-ground burial sites in these fill locations, without appropriate site preparation, could render these sites unstable and unsuitable for the proposed use.

Standard Conditions of Approval

Pursuant to **SCA #34: Soils Report**, the Project's geotechnical engineer (Tillis-Hultgren) has reviewed the boring and test pit data available and has made general recommendations for appropriate grading practices to be implemented as part of the Project's design. To address the site's geologic constraints related to existing fill soils, the following grading practices are recommended in furtherance of SCA #34 and pursuant to the grading permit requirements found in the Oakland Municipal Code (OMC) section 15.04.660 to remediate poor soils conditions:

Geotechnical Recommendations Pursuant to SCA #34: Grading Practices for Artificial Fill

1. Plot 82 Over-Excavation: The Project's proposed grading plan for Plot 82 includes removal of approximately 100,000 cubic yards of material from this location to create a gradually sloped, near level cemetery site. The planned cuts within this area will be of sufficient depth to remove all existing fill. Over-excavation and removal of additional fill beyond this cut is not expected to be necessary.
2. Grading Near Existing Burial Sites: Plot 77, immediately adjacent to the Plot 82 site and adjacent to the ridgeline road, will be retained at its existing approximately 3:1 slope. Removal of fill material from this location is not anticipated. The condition of the area immediately downslope from Plot 77, within the Plot 82 site, will be checked during construction. If zones of loose fill or debris are encountered, additional grading may be required at the lower edge of Plot 77.
3. Plot 98 and the Panhandle. The existing fill near and below the footprint of Plot 98 and the Panhandle will need to be removed and re-compacted during grading, mixed with the relocated fill excavated from Plot 82.
4. North Access Road. The access road along the north side of Plot 98 and the Panhandle will be partially located on fill, and this fill also extends downslope of the roadway. The fill below the road will be removed and replaced as a compacted buttress, whereas the fill further downslope is expected to remain.
5. Grading within Piedmont. The existing fill to the east of the Panhandle and within the City of Piedmont will not be removed since no significant grading is planned in this area.

The final grading permit for the Project per OMC section 15.04.660 will be required to incorporate these geotechnical recommendations for grading practices in artificial fill. Pursuant to SCA #34, the Project's design and construction shall implement these recommendations as included in a final geotechnical report to be approved by the City prior to construction. With incorporation of the geotechnical recommendations and pursuant to SCA #34, the risk of geologic instability related to artificial fill will be reduced to a level of less than significant.

Mitigation Measures

None needed

Landslides

The following discussion addresses Threshold 1.

Impact Geo-2: The Project would be constructed within areas containing landslide-prone materials. These existing conditions could potentially jeopardize the long-term stability and permanence of the proposed cemetery use. (**LTS with SCAs**)

Existing areas of known and potential landslides are present within and adjacent to the Project sites (see areas identified as Qls on Figure 4.5-2). Additional portions of the Project site contain undifferentiated colluvium and alluvium consisting of unconsolidated silty clay with sand and rock fragments (see areas identified as Qc-Qal on Figure 4.5-2). Most of these landslide-prone areas are located beyond the footprint and downslope of the Project's proposed new burial sites. However, certain of these slide areas have the potential to adversely affect the Project if they were subject to strong seismic shaking, undercut by grading activity, or subject to excessive moisture (e.g., from upslope irrigation).

Standard Conditions of Approval

Development of the Project will require submittal of a mass grading plan for the cut-and-fill operation to move fill material from Plot 82 to Plot 98 and the Panhandle, as well as detailed grading plans for each of the individual Project sites (i.e., Plot 82, Plot 98, and the Panhandle). City approval of each of these grading plans will be required. These grading plans will require the applicant to fully address site stability, with particular attention to existing conditions and proposed corrective actions at locations where land stability problems exist. Detailed recommendations for retaining structures, resistance to lateral loading, slopes and specifications for fill will be required pursuant to these subsequent grading permits.

Pursuant to **SCA #34: Soils Report** and subsequent grading permit requirements, the Project's geotechnical engineer has prepared recommendations to be applied to the Project's proposed earthwork and site preparation (Hultgren-Tillis, 2014). These recommendations were prepared pursuant to the Project's initial design phase and shall be incorporated in the Project's ultimate grading plans. The geotechnical engineer's recommended hillside grading practices for the Project provide for slope buttressing that will resist future movement of existing landslides and provide a stable site for construction of crypt walls and burial sites. Generally, these recommended grading practices include the following:

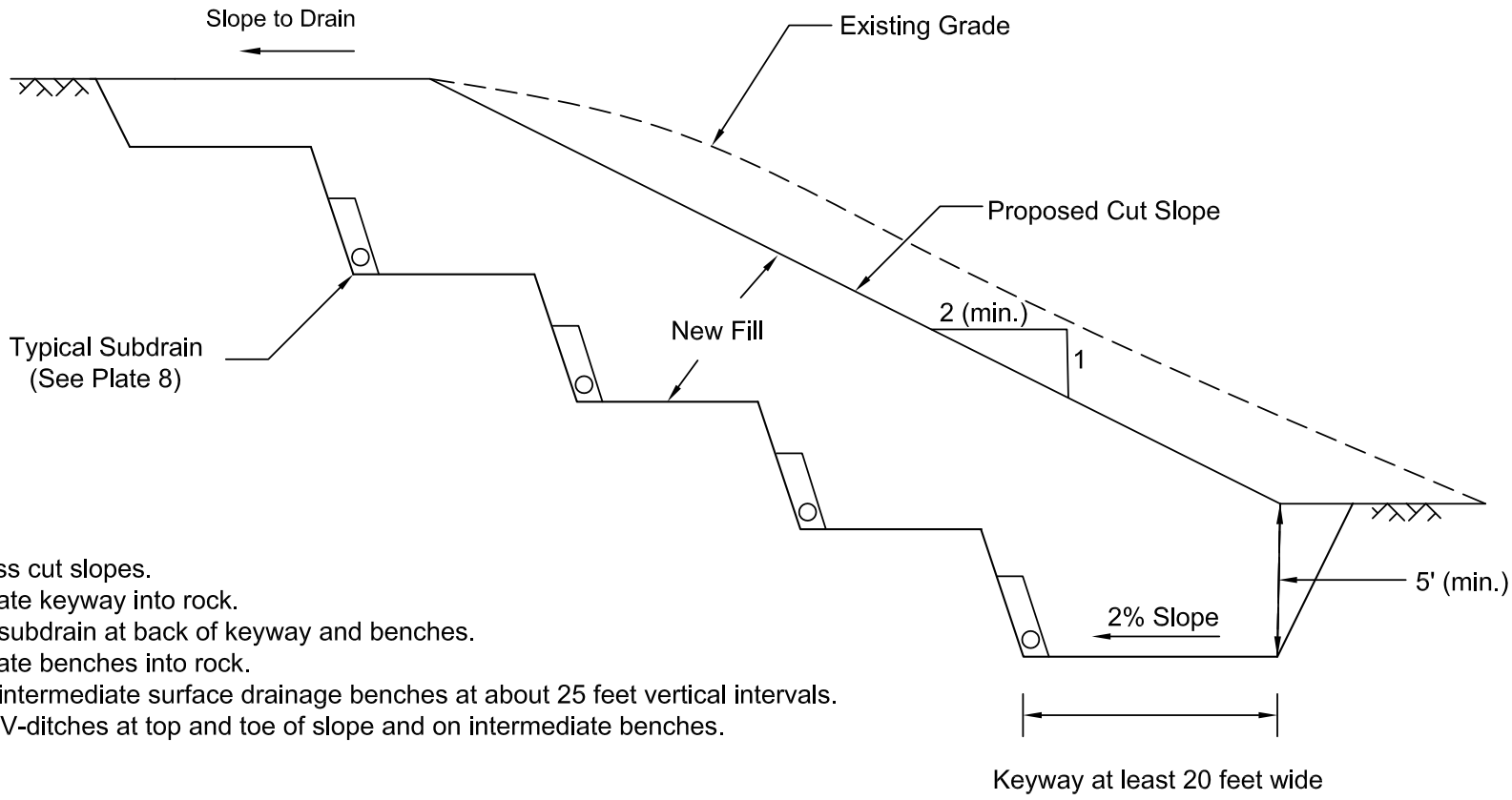
- Keyways will be excavated at the toe of fill slopes to remove soil and weaker materials;
- Wide, near-level pads will be created to receive new fill material;
- Sub-surface drains will be installed to collect subsurface water and reduce water pressure;
- Benches will be excavated to remove weak soil and to support fills on the underlying bedrock or firm materials;
- Retaining walls and retaining structures will be provided in areas where existing landslides extend partially into the proposed development sites; and
- New fill will be placed in thin, level lifts, and the fill will be moisture conditioned and methodically compacted.

More specifically, the following detailed engineering recommendations address the Project's proposed earthwork operations.

Geotechnical Recommendations Pursuant to SCA #34: Grading Practices to Address Potential Landslides

1. Site Preparation: Surface soils and existing fill be removed, and the areas rebuilt as well-compacted fills. Grading will include construction of keyways into rock, benching into firm material and placement of subdrains. The future development sites will be cleared of brush, trees, stumps, and surface vegetation designated for removal. Brush, trees, and stumps will be removed from the site, and the site will be stripped to remove grasses and shallow roots.

Grading: The fill and cut slopes will be constructed in accordance with the typical details presented on **Figure 4.5-4 and 4.5-5**. A keyway will be excavated at the slope toe. Keyways should be at least 20 feet wide, measured front to back. The keyway should extend through the surface soils and existing fill, and at least 5 feet into bedrock at the back of the keyway; at least 2 feet into bedrock at the front of the keyway for fill slopes, and at least 5 feet for cut slopes. Keyways should dip slightly into the hill. As the fill is extended up the hillside, benches will be excavated into the slope, exposing undisturbed bedrock. Benches at sub-drain locations should be at least 10 feet wide.

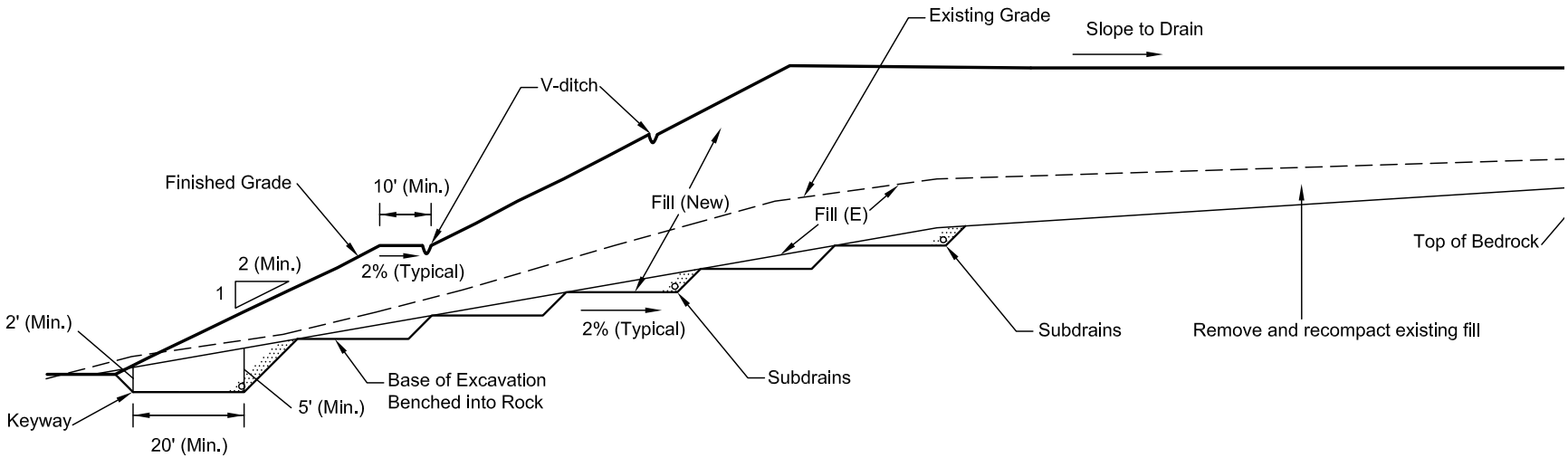


Notes:

(1) Buttress cut slopes.
(2) Excavate keyway into rock.
(3) Place subdrain at back of keyway and benches.
(4) Excavate benches into rock.
(5) Place intermediate surface drainage benches at about 25 feet vertical intervals.
(6) Install V-ditches at top and toe of slope and on intermediate benches.

Figure 4.5-4
Cut Slopes, Typical Cross Section

Source: Hultgren-Tillis Engineers, 2015



Notes (1) Remove existing fill.
(2) Excavate keyway into rock.
(3) Place subdrains at back of keyway and benches.
(4) Place existing fill in thin lifts, moisture condition and compact.
(5) Excavate benches into rock.
(6) Place intermediate surface drainage benches at about 25 feet vertical intervals.
(7) Install V-ditches at top and toe of slope and on intermediate benches.

Figure 4.5-5
Fill Slope, Typical Cross Section

Source: Hultgren-Tillis Engineers, 2015

2. Retaining Structures / Mausoleums and Niche Walls: To minimize the need for extensive remedial grading outside of (and down-slope from) the grading limits, retaining walls maybe constructed and are planned for at certain locations at Plot 82 and at Plot 98 and the Panhandle (see Figure 4.5-4).

    a. The retaining structures may consist of a soldier-pile and lagging walls, and to limit deflections, tiebacks may be needed in some areas. The design criteria for the walls will be provided as part of final building permit design.

    b. Design of foundations and flatwork for mausoleums or niche walls will also need to consider the presence of expansive soil material at foundation level and proximity to grave excavations. Recommendations for these structures will be presented as part of final building permit design.

3. Subdrains: New subdrains shall be installed at the rear of the excavated keyways and on benches above the keyway (as shown on Figures 4.5-4 and 4.5-5).

    a. Sub-drains should consist of a free-draining layer of Class 2 permeable material meeting Caltrans' Standard Specifications. The permeable material should be at least 12-inches thick and extend up the face of the back cuts. The permeable material should cover at least 50 percent of the vertical height of the existing slope.

    b. The maximum height of excavated slope that is not covered by permeable material should not exceed 8 feet between subdrains.

    c. Four-inch diameter perforated collector pipes should be installed near the bottom of the Class 2 permeable material. The pipes should be underlain by at least 3-inches of permeable material. The sub-drain pipes should have a minimum slope of one percent and should drain to discharge to a suitable outlet. Sub-drain lines should include a clean-out riser that should be covered with a tamper-proof locking cap and a concrete Christie box.

    d. The sub-drains shall be connected to solid pipes that outlet to V-ditches, storm drains or paved areas. The discharge point of the down-drains should be covered with a heavy wire mesh to deter rodent access. The locations of subdrains and their cleanouts and outlets should be surveyed and marked on the as-built grading plans.

4. Fill Materials: Fill placed at the site will be derived from the on-site excavations. Chert may generate large pieces of rock, depending on the method of excavation and massiveness of the rock. Boulders up to 3 feet in maximum dimension may be placed at least 3 feet below finished grade where burials are not planned. No rock fragments larger than 6-inches should be placed within 3 feet of finished grade or future gravesite areas. Wood, tree limbs, roots greater than 1-inch in diameter, tree stumps, metal and concentrated zones of common trash should be removed from existing fill during grading. Some debris (glass, plastic) that is well mixed within the existing fill may remain and be placed in the new, compacted fills. The contractor should stage grading such that existing fill containing debris is only placed in the lowest elevation of the fill below depths of future graves and excavations.

    a. Select fill placed at the site should be a soil or soil/rock mixture, free of deleterious matter and contain no rocks or hard fragments larger than 4-inches in maximum dimension, with less than 15 percent larger than 1-inch in maximum dimension.

    b. Select fill should have a low expansion potential, which for this site should be defined as having a Liquid Limit (LL) less than 40 and Plasticity Index (PI) less than 15.

c. Select fill should be predominantly granular with 100 percent passing a 2-inch sieve and less than 30 percent passing the Number 200 sieve.

d. Permeable material should meet requirements for Class 2 Permeable Material in accordance with Caltrans Standard Specification Section 68-1.025.

e. Sub-drain pipe should be an ABS or PVC plastic pipe having a SDR of 23.5. The collection pipe should be nominally 4-inches in diameter and should have nominally ¼-inch diameter perforations at 12-inches or less longitudinal spacing. Sub-drain pipes should be placed with perforations down. Cleanouts should be solid 4-inch diameter SDR 23.5 pipe, and discharge pipes should be solid 6-inch diameter SDR 23.5 pipe.

5. Compaction: Fill shall be placed in lifts 8-inches or less, in loose thickness, and moisture conditioned to at least over optimum moisture content. Moisture conditioning should be performed prior to compaction. Each lift should be compacted to a least 90 percent relative compaction with a sheepsfoot compactor. A sheepsfoot compactor or equivalent equipment should be used for compacting soils. Materials that are too wet to compact should be spread out and aerated by tilling or discing to achieve a moisture content suitable for compaction. ASTM Test No. D-1557 should be used to assess relative compaction. The outside face of the slope should be over-filled (constructed fat) to allow the finished slope to be cut back to a well compacted surface.

6. Slopes: Slopes should be inclined at 2:1 or flatter. Fill slopes should be constructed in accordance with the details shown on Figure 4.5-5. Cut slopes should include a slope buttress constructed in accordance with the details provided on Figure 4.5-4. Slopes should include surface benches and concrete V-ditches to collect surface water.

    a. The benches should be at least 10 feet wide and at about 25 feet vertical spacing. The new V-ditches should drain to the existing storm drain system or paved areas.

    b. A V-ditch or lined swale should be located at the top of slopes or the area above the slopes should be graded to drain away from slopes.

7. Slope Creep and Setback: Slopes tend to creep downhill due to gravity forces. Structures located near tops of slopes will tend to move slowly downslope and settle. New structures, including retaining walls, crypt walls and graves, should not be founded within 10 feet of finished slopes that are inclined at 3:1 or steeper. A railing or fence should be considered at the top of steep slopes in public areas to improve safety and limit access to the slope face.

8. Hydro-Seeding: Shortly after completion of filling, slopes will be hydro-seeded and irrigated to establish groundcover to minimize surface erosion.

9. Utility Trenches: Utility trenches will be set back far enough from structures (retaining walls) so they will not affect the planned foundations. The utility lines should not extend down below an imaginary plane inclined at 2:1 down and away from the base of footings. In the absence of local agency requirements, the following criteria for bedding and backfilling utility lines should be used.

    a. For pipes other than concrete storm drains, a bedding layer consisting of clean sand or fine gravel should be placed below and around pipes and extend at least 12-inches above their tops. The bedding thickness below the bottom of the pipe should be at least 3-inches.

    b. For concrete storm drains, the above bedding criteria may be modified by extending the sand or fine gravel bedding material only up to the spring line of the pipe, provided care is taken during placement and compaction of the fill around and above the pipe.

Common fill may be used for trench backfill above the sand or fine gravel. Backfill materials should be placed and compacted as described above. Jetting should not be allowed for compacting backfill.

The final grading permit for the Project will be required to incorporate these geotechnical recommendations for grading practices for landslide remediation and safety. Pursuant to SCA #34, the Project's design and construction shall implement these recommendations as included in a final geotechnical report to be approved by the City prior to construction. With implementation of appropriate grading practices as recommended above and pursuant to the requirements of the City's grading permit, existing landslide conditions are not expected to adversely affect the Project's operation and ultimate cemetery use and the risk of geologic instability related to landslide prone material will be reduced to a level of less than significant.

Mitigation Measures

None needed

Slope Stability – Stark Knoll Hillside

The following discussion addresses Threshold 2.

Impact Geo-3: The Project will not result in substantial soil erosion, loss of topsoil or exacerbation of slope instability that could create substantial risks to life or property. (**LTS**)

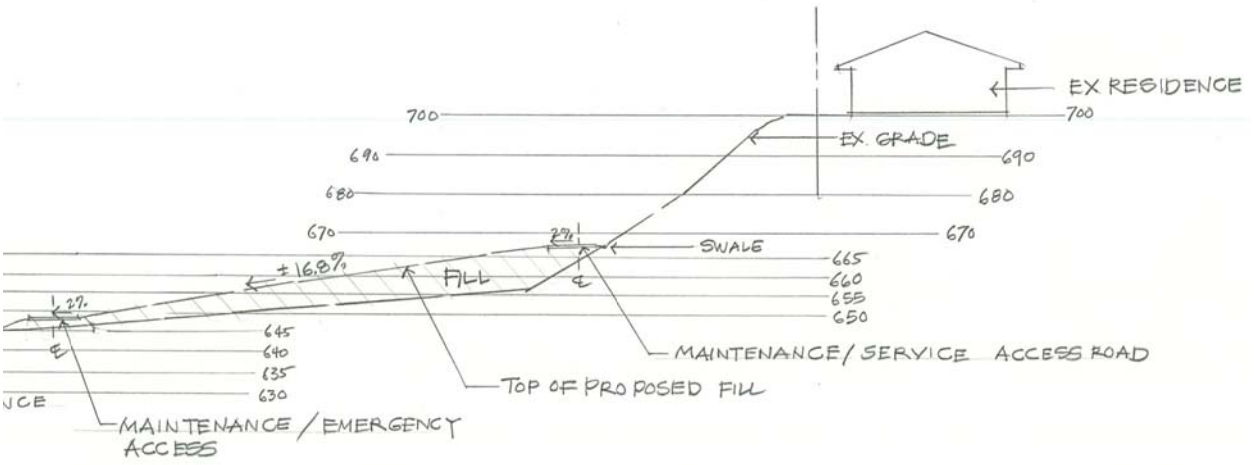
As indicated in the Setting section of this chapter, there is an existing steep slope at the perimeter of the Mountain View Cemetery property near the Panhandle area, between the Cemetery and the residences at Stark Knoll Place. This area was formerly part of a quarry, and large scale grading occurred during quarrying operations. The quarry operation ceased sometime prior to 1950, leaving steep slopes at the perimeter of the Cemetery property, rising approximately 50 feet from the relatively flat Panhandle area. This hillside is at a slope of roughly 1:1 (horizontal to vertical) and the top of the slope is generally coincident with the property line. The slopes are covered by trees and other vegetation, and houses have been constructed above the slope. These steep slopes extend to the east onto the City of Piedmont, and to the northeast beyond the Project site (**Figure 4.5-6**).

Residents of the homes located above the slope (primarily along Stark Knoll) have reported erosion and movement within the slope over the past 20 years. The slope is within an area shown on geologic maps as chert, and likely consists primarily of exposed chert from when the prior quarry ceased operation. The slope also includes areas with loose debris and rock. The loose material has likely developed from weathering of the cut slope and from runoff from the properties above the slope. The slope has indications of some local sloughing and erosion, but no definitive signs of larger zones of instability. It is expected that the slope will continue to weather, and surficial movement of the debris on the slope can be expected to continue.

The movement of surface material on the slope in certain places has been exacerbated by runoff from homes above the slope draining down the hillside, including locations where drainage pipes discharge to the face of the hillside. During the last 21 years, the face of the hillside has receded such that certain of these drainage pipes have new become exposed.



Stark Knoll Hillside



Proposed FIll at Stark Knoll Hillside

Figure 4.5-6
Stark Knoll Hillside

The Project is proposed to occur along approximately 40% of this slope area. The Project proposes to raise the elevation of grade at the toe of the slope by up to 15 feet by placing fill against the lower portion of the slope. The portion of the slope above the fill, and the remaining 60% of the slope outside of the Project site will not be altered. Within the Project area, the placement of fill at the toe of slope will serve to buttress the slope and generally improve overall stability. The slope above the fill and beyond the Project area will likely continue to weather and degrade with time.

The Project will not create or worsen erosion or slope instability along this hillside, but rather will provide a measure of improved stability, and the Projects impacts are less than significant. The alternatives Chapter of this EIR includes other potential grading and geotechnical strategies to better improve the overall slope stability of this hillside.

To better address the issue of slope erosion and movement, the existing runoff from the uphill properties would need to be addressed. Intercepting the water currently running off the upslope properties and onto the hillside by routing this runoff into a piped system would reduce the potential for erosion of the hillside, and could be achieved through a combination or curbing, brow ditches, inlets and piping. Such work would need to be conducted on, or in cooperation with the neighboring uphill properties.

Exposure to Seismic Hazards

The following discussion addresses Threshold 1.

Impact Geo-4: The proposed Project would not expose people or structures to substantial risk of loss, injury, or death involving strong seismic ground shaking or seismic-related ground failure including liquefaction, lateral spreading, subsidence, or collapse. **(LTS)**

The Project site does not have a substantial exposure to seismic hazards. The site is not located within a designated Earthquake Fault Zone, which identifies areas along active faults as defined by the State of California, and no known active faults pass through the site. The risk of fault rupture at the site is low. There are several shear zones which have been observed in bedrock outcroppings, primarily located within the Panhandle area. One major shear (see Figure 4.5-1) parallels the northeast trending hillside below Stark Knoll Place.[4] These shears are not known to be active, but could be subject to secondary seismic deformation in the event of seismic shaking.

Strong groundshaking will occur at the Project site when a major seismic event occurs on the nearby Hayward fault, as is true for property throughout the seismically active Bay Area region. Soil liquefaction is a phenomenon most commonly induced by strong groundshaking associated with earthquakes. However, the subsurface materials at the Project site are mainly clay and bedrock, and the risk of liquefaction is low.

The Project does not include construction of any habitable buildings or structures intended for actively used space that would be subject to special seismic regulations or that would expose structures to substantial risk of loss, or expose people to risk of injury or death. Below grade internment of human remains is not subject to building code requirements and deformation or strong ground shaking will not adversely affect the proposed cemetery use. Construction of proposed retaining walls and the crypt wall

[4] As mapped by D.H. Radbruch in 1969

at Plot 82 will be subject to existing building code requirements which provide design parameters for computing lateral forces related to ground shaking.

Standard Conditions of Approval

Pursuant to **SCA #33: Construction-Related Permits**, the Project applicant will be required to obtain all required construction-related permits and approvals from the City, and the Project will be required to comply with all standards, requirements and conditions contained in construction-related codes, including but not limited to the Oakland Building Code and the Oakland Grading Regulations. These code requirements and regulations ensure structural integrity and safe construction.

Additionally, pursuant to **SCA #34: Soils Repor**t the Project applicant will be required to submit a soils report prepared by a registered geotechnical engineer for City review and approval, and that report shall contain field test results and observations regarding the nature, distribution and strength of existing soils, and recommendations for appropriate project design. The project applicant will be required to implement the recommendations contained in the approved report during project design and construction.

These reports will be required to demonstrate how geotechnical and seismic design criteria are to be integrated into any proposed structures, consistent with the seismic requirements set forth in the California Code of Regulations, Title 24 of the California Building Standards Code (CBC). Implementation of required SCAs #33 and #34 will ensure the application of current geotechnical design criteria required under the CBC and would reduce the potential impacts associated with seismic hazards such as ground shaking and secondary deformation to a less than significant level.

Mitigation Measures

None needed.

Soil Erosion

The following discussion addresses Threshold 2.

Impact Geo-5: The proposed Project could result in substantial soil erosion or loss of topsoil, creating substantial risks to property or downhill creeks and waterways. **(LTS with SCAs)**

The Project entails a substantial cut and fill operation, moving approximately 100,000 cubic yards of material from Plot 82 to Plot 98 and the Panhandle. Following this cut and fill operation, exposure of newly excavated earth and new soil placement could be subject to substantial erosion (both wind and water) if not properly controlled.

The detailed engineering recommendations (Hultgren-Tillis, 2014), which address the Project's proposed earthwork operations include a number of erosion control measures to be implemented during this operation, including the installation of subdrains along the rear of excavated keyways and on benches above the keyways to convey runoff off of planned slopes, moisture conditioning fill material prior to compaction, constructing new slopes at inclinations of 2:1 or flatter, and hydro-seeding and irrigating new slopes shortly after completion to establish groundcover and to minimize surface erosion (see discussion under Impact Geo-1, above).

Standard Conditions of Approval

The City of Oakland imposes SCAs to reduce soil erosion during construction for water quality purposes and to effectively prevent excessive rilling or rutting of soil on construction sites. These SCAs include SCA

#45: Erosion and Sedimentation Control Plan for Construction, SCA # 46: State Construction General Permit, and SCA #50: NPDES C.3 Stormwater Requirements for Regulated Projects. Pursuant to these SCAs, the Project applicant is required to submit an Erosion and Sedimentation Control Plan to the City for review and approval, and that Plan shall include all necessary measures to prevent excessive stormwater runoff or carrying by stormwater runoff of solid materials on to lands of adjacent property owners, public streets, or to creeks as a result of conditions created by grading and/or construction operations. The Project applicant will also be required to comply with requirements of the Construction General Permit issued by the State Water Resources Control Board (SWRCB), including preparation of an approved Stormwater Pollution Prevention Plan (SWPPP), and other required permit registration documents. Furthermore, the Project will be required to comply with the requirements of Provision C.3 of the Municipal Regional Stormwater Permit issued under the National Pollutant Discharge Elimination System (NPDES). The Project applicant will be required to submit a Post-Construction Stormwater Management Plan to the City for review and approval, and shall implement the approved Plan during construction.

The Project applicant previously prepared a preliminary Water Pollution Control Plan as part of a previous grading permit submittal for the same Project site. That prior grading permit application (which has since been revoked and replaced by the current Project application) included Best Management Practices (BMPs) as referenced from the California Stormwater Quality Association Best Management Practices (CASQA BMP) Handbook, and incorporated into that prior grading permit's SWPPP document. Although that prior Water Pollution Control Plan has since been revoked, many of the water pollution and erosion control features of that prior WPCP will be incorporated into the Project's required SWPPP and Erosion Control Plans. These features include:

- Existing surfaces and vegetation are to remain undisturbed to the extent practical;
- Plant-based soil binders are to be applied to exposed soils at disturbed areas if left inactive for more than 14 days;
- All slopes are to be protected with linear sediment controls along the toe of slopes, face of slopes and grade breaks, at spacing not to exceed 20 feet on slopes of 0 to 25%, at spacing not to exceed 15 feet on slopes of 25% to 50%, and at spacing not to exceed 10 feet on slopes in excess of 50%,
- Hydro-seeding all new slopes and placing fiber rolls on all exterior-facing slopes;
- Installation of a small check dam at lower elevations on the slopes; and
- Placement of storm drain inlet protections at all storm drain inlets;

With implementation of City-required SCAs (including SCA #45: Erosion and Sedimentation Control Plan for Construction, SCA # 46: State Construction General Permit, and SCA #50: NPDES C.3 Stormwater Requirements for Regulated Projects), and incorporation of Applicable BMPs from the CASQA BMP Handbook as previously proposed, the Project's potential impacts pertaining to erosion would be reduced to a level of less than significant.

Mitigation Measures

None needed

Located above Subsurface Hazards

The following discussion addresses Threshold 4.

Impact Geo-6: The Project is not located above a well, pit, swamp, mound, tank vault or unmarked sewer line. There are no subsurface features that could result in substantial risks to life or property. **(LTS)**

The Project Area is in a principally undeveloped area, but there are locations within the Project area where prior disturbance has occurred, and underground utilities are present near the Project's proposed development sites. Storm drain lines are present in the Project Area, but it is not likely that any unmarked sewer lines are present. The Project area is not located within a swamp, pit or mound that could present subsurface hazards during grading. Any existing utilities, wells or other subsurface features that are present will be incorporated during the design and/or construction phases of the proposed Project, and this impact is less than significant.

Mitigation Measures

None needed

Located above Landfill

The following discussion addresses Threshold 5.

Impact Geo-7: The proposed Project is not located above a landfill for which there is no approved closure and post-closure plan. The proposed Project is located above fill. **(LTS with SCAs)**

There are no active or closed landfills within the Project Area. However, as described in detail under Impact Geo-1 above, substantial portions of the Project site lie on imported fill of various, and in some cases uncertain material. By itself, the presence of this fill does not pose a substantial risk to life or property. The impacts of fill in this location are primarily related to seismic hazards and the possibility of expansive soils. Standard requirements of the City's grading permit process that address these potential issues are described above under Impact Geo-1, and are less than significant with the application of the cited grading permit conditions and the Project geotechnical engineer's recommendations.

Mitigation Measures

None needed

Disposal

The following discussion addresses Threshold 6.

Impact Geo-8: The Project does not include the need for septic tanks or alternative wastewater disposal systems, so concerns relative to soils capable of adequately supporting such facilities are not relevant. **(No Impact)**

No septic tanks or alternative wastewater disposal systems are necessary or proposed. Therefore, the proposed Project would have a less than significant impact related to the capacity of local soils to adequately supporting the use of septic tanks or alternative wastewater disposal systems.

Mitigation Measures

None needed

Cumulative Geology and Soils Impacts

Cumulative Impact Geo-9: Construction of the Project, when combined with other past, present, existing, approved, pending and reasonably foreseeable development in the vicinity, would not result in significant cumulative impacts with respect to geology, soils or seismicity. **(Less than Significant with SCAs)**

Although the entire Bay Area is situated within a seismically-active region with a wide range of geologic and soil conditions, these conditions can vary widely within a short distance, making the cumulative context for potential impacts resulting from exposing people and structures to related risks localized or even site-specific. Potential cumulative geology and seismic impacts do not extend far beyond a project's boundaries, since geological impacts are typically confined to discrete spatial locations and do not combine to create an extensive cumulative impact. The exception to this generalization would occur where a large geologic feature (e.g., fault zone, massive landslide) might affect an extensive area, or where the impacts of the Project could affect the geology of an off-site location. These circumstances are not likely to occur in the Project Area as there are no large landslide features or fault zones.

The SCAs and grading permit requirements discussed above, including soil reports and geotechnical studies, and compliance with CBC regulations would reduce the potential for cumulative geologic and seismic effects associated with the Project and surrounding areas. Therefore, the Project together with the impact of other past, present, existing, pending and reasonably foreseeable future development would not result in any significant cumulative geologic and seismic impacts. Moreover, given that the Project would likely improve (or remediate) certain existing geologic hazards such as landslides, the Project would not make any considerable contribution to a potentially cumulative impact because it would improve geologic and seismic safety in the area. The impact would be less than significant.

Mitigation Measures

None needed

4.6

Hazards and Hazardous Materials

This chapter of the EIR discusses the hazards and hazardous materials issues associated with the Project Area, project construction, and project operations. This chapter also identifies potential Project impacts, applicable Standard Conditions of Approval and appropriate mitigation measures (when necessary), and describes the applicable regulations for the Project site.

Physical Setting

Hazardous Materials

Definition of Hazardous Materials

A hazardous material is defined as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment (State of California, Health and Safety Code, Chapter 6.95, Section 25501(o). The term "hazardous materials" refers to both hazardous substances and hazardous wastes. Under federal and state laws, any material, including wastes, may be considered hazardous if it is specifically listed by statute as such or if it is toxic, ignitable, corrosive, or reactive.

The four basic exposure pathways through which an individual can be exposed to a hazardous material include inhalation, ingestion, bodily contact, and injection. Exposure can come as a result of an accidental release of hazardous materials during transportation, storage, or handling. Disturbance of contaminated soils during construction can also cause exposures to workers, the public or the environment through stockpiling, handling, or transportation of soils.

A hazardous waste, for the purpose of this EIR, is any hazardous material that is abandoned, discarded, or recycled, as defined in the State Health and Safety Code (Chapter 6.95, Section 25125). The transportation, use and disposal of hazardous materials, as well as the potential releases of hazardous materials to the environment, are closely regulated through many state and federal laws.

Cortese List

In California, regulatory databases listing hazardous materials sites provided by numerous federal, state, and local agencies are consolidated in the "Cortese List" pursuant to Government Code Section 65962.5. The Cortese List is located on the California Environmental Protection Agency's (Cal EPA) website and is a compilation of the following lists:

- List of Hazardous Waste and Substances sites from Department of Toxic Substances Control (DTSC) EnviroStor database. The DTSC EnviroStor database includes federal and state response sites, voluntary, school, and military cleanups and corrective actions, and permitted sites;

- List of Leaking Underground Storage Tank Sites by County and Fiscal Year from the State Water Resources Control Board (SWRCB) GeoTracker database. The SWRCB GeoTracker database includes LUST, UST, and SLIC sites;
- List of solid waste disposal sites identified by SWRCB with waste constituents above hazardous waste levels outside the waste management unit;
- List of "active" Cease and Desist Order (CDO) and Cleanup and Abatement Order (CAO) sites from the SWRCB; and
- List of hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code, identified by DTSC and listed on their EnviroStor database (Cal EPA, 2013).

Based on a review of these public databases and other database searches for nearby properties, neither the approximately 7-acre Project site nor the entire 226-acre Mountain View Cemetery property is contained on any list of sites with suspected and confirmed releases of hazardous materials to the subsurface soil and/or groundwater.

Other Hazardous Materials Records

The 7-acre Project site has no known record of any activity associated with hazardous materials.

A search of all available environmental records indicates that the Mountain View Cemetery (in its entirety) is listed with the following non-Cortese List sites:

- The federal EPA's Resource Conservation and Recovery Act database of small quantity generators (RCRIS-SQG) database lists Mountain View Cemetery as a of site that generates, stores, treats or disposes of hazardous waste;
- The State Water Resources Control Board (WRCB) databases of hazardous substances storage containers (UST) and active or inactive underground storage tanks (CAFID UST) lists the Mountain View Cemetery property as having an underground storage tank containing unleaded fuel, but with no reported incidences of leaks or spills, and as having removed two permitted underground storage tanks in 1992 with no incidents. The removed storage tanks were not located within the upper hillside portion of the Cemetery property (i.e., not at the Project site);
- The California Department of Toxic Substance Control (DTSC) retains data from shipping manifests (HAZNET) indicating sites that have shipped hazardous materials to, or from their sites. Mountain View Cemetery is listed as having disposed of hydrocarbon solvents, waste oils and other unspecified oils, and asbestos-containing waste to a certified recycler of such materials or appropriate landfill on several occasions.

None of these records indicate any potential hazard to human health and safety or to the environment, and none pertain to the upper elevations of the Cemetery where the Project is located.

Previous Fill

As indicated in Chapter 4.5: Geology and Soils, at some point in the past, the Cemetery's upper hillside area (Hill 500) was graded with fill material placed within the slope of the hill. The fill material included debris consisting of wood (tree branches, stumps, tree trunks and wood chips) as well as other debris (glass bottles, plastic bottles, plastic bags, metal and paper products) interspersed within this fill. The approximate limit of this fill is shown on Figure 4.5-3. There is no documentation of the extent or

quantity of trash and debris included within that fill material, nor is there any indication that this debris included any hazardous or household hazardous waste. More recently, the Cemetery removed the more concentrated zones of trash, and loosely backfilled the excavations.

Wildland Fires

Fire Hazard Severity Zone

The California Department of Forestry and Fire Protection (CAL FIRE) is required by law to map areas of significant fire hazard based on fuels, terrain, weather, and other relevant factors (PRC 4201-4204 and Govt. Code 51175-89). Factors that increase an area's susceptibility to fire hazards include slope, vegetation type and condition, and atmospheric conditions. The CAL FIRE's Fire Hazard Severity Zone Map for the City of Oakland (**Figure 4.6-1**) indicates that neither the Project site nor any portion of Mountain View Cemetery is within a very high or high fire hazard zone as designated by the state (CAL FIRE, 2008).

Oakland Wildfire Prevention Assessment District

The Oakland Fire Suppression, Prevention, and Preparedness District Ordinance of 2003 established an Oakland Wildfire Prevention Assessment District, and the boundaries of this District were developed with assistance from the City of Oakland Fire Department and the California Department of Forestry and Fire. Properties located within the Assessment District are generally within the Oakland Hills and the surrounding areas, and identifies unique properties because they are located within and among extreme dense vegetation which puts them at a high risk of loss or damage if a wildland fire were to start and spread.

The upper hillside portion of Mountain View Cemetery (i.e., the Project site) is located within the original boundaries of the Oakland Wildfire Prevention Assessment District (**Figure 4.6-2**), indicating that the Project site is located within and among extreme dense vegetation and at high risk of loss or damage due to wildland fire.

As indicated in the Biology chapter of this Draft EIR, vegetative cover within the Project area is dominated by non-native ruderal (or weedy) grasses and forbs; native species scattered through a few locations in the grassland; thickets of brush and sapling coast live oaks replacing grassland cover in some locations; scattered clumps of invasive non-native brush beginning to spread through some areas, as well as seedlings and saplings of invasive tree species (such as blue gum, black acacia and silver wattle). Many of these vegetative species are considered highly flammable,[1] or non-fire resistant.

[1] U.S. Department of Agriculture, Forest Service, Esser, Lora. In: Fire Effects Information System, [Online], 1993

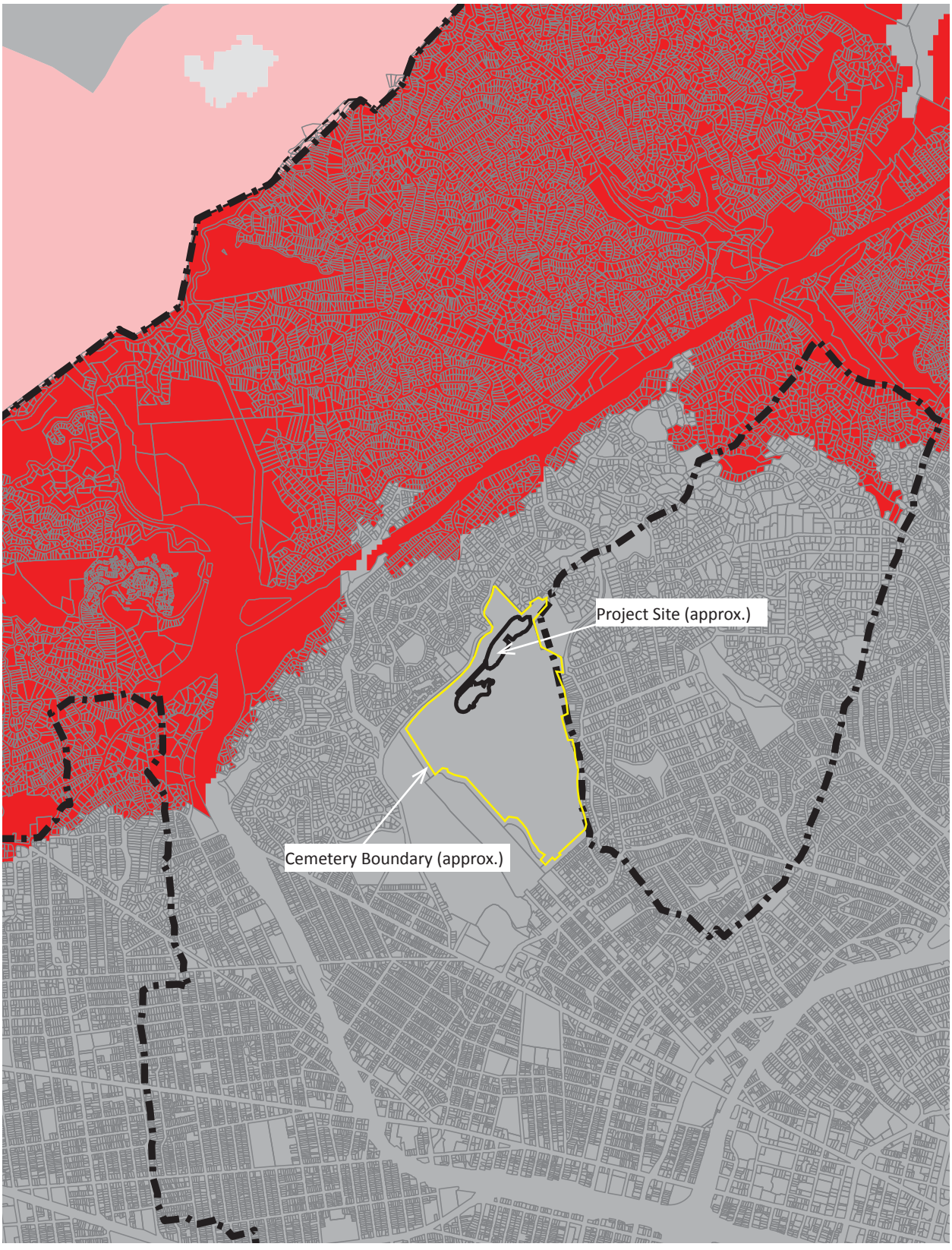


Figure 4.6-1
Fire Hazard Severity Zone

Source: CAL FIRE Fire Hazard Severity Zones (FHSZL06_3)

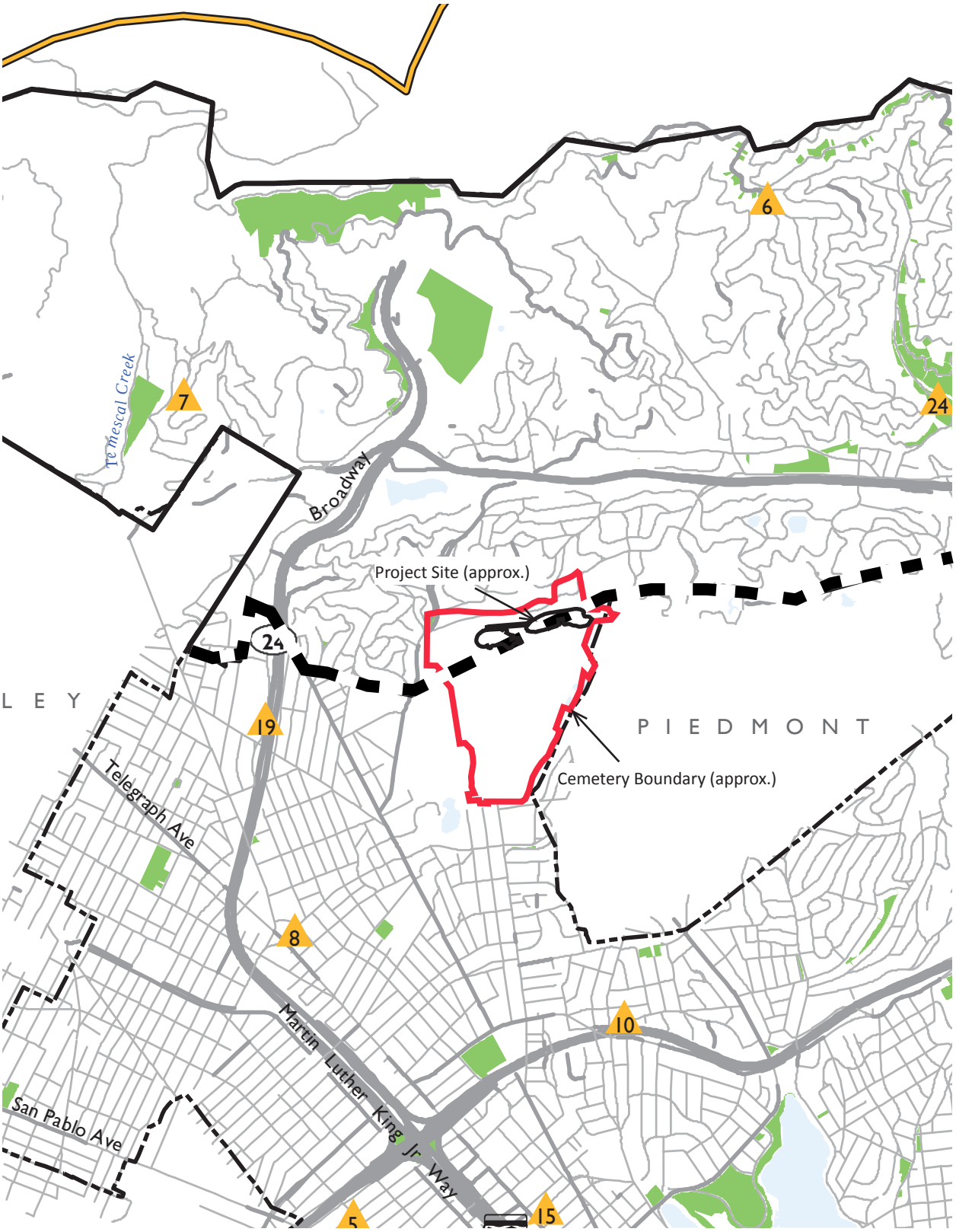


Figure 4.6-2
(Former) Oakland Wildfire Prevention Assessment District

Source: Safety Element of the Oakland General Plan
Figure 4.1: Fire Hazards

Regulatory Setting

The Project is subject to government health and safety regulations applicable to the transportation, use, and disposal of hazardous materials, fire hazards and other hazardous conditions. This section provides an overview of the health and safety regulatory framework that is applicable to the Project.

Federal

Hazardous Materials Management

The primary federal agencies with responsibility for hazardous materials management include the USEPA, U.S. Department of Labor Occupational Safety and Health Administration (OSHA), and the U.S. Department of Transportation (DOT). Federal laws, regulations, and responsible agencies are summarized below and are discussed in detail in this section:

- *Hazardous Materials Management*: The Community Right to Know Act of 1986 imposes requirements to ensure that hazardous materials are properly handled, used, stored, and disposed of and to prevent or mitigate injury to human health or the environment in the event that materials are accidently released

- *Hazardous Waste Handling*: Under the Resource Conservation and Recovery Act (RCRA) the US EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. The Hazardous and Solid Waste Act amended RCRA in 1984. The amendments specifically prohibit the use of certain techniques for the disposal of hazardous waste.

- *Hazardous Materials Transportation*: The US Department of Transportation (DOT) has the regulatory responsibility for the safe transportation of hazardous materials. The DOT regulations govern all means of transportation except packages shipped by mail (49 CFR). The US Postal Service (USPS) regulations govern the transportation of hazardous materials shipped by mail.

Pesticide Regulations

The USEPA's Office of Pesticide Programs (OPP) regulates the manufacture and use of all pesticides (including insecticides, herbicides, rodenticides, disinfectants, sanitizers and more) in the United States. EPA has expanded public access to information about risk assessment and risk management actions to help increase transparency of decision making and facilitate consultation with the public and affected stakeholders. In addition to their regulatory functions, OPP provides information on issues ranging from worker protection to misuse of pesticides, and participates in programs and partnerships related to pesticide use.

The primary regulatory tool used by OPP is the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. §136 et seq., 1996), which provides federal regulation of pesticide distribution, sale, and use. All pesticides distributed or sold in the United States must be registered (licensed) by EPA. Before EPA registers a pesticide, it must conclude, based on specifications, that the pesticide "will not generally cause unreasonable adverse effects on the environment." This conclusion is further defined to mean: "any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide, or a human dietary risk from residues that result from a use of a pesticide in or on any food inconsistent with the standard under section 408 of the Federal Food, Drug, and Cosmetic Act."

Occupational Safety

The Occupational Safety and Health Act of 1970 (Fed/OSHA) sets standards for safe workplaces and work practices, including the reporting of accidents and occupational injuries (29CFR). The US EPA monitors and regulates hazardous materials used as building components and their effects on human health. State and local agencies often have either parallel or more stringent regulations than federal agencies. In most cases, state law mirrors or overlaps federal law and enforcement of these laws is the responsibility of the state or of a local agency to which enforcement powers are delegated. For these reasons, the requirements of the law and its enforcement are discussed under either the state or local agency section.

Toxic and Hazardous Chemicals

The regulations pursuant to Occupational Safety and Health Standards, Subpart Z, Standard Number: 1910.1200 are intended to ensure that the hazards of all chemicals produced or imported are classified, and that information concerning the classified hazards is transmitted to employers and employees. The requirements of this section are intended to be consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS), Revision 3. The transmittal of information is to be accomplished by means of comprehensive hazard communication programs, which are to include container labeling and other forms of warning, safety data sheets and employee training.

State

In January 1996, the California Environmental Protection Agency (Cal EPA) adopted regulations implementing a Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program). The program has six elements: hazardous waste generators and hazardous waste on-site treatment; underground storage tanks; aboveground storage tanks; hazardous materials release response plans and inventories; and risk management and prevention programs. The plan is implemented at the local level. The Certified Unified Program Agency (CUPA) is the local agency that is responsible for the implementation of the Unified Program. In Oakland, the Alameda County Department of Environmental Health (ACDEH) is the designated CUPA agency for all businesses.

Hazardous Materials Management

The California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires that any business that handles hazardous materials prepare a business plan, which must include the following:

- Details, including floor plans, of the facility and business conducted at the site;
- An inventory of hazardous materials that are handled or stored on site;
- An emergency response plan; and
- A safety and emergency response training program for new employees with annual refresher courses.

The California Hazardous Materials Incident Report System (CHMIRS) provides information regarding spills and other incidents gathered from the California Office of Emergency Services.

Hazardous Waste Handling

The DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. State and federal laws require detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed of, and, in the event that such materials are accidentally released, to prevent or to mitigate injury to health or the environment. Laws and regulations require hazardous materials users to store these materials appropriately and to train employees to manage them safely.

Under the federal Resource Conservation and Recovery Act of 1976 (RCRA) described above, individual states may implement their own hazardous waste programs in lieu of RCRA, as long as the state program is at least as stringent as federal RCRA requirements. In California, the DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. The hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; prescribe management of hazardous waste; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in landfills.

Hazardous Materials Transportation

The State of California has adopted DOT regulations for the intrastate movement of hazardous materials. State regulations are contained in Title 26 of the California Code of Regulations (CCR). In addition, the State of California regulates the transportation of hazardous waste originating in the state and passing through the state (26 CCR). Both regulatory programs apply in California. The two state agencies that have primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol (CHP) and the California Department of Transportation (Caltrans).

Occupational Safety

The California Occupational Safety and Health Administration (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations in California. Because California has a federally approved OSHA program, it is required to adopt regulations that are at least as stringent as those found in Title 29 of the CFR. Cal/OSHA standards are generally more stringent than federal regulations.

Cal/OSHA regulations (8 CCR) concerning the use of hazardous materials in the workplace require employee safety training, safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces hazard communication program regulations, which contain training and information requirements, including procedures for identifying and labeling hazardous substances, and communicating hazard information relating to hazardous substances and their handling. The hazard communication program also requires that Materials Safety Data Sheets (MSDS) be available to employees, and that employee information and training programs be documented. These regulations also require preparation of emergency action plans (escape and evacuation procedures, rescue and medical duties, alarm systems, and training in emergency evacuation).

Wildland Fires

The California Fire Code, Chapter 49 contains requirements for wildland-urban interface fire areas, and contains minimum standards to increase the ability of a building to resist the intrusion of flame or burning embers being projected by a vegetation fire and contribute to reduction in conflagration loss,

through the use of performance and prescriptive requirements. Areas designated under these provisions of the Fire Code as Very High Fire Hazard Severity Zones within Local Responsibility Areas (e.g., within the City of Oakland) are required to maintain hazardous vegetation and fuels management in accordance with Public Resources Code, California Code of Regulations, and California Government Code requirements, and specifically the provisions for defensible space as provided under Government Code section 511175 – 51189.

Defensible Space

Specifically, California Government Code section 51182 provides that:

> *A person who owns, leases, controls, operates, or maintains an occupied dwelling or occupied structure in, upon, or adjoining a mountainous area, forest-covered land, brush-covered land, grass-covered land, or land that is covered with flammable material, which area or land is within a very high fire hazard severity zone designated by the local agency, shall at all times maintain defensible space of 100 feet from each side and from the front and rear of the structure, but not beyond the property line (except as provided in paragraph 2). The amount of fuel modification necessary shall take into account the flammability of the structure as affected by building material, building standards, location, and type of vegetation. Fuels shall be maintained in a condition so that a wildfire burning under average weather conditions would be unlikely to ignite the structure.*

This paragraph does not apply to single specimens of trees or other vegetation that are well-pruned and maintained so as to effectively manage fuels and not form a means of rapidly transmitting fire from other nearby vegetation to a structure or from a structure to other nearby vegetation.

Emergency Response

California has developed an emergency response plan to coordinate emergency services provided by federal, state, and local government and private agencies. Responding to hazardous materials incidents is one part of this plan. The plan is administered by the State Office of Emergency Services (OES), which coordinates the responses of other agencies, including Cal EPA, CHP, CDFG, the San Francisco Bay RWQCB, and the Oakland Fire Department (OFD). The OFD provides first response capabilities, if needed, for hazardous materials emergencies within the Project Area.

Local

Soil and Groundwater Contamination

In Alameda County, remediation of contaminated sites is performed under the oversight of the ACDEH and the San Francisco Bay RWQCB. The ACDEH implements a local oversight program under contract with the SWRCB to provide regulatory oversight of the investigation and cleanup of soil and groundwater contamination from leaking petroleum USTs and aboveground storage tanks. At sites where contamination is suspected or known to have occurred, the project sponsor is required to perform a site investigation and prepare a remediation plan, if necessary. For typical development projects, actual site remediation is completed either before or during the construction phase of the project. Site remediation or development may be subject to regulation by other agencies.

Alameda County Hazardous Waste Management Program

Under the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program, the ACDEH is certified by the DTSC to implement the following programs:

- Hazardous Materials Management Plan and Inventory (HMMP) and the Hazardous Materials Business Plan (HMBP);
- Risk Management Program (RMP);
- UST program;
- Spill Prevention, Control and Countermeasure (SPCC) Plan for aboveground storage tanks;
- Hazardous waste generators; and
- On-site hazardous waste treatment (tiered permit)

City of Oakland General Plan

The Safety Element of the City of Oakland General Plan contains the following policies pertaining to hazards and hazardous materials with potential relevance to adoption and development under the Specific Plan:

- Hazardous Materials, Policy HM-1: Minimize the potential risks to human and environmental health and safety associated with the past and present use, handling, storage and disposal of hazardous materials.
  - *Action HM-1.2:* Continue to enforce provisions under the zoning ordinance regulating the location of facilities which use or store hazardous materials.
  - *Action HM-1.4:* Continue to participate in the Alameda County Waste Management Authority and as a participant, continue to implement policies under the county's hazardous-waste management plan to minimize the generation of hazardous wastes.
  - *Action HM-1.6:* Through the Urban Land Redevelopment program, and along with other participating agencies, continue to assist developers in the environmental cleanup of contaminated properties.
  - *Action HM-1.7:* Create and maintain a database with detailed site information on all brownfields and contaminated sites in the city.
- Hazardous Materials, Policy HM-3: Seek to prevent industrial and transportation accidents involving hazardous materials, and enhance the city's capacity to respond to such incidents.
  - *Action HM-3.1:* Continue to enforce regulations limiting truck travel through certain areas of the city to designated routes, and consider establishing time based restrictions on truck travel on certain routes to reduce the risk and potential impact of accidents during peak traffic hours.
  - *Action HM-3.4:* Continue to rely on, and update, the city's hazardous materials area plan to respond to emergencies related to hazardous materials

Oakland Municipal Code

To protect sensitive receptors from public health effects from a release of hazardous substances, the Oakland Municipal Code, Title 8 Section 42.105 allows the City, at its discretion, to require facilities that

handle hazardous substances within 1,000 feet of a residence, school, hospital, or other sensitive receptors to prepare a Hazardous Materials Assessment Report and Remediation Plan (HMARRP).

The HMARRP must include public participation in the planning process, along with the following requirements:

- identify hazardous materials used and stored at the property and the suitability of the site;
- analyze off-site consequences that could occur as a result of a release of hazardous substances (including fire);
- include a health risk assessment; and
- identify remedial measures to reduce or eliminate on-site and off-site hazards.

Wildfire Prevention Assessment District

In 2003, Oakland voters approved the Wildfire Prevention Assessment District to fund fire prevention activities. The Wildfire Prevention Assessment District financed the costs and expenses related to fire suppression, prevention and preparedness services and programs in the Oakland hills. The legislation forming the WPAD provided for the creation of a Citizens Advisory Committee, which took responsibility for preparing a budget for Council approval and recommending program priorities. The City of Oakland collected the WPAD assessment through the County of Alameda property tax bill. Within this District, the City of Oakland monitored fire risks on more than 25,000 parcels, managed vegetation on public lands, and conducted other activities designed to reduce the threat of damaging wildfires. Fire prevention programs and services Included:

- Annual Fire Safety Inspections
- Fire Prevention Education & Training
- Free Curbside Chipping
- Goat Grazing
- High Fire Danger Warnings
- Roving fire patrols on high fire danger days
- Vegetation Management

The Wildfire Prevention Assessment District lost a November 2013 ballot bid to raise property taxes to continue to fund fire prevention efforts. The District's parcel tax expired in 2014, and voters chose not to renew the assessment.

Standard Conditions of Approval

The City's Standard Conditions of Approval (SCAs) relevant to hazards and hazardous materials are listed below for reference. If the Coliseum Area Specific Plan is approved by the City, all applicable SCAs would be incorporated into the Specific Plan, adopted as conditions of approval, and required of the adoption and development under the Specific Plan, as applicable, to help ensure less-than-significant impacts associated with hazards and hazardous materials. The SCAs are incorporated and required as part of the Specific Plan, so they are not listed as mitigation measures.

The following condition applies to all projects involving construction activities.

> **SCA #39: Hazardous Materials Related to Construction**. Requirement: The project applicant shall ensure that Best Management Practices (BMPs) are implemented by the contractor during construction to

minimize potential negative effects on groundwater, soils, and human health. These shall include, at a minimum, the following:

a. Follow manufacture's recommendations for use, storage, and disposal of chemical products used in construction;

b. Avoid overtopping construction equipment fuel gas tanks;

c. During routine maintenance of construction equipment, properly contain and remove grease and oils;

d. Properly dispose of discarded containers of fuels and other chemicals;

e. Implement lead-safe work practices and comply with all local, regional, state, and federal requirements concerning lead (for more information refer to the Alameda County Lead Poisoning Prevention Program); and

f. If soil, groundwater, or other environmental medium with suspected contamination is encountered unexpectedly during construction activities (e.g., identified by odor or visual staining, or if any underground storage tanks, abandoned drums or other hazardous materials or wastes are encountered), the project applicant shall cease work in the vicinity of the suspect material, the area shall be secured as necessary, and the applicant shall take all appropriate measures to protect human health and the environment. Appropriate measures shall include notifying the City Fire Prevention Bureau, Alameda County Environmental Health, and other applicable regulatory agency(ies) and implementation of the actions described in these agencies' Standard Conditions of Approval, as necessary, to identify the nature and extent of contamination. Work shall not resume in the area(s) affected until the measures have been implemented under the oversight of the City or regulatory agency, as appropriate.

   When Required: During construction

   Initial Approval: N/A

   Monitoring/Inspection: Bureau of Building

The following condition applies to all projects involving the handling, storage, or transportation of hazardous materials during business operations.

SCA #41: Hazardous Materials Business Plan. Requirement: The project applicant shall submit Hazardous Materials Business Plan information into the California Environmental Reporting System (CERS) for review and approval by Alameda County Environmental Health, and shall implement the approved Plan. The approved Plan will be available in the CERS database and the project applicant shall update the Plan as applicable. The purpose of the Hazardous Materials Business Plan is to ensure that employees are adequately trained to handle hazardous materials and provides information to the Fire Department should emergency response be required. Hazardous materials shall be handled in accordance with all applicable local, state, and federal requirements. The Hazardous Materials Business Plan shall include the following:

a. The types of hazardous materials or chemicals stored and/or used on-site, such as petroleum fuel products, lubricants, solvents, and cleaning fluids.

b. The location of such hazardous materials.

c. An emergency response plan including employee training information.

d. A plan that describes the manner in which these materials are handled, transported, and disposed.

   When Required: Prior to building permit final

   Initial Approval: Alameda County Environmental Health

   Monitoring/Inspection: Oakland Fire Department (fire code regulations); Alameda County Environmental Health (CUPA regulations)

The following condition applies to all projects to be constructed in phases and the furthest structure is over 150 feet from the nearest fire hydrant.

SCA #42: Fire Safety Phasing Plan. Requirement: The project applicant shall submit a Fire Safety Phasing Plan for City review and approval, and shall implement the approved Plan. The Fire Safety Phasing Plan shall include all of the fire safety features incorporated into each phase of the project and the schedule for implementation of the features.

When Required: Prior to approval of construction-related permit

Initial Approval: Oakland Fire Department

Monitoring/Inspection: Bureau of Building

The following condition applies to all projects involving construction of new facilities located in the Oakland Wildfire Prevention District.

SCA #43: Wildfire Prevention Assessment District – Vegetation Management

a. Vegetation Management Plan Required. Requirement: The project applicant shall submit a Vegetation Management Plan for City review and approval, and shall implement the approved Plan prior to, during, and after construction of the project. The Vegetation Management Plan may be combined with the Landscape Plan otherwise required by the Conditions of Approval. The Vegetation Management Plan shall include, at a minimum, the following measures:

   i. Removal of dead vegetation overhanging roof and chimney areas;

   ii. Removal of leaves and needles from roofs;

   iii. Planting and placement of fire-resistant plants around the house and phasing out flammable vegetation;

   iv. Trimming back vegetation around windows;

   v. Removal of flammable vegetation on hillside slopes greater than 20%;

   vi. Pruning the lower branches of tall trees;

   vii. Clearing out ground-level brush and debris; and

   viii. Stacking woodpiles away from structures.

   When Required: Prior to approval of construction-related permit

   Initial Approval: Oakland Fire Department

   Monitoring/Inspection: Oakland Fire Department

b. Fire Safety During Construction. Requirement: The project applicant shall require the construction contractor to implement spark arrestors on all construction vehicles and equipment to minimize accidental ignition of dry construction debris and surrounding dry vegetation.

   When Required: During construction

   Initial Approval: N/A

   Monitoring/Inspection: Bureau of Building

Impacts, Standard Conditions of Approval and Mitigation Measures

Thresholds of Significance

The proposed Project would have a significant impact on the environment if it were to:

1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
2. 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;
3. Create a significant hazard to the public through the storage or use of acutely hazardous materials near sensitive receptors;
4. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
5. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment;
6. Result in less than two emergency access routes for streets exceeding 600 feet in length unless otherwise determined to be acceptable by the Fire Chief, or his/her designee, in specific instances due to climatic, geographic, topographic, or other conditions;
7. Be 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, and would result in a safety hazard for people residing or working in the Project Area;
8. Be located within the vicinity of a private airstrip, and would result in a safety hazard for people residing or working in the Project Area;
9. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
10. 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.

Cortese List - Exposure to Hazardous Materials

The following discussion addresses Threshold 5.

Impact Haz-1: The Project site is not located on a site included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and does not represent a significant hazard to the public or the environment. **(Less than Significant)**

As indicated in the Setting section of this chapter of the Draft EIR, neither the 7-5 acre Project site nor the entire 226-acre Mountain View Cemetery property is contained on any list of sites with suspected or confirmed releases of hazardous materials to the subsurface soil and/or groundwater, as compiled pursuant to Government Code Section 65962.5. Therefore, the Project site does not present a significant hazard to the public or the environment.

Mitigation Measures

None required.

Hazardous Materials Transport, Use and Disposal, and Accidental Release

The following discussion addresses Thresholds 1, 2, 3 and 4.

Impact Haz-2: The Project's construction activities will likely utilize construction materials and fuels considered hazardous, and regular landscape maintenance of the expanded cemetery will likely involve the use of hazardous chemicals. Spills or accidents with these materials or chemicals could result in a significant impact to the health of workers and the environment. Compliance with existing regulations and applicable Standard Conditions of Approval will ensure the Project will not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. (**Less than Significant with SCA**)

During Construction

Project construction activities may involve the use, transport and disposal of hazardous materials such as gasoline, diesel fuel, lubricating oil, hydraulic oil, lubricating grease, automatic transmission fluid, paints, solvents, glues, and other substances used during construction. Construction of the Project would also require the use of gasoline and diesel-powered heavy equipment, such as graders, bulldozers, backhoes and other grading heavy equipment. Inadvertent release of large quantities of these materials into the environment could adversely impact soil, surface waters, or groundwater quality. These impacts would be potentially significant.

During Operation

Operation of the site for cemetery use would not result in the use, transport or disposal of hazardous materials other than those routinely used as maintenance fuels and landscape maintenance chemicals also used elsewhere throughout the Cemetery. Such chemicals may include the use of glyphosate (commercially known as Roundup) and other commercially available herbicides, pesticides and fertilizers. Glyphosate and other hazardous chemicals often used in landscape maintenance are specifically defined as hazardous chemicals under the criteria of the OSHA Hazard Communication Standard (29 CFR 1910.1200). Inappropriate use of these chemicals could result in a significant effect on the environment and potentially human health.

Existing Regulations and Standard Conditions of Approval

Handling and use of hazardous materials is required to follow applicable laws and regulations as described in Regulatory Setting, above. Spills of hazardous materials on construction sites are typically localized and are cleaned up in a timely manner. In most cases, the individual construction contractors are responsible for their hazardous materials and are required under contract to properly store and dispose of these materials in compliance with state and federal laws. Additionally, construction contractors will be required to comply with Project-specific Best Management Practices for hazardous materials as required by SCA #35: Hazards Best Management Practices, during construction. Given the use of best management practices as required of the construction contractors, the threat of exposure to the public or contamination to soil and groundwater from construction-related hazardous materials is considered less than significant.

Use, storage and disposal of hazardous chemicals typical used in landscape maintenance is regulated by the federal EPA under the authority of the Federal Insecticide, Fungicide and Rodenticide Act, primarily through product labeling. All necessary and appropriate precautionary use, storage and disposal information is required to be set forth on that labeling. All maintenance personnel and any landscape contractors involved in landscape maintenance at the Cemetery are required to follow and comply with these labeling requirements, and it is a violation of federal law to use such products in any manner not proscribed on the EPA-approval label. Compliance with these rules and regulations ensures that impacts to human health and the environment will not occur.

Any hazardous materials or hazardous chemicals stored at the Cemetery for maintenance use is required to be stored according to manufacturer's recommendations and according to specifications established within a Hazardous Materials Business Plan (HMBP) required pursuant to SCA #41, as applicable for the Cemetery. The Alameda County Environmental Health (ACDEH) Department will need to be contacted to review and determine the applicability and requirements of the HMBP. The Oakland Fire Prevention Bureau will review any proposed storage of hazardous materials on the site to insure compliance with Fire Code regulations. As applicable, any hazardous materials or chemicals used at the Cemetery will be stored in locations according to compatibility and in storage enclosures (i.e., flammable material storage cabinets) or in areas or rooms specially designed, protected, and contained for such storage, in accordance with applicable regulations. Hazardous materials would be handled and used in accordance with applicable regulations by personnel that have been trained in the handling and use of the material and that have received proper hazard-communication training. Required compliance with applicable regulatory requirements and SCAs would minimize hazards to workers, visitors, the public, and the environment from such products. As a result of implementation and compliance with these requirements, impacts resulting from hazardous chemical and materials use at the Cemetery would be less than significant.

Mitigation Measures

None required.

Wildland Fires

The following discussion addresses Threshold 10.

Impact Haz-3: the proposed Project would not expose people or structures to risks involving wildland fires. (**Less than Significant with SCAs**)

The Project site is not in or immediately adjacent to a fire hazard severity zone, for either a State Responsibility Area or a Local Responsibility Area, as shown on CalFire's Fire Hazard Severity Zone maps for Alameda County.[2] However, the Project site is located within the original boundaries of the Oakland Wildfire Prevention Assessment District, indicating that it is at high risk of loss or damage due to wildland fire.

The Project will transform approximately 7.5 acres of the uppermost portions of the Cemetery in ways that will reduce the risk from wildland fire. Among other actions the Project will remove non-native

[2] Accessed on February 6, 2014 at: http://www.fire.ca.gov/fire_prevention/fhsz_maps_alameda.php

plants and dead trees and shrubs; provide new irrigated landscape and improved roads that will create a fire break in this portion of the Cemetery; and result in improved maintenance that will reduce the likelihood of fuel buildup. Project development will also enhance site access for OFD apparatus and will improve access to water supplies.

Standard Conditions of Approval

Although the Wildfire Assessment District is no longer levying assessments, SCA #70 regarding the requirement for a Vegetation Management Plan is assumed as still applicable, including the requirements for Mountain View Cemetery to remove flammable vegetation on hillside slopes greater than 20%, prune lower branches of tall trees and clear out ground-level brush and debris, ensured through a maintenance agreement with the City that landscaping will be maintained.

Open Flames

The burning of Joss paper and other burnt offerings is customary in some religious practices, including the veneration of the deceased on holidays and special occasions. At Mountain View Cemetery, Joss paper and other paper-craft are also burned during some funerals. Mountain View Cemetery provides metal canisters throughout the property for disposal of embers and ashes related to these practices.

Although this practice currently occurs at the Cemetery on regular occasions, the Project may increase the number of such occurrences, and in areas nearer to potential wildland fire fuels. Although not considered a significant hazards-related impact under CEQA, the following recommendation is suggested for the Project:

Recommendation Haz-3: The Project applicant should consider providing a centralized Joss paper burner, specifically fitted with a cover which can eliminate the spread of burning ashes while allowing enough oxygen in to ensure that all of the offering is completely burned.

Mitigation Measures

None required.

Emergency Access Routes and Evacuation Plans

The following discussion addresses Threshold 9.

Impact Haz-4: The Project would not impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan. (**Less than Significant**)

Emergency access to the Project site is currently provided by three routes; the internal roadway system within the Cemetery which provides primary access to the Project site, a maintenance road off of Clarewood Drive near Clarewood Lane, and an un-paved emergency access route from the Panhandle area to a gate at Maxwelton Drive in Piedmont. The Project will not impair these emergency access routes, but rather will improve emergency access to and from the site:

- The Project will improve the existing internal roadway through the Plot 82 area with a new, less steep roadway designed to accommodate emergency access vehicles.
- The Project will make improvements to the existing unimproved pedestrian pathway/maintenance path and the emergency access route within the Panhandle boundaries with wider, paved access.

These improvements will terminate a few feet before entering into Cemetery property within the City of Piedmont, but from the City of Piedmont boundary to the access gate at Maxwelton the existing pathway will remain fully functional, as it is now.

With these improvements, the Project will not limit emergency access, impede emergency response or create hazardous conditions for the public related to emergency access or evacuation, and the impact would be less than significant.

Mitigation Measures

None required.

Conflicts with Public or Private Airports

The following discussion addresses Thresholds 7 and 8.

Impact Haz-5: The Project site is not located in the vicinity of a public airport or private airstrip. (**No Impact**)

The Project site is located approximately 4.5 miles away from the Oakland International Airport, and would not conflict with airport operations or result in a safety hazard regarding airport operations. There are no private airstrips in or around Oakland.

Mitigation Measures

None required.

Cumulative Impacts

Impact Haz-6: The Project, when combined with other past, present, existing, approved, pending and reasonably foreseeable development in the vicinity, would result in cumulative hazards. (**Less than Significant with SCAs**)

Potential cumulative public health and hazards impacts do not extend far beyond a project's boundaries, since such impacts are typically confined to specific locations, and site-specific hazards and do not generally combine to create a cumulative impact.

Development activities in the vicinity of the Project, although minimal, could increase the exposure of persons to hazardous materials. However, the use, storage, and disposal of hazardous materials has been increasingly regulated by local, state, and federal law and regulation. Many past projects have been, all present projects are, and all future projects (including the Project) will be subject to these more rigorous controls for site remediation and development. The current and future handling of hazardous materials will be subject to these escalating regulations and the City's SCAs, and the resulting cumulative hazardous materials risk will not be significant.

Compliance with the strict regulatory requirements associated with handling of hazardous materials would reduce the potential for the Project to result in a considerable contribution to potential significant hazardous materials cumulative impact. Therefore, the Project together with the impact of

past, present, pending and reasonably foreseeable development would not result in any cumulatively significant hazardous material impacts.

The Project in combination with other development projects within the Oakland/Berkeley Hills would all contribute to a cumulative increase in the risk of wildland fires. However, all cumulative development projects in the Hills are required to comply with the newest building codes and fire codes applicable to areas of hire fire hazards severity, and these increasingly strict code requirements reduce this cumulative impact to less than significant levels.

4.7

Hydrology and Water Quality

This chapter provides background information on hydrologic conditions within the Project Area and the relevant regulatory setting applicable to the site, evaluates potential hydrology and water quality impacts that could result from implementation of the proposed Project, and identifies Standard Conditions of Approval (SCAs) or mitigation measures that would avoid or minimize potential impacts, when appropriate.

Environmental Setting

Regional Hydrology

Glen Echo Creek is one of the main tributaries into Lake Merritt, and the Glen Echo Creek watershed drains the Upper Rockridge and Piedmont Avenue neighborhoods in North Oakland (**Figure 4.7-1**). Just south of Oak Glen Park (south of I-580), Glen Echo Creek forks into the Rockridge Branch, which generally parallels Broadway and runs past the Claremont Country Club; and the Cemetery Creek Branch, which generally parallels Piedmont Avenue. The Cemetery Creek Branch flows through Mountain View Cemetery, passes through the Cemetery's reservoirs, and continues on up to Blair Park/Coaches Field.

Much of Rockridge Branch has been undergrounded, except for the segment passing through Claremont County Club golf course. Similarly, much of the Cemetery Creek Branch has also been undergrounded, except for segments within the Cemetery, between Linda Avenue and Monte Vista Avenue, near Moss Way, west of MacArthur Boulevard in Oak Glen Park, and by the Veterans' Memorial Building at Harrison Street and Grand Avenue, near where it empties into Lake Merritt.

On-Site Hydrological Conditions

Mountain View Cemetery Property

A reconnaissance level survey of the Cemetery property was conducted pursuant to the biological resources assessment conducted for this EIR (Environmental Collaborative, 2015). Several freshwater ponds and ephemeral drainages were encountered on the Mountain View Cemetery property. These features, including the Cemetery's system of lakes and open creeks, as well as other drainages within the Cemetery from off-site locations, are indicated on **Figure 4.7-2**).

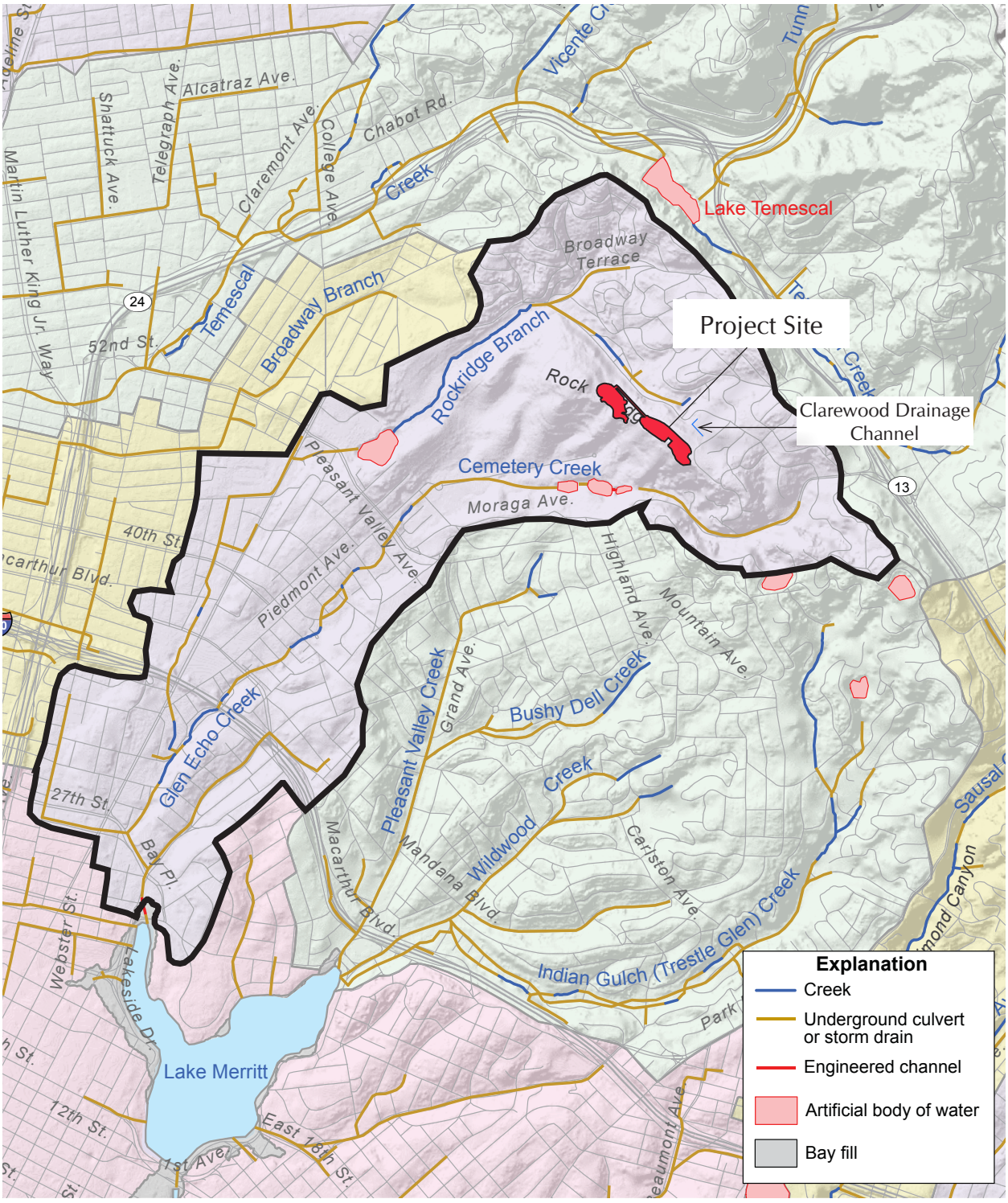


Figure 4.7-1
Regional Hydrology

Source: Alameda County Flood Control and Water Conservaton District , 2014

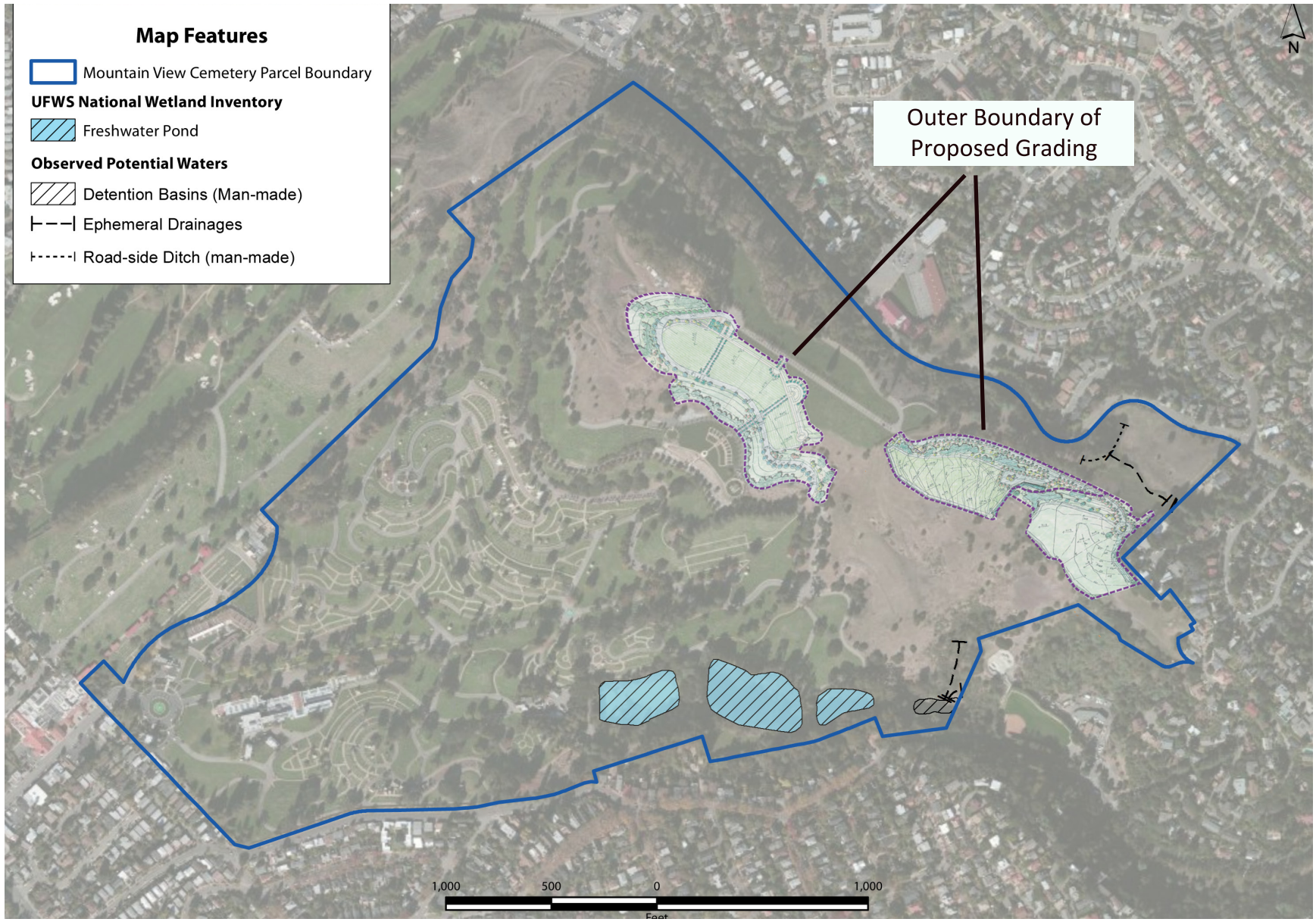


Figure 4.7-2
Existing Hydrological Features

Source: Environmental Collaborative, 2015

Project Site

No evidence of any jurisdictional wetlands or drainage channels were observed within the Project site boundaries (i.e., within the limits of proposed grading). The nearest ephemeral drainage channel that is assumed to meet the City definition of a "creek" is located within the area known as the Clarewood Bowl, a flag-shaped portion of the Cemetery that juts to the northeast from the Project site, down to Clarewood Drive.[1] This creek is located below the ridgeline and on back side of the downhill slope from the ridge that defines the upper limits of Project site. The ephemeral drainage channel is formed at the outlet of a below-grade drainage pipe that conveys storm water runoff from the Stark Knoll properties, carrying runoff toward the northwest to the edge of Clarewood Drive. The outlet for this ephemeral drainage is located approximately 140 feet to the north (downhill) of the nearest edge of grading associated with the Project (**Figure 4.7-3**).

Regulatory Setting

Federal/State

Clean Water Act (CWA)

The National Pollutant Discharge Elimination System (NPDES) permit program under the Clean Water Act (CWA) controls water pollution by regulating point and nonpoint sources that discharge pollutants into "waters of the U.S." California has an approved state NPDES program. The USEPA has delegated authority for NPDES permitting to the California State Water Resources Control Board (SWRCB), which has nine regional boards. The San Francisco Bay RWQCB regulates water quality in the Project Area.

Regional

Regional Water Quality Control Board

The San Francisco Bay RWQCB is responsible for the protection of beneficial uses and the water quality of water resources within the San Francisco Bay region. The San Francisco Bay RWQCB administers the NPDES stormwater permitting program and regulates stormwater in the San Francisco Bay region. The City of Oakland is a permittee under the NPDES Municipal Stormwater Permit for the Alameda Countywide Clean Water Program (see below for detailed discussion). Project applicants are required to apply for a NPDES General Permit for discharges associated with project construction activities of greater than one acre.

[1] Per Title 13, Chapter 13.16 of the City of Oakland Municipal Code "a creek is a watercourse that is a naturally occurring swale or depression, or engineered channel that carries fresh or estuarine water either seasonally or year round."

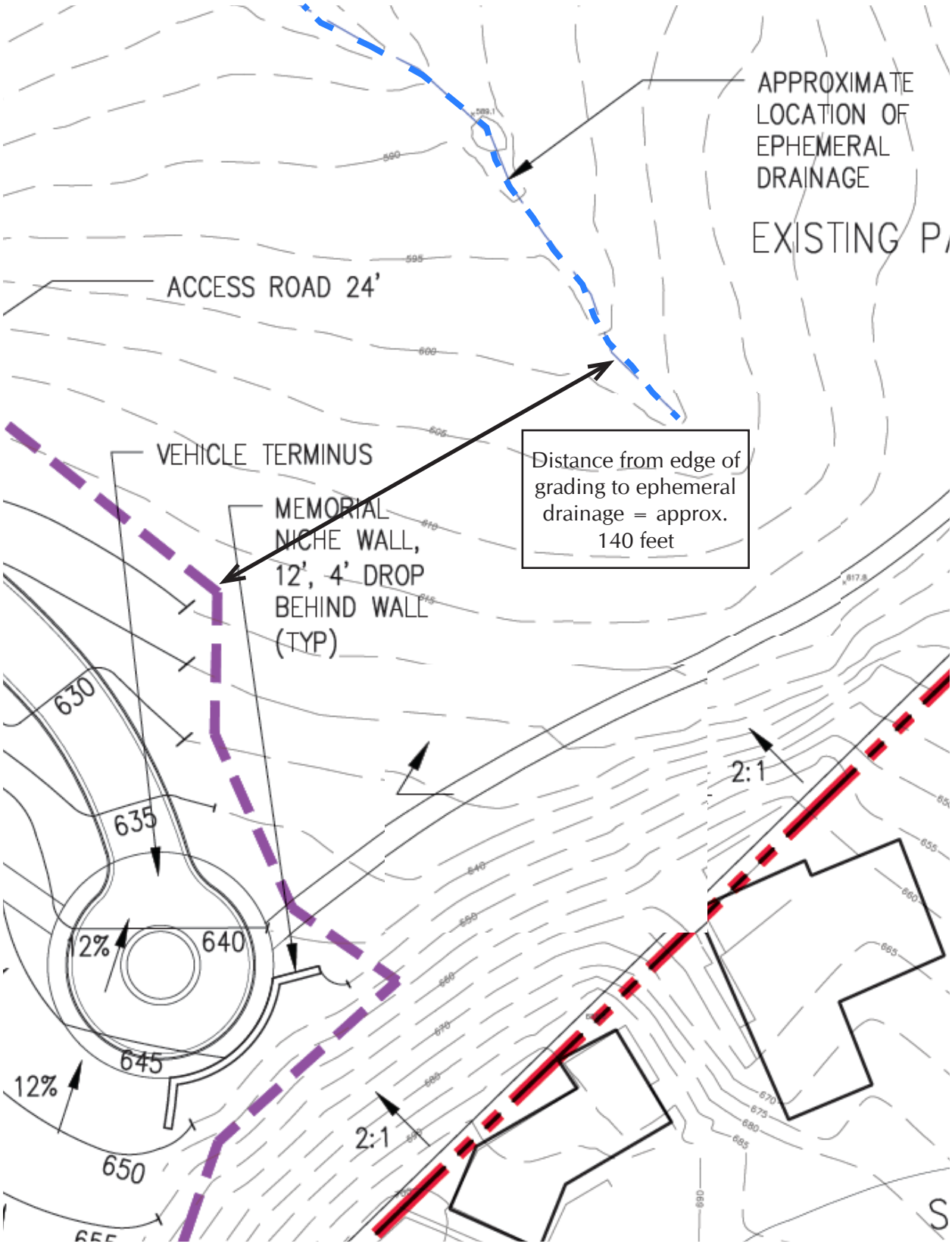


Figure 4.7-3
Project Grading Relative to Existing Drainage / Creek

Source: SWA

Construction General Permit

Stormwater discharges from construction activities on one acre or more are regulated by the RWQCB and are subject to the permitting requirements of the NPDES General Permit for Discharges of Stormwater Runoff Associated with Construction Activity (General Construction Permit, 99-08-DWQ). All dischargers are required to obtain coverage under the Construction General Permit Order 2009-0009-DWQ adopted on September 2, 2009. The RWQCB established the General Construction Permit program to reduce surface water impacts from construction activities. Construction associated with adoption and development under the Specific Plan would be required to comply with the current NPDES permit requirements to control stormwater discharges from the construction site. The General Construction Permit requires the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) for construction activities. The SWPPP must be prepared before the construction begins, and in certain cases, before demolition begins. The SWPPP must include specifications for BMPs that would need to be implemented during project construction. BMPs are measures that are undertaken to control degradation of surface water by preventing soil erosion or the discharge of pollutants from the construction area.

To obtain a Construction General Permit the State requires on-line filing of a Notice of Intent (NOI) by a Qualified SWPPP Developer through the state's SMART system.

Alameda County

The Alameda County Flood Control and Water Conservation District and the City of Oakland Public Works Agency share responsibility for maintaining drainage facilities in Oakland.

Alameda Countywide Clean Water Program (ACCWP)

The ACCWP includes 17 member agencies that work together to protect creeks, wetlands, and San Francisco Bay. The City of Oakland and ACFCWCD are two of the agencies that participate in the ACCWP. The member agencies have developed performance standards to clarify the requirements of the stormwater pollution prevention program, adopted stormwater management ordinances, conducted extensive education and training programs, and reduced stormwater pollutants from industrial areas and construction sites through program implementation. In the Project Area, the City of Oakland staff administers the stormwater program to meet CWA requirements by controlling pollution in the local storm drain sewer systems.

The City of Oakland is part of the Municipal Regional Stormwater NPDES Permit (MRP) that was adopted by the RWQCB on October 14, 2009 and revised on November 28, 2011. The new NPDES permit (Order R2-2009-0074 Permit No. CAS612008) issued by the RWQCB is designed to enable the ACCWP agencies to meet CWA requirements. The permit addresses the following major program areas: regulatory compliance, focused watershed management, public information/participation, municipal maintenance activities, new development and construction controls, illicit discharge controls, industrial and commercial discharge controls, monitoring and special studies, control of specific pollutants of concern, and performance standards. The permit also includes performance standards for new development and construction activities also referred to as Provision C.3 requirements. The C.3 requirements include measures for Permittees to use in planning appropriate source controls in site designs to include stormwater treatment measures in development projects to address both soluble and insoluble stormwater runoff pollutant discharges. An additional goal is to prevent increases in runoff flows primarily accomplished through implementation of low impact development techniques.

City of Oakland

City of Oakland General Plan

The following objectives, policies and actions from City of Oakland's General Plan (OSCAR and Safety Elements) are applicable to the Project:

Open Space, Conservation and Recreation (OSCAR) Element

- **Objective CO-5: Water Quality**: To minimize the adverse effects of urbanization on Oakland's groundwater, creeks, lakes, and near shore waters.

Safety Element

- **Policy GE-2**: Continue to enforce ordinances and implement programs that seek specifically to reduce the landslide and erosion hazards.
    - Action GE-2.2: Continue to enforce the grading, erosion and sedimentation ordinance by requiring, under certain conditions, grading permits and plans to control erosion and sedimentation.
    - Action GE-2.3: Continue to enforce provisions under the creek protection, stormwater management and discharge control ordinance designed to control erosion and sedimentation.
    - Action GE-2.5: Enact regulations requiring new development projects to employ site-design and source-control techniques to manage peak stormwater runoff flows and impacts from increased runoff volumes.

City of Oakland Municipal Code

The City of Oakland implements the following regulations to protect water quality and water resources:

Creek Protection, Stormwater Management, and Discharge Control Ordinance

Chapter 13.16 of the Oakland Municipal Code prohibits activities that would result in the discharge of pollutants to Oakland's waterways or in damage to creeks, creek functions, or habitat. The ordinance gives the City authority to implement measures to comply with NPDES regulation, including C.3. The ordinance requires the use of standard BMPs to prevent pollution or erosion to creeks and/or storm drains. The ordinance establishes comprehensive guidelines for the regulation of discharges to the city's storm drain system and the protection of surface water quality. The ordinance identifies BMPs and other protective measures for development projects. Under the ordinance, the City of Oakland Public Works Agency issues permits for storm drainage facilities that would be connected to existing city drainage facilities.

Title 13, Chapter 13.16 of the City of Oakland Municipal Code establishes a number of guidelines to protect Oakland's creeks by reducing and controlling stormwater pollution, preserving and enhancing creekside vegetation and wildlife, and controlling erosion and sedimentation. The ordinance includes specific measures applicable to properties that contain creeks or other watercourses. According to the ordinance, "a creek is a watercourse that is a naturally occurring swale or depression, or engineered channel that carries fresh or estuarine water either seasonally or year round." The ordinance includes permitting guidelines for development and construction projects taking place in or near creeks, with specific requirements for each of the following categories:

- Category I: Applies to any indoor development or work that would not affect the quality of the creek environment. No special submittals are required for this category.
- Category II: Applies to any exterior development or work that does not include earthwork, and that is more than 100 feet from the center line of a creek. Best management practices to protect water quality must be followed for projects that fall within this category, and the project's site plan must show the relationship and distance between the development or work to be conducted, and the top of bank of the creek.
- Category III: Applies to any exterior development or work that may adversely impact a creek, beyond a 20 foot setback from the top of bank of the creek and within 100 feet of the centerline of the creek, as well as any work or development that includes earthwork beyond the 20 foot setback from the top of the bank of a creek. Submittal requirements for this category of project include a site plan that shows the relationship and distances between the development or work to be conducted and the top of bank of the Creek, as well as a Creek Protection Plan that describes the BMPs that will be employed to assure construction activity will not adversely impact the creek bank, riparian corridor or water quality.
- Category IV: Applies to any exterior development or work that is conducted from the centerline of a creek to the 20-foot setback from the top of bank of the creek. Submittal requirements for this category of project include a site plan that shows the relationship between the development or work to be conducted and the top of bank of the creek; a Creek Protection Plan that describes the BMPs to be employed to assure construction activity will not adversely impact the creek bank, riparian corridor or water quality; and a Hydrology Report.

According to the Ordinance, a "creekside property" means those properties located in Oakland, as identified by the Environmental Services Manager, having a creek or riparian corridor crossing the property and/or that are contiguous to a creek or riparian corridor. According to section 13.16.120 of the ordinance, "no person shall commit or cause development or work within the boundaries of a creekside property, or within the public right-of-way fronting a creekside property, unless a creek protection permit has first been obtained from the Chief of Building Services."

Grading Ordinance

Chapter 15.04.660 of the Grading Ordinance requires a permit for grading activities on private or public property for projects that exceed certain criteria, such as amount of proposed excavation and degree of site slope. During project construction, the volume of the excavated fill material could exceed 50 cubic yards and could result in a 20 percent slope onsite, or the depth of excavation could exceed five feet at any location. Therefore, the project sponsor would be required to apply for the grading permit and prepare a grading plan, erosion and sedimentation control plan, and drainage plan.

Standard Conditions of Approval

The following SCA applies to all projects involving construction activities that require a grading permit or are located on a hillside property (20% or greater slope), except projects requiring a Category III or IV Creek Protection Permit (see other SCAs for creek protection permits).

SCA #45: Erosion and Sedimentation Control Plan for Construction

a. Erosion and Sedimentation Control Plan Required. The project applicant shall submit an Erosion and Sedimentation Control Plan to the City for review and approval. The Erosion and Sedimentation Control Plan shall include all necessary measures to be taken to prevent excessive stormwater runoff or carrying by stormwater runoff of solid materials on to lands of adjacent property owners, public

streets, or to creeks as a result of conditions created by grading and/or construction operations. The Plan shall include, but not be limited to, such measures as short-term erosion control planting, waterproof slope covering, check dams, interceptor ditches, benches, storm drains, dissipation structures, diversion dikes, retarding berms and barriers, devices to trap, store and filter out sediment, and stormwater retention basins. Off-site work by the project applicant may be necessary. The project applicant shall obtain permission or easements necessary for off-site work. There shall be a clear notation that the plan is subject to changes as changing conditions occur. Calculations of anticipated stormwater runoff and sediment volumes shall be included, if required by the City. The Plan shall specify that, after construction is complete, the project applicant shall ensure that the storm drain system shall be inspected and that the project applicant shall clear the system of any debris or sediment.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: N/A

b. Erosion and Sedimentation Control during Construction. The project applicant shall implement the approved Erosion and Sedimentation Control Plan. No grading shall occur during the wet weather season (October 15 through April 15) unless specifically authorized in writing by the Bureau of Building.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

The following SCA applies to all projects that disturb one acre or more of surface area.

SCA #46: State Construction General Permit. Requirement: The project applicant shall comply with the requirements of the Construction General Permit issued by the State Water Resources Control Board (SWRCB). The project applicant shall submit a Notice of Intent (NOI), Stormwater Pollution Prevention Plan (SWPPP), and other required Permit Registration Documents to SWRCB. The project applicant shall submit evidence of compliance with Permit requirements to the City.

When Required: Prior to approval of construction-related permit

Initial Approval: State Water Resources Control Board; evidence of compliance submitted to Bureau of Building

Monitoring/Inspection: State Water Resources Control Board

The following SCA applies to all projects considered Regulated Projects under the NPDES C.3 requirements. In this case the Project is considered a Regulated Project as it creates or replace 10,000 square feet or more of new or existing impervious surface area.

SCA #50: NPDES C.3 Stormwater Requirements for Regulated Projects

a. Post-Construction Stormwater Management Plan Required. Requirement: The project applicant shall comply with the requirements of Provision C.3 of the Municipal Regional Stormwater Permit issued under the National Pollutant Discharge Elimination System (NPDES). The project applicant shall submit a Post-Construction Stormwater Management Plan to the City for review and approval with the project drawings submitted for site improvements, and shall implement the approved Plan during construction. The Post-Construction Stormwater Management Plan shall include and identify the following:

1. Location and size of new and replaced impervious surface;
2. Directional surface flow of stormwater runoff;

3. Location of proposed on-site storm drain lines;
4. Site design measures to reduce the amount of impervious surface area;
5. Source control measures to limit stormwater pollution;
6. Stormwater treatment measures to remove pollutants from stormwater runoff, including the method used to hydraulically size the treatment measures; and
7. Hydromodification management measures, if required by Provision C.3, so that post-project stormwater runoff flow and duration match pre-project runoff.

   When Required: Prior to approval of construction-related permit

   Initial Approval: Bureau of Planning; Bureau of Building

   Monitoring/Inspection: Bureau of Building

b. Maintenance Agreement Required. Requirement: The project applicant shall enter into a maintenance agreement with the City, based on the Standard City of Oakland Stormwater Treatment Measures Maintenance Agreement, in accordance with Provision C.3, which provides, in part, for the following:

   1. The project applicant accepting responsibility for the adequate installation/construction, operation, maintenance, inspection, and reporting of any on-site stormwater treatment measures being incorporated into the project until the responsibility is legally transferred to another entity; and
   2. Legal access to the on-site stormwater treatment measures for representatives of the City, the local vector control district, and staff of the Regional Water Quality Control Board, San Francisco Region, for the purpose of verifying the implementation, operation, and maintenance of the on-site stormwater treatment measures and to take corrective action if necessary.
   3. The maintenance agreement shall be recorded at the County Recorder's Office at the applicant's expense.

      When Required: Prior to building permit final

      Initial Approval: Bureau of Building

      Monitoring/Inspection: Bureau of Building

The following condition applies to all projects located on creekside properties:

SCA #53: Vegetation Management on Creekside Properties. Requirement: The project applicant shall comply with the following requirements when managing vegetation prior to, during, and after construction of the project:

a. Identify and leave "islands" of vegetation in order to prevent erosion and landslides and protect habitat;
b. Trim tree branches from the ground up and leave tree canopy intact;
c. Leave stumps and roots from cut down trees to prevent erosion;
d. Plant fire-appropriate, drought-tolerant, preferably native vegetation;
e. Provide erosion and sediment control protection if cutting vegetation on a steep slope;
f. Fence off sensitive plant habitats and creek areas if implementing goat grazing for vegetation management;
g. Obtain a Tree Permit before removing a Protected Tree (any tree 9 inches dbh or greater and any oak tree 4 inches dbh or greater, except eucalyptus and Monterey pine);

h. Do not clear-cut vegetation. This can lead to erosion and severe water quality problems and destroy important habitat;

i. Do not remove vegetation within 20 feet of the top of the creek bank. If the top of bank cannot be identified, do not cut within 50 feet of the centerline of the creek or as wide a buffer as possible between the creek centerline and the development;

j. Do not trim/prune branches that are larger than 4 inches in diameter;

k. Do not remove tree canopy;

l. Do not dump cut vegetation in the creek;

m. Do not cut tall shrubbery to less than 3 feet high; and

n. Do not cut short vegetation (e.g., grasses, ground-cover) to less than 6 inches high.

When Required: Ongoing

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

The following SCA applies to all projects requiring a Category III Creek Protection permit (exterior development or work that may adversely impact a creek, beyond a 20 foot setback from the top of bank of the creek and within 100 feet of the centerline of the creek, as well as any work or development that includes earthwork beyond the 20 foot setback from the top of the bank of a creek) or a Category IV Creek Protection permit (exterior development or work that is conducted from the centerline of a creek to the 20-foot setback from the top of bank of the creek).

SCA #54: Creek Protection Plan

a. Creek Protection Plan Required. Requirement: The project applicant shall submit a Creek Protection Plan for review and approval by the City. The Plan shall be included with the set of project drawings submitted to the City for site improvements and shall incorporate the contents required under section 13.16.150 of the Oakland Municipal Code including Best Management Practices (BMPs) during construction and after construction to protect the creek. Required BMPs are identified below in sections (b), (c), and (d).

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Planning

Monitoring/Inspection: N/A

b. Construction BMPs, Requirement: The Creek Protection Plan shall incorporate all applicable erosion, sedimentation, debris, and pollution control BMPs to protect the creek during construction. The measures shall include, but are not limited to, the following:

1. On sloped properties, the downhill end of the construction area must be protected with silt fencing (such as sandbags, filter fabric, silt curtains, etc.) and hay bales oriented parallel to the contours of the slope (at a constant elevation) to prevent erosion into the creek.

2. The project applicant shall implement mechanical and vegetative measures to reduce erosion and sedimentation, including appropriate seasonal maintenance. One hundred (100) percent degradable erosion control fabric shall be installed on all graded slopes to protect and stabilize the slopes during construction and before permanent vegetation gets established. All graded areas shall be temporarily protected from erosion by seeding with fast growing annual species. All bare slopes must be covered with staked tarps when rain is occurring or is expected.

3. Minimize the removal of natural vegetation or ground cover from the site in order to minimize the potential for erosion and sedimentation problems. Maximize the replanting of the area with native vegetation as soon as possible.
4. All work in or near creek channels must be performed with hand tools and by a minimum number of people. Immediately upon completion of this work, soil must be repacked and native vegetation planted.
5. Install filter materials (such as sandbags, filter fabric, etc.) acceptable to the City at the storm drain inlets nearest to the project site prior to the start of the wet weather season (October 15); site dewatering activities; street washing activities; saw cutting asphalt or concrete; and in order to retain any debris flowing into the City storm drain system. Filter materials shall be maintained and/or replaced as necessary to ensure effectiveness and prevent street flooding.
6. Ensure that concrete/granite supply trucks or concrete/plaster finishing operations do not discharge wash water into the creek, street gutters, or storm drains.
7. Direct and locate tool and equipment cleaning so that wash water does not discharge into the creek.
8. Create a contained and covered area on the site for storage of bags of cement, paints, flammables, oils, fertilizers, pesticides, or any other materials used on the project site that have the potential for being discharged to the creek or storm drain system by the wind or in the event of a material spill. No hazardous waste material shall be stored on site.
9. Gather all construction debris on a regular basis and place it in a dumpster or other container which is emptied or removed at least on a weekly basis. When appropriate, use tarps on the ground to collect fallen debris or splatters that could contribute to stormwater pollution.
10. Remove all dirt, gravel, refuse, and green waste from the sidewalk, street pavement, and storm drain system adjoining the project site. During wet weather, avoid driving vehicles off paved areas and other outdoor work.
11. Broom sweep the street pavement adjoining the project site on a daily basis. Caked-on mud or dirt shall be scraped from these areas before sweeping. At the end of each workday, the entire site must be cleaned and secured against potential erosion, dumping, or discharge to the creek, street, gutter, or storm drains.
12. All erosion and sedimentation control measures implemented during construction activities, as well as construction site and materials management shall be in strict accordance with the control standards listed in the latest edition of the Erosion and Sediment Control Field Manual published by the Regional Water Quality Control Board (RWQCB).
13. Temporary fencing is required for sites without existing fencing between the creek and the construction site and shall be placed along the side adjacent to construction (or both sides of the creek if applicable) at the maximum practical distance from the creek centerline. This area shall not be disturbed during construction without prior approval of the City.

    When Required: Prior to approval of construction-related permit

    Initial Approval: Bureau of Planning

    Monitoring/Inspection: N/A

c. Post-Construction BMPs. Requirement: The project shall not result in a substantial increase in stormwater runoff volume or velocity to the creek or storm drains. The Creek Protection Plan shall include site design measures to reduce the amount of impervious surface to maximum extent practicable. New drain outfalls shall include energy dissipation to slow the velocity of the water at the point of outflow to maximize infiltration and minimize erosion.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Planning

Monitoring/Inspection: N/A

d. Creek Landscaping. Requirement: The project applicant shall include final landscaping details for the site on the Creek Protection Plan, or on a Landscape Plan, for review and approval by the City. Landscaping information shall include a planting schedule, detailing plant types and locations, and a system to ensure adequate irrigation of plantings for at least one growing season. Plant and maintain only drought-tolerant plants on the site where appropriate as well as native and riparian plants in and adjacent to riparian corridors. Along the riparian corridor, native plants shall not be disturbed to the maximum extent feasible. Any areas disturbed along the riparian corridor shall be replanted with mature native riparian vegetation and be maintained to ensure survival.

   When Required: Prior to approval of construction-related permit

   Initial Approval: Bureau of Planning

   Monitoring/Inspection: N/A

e. Creek Protection Plan Implementation. Requirement: The project applicant shall implement the approved Creek Protection Plan during and after construction. During construction, all erosion, sedimentation, debris, and pollution control measures shall be monitored regularly by the project applicant. The City may require that a qualified consultant (paid for by the project applicant) inspect the control measures and submit a written report of the adequacy of the control measures to the City. If measures are deemed inadequate, the project applicant shall develop and implement additional and more effective measures immediately.

   When Required: During construction; ongoing

   Initial Approval: N/A

   Monitoring/Inspection: Bureau of Building

Impacts, Standard Conditions of Approval and Mitigation Measures

Thresholds of Significance

The proposed Project would have a significant impact on the environment related to hydrology if it would:

1. Violate any water quality standards or waste discharge requirements;
2. Create or contribute substantial runoff which would be an additional source of polluted runoff;
3. Otherwise substantially degrade water quality.
4. Create or contribute substantial runoff which would exceed the capacity of existing or planned stormwater drainage systems;
5. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course, or increasing the rate or amount of flow, of a creek, river or stream in a manner that would result in substantial erosion, siltation, or flooding, both on- or off- site,
6. Result in substantial erosion or siltation on- or off-site that would affect the quality of receiving waters.

7. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would 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 would drop to a level which would not support existing land uses or proposed uses for which permits have been granted).
8. Result in substantial flooding on- or off-site; 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 that would impede or redirect flood flows; place within a 100-year flood hazard area structures which would impede or redirect flood flows; expose people or structures to a substantial risk of loss, injury or death involving flooding; or expose people or structures to a substantial risk of loss, injury, or death as a result in inundation by tsunami
9. Fundamentally conflict with the City of Oakland Creek Protection Ordinance (OMC Chapter 13.16) intended to protect hydrologic resources.

Water Quality and Sedimentation during Construction

The following discussion addresses Thresholds 1 and 6, specific to construction period effects.

Impact Hydro-1: During construction, the Project could result in substantial erosion, siltation and pollution that could affect the quality of receiving waters. Such impacts would be reduced to levels of less than significant through implementation of required erosion control and storm water pollution prevention preventions plans required pursuant to City of Oakland SCAs. **(LTS with SCAs)**

Site preparation, mass site grading and construction activity associated with the Project could result in soil erosion, which could have adverse effects including increased sedimentation in downstream water courses. Additionally, if potential pollutants associated with construction activities (including minor quantities of oil and grease, and petroleum hydrocarbons) were allowed to enter into storm water runoff from the site, they could contribute to degradation of downstream receiving waters.

Standard Conditions of Approval

The City of Oakland imposes numerous SCAs to reduce soil erosion and potential water pollution during construction. The Project applicant prepared and submitted (as part of a previous grading permit application for Plot 82 which has since been withdrawn and replaced by this current Project)), a preliminary Erosion Control Plan that included BMPs as referenced from the California Stormwater Quality Association Best Management Practices (CASQA BMP) Handbook. Although that prior grading permit submittal has since been revoked, the applicant has indicted that many of the construction-period water pollution and erosion control features of that prior Erosion Control Plan, which are consistent with the SWPPP requirements pursuant to SCAs #45 and 46, will be incorporated into the Project's required Erosion and Sediment Control Plan. These features include:

- Existing surfaces and vegetation are to remain undisturbed to the extent practical;
- Plant-based soil binders are to be applied to exposed soils at disturbed areas if left inactive for more than 14 days;
- All slopes are to be protected with linear sediment controls along the toe of slopes, face of slopes and grade breaks, at spacing not to exceed 20 feet on slopes of 0 to 25%, at spacing not

to exceed 15 feet on slopes of 25% to 50%, and at spacing not to exceed 10 feet on slopes in excess of 50%,

- Hydro-seeding all new slopes and placing fiber rolls on all exterior-facing slopes immediately upon completion of earthwork activities;
- Installation of a small check dam at lower elevations on the slopes; and
- Placement of storm drain inlet protections at all storm drain inlets prior to commencement of construction activity.

Pursuant to SCA #45, the Project applicant will be required to submit a new Erosion and Sedimentation Control Plan for the entire Project, and will be required to implement the approved Erosion and Sedimentation Control Plan during all grading operations. No grading operations will be allowed during the wet weather season (October 15 through April 15) unless specifically authorized in writing by the Bureau of Building.

Additionally, pursuant to SCA #46 the Project will be required to comply with all requirements of the Construction General Permit issued by the SWRCB. The Project applicant will need to submit an NOI, an SWPPP, and other required permit registration documents to SWRCB, and then file evidence of compliance with these state permit requirements with the City. The SWPPP will be required to include a description of construction materials, practices and equipment storage and maintenance; a list of pollutants likely to contact stormwater; site-specific erosion and sedimentation control practices; a list of provisions to eliminate or reduce discharge of materials to stormwater; BMPs; and an inspection and monitoring program. Each of these SWRCB permits shall be obtained prior to approval of the Project's grading permit.

With implementation of City-required SCAs #45 and #46, the Project's potential impacts pertaining to water quality and sedimentation during construction would be reduced to a level of less than significant.

Mitigation Measures

None needed

Water Quality during Operations

The following discussion addresses Thresholds 1, 2, 3 and 4, specific to post-construction effects.

Impact Hydro-2: The Project would result in increased storm water runoff from the site, potentially creating a new source of polluted runoff that could degrade downstream water quality. Such impacts would be reduced to levels of less than significant through implementation of required storm water quality requirements related to NPDES C.3 permits requirements and City of Oakland SCAs pertaining to water quality. **(LTS with SCA**)

Under current conditions the Project site is an open area within the Cemetery, and the only maintenance activity that occurs is occasional disking or mowing. With operational activities at the Project site such as excavation of burial plots, increased visitors and landscape maintenance, these new activities may generate and/or result in the pollution of stormwater runoff, including motor oil and other automotive fluids from spills and leaks; and pesticides, fertilizers and herbicides used in landscaping. If allowed to be captured in runoff during storm events, these pollutants would enter the storm drainage system and eventually contribute to downstream surface water quality degradation.

Standard Conditions of Approval

The City of Oakland imposes SCAs to reduce potential water pollution during on-going operations.

The Project's roadway improvements, paths and walls will create and/or replace more than 10,000 square feet of impervious surfaces, and therefore the Project is regulated under NPDES regulations, as required pursuant to SCA #50. Pursuant to provision C.3 of the Municipal Regional Stormwater Permit issued under the NPDES, the Project applicant will be required to submit a Post-Construction Stormwater Management Plan (SWMP) to the City for review and approval. The SWMP shall identify the location and size of all new and replaced impervious surfaces, the directional surface flow of stormwater runoff, and the location of proposed on-site storm drain lines. Additionally, storm water pollution reduction measures shall be incorporated, potentially including site design measures to reduce the amount of impervious surface area, source control measures to limit stormwater pollution, and stormwater treatment measures to remove pollutants from stormwater runoff, including the method used to hydraulically size the treatment measures. Additionally, the Project applicant will be required to enter into a Maintenance Agreement with the City to accept responsibility for the construction, operation, maintenance and inspection of all elements of the SWCP.

The Project's proposed method of compliance with Provisions C.3 of the SF Bay RWQCB Municipal Regional Stormwater NPDES permit (Order No. R2-2009-0074) is to provide for low-impact development treatment through rain-water harvesting for irrigation use. Surface runoff from the upper portions of the Cemetery is proposed to be collected via a system of storm drains and drainage channels which outfall into the Cemetery's system of three lakes located along the lower, southerly portions of the Cemetery near Moraga Avenue. These lakes are filled with runoff water annually, and the stored water is pumped back through on-site irrigation system to supplement well water irrigation supplies. This system provides for on-site reuse of storm water runoff for irrigation purposes during dry summer months. All of these storm drain facilities are private infrastructure of the Cemetery and are on site within Cemetery property. This system is completely internal to the Cemetery property and prevents off-site release of polluted runoff from degrading downstream water quality.

With acceptance of this proposed low impact water treatment system and its implementation, the Project's water quality impacts from operational storm water runoff would be less than significant.

Mitigation Measures

None needed

Flooding

The following discussion addresses each of the items listed in Threshold 8.

Impact Hydro-3: The Project site is located at a high elevation within the Oakland Hills and would not be susceptible to flooding hazards of any type. (**No Impact**)

The Project site is located well outside of any 100-year flood zone, is not susceptible to flooding hazards in the event of dam or reservoir failure, and is not is located within a tsunami inundation zone. The nearest large water body reservoir is the Temescal Reservoir, and the inundation pathway in the event of a failure of that reservoir does not intersect the Project site. There are no risks associated with flooding at this site.

Mitigation Measures

None needed

Hydrologic Alteration

The following discussion addresses Threshold 5.

Impact Hydro-4: The Project would not substantially alter the course of any creek, or otherwise substantially alter (increase or decrease) stormwater runoff volume or the velocity of runoff into a receiving creek. (**LTS**)

No evidence of any drainage channels were observed within the Project site boundaries (i.e., within the limits of proposed grading). The nearest drainage channel is located within the area known as the Clarewood Bowl, a bowl-shaped portion of the Cemetery that juts to the northeast from the Panhandle portion of the Project site, but that is not within the Project boundaries. This drainage is located below the ridgeline and on the back (northerly) side of the ridge that defines the upper limits of the Project site, as indicated in **Figure 4.7-4**. This drainage channel is formed by the outlet of a below-grade drainage pipe, which conveys storm water runoff from the adjacent up-hill Stark Knoll properties, and also caries runoff from this bowl-shaped area, eventually discharging into an underground storm drain line near Clarewood Drive. The storm drain line in Clarewood Drive forms a portion of the upper reach of the Rockridge Branch of Glen Echo Creek.

The Project's proposed grading plan for the Panhandle area would add new fill, such that the majority of the Panhandle site will be raised and moderately pitched to the southwest. This grading work is designed to meet existing grades to the south and east within the City of Piedmont boundaries, and to match existing grade the north at approximately the ridgeline road (see cross-section, Figure 4.7-4). None of this grading activity involves any direct alteration to the Clarewood drainage (see further discussion below regarding consistency with the City's Creek Protection Ordinance).

Whereas it is generally possible that alterations to topography as a result of grading activities may re-route stormwater flows from current drainage patterns, and removal of mature trees (the root systems of which contribute to sub-surface flows and groundwater recharge) could potentially affect site hydrology and water quality, these effects would be less than significant for the Project based on the following:

- The majority of flow that contributes to the Clarewood Bowl drainage channel is comprised of storm water runoff (from both permeable and impermeable surfaces) from the adjacent private properties located along the downhill side of Stark Knoll. These properties are off-site from the Cemetery, and the Project will have no effect on this existing drainage pattern or on the outfall at the head of this drainage channel
- The remainder of flow within this channel is derived from runoff from a relatively small (approximately 7.7 acre) upper watershed bounded by the Stark Knoll hillside to the east, Clarewood Drive to the north and west, and the upper ridgeline within the Cemetery to the south, as indicated in Figure 4.7-3. The Project's grading activity will be limited to an approximately 2.3-acre portion of this sub-basin watershed to the south, representing approximately 30% of the watershed boundary (not including the Stark Knoll residences). The Project will have no effect on those portions of this watershed sub-basin to the north or west.



Clarewood Bowl Sub-basin

Clarewood drainage channel, beyond limits of Project grading

direction of surface flow, pre-and post construction

approximate limits of Project grading

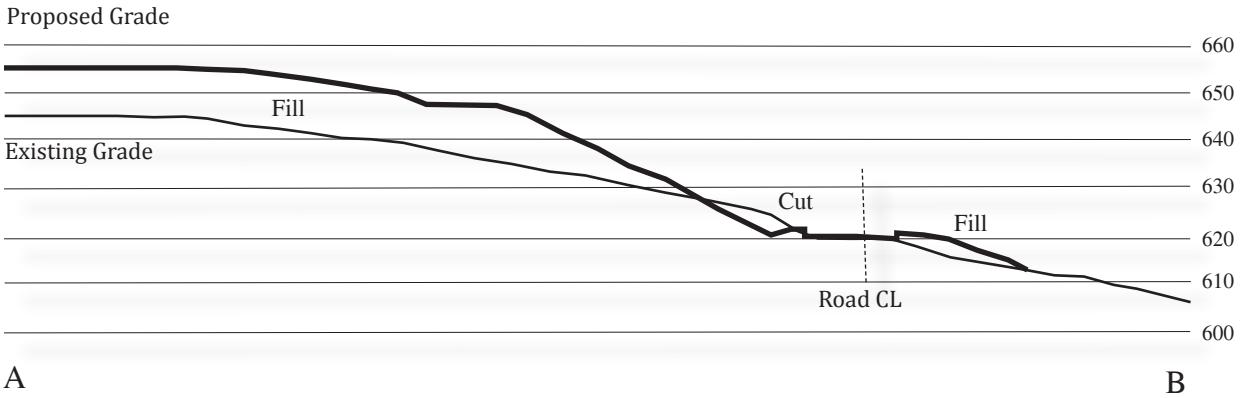


Figure 4.7-4
Hydrologic Alterations to the Clarewood Drainage

Source (section): SWA

- Runoff from that portion of the Clarewood Bowl sub-basin that will be affected by the Project's proposed grading plan currently flows downgradient from the ridgeline in a northerly direction. The Project's proposed grading plan raises existing grade, but does not materially alter the sub-basin boundary or ridgeline location, such that the watershed boundaries will remain substantially the same.
- Surface runoff from the relatively small portion of the Clarewood Bowl sub-basin that is located above the ridgeline road currently drains to the existing ridge road, where much of the surface flow is captured in the roadway and conveyed cross-slope to the west. Only a portion of surface runoff from the area uphill from the road overflows the roadway edge and is conveyed further downhill to the Clarewood drainage. The Project would improve the ridge road with curbs and a storm drain line, and provide for a more efficient capture of this runoff, but changes in runoff volume from this area to the Clarewood drainage would be negligible.
- During construction of the ridge road improvements, the Project would implement minor grading activities on approximately 0.5 acres on the downhill side of the roadway. The finish grade would generally match existing grade, this area would be re-seeded with native grasses, and runoff from this area would continue to flow downhill to the Clarewood drainage, similar to existing conditions. There would be little to no changes in runoff from the area below the ridge road.
- The Project's grading activity would result in removal of approximately 10 existing trees from the area that is within the Clarewood Bowl sub-basin, but would also replace lost trees with an approximately equivalent number of new trees planted along the up-hill and downhill sides of the ridge road. The root system for these new trees would continue to contribute to sub-surface flows and groundwater recharge, similar to the current conditions.

Standard Conditions of Approval

The Project will be regulated under NPDES, as required pursuant to SCA #50. Provision C.3 of these NPDES regulations require the Project applicant to submit a post-construction SWMP to the City for review and approval, showing all new and replaced impervious surfaces, the directional surface flow of stormwater runoff, the location of proposed on-site storm drain lines, and stormwater treatment measures that are hydrologically sized appropriate to runoff volume to remove pollutants from stormwater. With implementation of the Storm Water Management Plan, operational water quality impacts to the down-gradient Clarewood drainage would be less than significant.

Mitigation Measures

None needed

Groundwater

The following discussion addresses each of the items listed in Threshold 7.

Impact Hydro-5: The Project would not substantially deplete groundwater supplies, nor would it interfere substantially with groundwater recharge such that it would cause a net deficit in aquifer volume or a lowering of the local groundwater table. (**LTS**)

Groundwater Extraction

The Project proposes to utilize well water for landscape irrigation, but well water is only one component of the irrigation water supply expected to be used for the Project. The other irrigation water supply sources include rain water harvesting, and purchase of water from EBMUD. Each of these irrigation water supply sources are in use today, and will continue to be used for the Project.

- The Cemetery owns two wells located in the upper portions of the Cemetery property and within the Project site. These are deep wells with inconsistent yields, but are used to supply irrigation water as it is available, and at such times that well production yields are economically viable.
- Surface runoff of rainfall from the upper portions of the Cemetery is collected via a system of storm drains and drainage channels which outfall into the Cemetery's system of three lakes located along the lower, southerly portions of the Cemetery, near Moraga Avenue. These lakes are filled with rainfall runoff water annually, and the stored water is pumped back through an on-site irrigation system to supplement irrigation water supplies. This system provides for on-site reuse of storm water runoff to supplement irrigation demands during dry summer months.
- The Cemetery also supplements these two on-site water sources by purchasing water from EBMUD when other sources are less reliable or unavailable.

Currently, the Cemetery irrigates over 125 acres of landscaped turf and vegetation using these three sources of water. The Project would increase the irrigated landscape by approximately 7.5 acres of irrigated grass plus peripheral shrubs (or a 6% to 7% increase in irrigated land). This relatively small increase relative to existing irrigation demand would not substantially increase overall water demands to the extent that it would materially affect existing use of well water or deplete the groundwater supply.

Groundwater Recharge

The Project will only minimally increase the extent of impervious surfaces within the Project site. New impervious surfaces include construction of new roadway improvements, paths, retaining walls and other impervious surfaces. This increase in impervious surface will be off-set by removal of a previously paved area (the Panhandle) that has become overgrown with grasses, but where impervious pavement still remains. The Project will remove this pavement from the Panhandle area, thereby increasing groundwater recharge potential and reducing surface runoff from this upper area of the site.

The vast majority of the Project site will remain pervious landscaped surfaces that will retain groundwater recharge capabilities, and impacts to groundwater recharge will be less than significant.

Mitigation Measures

None needed

Consistency with City of Oakland Creek Protection Ordinance

The following discussion addresses each of the items listed in Threshold 9.

Impact Hydro-6: The Project would not conflict with the City of Oakland Creek Protection Ordinance (OMC Chapter 13.16) intended to protect hydrologic resources. (**LTS**)

Permit Requirements

According to the Ordinance, the Project site is considered a "creekside property" because the Cemetery has creeks and riparian corridors crossing the property. Therefore, according to section 13.16.120 of the OMC, before any work may commences at the Project site, the applicant will be required to obtain a creek protection permit.

The closest regulated feature that would be defined under the Creek Ordinance as a “creek” is the ephemeral drainage that flows into the area known as the Clarewood Bowl, immediately north of the Project site. This ephemeral drainage begins at a box culvert opening that is an outlet to a drainage pipe which conveys runoff from the development area at Stark Knoll Court, just above the Panhandle portion of the Project. This box culvert opening is located approximately 140 feet to the north (downhill) of the limits of anticipated grading associated with the proposed Project (see Figure 4.7-3).

The distance between the identified limit of Project-related grading activity and this regulated feature exceeds the 100-foot controls for a Category III permit. Projects that are located more than 100 feet from the centerline of a creek are classified as Category II projects, and are only required to submit a site plan clearly illustrating the relationship and distance of the project to the creek centerline and top of the creek bank.

Potential for Direct Impacts on the Creek

There are no numeric or quantitative criteria to assess consistency or conflicts with the Creek Ordinance. Factors considered in determining potential water quality conflicts with the City of Oakland’s Creek Protection Ordinance include whether there is substantial degradation of riparian or aquatic habitat through discharging a substantial amount of pollutants into the creek; significantly modifying the natural flow of the water; depositing substantial amounts of new material into the creek; or causing substantial bank erosion or instability.

The Project’s nearest point of proposed grading is approximately 140 feet from the creek’s box culvert outlet. As a result of this distance of separation between the Project site and the creek, the Project will not result in any direct impacts to this ephemeral drainage causing modifications to the natural flow of water in this creek, would not directly deposit any new material into this creek, and would not directly cause substantial bank erosion or instability.

Potential for Indirect Impacts on the Creek

Indirect impacts on the down gradient creek could potentially occur as a result of grading activities that may re-route stormwater flows from current drainage patterns (see discussion above regarding Hydrologic Alterations), or through indirect discharge of substantial amounts of sediment or pollutants into the creek.

Standard Conditions of Approval

The Project will be required to implement of a number of City of Oakland SCAs related to stormwater pollution prevention and water quality protection (see discussion under Impacts Hydro-1 and Hydro-2, above).

- Pursuant to SCA #45, the Project applicant is required to submit an Erosion and Sedimentation Control Plan to the City for review and approval that includes all necessary measures to be taken to prevent excessive stormwater runoff or carrying polluted stormwater runoff to this creek during grading and construction operations. Best management practices to be included in the Erosion and Sedimentation Control Plan will be required to address any possible indirect effects of sedimentation or pollution of the nearby ephemeral drainage.
- Pursuant to SCA #50, the Project applicant is required to submit a Post-Construction Stormwater Management Plan to the City for review and approval that will include all necessary NPDES c.3 requirements to provide source control measures that limit stormwater pollution, to include stormwater treatment measures that remove pollutants from stormwater runoff, and that may include specific measures necessary to ensure that post-Project stormwater runoff flow and duration match pre-Project runoff conditions to the nearby creek.
- Pursuant to SCA #53, the Project applicant will be required to appropriately manage vegetation on the slope between the Project site and the Clarewood creek prior to, during, and after construction of the project to prevent erosion.

Implementation of these SCAs would ensure that indirect impacts on the down gradient creek through the potential discharge of substantial amounts of sediment or pollutants, would be adequately avoided. These SCAs will require implementation of best management practices be employed to assure that construction activity will not adversely impact the creek bank, riparian corridor or water quality. These SCA requirements for erosion and stormwater control are fundamentally consistent with similar Category III Creek permit requirements. No direct or indirect impacts to the nearby creek are anticipated due to the distance between the Project site and regulated features, as well as the erosion and sediment control requirement and storm water management requirements of the applicable SCAs, and no conflicts with the City's Creek Protection Ordinance are anticipated.

There is the potential that the Project's final grading plans showing the defined limits of grading may need to be adjusted, depending upon subsurface conditions that may be encountered (such as the potential presence of currently unknown un-compacted artificial fill north of the current limits of grading).

Should adjustments to the grading limits for the Project later be found necessary based on unknown conditions encountered in the field, and such adjustments result in grading operations that would occur within 100 feet of the ephemeral drainage within the Clarewood bowl, then grading activity would need to cease until a Category III Creek Protection permit is prepared, reviewed and approved pursuant to SCA #54.

Mitigation Measures

No mitigation measures are necessary, based on the Project's conceptual grading plans included in the Project Description. If the Project's final grading plans and defined limits of grading need to be adjusted due to subsurface conditions that may be encountered in the field, the submittal and required approval of a Class III Creek Permit as required pursuant to SCA #54 would ensure that no fundamental conflict

with the City of Oakland Creek Protection Ordinance would occur, and the impact would be less than significant.

Cumulative Hydrology Impacts

Cumulative Impact Hydro-7: Construction of the Project, when combined with other past, present, existing, approved, pending and reasonably foreseeable development in the vicinity, would not result in significant cumulative impacts with respect to hydrology and water quality. **(Less than Significant with SCAs)**

The geographic area considered for hydrology and water quality includes the Glen Echo Creek watershed area, where cumulative development discharges into the City's stormwater drainage system and into Glen Echo Creek and its tributaries. Glen Echo Creek and its major tributaries (the Rockridge Branch and the Cemetery Branch) are the regional conveyance channels that connect the Project area with lower parts of the Glen Echo Creek watershed area, through Oakland to Lake Merritt. Cumulative development contributes flows and pollutants to this creek system, and can result in the potential for adverse cumulative effects related to stormwater water quality and flows.

Implementation of the proposed Project, together with other past, present and reasonably foreseeable future projects within the watershed could combine to increase stormwater runoff and pollutant loading into these creeks and to Lake Merritt. Water quality of this watershed has been compromised over many years of urban development. Cumulative development contributes additional stormwater flows to these drainages as well as urban pollutants that affect water quality. The proposed Project and other future projects within the regional watershed would be required to comply with drainage and grading requirements intended to control runoff and regulate water quality at each development site. Additionally, new projects would be required to demonstrate that stormwater volumes can be managed by stormwater conveyance facilities designed to control on-site stormwater flows. New development projects in Oakland also would be required to similarly comply with regional stormwater requirements and City of Oakland SCAs regarding water quality including regional NPDES C.3 permitting requirements. All construction work would require an NPDES Construction General permit that requires all activities to minimize adverse effects to water quality through implementation of BMPs. Therefore, the effect of the Project on water quality and hydrology, in combination with other cumulative projects, would not be cumulatively significant.

Additionally, new projects would be required to demonstrate that stormwater volumes can d be managed by stormwater conveyance facilities designed to control on-site stormwater flows. New development projects in Alameda County also are required to comply with Alameda County and regional NPDES permit requirements, which include low impact development (LID) drainage features. Therefore, the Project, in combination with other cumulative developments, would not result in a significant cumulative impact related to increased stormwater flows and the cumulative effects would be less than significant.

Mitigation Measures

None needed

4.8

Noise

This section analyzes potential impacts on the ambient noise environment caused by the construction and operation of the Project. This section describes the environmental and regulatory setting of the Project area as well as basics of environmental acoustics, including definitions of terms commonly used in noise analysis. Potential impacts are discussed and evaluated, and appropriate mitigation measures or Standard Conditions of Approval (SCAs) are identified, as necessary.

Environmental Setting

Fundamentals of Environmental Noise

Noise is defined as unwanted sound. Sound levels are usually measured and expressed in decibels (dB) with 0 dB corresponding roughly to the threshold of hearing. Decibels and other technical terms are defined in **Table 4.8-1**. Most of the sounds that we hear in the environment do not consist of a single frequency, but rather a broad band of frequencies, with each frequency differing in sound level. The intensities of each frequency add together to generate a sound. The method commonly used to quantify environmental sounds consists of evaluating all of the frequencies of a sound in accordance with a weighting that reflects the fact that human hearing is less sensitive at low frequencies and extreme high frequencies than in the frequency mid-range. This is called "A" weighting, and the decibel level so measured is called the A-weighted sound level (dBA). Typical A-weighted levels measured in the environment and in industry are shown in **Table 4.8-2** for different types of noise.

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 combination of noise from distant sources which create a relatively steady background noise, with no particular source 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% of a stated time period. A single number descriptor called the L_{eq} is also widely used. The L_{eq} is the average A-weighted noise level during a stated period of time.

In determining the daily level of environmental noise, there are also differences in individual responses to daytime and nighttime noises. During the nighttime, exterior background noises are generally lower than the daytime levels. However, most household noise also decreases at night and exterior noise becomes more noticeable. Further, most people sleep at night and are more sensitive to noise intrusion. To account for human sensitivity to nighttime noise levels, a descriptor, L_{dn} (day/night average sound level), was developed. The L_{dn} divides the 24-hour day into the daytime of 7:00 AM to 10:00 PM and the nighttime of 10:00 PM to 7:00 AM. The nighttime noise level is weighted 10 dB higher than the daytime noise level. The Community Noise Equivalent Level (CNEL) is another 24-hour average that includes both an evening and nighttime weighting, applying a 5 dB penalty during evening hours to account for peoples increased sensitivity

Table 4.8-1: Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micro Pascals (or 20 micro Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micro Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sounds are below 20 Hz and Ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period. The hourly Leq used for this report is denoted as dBA L_{eq} (h).
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level, L_{dn} or DNL	The equivalent noise level for a continuous 24-hour period with a 10-decibel penalty imposed during nighttime and morning hours. (10:00 PM to 7:00 AM).
Community Noise Equivalent Level, CNEL	CNEL is the equivalent noise level for a continuous 24-hour period with a 5-decibel penalty imposed in the evening (7:00 PM to 10:00 PM) and a 10-decibel penalty imposed during nighttime and morning hours (10:00 PM to 7:00 AM).
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Handbook of Acoustical Measurements and Noise Control, Harris, 1998.

Table 4.8-2: Typical Noise Levels in the Environment

Common Outdoor Noise Source	Noise Level (dBA)	Common Indoor Noise Source
	110 dBA	
Jet fly-over at 1,000 feet		
	100 dBA	
Gas lawn mower at 3 feet		
	90 dBA	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80 dBA	Garbage disposal at 3 feet
Noisy urban area, daytime		Vacuum cleaner
Gas lawn mower, 100 feet	70 dBA	
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60 dBA	
		Large business office
Quiet urban daytime	50 dBA	Dishwasher in next room
Suburban daytime		Active office environment
Quiet urban nighttime	40 dBA	Theater, large conference room
Quiet suburban nighttime		
	30 dBA	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20 dBA	
Wilderness area	20 dBA	
		Broadcast/recording studio
	0 dBA	

Source: Technical Noise Supplement (TeNS), Caltrans, November 2009.

Existing Noise Environment

According to the City General Plan Safety Element's Noise Contour Map, the Project site is located in an area with day/night average noise levels (L_{dn}) quieter than 60 dB. There are no major sources of noise in the Project area. The nearest major noise sources to the Project site are road noise from Broadway Terrace (approximately 1,800 feet to the northwest), Moraga Avenue (approximately 800 feet to the south) and Highway 13 (approximately 2,600 feet to the northeast).

Existing Sensitive Receptors

Existing sensitive noise receptors located in the vicinity of the Project site include residential uses to the north, east and south, and the Saint Theresa Catholic Church and school to the north.

The closest residences are immediately adjacent to the Project site along the northeast Cemetery boundary along the Stark Knoll Place cul-de-sac. These residences share a property line with the Cemetery at the Panhandle, and the nearest homes are within 25 to 50 feet from the nearest edge of proposed earthwork. On the opposite, northerly side of the ridgeline separating the Cemetery from Clarewood Drive, the nearest homes along Truitt Lane are within 300 feet of the proposed earthwork at Plot 98, and Saint Theresa's Church and school is about 500 feet north of the proposed earthwork at Plot 82, but also on the opposite, northerly side of the ridgeline.

Other nearby sensitive receptors include residential neighborhoods along Maxwelton Road (400 feet to the east of the Panhandle), along Abbott Lane (600 feet to the southeast of the Panhandle), and along Scenic Avenue (approximately 1,000 feet to the south of the Panhandle).

Regulatory Setting

Federal, state, and local agencies regulate different aspects of environmental noise. Federal and state agencies generally set noise standards for mobile sources such as aircraft and motor vehicles, while regulation of stationary sources is generally the responsibility of local agencies. Local regulation of noise involves implementation of General Plan policies and noise ordinance standards. The City of Oakland General Plan identifies general principles intended to guide and influence development plans; the noise ordinances establish standards and procedures for addressing specific noise sources and activities.

Federal

Federal Transit Administration

The Federal Transit Administration (FTA) publishes methodology and criteria in for assessing the impact of transit projects[1], which also contains thresholds for damage risk due to construction related vibration, shown in **Table 4.8-3**. These limits should be viewed as criteria used to identify problem locations that must be addressed during final design.

[1] FTA, *Transit Noise And Vibration Impact Assessment,* 2006

Table 4.8-3: Construction Vibration Damage Criteria

Building Category	PPV (in/sec)	Approximate Lv (VdB)
I. Reinforced-concrete, steel or timber (no plaster)	0.5	102
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Non-engineered timber and masonry buildings	0.2	94
IV. Buildings extremely susceptible to vibration damage	0.12	90

PPV: Peak Particle Velocity

VdB: RMS vibration velocity in decibels re 1 micro-inch/second

State

State of California Noise Insulation Standards

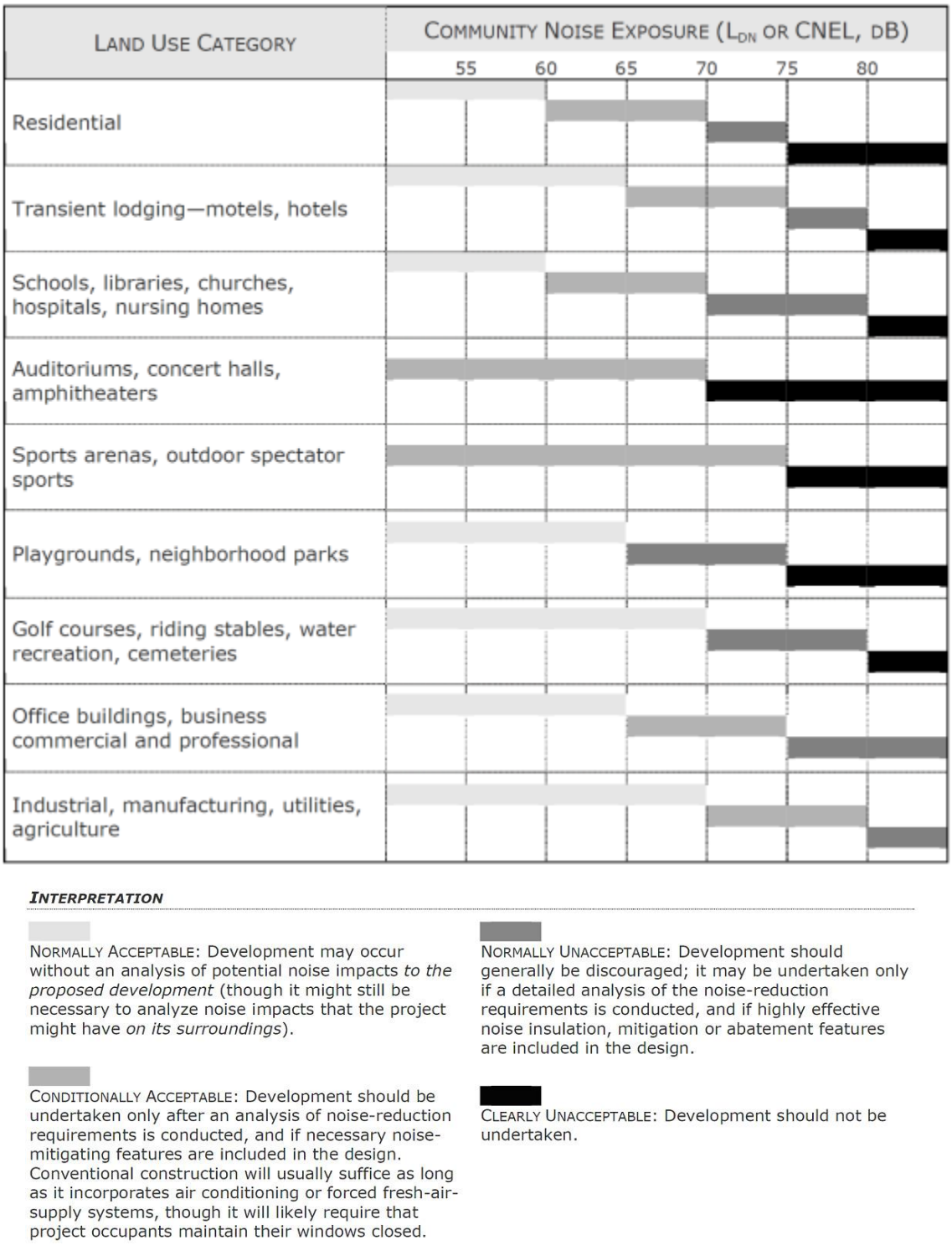
The California Noise Insulation Standards found in CCR, Title 24 establish requirements for new multi-family residential units, hotels, and motels that may be subject to relatively high levels of transportation noise. In this case, the noise insulation criterion is 45 dB L_{dn} inside noise sensitive spaces. For developments with exterior transportation noise exposure exceeding 60 dB L_{dn}, an acoustical analysis and mitigation (if required) must be provided showing compliance with the 45 dB L_{dn} interior noise exposure limit.

Local

City of Oakland General Plan

The City of Oakland's General Plan Noise Element compatibility guidelines are shown in **Table 4.8-4**. Residential land use is considered "normally acceptable" when exposed to an L_{dn} of 60 dBA or less, "conditionally acceptable" when exposed to a L_{dn} between 60 and 70 dBA, "normally unacceptable" between L_{dn} 70 and 75 dBA and "clearly unacceptable" above L_{dn} 75 dBA.

Table 4.8-4: Oakland General Plan Noise-Land Use Compatibility Matrix



The guidelines in Table 4.8-4 specify acceptable levels for exterior noise exposures and in some instances require that noise insulation be included in the design to reduce interior noise. In another section, the Noise Element discusses acceptable noise levels for interior spaces:

Conventional contemporary construction methods and materials decrease outdoor noise by 12-18 dB (with partially open windows). According to common practice, the following are the maximum interior noise levels generally considered acceptable for various common land uses:

- *45 dB: residential, hotels, motels, transient lodging, institutional (churches, hospitals, classrooms, libraries), movie theaters*
- *50 dB: professional offices, research and development, auditoria, meeting halls*
- *55 dB: retail, banks, restaurants, sports clubs*
- *65 dB: manufacturing, warehousing*

City of Oakland Noise Ordinance

The City of Oakland also regulates noise through enforcement of its Noise Ordinance, which is found in Sections 8.18 and 17.120 of the Oakland Municipal Code. Per Chapter 8.18.020, the persistent maintenance or emission of any noise or sound produced by human, animal or mechanical means, between the hours of 9:00 PM and 7:00 AM which shall disturb the peace or comfort, or be injurious to the health of any person shall constitute a nuisance. Failure to comply with the following provisions shall constitute a nuisance.

A. All construction equipment powered by internal combustion engines shall be properly muffled and maintained.

B. Unnecessary idling of internal combustion engines is prohibited.

C. All stationery noise-generating construction equipment such as tree grinders and air compressors are to be located as far as is practical from existing residences.

D. Quiet construction equipment, particularly air compressors, is to be selected whenever possible.

E. Use of pile drivers and jack hammers shall be prohibited on Sundays and holidays, except for emergencies and as approved in advance by the Building Official.

Whenever the existence of any such nuisance shall come to the attention of the Health Officer, it shall be his or her duty to notify in writing the occupant of the premises upon which such nuisance exists, specifying the measures necessary to abate such nuisance, and unless the same is abated within forty-eight (48) hours thereafter, the occupant so notified shall be guilty of an infraction, and the Health Officer shall summarily abate such nuisance.

Operational Noise

Chapter 17.120.050 of the Oakland Planning Code regulates operational noise from stationary sources. **Table 4.8-5** presents maximum allowable receiving noise standards applicable to long-term exposure for residential and civic land uses for noise from stationary noise sources (not transportation noise). For example, between 7:00 AM and 10:00 PM, residential and civic land uses, including public open spaces, may only be exposed to noises up to 60 dBA for a period of 20 cumulative minutes in a one-hour time period and a maximum of 80 dBA.

Table 4.8-5: Maximum Allowable Receiving Noise Level Standards (dBA)[1]

Cumulative Number of Minutes in Either the Daytime or Nighttime One Hour Time Period		Residential and Civic Land Use[3]		Commercial Land Use	Mfg., Industrial, Ag., and Extractive Land Use
		Daytime (7:00 AM to 10:00 PM)	Nighttime (10:00 PM to 7:00 AM)	Anytime	Anytime
20	(L33)[2]	60	45	65	70
10	(L17)	65	50	70	75
5	(L8)	70	55	75	80
1	(L2)	75	60	80	85
0	(L_{max})	80	65	85	90

Notes:

1. These standards are reduced 5 dBA for simple tone noise, noise consisting primarily of speech or music, or recurring impact noise. If the ambient noise level exceeds these standards, the standard shall be adjusted to equal the ambient noise level.
2. L_x represents the noise level that is exceeded *x* percent of a given period. L_{max} is the maximum instantaneous noise level.
3. Legal residences, schools and childcare facilities, health care or nursing home, public open space, or similarly sensitive land uses.

Source: OMC Section 17.120.050.

Per Chapter 17.120.060 of the Oakland Planning Code, all activities, except those located within the M-40 zone, or in the M-30 zone more than 400 feet from any legal residentially occupied property, shall be so operated as not to create a vibration which is perceptible without instruments by the average person at or beyond any lot line of the lot containing such activities. Ground vibration caused by motor vehicles, trains, and temporary construction or demolition work is exempted from this standard. (Ord. 11895 Section 8, 1996: prior planning code Section 7711)

Construction Noise

Table 4.8-6 presents noise level standards from the Noise Ordinance that applies to temporary exposure to short- and long-term construction noise. In this context, short-term refers to construction activity lasting less than 10 days at a time while long-term refers to construction activities lasting greater than 10 days at a time. This table shows the maximum allowable receiving noise levels during the day time, as received by any residential, commercial, or industrial land use, which is produced by any non-scheduled, intermittent, short-term construction or demolition operation (less than 10 days) or by any repetitively scheduled and relatively long-term construction or demolition operation (10 days or more).

Table 4.8-6: Construction Noise Level Standards[1] (dBA)

Receiving Land Use	Less Than 10 Days		More Than 10 Days	
	Weekdays 7 AM to 7 PM	Weekends 9 AM to 8 PM	Weekdays 7 AM to 7 PM	Weekends 9 AM to 8 PM
Residential	80	65	65	55
Commercial, Industrial	85	70	70	60

Note:

1. If the ambient noise level exceeds these standards, the standard shall be adjusted to equal the ambient noise level.

Source: OMC Section 17.120.050, TABLE 17.120.04

Standard Conditions of Approval

The City of Oakland's Standard Conditions of Approval (SCAs) relevant to reducing noise and vibration impacts applicable to the Project are listed below. If the Project is approved, all applicable SCAs would be adopted as conditions of approval, as applicable, to help ensure less-than-significant impacts from noise and vibration. The SCAs are incorporated and required as part of all approved projects, so they are not listed as mitigation measures.

These SCAs apply to all construction projects:

> **SCA #58: Construction Days/Hours.** Requirement: The project applicant shall comply with the following restrictions concerning construction days and hours:
>
> a. Construction activities are limited to between 7:00 AM and 7:00 PM Monday through Friday, except that pier drilling and/or other extreme noise generating activities greater than 90 dBA shall be limited to between 8:00 AM and 4:00 PM.
>
> b. Construction activities are limited to between 9:00 AM and 5:00 PM on Saturday. In residential zones and within 300 feet of a residential zone, construction activities are allowed from 9:00 AM to 5:00 PM only within the interior of the building with the doors and windows closed. No pier drilling or other extreme noise generating activities greater than 90 dBA are allowed on Saturday.
>
> c. No construction is allowed on Sunday or federal holidays.
>
> Construction activities include, but are not limited to, truck idling, moving equipment (including trucks, elevators, etc.) or materials, deliveries, and construction meetings held on-site in a non-enclosed area.
>
> Any construction activity proposed outside of the above days and hours for special activities (such as concrete pouring which may require more continuous amounts of time) shall be evaluated on a case-by-case basis by the City, with criteria including the urgency/emergency nature of the work, the proximity of residential or other sensitive uses, and a consideration of nearby residents'/occupants' preferences. The project applicant shall notify property owners and occupants located within 300 feet at least 14 calendar days prior to construction activity proposed outside of the above days/hours. When submitting a request to the City to allow construction activity outside of the above days/hours, the project applicant shall submit information concerning the type and duration of proposed construction activity and the draft public notice for City review and approval prior to distribution of the public notice.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

SCA #59: Construction Noise. Requirement: The project applicant shall implement noise reduction measures to reduce noise impacts due to construction. Noise reduction measures include, but are not limited to, the following:

d. Equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds) wherever feasible.

e. Except as provided herein, impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used, if such jackets are commercially available, and this could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures.

f. Applicant shall use temporary power poles instead of generators where feasible.

g. Stationary noise sources shall be located as far from adjacent properties as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or use other measures as determined by the City to provide equivalent noise reduction.

h. The noisiest phases of construction shall be limited to less than 10 days at a time. Exceptions may be allowed if the City determines an extension is necessary and all available noise reduction controls are implemented.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

SCA #60: Extreme Construction Noise

a. Construction Noise Management Plan Required. Requirement: Prior to any extreme noise generating construction activities (e.g., pier drilling, pile driving and other activities generating greater than 90dBA), the project applicant shall submit a Construction Noise Management Plan prepared by a qualified acoustical consultant for City review and approval that contains a set of site-specific noise attenuation measures to further reduce construction impacts associated with extreme noise generating activities. The project applicant shall implement the approved Plan during construction. Potential attenuation measures include, but are not limited to, the following:

1. Erect temporary plywood noise barriers around the construction site, particularly along on sites adjacent to residential buildings;

2. Implement “quiet” pile driving technology (such as pre-drilling of piles, the use of more than one pile driver to shorten the total pile driving duration), where feasible, in consideration of geotechnical and structural requirements and conditions;

3. Utilize noise control blankets on the building structure as the building is erected to reduce noise emission from the site;

4. Evaluate the feasibility of noise control at the receivers by temporarily improving the noise reduction capability of adjacent buildings by the use of sound blankets for example and

implement such measure if such measures are feasible and would noticeably reduce noise impacts; and

5. Monitor the effectiveness of noise attenuation measures by taking noise measurements.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

b. Public Notification Required. Requirement: The project applicant shall notify property owners and occupants located within 300 feet of the construction activities at least 14 calendar days prior to commencing extreme noise generating activities. Prior to providing the notice, the project applicant shall submit to the City for review and approval the proposed type and duration of extreme noise generating activities and the proposed public notice. The public notice shall provide the estimated start and end dates of the extreme noise generating activities and describe noise attenuation measures to be implemented.

When Required: During construction

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

The following SCA applies to all projects for which a noise study was prepared during the project review process that contained recommended noise reduction measures:

SCA #61: Project-Specific Construction Noise Reduction Measures. Requirement: The project applicant shall submit a Construction Noise Management Plan prepared by a qualified acoustical consultant for City review and approval that contains a set of site-specific noise attenuation measures to further reduce construction noise impacts. The project applicant shall implement the approved Plan during construction

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

The following SCA applies to all major development projects, including those involving CEQA review:

SCA #62: Construction Noise Complaints. Requirement: The project applicant shall submit to the City for review and approval a set of procedures for responding to and tracking complaints received pertaining to construction noise, and shall implement the procedures during construction. At a minimum, the procedures shall include:

a. Designation of an on-site construction complaint and enforcement manager for the project;

b. A large on-site sign near the public right-of-way containing permitted construction days/hours, complaint procedures, and phone numbers for the project complaint manager and City Code Enforcement unit;

c. Protocols for receiving, responding to, and tracking received complaints; and

d. Maintenance of a complaint log that records received complaints and how complaints were addressed, which shall be submitted to the City for review upon the City's request.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

The following condition applies to all projects:

SCA #64: Operational Noise. Requirement: Noise levels from the project site after completion of the project (i.e., during project operation) shall comply with the performance standards of chapter 17.120 of the Oakland Planning Code and chapter 8.18 of the Oakland Municipal Code. If noise levels exceed these standards, the activity causing the noise shall be abated until appropriate noise reduction measures have been installed and compliance verified by the City.

When Required: Ongoing

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

Impacts, Standard Conditions of Approval and Mitigation Measures

This section discusses potential impacts from noise and vibration that could result from the Project. It presents the thresholds of significance, describes the approach to the analysis, and identifies potential impacts and mitigation measures, as appropriate.

Thresholds of Significance

The Project would have a significant impact on the environment if it would:

1. Generate noise in violation of the City of Oakland Noise Ordinance, Oakland Planning Code section 17.120.050 regarding construction noise, except if an acoustical analysis is performed that identifies recommended measures to reduce potential impacts[2] (see Table 4.8-6 for City of Oakland construction noise standards at receiving property line). During the hours of 7 PM to 7 AM on weekdays and 8 PM to 9 AM on weekends and federal holidays, noise levels received by any land use from construction or demolition shall not exceed the applicable nighttime operational noise level standard.
2. Generate noise in violation of the City of Oakland nuisance standards of the Oakland Municipal Code section 8.18.020 regarding persistent construction-related noise.
3. Generate noise in violation of Oakland Planning Code section 17.120.050 regarding operational noise (see Table 4.8-5).
4. Generate noise resulting in a 5 dBA permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or, if under a cumulative scenario where the cumulative increase results in a 5 dBA permanent increase in ambient noise levels in the project vicinity without the project (i.e., the cumulative condition including the project compared to the existing conditions) and a 3 dBA permanent increase is attributable to the project (i.e., the

[2] The acoustical analysis must identify, at a minimum, (a) the types of construction equipment expected to be used and the noise levels typically associated with the construction equipment and (b) the surrounding land uses including any sensitive land uses (e.g., schools and childcare facilities, health care and nursing homes, public open space). If sensitive land uses are present, the acoustical analysis must recommend measures to reduce potential impacts.

cumulative condition including the project compared to the cumulative baseline condition without the project).[3]

5. Expose persons to interior L_{dn} or CNEL greater than 45 dBA for multi-family dwellings, hotels, motels, dormitories and long-term care facilities (and may be extended by local legislative action to include single-family dwellings) per California Noise Insulation Standards (CCR Part 2, Title 24).
6. Expose the project to community noise in conflict with the land use compatibility guidelines of the Oakland General Plan after incorporation of all applicable Standard Conditions of Approval (see Table 4.8-4 for the land use compatibility guidelines).[4]
7. Expose persons to or generate noise levels in excess of applicable standards established by a regulatory agency (e.g., occupational noise standards of the Occupational Safety and Health Administration [OSHA]).
8. During either project construction or project operation expose persons to or generate groundborne vibration that exceeds the criteria established by the Federal Transit Administration (see Table 4.8-3 for FTA Groundborne Vibration Impact Criteria).[5]
9. Be located within an airport land use plan and would expose people residing or working in the project area to excessive noise levels.
10. Be located within the vicinity of a private airstrip, and would expose people residing or working in the project area to excessive noise levels.

[3] Outside of a laboratory, a 3 dBA change is considered a just-perceivable difference. Therefore, 3 dBA is used to determine if the project-related noise increases are cumulative considerable. Project-related noise should include both vehicle trips and project operations. A 5 dB change is clearly noticeable, but not dramatic. A 10 dB change is perceived as a halving or doubling in loudness.

[4] The evaluation of land use compatibility should consider the following factors: type of noise source; the sensitivity of the noise receptor; the noise reduction likely to be provided by structures; the degree to which the noise source may interfere with speech, sleep or other activities characteristic of the land use; seasonal variations in noise source levels; existing outdoor ambient levels; general societal attitudes towards the noise source; prior history of the noise source; and tonal characteristics of the noise source. To the extent that any of these factors can be evaluated, the measured or computed noise exposure values may be adjusted in order to more accurately assess local sentiments towards acceptable noise exposure. (Oakland General Plan, Noise Element, 2005)

[5] The FTA criteria were developed to apply to transit-related groundborne vibration. However, these criteria may be applied to transit-related and non-transit-related sources of vibration.

Construction Noise

The following discussion addresses Thresholds 1 and 2.

Impact Noise-1: Construction activity at the Project site would include use of heavy grading, rock breaking and other construction equipment that would temporarily increase noise levels at surrounding sensitive receptors to noise levels exceeding City construction-period thresholds. In consideration of the noise attenuation due to site topography and the required implementation of all reasonable and feasible noise attenuation measures pursuant to the City's Standard Conditions of Approval, the construction-period noise impacts of the Project are considered to be less than significant with implementation of all required SCAs. **(LTS with SCAs)**

Construction Activity

Construction activities for the Project can be summarized as shown below in **Table 4.8-7**. These construction activities affect different portions of the Project site.

Grading activity at Plot 98 and the Panhandle is expected to occur during approximately 8 weeks of time (assuming a 5-day work week), but spread out over an approximately 12-week period. During a continuous 5-week period (Phase 5 in weeks 5 through 9), large equipment including scrapers, dozers and compactors would be at these locations almost continuously, hauling, dumping, and spreading soil removed from Plot 82.

Grading and construction activity at Plot 82 is expected to occur throughout the 16-week construction period (assuming a 5-day work week). During the majority of that time, large equipment including scrapers, dozers, and compactors would be at the Plot 82 site almost continuously.

Table 4.8-7: Construction Schedule of Work

Week	Phase	At Plot 82	At Plot 98 and Panhandle
1	Phase 1		Prepare Plot 98 and Panhandle to accommodate new fill using scrapers and dozers, with the large equipment used for up to 8 hours per day for approximately 3 days
1	Phase 2	Demo existing road through Plot 82 using a loader and dump truck, with the large equipment used for up to 8 hours per day for approximately 3 days	
2 3	Phase 3	Drill rock at Plot 82 using a pneumatic backhoe drill or jackhammer (8 hours per day for up to 5 days) and crush rock into smaller pieces using a ram hoe (8 hours per day for up to 5 days)	
4	Phase 4	Cut and doze temporary haul road between Plot 82 and Plot 98/Panhandle using a dozer and grader, with the large equipment used for up to 8 hours per day for approximately 2 days	
5 6 7 8 9	Phases 5 and 6	Over-excavate Plot 82 and build keyways and benches to rough grade, scrape excess soil and rock and haul to Plot 98 and Panhandle, using as many as 3 scrapers, a dozer, a compactor and a water truck, with the larger equipment used for up to 8 hours per day for approximately 25 days	Haul, dump and spread excess soils from Plot 82 at Plot 98 and Panhandle using 3 scrapers, a dozer, a water truck (for dust control) and a compactor, with the large equipment used up to 8 hours per day for approximately 25 days
10	Phase 7	Grade Plot 82 using a dozer and a compactor, with the larger equipment used for up to 8 hours per day for approximately 3 days	
11	Phase 8		Grade Plot 98 and Panhandle, building keyways and benches, and retaining walls as necessary, using a dozer and a compactor, with the large equipment used up to 8 hours per day for approximately 5 days
12	Phases 9, 10, and 11	Build niche/wall at Plot 82 using a cement mixer and hand tools, estimated at a 15 day duration	Re-vegetate Plot 98 and Panhandle using minimal equipment, with the duration lasting approximately 2 days
13 14		Build new road thru Plot 82 including storm drain and irrigation system, using a grader, compactor, loader and backhoe, with the larger equipment used for up to 4 hours per day for approximately 15 days	
15		Finish grade Plot 82 using a loader, a grader and a compactor, with the larger equipment used for up to 8 hours per day for approximately 5 days	
16		Landscape installation (tree planting, grass, etc.) with minimal heavy equipment needed, estimated to last 7 days	

Estimated Construction Noise

Excavation and Hauling

The construction activity using the most pieces of large equipment and lasting for the longest duration will occur during Phase 5 and 6. This construction phase involves moving 3 scrapers, a dozer, a compactor and a water truck around the construction site and performing tasks in a recurring manner to scrape, haul, spread and compact excess earth moved from Plot 82, to Plot 98 and the Panhandle. Maximum noise levels from the types of construction equipment anticipated to be used during this phase of construction are shown in **Table 4.8-8**, which indicates typical maximum (L_{max}) equipment noise levels at 50 feet from the noise source.

To provide a conservative estimate of construction noise during this construction phase, it is assumed that both Plot 82 and Plot 98/Panhandle represent two separate construction sites and that each site will be in operation at the same time. Because the equipment will be moving around at each of these construction sites throughout the day, the center of each construction site is assumed to represent the acoustical center of construction activity at both Plot 82 and at Plot 98/Panhandle.

To estimate the construction noise generated by this "worst-case" construction period, the Federal Highway Administration's Roadway Construction Noise Model equations have been used (see **Appendix 4.8**). The equations derived from this model provide for calculating the estimated combined construction noise from all pieces of equipment operating at each construction site.

Table 4.8-8: Combined "Worst-Case" Construction Noise, at 50 Feet

Equipment	Ref. Emission Factor (L_{max}) at 50'[1]	Usage Factor[2]	Ground Factor[3]	Predicted Noise Level (L_{eq}) at 50 Feet[4]
Scraper	89	0.8	0.63	88.0
Scraper	89	0.8	0.63	88.0
Scraper	89	0.8	0.63	88.0
Dozer	85	0.8	0.63	84.0
Water truck	80	0.7	0.63	78.5
Compactor	80	0.4	0.63	76.0
Combined Construction Noise at 50 Feet				**93.5[5]**

Notes:

[1] From FHWA Roadway Construction Noise Model User's Guide, 2006, Table 1

[2] Usage factors conservatively doubled above FHWA "typical" roadway construction use factors to account for open terrain, ease of mobility across site, and limited down time during grading operations

[3] Ground factor accounts for soft, landscape terrain

[4] Predicted Noise Level for each piece of equipment based on the equation: L_{eq} = *Reference Emission + 10 * log(usage factor)*

[5] calculated using a decibel calculator, is not an incremental addition of noise sources

Source: Federal Transit Administration Transit Noise and Vibration Impact Assessment, May 2006, FTA-VA-90-1003-06, (FTA 2006)

There are a number of noise sensitive land uses in proximity to the Project site, including Saint Theresa's Church and School along Clarewood Drive, homes along Truitt Lane near Clarewood Drive, residences along the Stark Knoll Place cul-de-sac northeast of the Panhandle hill, residences along Maxwelton Road at the far east end of the Panhandle, as well as homes along Abbott Lane and Pala Avenue south and west of the Project site **(Figure 4.8-1**). Each of these sensitive land uses will be exposed to construction noise levels based on their distance from the noise sources and intervening topography.

Table 4.8-9 provides an estimate of the total construction noise that each of these sensitive receptor locations will be exposed to during this construction phase. Note that these noise exposure calculations conservatively do not account for noise attenuation due to intervening topography. The existing topography will serve to attenuate noise received at these site beyond that predicted in this analysis, particularly in areas north of the Cemetery (i.e., along Clarewood Drive), as these locations are separated from the Project site by the intervening ridgeline across the top of the Cemetery.

Table 4.8-9: Predicted "Worst-Case" Construction Noise Levels at Sensitive Receptors. Greater than 10 Days

	Plot 82 Construction		Plot 98/Panhandle		Combined Predicted Noise Level (L_{eq} dBA)[3]
Receptor Location	**Distance from Acoustic Center (feet)[1]**	**Predicted Noise Level (L_{eq} dBA)[2]**	**Distance from Acoustic Center (feet)[1]**	**Predicted Noise Level (L_{eq} dBA)[2]**	
Stark Knoll Place	1,550	53.2	500	66.1	**67.4**
Truitt	1,000	58.2	425	68.0	**69.5**
St. Theresa's	535	65.3	960	58.6	**67.2**
Maxwelton	1,950	50.6	960	58.6	60.3
Abbott	2,000	50.3	1,100	57.1	59.0
Pala Avenue	1,450	53.9	1,300	55.2	58.7
Threshold for Construction lasting more than 10 days:					**65 dBA L_{eq}**

Notes:

[1] Measured form acoustic center of construction site to nearest sensitive receiver

[2] Predicted noise level (L_{max}) at 50 feet adjusted for distance and ground type based on the equation: *L_{eq} Rec. = L_{max} at 50' – [20 * log (dist./50)] –[10* ground factor* (log (dist./50)]*

[3] Calculated using a decibel calculator, is not a simple addition of both noise sources combined

As indicated in Table 4.8-9, existing sensitive residential receptors at Truitt Lane, Saint Theresa's Church and School, and at Stark Knoll Place could conservatively be exposed to construction noise exceeding the City's 65 dBA L_{eq} threshold for construction noise that lasts for more than 10 days (the conservative estimate does not account for noise attenuation due to intervening topography or any other noise attenuation methods). Beyond these distances (e.g., at residences along Maxwelton, Abbott and Pala Avenue) construction noise levels are not expected to exceed the 65 dBA L_{eq} threshold.

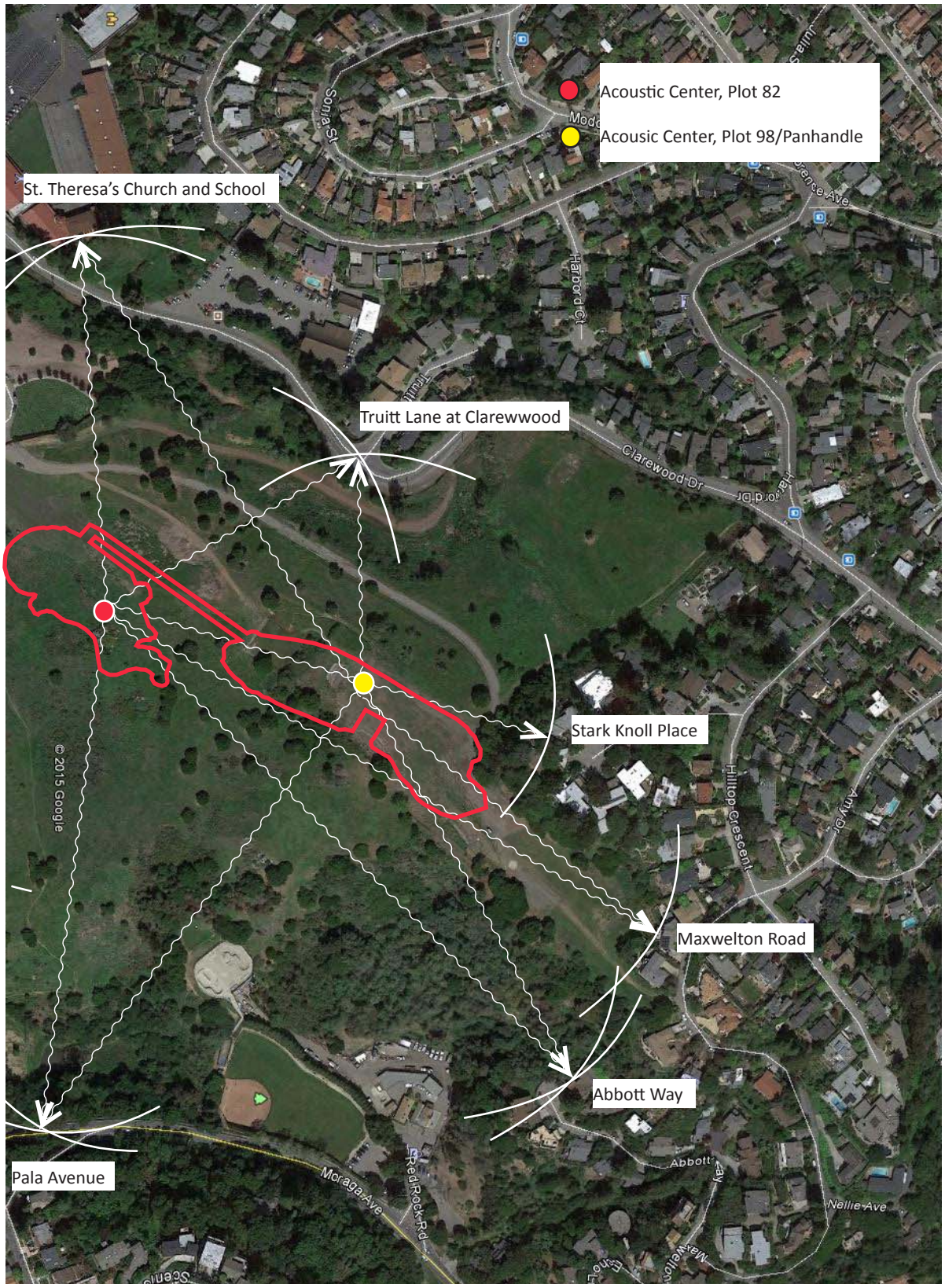


Figure 4.8-1
Noise Sensitive Land Uses in Vicinity

It is likely that intervening topography (i.e., the ridgeline at the top of the Cemetery, which prohibits line of site to the Project site) will provide adequate noise attenuation necessary to achieve the 65 dBA threshold at St. Theresa's and at the homes along Truitt Lane. However, residences at Stark Knoll Place will not receive substantial noise attenuation from topography, and noise levels will likely exceed City construction thresholds. There will be periods of time when grading equipment will be operating in immediate proximity to the lot lines of homes at Stark Knoll Place, and residents could be exposed to instantaneous noise levels of approximately 88 dBA as the equipment passes along their properties.

Rock Mass Removal

Plot 82 contains a large mass of exposed and covered base rock (chert) that will need to be removed before standard excavation and hauling activities can commence. Removal of this large rock mass is assumed to be conducted by breaking it up into smaller pieces using a pneumatic drill to fracture the rock into pieces, and then using a ram hoe to crush the fractured pieces into smaller rock suitable for use as fill material (less than 2 feet in diameter). This process is estimated to last for approximately 10 construction days, or 2 weeks. Each of these pieces of equipment are considered "extreme noise generators," as they typically generate noise levels greater than 90 dBA.

Noise levels from the types of drilling and ramming equipment anticipated to be used to remove the rock mass from Plot 82 are shown in **Table 4.8-10**, which shows typical noise levels for this equipment at 50 feet from the noise source.

Table 4.8-10: Noise Generating Equipment for Rock Breaking at Plot 82

Equipment	Ref. Emission Factor (L_{max}) at 50'[1]	Usage Factor[2]	Ground Factor[3]	Predicted Noise Level (L_{eq}) at 50 Feet[4]
Pneumatic Breaker or Backhoe Drill	104 (avg.)	0.6	0.5	101.8
Hydraulic Breaker, or Ram Hoe	95	0.6	0.5	92.8
Combined Construction Noise at 50 Feet				**102.3** [5]

Notes:

[1] Source: Center for Construction Research and Training

[2] Usage factors from FHWA "typical" construction use factors

[3] Ground factor accounts for soft, landscape terrain

[4] Predicted Noise Level for each piece of equipment based on the equation: L_{eq} = *Reference Emission + 10 * log(usage factor)*

[5] calculated using a decibel calculator, and is not an incremental addition of noise sources

Table 4.8-11 provides an estimate of the total short-term construction noise that each of the identified sensitive receptor locations will be exposed to during this rock removal operation. Note that these noise exposure calculations conservatively do not account for noise attenuation due to intervening topography. As indicated in Table 4.8-11 (and without accounting for noise attenuation due to intervening topography), sensitive residential receptors are not anticipated to be exposed to construction noise exceeding the City's 80 dBA L_{eq} threshold for construction noise that lasts for less

than 10 days. It is likely that intervening topography (i.e., the ridgeline at the top of the Cemetery, which prohibits line of site to the Project site) will provide further noise attenuation for sensitive receptors at St. Theresa's Church and School and for homes along Truitt Lane during this period, as will intervening topography between the Project site and homes on Abbott and Pala Avenue. At the distances to all identified sensitive receptors, extreme construction noise associated with rock breaking activities at Plot 82 is not expected to exceed the 80 dBA L_{eq} threshold for construction activities lasting for less than 10 days.

Table 4.8-11: Predicted Noise Levels at Sensitive Receptors – Rock Breaking at Plot 82

Receptor Location	Distance from Acoustic Center (feet)[1]	Predicted Noise Level (L_{eq} dBA)[2]
Stark Knoll Place	1,550	65.0
Truitt	1,000	69.8
St. Theresa's	535	76.6
Maxwelton	1,950	62.5
Abbott	2,000	62.2
Pala Avenue	1,450	65.7
Threshold for Construction lasting less than 10 days:		**80 dBA L_{eq}**

Notes:

[1] Measured from acoustic center of construction site to nearest sensitive receiver

[2] Predicted noise level (L_{max}) at 50 feet adjusted for distance and ground type based on the equation: *L_{eq} Rec. = L_{max} at 50' – [20 * log (dist./50)] –[10* ground factor* (log (dist./50)]*

Summary

The Project's potential extreme noise generating activity associated with rock breaking at Plot 82 is estimated to last approximately 10 days, during which time the resulting noise levels at sensitive receptors would not exceed the short-term (less than 10-day) threshold of 80 dBA L_{eq}. However, when combined with other grading operations that will occur throughout Phases 3 through 6 of the construction schedule, sensitive residential receptors at Stark Knoll Place will be subject to construction noise that will exceed the 65 dBA threshold for construction activity lasting more than 10 days for a period of up to 8 weeks. It is likely that intervening topography (i.e., the ridgeline at the top of the Cemetery, which prohibits line of site to the Project site) will provide adequate noise attenuation necessary to achieve the 65 dBA threshold at St. Theresa's and at the homes along Truitt Lane. However, residences at Stark Knoll Place will not receive as much noise attenuation from topography, and without implementation of noise reduction measures, noise levels at homes on Stark Knoll Place will likely exceed City construction thresholds.

Standard Conditions of Approval

The Project will be subject to implementation of all applicable City of Oakland Standard Conditions of Approval relative to construction noise. These SCAs include:

SCA #58 provides reasonable regulation of the hours of construction, generally limited to between 7:00 AM and 7:00 PM Monday through Friday.

SCA #59 requires preparation of a Noise Reduction Program for the Project that uses design, use, location and shielding of construction vehicles and equipment to ensure maximum feasible noise attenuation. To implement SCA #59, the Project applicant will be required to have a qualified acoustical consultant prepare a Noise Reduction Implementation Plan for City review and approval. The purpose of the Plan will be to reduce noise impacts during construction to a level that achieves City standards. The Project applicant would be required to implement the approved Plan, which may include but would not be limited to the following specific strategies:

- Improved mufflers, and use intake silencers, ducts and engine enclosures on large pieces of earthmoving equipment.
- Consider use of smaller, less noise-producing grading equipment (i.e., bobcat-style small graders) for specific grading activity nearest to existing homes.
- Use acoustically-attenuating shields or shrouds on all equipment, wherever feasible.
- Limit the noisiest phases of construction to periods of less than 10 days at a time.

Implementation of SCA #59 would be capable of reducing standard temporary construction noise levels, including site grading operations, to the extent reasonable and feasible.

SCA #60 requires additional measures to reduce noise from those construction activities that generate extreme noise exceeding 90 dBA, such as rock drilling and crushing at Plot 82. These additional measures may include, but are not limited to:

- Use hydraulically or electrically powered equipment where possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatic tools is unavoidable, an exhaust muffler shall be used on the compressed air exhaust capable of lowering noise levels from the exhaust by up to approximately 10 dBA.
- Place external jackets (if commercially available) over impacts tools, potentially achieving a 5 dBA noise reduction.
- Erect temporary noise barriers around the drilling and crushing site, potentially utilizing noise control blankets.
- Evaluate the feasibility of noise control at the receivers by temporarily improving the noise reduction capability of adjacent buildings, and implement such controls if feasible.
- Providing public notice to property owners and occupants located within 300 feet of the construction activities at least 14 calendar days prior to commencing extreme noise generating activities.
- Reducing the duration of extreme noise generation by using blasting as an alternative rock removal strategy, in consideration of the opinions and preferences of surrounding neighbors.

SCA #61 requires efforts to track and respond to noise complaints.

General Grading and Construction Activity

Significant construction noise impacts do not normally result when standard construction noise control measures are enforced and when the duration of the noise-generating construction period is limited to one construction season, typically one year or less. Construction noise associated with the Project would

occur for a period of less than one year, limited to a relatively short duration of approximately 90 total days, or up to 16 weeks.

Although large grading and construction equipment will be operating in close proximity to homes at Stark Knoll Place throughout the grading and construction operations at Plot 98 and the Panhandle, SCA #59 requires implementation of practical strategies that would be capable of achieving noise reductions necessary to meet the City's construction noise threshold of 65 dBA for construction lasting more than 10 days. The elevation difference between the construction operations at the Plot 98 and Panhandle sites and the residences at Stark Knoll Place provide some level of noise attenuation, and additional temporary noise barriers (i.e., noise blankets) could potentially be constructed along the Stark Knoll hill to provide additional shielding. Such barriers might be most effective if erected on the private property of the neighboring residences, which would require private agreements and authorizations.

The City's SCAs are comprehensive in their content, and effectively require implementation of all feasible measures available to mitigate construction noise. It is reasonable to assume that site-specific noise attenuation measures pursuant to these SCAs, together with noise attenuation due to site topography and grade change, will be capable of achieving the 5 dBA reduction necessary to achieve acceptable (i.e., 65 dBA Leq) noise levels during grading and construction noise activity that lasts for more than 10 days, at all sensitive receptor sites.

In consideration of the limited duration of grading and construction activity (90 days or 16 weeks) relative to the City's standard practice of considering construction noise impacts to be significant only when the duration of the noise-generating construction period exceeds one construction season (typically one year or less), and the required implementation of all reasonable and feasible noise attenuation measures pursuant to the City's Standard Conditions of Approval, the general construction-period noise impacts of the Project are considered to be less than significant with implementation of all required SCAs.

Extreme Noise Generating Activity

The rock breaking activity at Plot 82 would occur within a relatively well defined and limited portion of the site, and it would be reasonable (pursuant to SCA #60) to erect temporary noise barriers around the drilling and crushing site to provide additional noise attenuation during these extreme noise-generating activities. With implementation of measures required pursuant to SCA #60, site-specific noise attenuation measures, together with noise attenuation due to site topography and grade change, will be capable of achieving acceptable (i.e., 80 dBA Leq) noise levels for extreme noise generating operations lasting for less than 10 days at all sensitive receptors.

Please also refer to the Alternatives chapter of this EIR for a discussion of the pros and cons associated with an alternative rock breaking process whereby the rock mass is blasted into small pieces using explosives, and then using a ram hoe to crush any remaining larger pieces into smaller rock. Limiting the duration of extreme noise generating activities associated with drilling and crushing by blasting instead, may be a preferred approach. Pursuant to preparation of the Noise Reduction Program for the Project and the public notice requirements of SCA #60, shall prepare a Construction Noise Management Plan and shall submit such Plan to the City for review and approval, indicating the proposed type and duration of extreme noise generating activities, and the proposed public notice as required for extreme noise generating activities. (see further discussion regarding blasting under Alternative #5).

Mitigation Measures

None needed

Groundborne Vibration

The following discussion addresses Threshold 8.

Impact Noise-2: Project construction is not expected to generate groundborne vibration that exceeds City of Oakland established criteria. **(LTS)**

Construction activities generate varying degrees of temporary ground vibration, depending on the specific construction equipment used and activities involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increased distance. Construction-related ground vibration is normally associated with impact equipment such as rock breakers, jackhammers and the operation of some heavy-duty construction equipment such as dozers and trucks. Vibrations from construction attenuate rapidly with distance, and is usually well below threshold levels at most construction sites. Ground vibration and noise levels associated with various types of construction equipment anticipated to be used at the Project site are shown in **Table 4.8-12**.

Table 4.8-12: Representative Ground Vibration and Noise Levels for Construction Equipment

Equipment	PPV at 25 feet (in/sec)[1]	Approximate Lv (VdB) at 25 feet[2]
Large Dozer	0.089	87
Loaded Truck	0.076	86
Ram Hoe	0.089	
Jackhammer	0.035	79
Small Dozer	0.003	58

Notes:

[1] PPV = peak particle velocity;

[2] LV = the root mean square velocity expressed in vibration decibels (VdB), assuming a crest factor of 4

Source: FTA 2006:12-6,12-8

Based on the ground vibration levels associated with these typical types of construction equipment, all of the equipment is well below the City's threshold levels of 0.2 PPV and 94 VdB at a distance of 25 feet. Although there will be periods of time when scrapers and dozers are operating near adjacent property lines at the base of the Panhandle hill next to homes on Stark Knoll Place, this equipment will not be within 25 feet of the homes in this nearest neighborhood. The impact related to typical construction equipment vibration would be **less than significant** according to City thresholds, but may exceed the FTA's recommended standard with respect to human annoyance for sensitive uses for brief periods of time.

Mitigation Measures

None needed

Operational Noise

The following discussion addresses Thresholds 3, 5, 6, and 7.

Impact Noise-3: The Project will not generate operational noise that would exceed the City of Oakland Noise Ordinance standards at adjacent sensitive receivers, will not expose persons to an interior Ldn or CNEL greater than 45 dBA, and will not expose new or existing noise-sensitive land uses to noise levels in excess of noise levels considered normally acceptable according to the land use compatibility guidelines of the Oakland General Plan. **(LTS)**

A cemetery is, by its very nature, generally a quiet place. After construction and other than occasional temporary noise associated with burials and burial ceremonies, noise levels within the Project site will remain low. No General Plan policies, ordinances or standards are expected to be exceeded during operation of the Project as an extension of the existing Cemetery.

As Mountain View is an existing cemetery and the Project will enable the Cemetery to maintain this existing use on into the future, the Project will not result in a substantial increase in traffic or traffic-related noise. The Project may contribute to a minor increase in traffic along Piedmont Avenue and Pleasant Valley Boulevard, but traffic noise attributable to the Project will be unmeasurable (i.e., less than 1 dBA). Since noise level increases of less than 3 dBA are generally not discernable to the human ear, this impact is considered less than significant.

Mitigation Measures

None needed

Aircraft Noise

The following discussion addresses Thresholds 9 and 10.

Impact Noise-4: The Project site is not located within an airport land use plan or in the vicinity of a private airstrip, and would not expose people to excessive noise levels from aircraft activity. **(No Impact)**

The Project is located outsides of the Airport Influence Area (AIA) of Oakland International Airport, is not subject to the Airport Land Use Compatibility Plan (ALUCP), is not located within the vicinity of a public or private airport, and would not expose people to excessive noise levels.

Mitigation Measures

None needed

Cumulative Noise

The following discussion addresses Threshold 4.

Cumulative Impact Noise-5: The Project will not contribute to any cumulative noise or vibration impacts other than those Project-specific impacts described above. **(LTS)**

There are no known pending or reasonably foreseeable future projects on the City's list of Major Projects that are within close enough proximity to the Project site such that noise impacts form the Project would contribute to other cumulative noise effects. The Project would not contribute to an increase of 5 dBA in traffic noise along any nearby roadways (the City's thresholds of significance for a cumulative traffic noise impact), and other than short-term construction noise, the Cemetery will not generate significant or cumulatively considerable operational noise impacts.

Mitigation Measures

None needed

4.9

Other Less-than-Significant Effects

Section 15128 of the CEQA Guidelines requires that the EIR "briefly indicate the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR." The following environmental topics, included in the City's CEQA Thresholds, were found not to be significant.

The Notice of Preparation for this EIR did not include an Initial Study Checklist and therefore did not identify any environmental topics as being screened out for potential adverse environmental effects. However, the NOP did indicate that,

> *"It is not anticipated the Project will have significant environmental impacts related to operational issues such as greenhouse gas emissions and climate change, land use and planning, population and housing, public services, recreation, traffic and transportation, or utilities and service systems. Additionally, it is not anticipated that the Project will have significant environmental effects on agricultural, forest resources or mineral resources."*

This chapter of the Draft EIR provides a discussion and analysis of those environmental topics not anticipated to rise to a level of significance and not evaluated elsewhere in the EIR.

As indicated in Chapter 4.0 of this Draft EIR, the City's Uniformly Applied Development Standards and Conditions of Approval (SCAs) are incorporated into projects as conditions of approval regardless of the determination of a project's environmental impacts. As applicable, SCAs are adopted as requirements of an individual project when it is approved by the City and are designed to, and will avoid or substantially reduce a project's environmental effects. Depending on the specific characteristics of the project type and/or project site, the City determines which SCAs apply to a specific project. Because these SCAs are mandatory City requirements, the following impact analysis assumes that applicable SCAs will be imposed and implemented by the Project and if an SCA would reduce a potentially significant impact to less than significant, the impact is determined to be less than significant and no mitigation is imposed.

Agriculture and Forest Resources

Would the Project:	Potentially Significant	LTS with Mitigation	LTS with SCAs	No Impact / LTS
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?	☐	☐	☐	■
Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	■
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))?	☐	☐	☐	■
Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	■
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?	☐	☐	☐	■

Farmland Conversion

Impact Ag-1: The Project would not convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use. (**No Impact**)

The Project site is located in an urbanized portion of the City of Oakland and is not used for agriculture. The Project site is not shown on the Farmland Mapping and Monitoring Program of the California Resources Agency as containing any prime, unique or important farmland.[1]

Mitigation Measures

None needed

[1] California Department of Conservation, California Important Farmland Finder, accessed September 23, 2014. Available at: http://maps.conservation.ca.gov/ciff

Agricultural Zoning or Williamson Act Conflicts

Impact Ag-2: The Project would not conflict with existing zoning for agricultural use, or with a Williamson Act contract. (**No Impact**)

The Project site is not zoned for agricultural use. There are no lands in the vicinity that are zoned for agriculture, and neither the Project site nor any lands in the surroundings are under Williamson Act contracts.

Mitigation Measures

None needed

Forest Resources

Impact Ag-3: The Project would not conflict with existing zoning for, or cause rezoning of forest land, and would not result in the loss of forest land or conversion of forest land to non-forest use. (**No Impact**)

The Project site is predominantly covered by non-native grassland, irrigated turf, paved roadways and former parking areas. Scattered native coast live oak occur throughout the site and, together with other native tree species, form a dense woodland cover on portions of the site , particularly at the former quarry slopes at the eastern edge of the Project site. Planted and naturalized non-native tree species are also scattered throughout the Project site, such as blue gum eucalyptus, red iron bark, plum, Monterey pine, blue atlas cedar, blackwood acacia, and California pepper. These trees, even in areas of denser woodland cover, do not constitute a forest or forest land. Surrounding areas are developed or otherwise urbanized and do not contain Farmland or Forest Land.

Mitigation Measures

None needed

Other Changes Affecting Farmland or Forest Resources

Impact Ag-4: The Project would not involve any changes in the existing environment which could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use. (**No Impact**)

The Project site is located in an urbanized portion of the City of Oakland. There are no farmlands in the vicinity that could be converted to non-agricultural use as a result of any Project changes. The Project site and adjacent surrounding properties are developed or otherwise urbanized and do not contain farmland or forest land. Undeveloped open space areas within the Oakland Hills would not be affected by the Project in any manner that would result in conversion of forest land to non-forest use.

Mitigation Measures

None needed

GHG Emissions/Global Climate Change

Would the Project:	Potentially Significant	LTS with Mitigation	LTS with SCAs	No Impact / LTS
Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, specifically:				
For a project involving a stationary source, produce total emissions of more than 10,000 metric tons of CO_2e annually?	☐	☐	☐	■
For a project involving a land use development, produce total emissions of more than 1,100 metric tons of CO_2e annually and more than 4.6 metric tons of CO_2e per service population annually?	☐	☐	☐	■
Fundamentally conflict with an applicable plan, policy, or regulation adopted for the purposes of reducing greenhouse gas emissions?	☐	☐	☐	■

GHG Emissions

Impact GHG-1: Construction and operation of the Project would not result in GHG emissions that exceed City thresholds of significance. Therefore, the Project would result in a less-than-considerable contribution to cumulative global climate change, and thus a less-than-significant impact. (**LTS**)

The Project does not include any new stationary sources of GHG emissions that would produce total emissions of more than 10,000 metric tons of CO_2e annually.

Construction Emissions

Construction equipment used during the Project's construction phases will use fossil-based fuels (diesel and gasoline) to operate. The combustion of these fossil-based fuels will create GHG emissions such as carbon dioxide, methane and nitrous oxide. Methane will also be emitted during the fueling of heavy equipment. GHG emissions from construction activity at the Project site were calculated using the latest version of the California Emissions Estimator Model (CalEEMod™). CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations. The mobile source emission factors used in the model (EMFAC2011 and the 2011 Off-Road Inventory Model) include the Pavley standards and Low Carbon Fuel standards. Specific construction data provided by the applicant, as well as default data (e.g., emission factors, trip lengths, meteorology, source inventory) provided by various California air districts were used, consistent with guidance issued by BAAQMD on July 31, 2013. The GHG emissions attributable to the Project's construction phases is calculated to be approximately 283 metric tons of CO_2e emitted over the course of approximately 4 months (refer to **Appendix 4.2** for CalEEMod output results). These emissions are substantially less than the 1,100 metric tons of CO_2e annual threshold, and the impact is considered less than significant.

Additionally, according to City standard practice, GHG emissions during a project's construction phase are calculated, annualized over the expected lifetime of the project, and the annualized emissions added to the project's expected annual operational emissions to calculate total GHG emissions on a metric tons per year basis. In the instance of this Project, the construction-period emissions will occur for a relatively

short period (anticipated to be approximately 4 months) and will be annualized over a very long-term lifetime (essentially into perpetuity) for the cemetery use.

Operational Emissions

Operation of the Project would generate a minimum extent of GHG emissions. Generally, the largest source of GHG emissions associated with a project is transportation, resulting in GHG emissions from the combustion of fossil fuels in daily automobile and truck trips. As discussed further below, the Project would not generate a substantial increase in vehicle trips over baseline conditions and transportation-related GHG emissions would similarly not increase over the existing baseline. The Project does not include any new buildings that would rely on natural gas or electricity, and would not result in GHG emissions associated with energy demands. Once constructed, the Project would have minimal solid waste disposal requirements, and GHG emissions created by the disposal of solid waste (i.e., anthropogenic methane and carbon dioxide from the anaerobic breakdown of material) would be less than significant. New landscaping at the Project site would require water for irrigation, but the Project's primary water sources is from on-site wells and re-use of runoff (see further discussion under Utilities, below), and the Project would have minimal demands on water that is conveyed, treated or transported to the site using energy.

The Project will marginally increase natural gas combustion through the use of landscape maintenance equipment, creating GHG emissions of carbon dioxide, methane and nitrous oxide. However, these sources are minor contributors to overall GHG emissions and would not result in significant levels of GHG emissions as compared to City thresholds. The Project will also remove existing vegetation, resulting in a loss of carbon sequestration from the on-site plants. However, the Project will plant new (grass, trees and other ornamental landscaping) that would provide for replacement of carbon sequestration and lower the carbon footprint of the Project.

Conflict with Plans GHG Emissions Reduction

Impact GHG-2: Because the estimated GHG emissions of the Project would not exceed the City's numeric significance threshold, development and implementation of the Project would comply with applicable plans, policies and regulations adopted for the purpose of reducing GHG emissions. **(LTS**)

To ensure that new development projects comply with applicable plans, policies, and regulations adopted for the purpose of reducing GHG emissions, the City of Oakland requires implementation of SCAs requiring preparation of a Greenhouse Gas Reduction Plan for projects that meet the following criteria:

- Projects which involve a land use development, that exceed the BAAQMD's GHG emissions screening criteria, and that would produce total GHG emissions of more than 1,100 metric tons of CO_2e annually and more than 4.6 metric tons of CO_2e per service population annually;
- Projects which involve a land use development, that exceed the BAAQMD's GHG emissions screening criteria, and that would exceed at least one of the BAAQMD Thresholds of Significance (more than 1,100 metric tons of CO_2e annually, or more than 4.6 metric tons of CO_2e per service population annually), and are considered to be "Very Large Projects," and
- Projects which involve a stationary source of GHG that would produce total GHG emissions of more than 10,000 metric tons of CO_2e annually.

As indicated in the analysis and discussion above under Impact GHG-1, the Project would not meet any of the criteria requiring preparation of a Greenhouse Gas Reduction Plan, and potential conflicts with applicable plans, policies and regulations adopted for the purpose of reducing GHG emissions would be less than significant.

The Project will be required to comply with SCA #78: Green Building Requirements for Small Projects, which ensures compliance with the California Green Building Standards (CALGreen) mandatory measures and the applicable requirements of the City of Oakland Green Building Ordinance (chapter 18.02 of the Oakland Municipal Code) for projects using the Bay Friendly Basic Landscape Checklist (see further discussion under the Utilities section of this chapter of the EIR regarding water use).

Land Use

Would the Project:	Potentially Significant	LTS with Mitigation	LTS with SCAs	No Impact / LTS
Physically divide an established community?	☐	☐	☐	■
Result in a fundamental conflict between adjacent or nearby land uses?	☐	☐	☐	■
Fundamentally 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 and actually result in a physical change in the environment?	☐	☐	☐	■
Fundamentally conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	■

Divide an Established Community

Impact Land Use-1: The Project would not physically divide an established community. **(LTS**)

The Project site is located entirely within the existing Mountain View Cemetery property and within the Cemetery's existing fenced boundaries. The Cemetery's boundaries have been established in this area for well over 50 years. Although the Project represents an expansion of cemetery use into presently undeveloped portions of the property, it does not extend the Cemetery's property or use into or between established communities.

There are established communities immediately adjacent to the Project site at Stark Knoll Place and along Maxwelton Road, but these residential areas are adjacent to the northeastern boundaries of the Cemetery, and the Cemetery property already separates these neighborhoods from other nearby communities. Similarly, the Project site is generally south of established communities to the north along Clarewood Drive, but the Cemetery property already represents an established open space edge to these communities as well. The Project's development of these areas into improved cemetery use rather than unimproved open space would not result in a physical division of the established community.

Fundamental Conflict with Adjacent Uses

Impact Land Use-2: The Project would not result in a fundamental conflict between adjacent or nearby land uses. (**LTS**)

Mountain View Cemetery is surrounded on three sides by adjacent residential neighborhoods, and by the Claremont County Club on the fourth (westerly) side. At the Cemetery's existing edges adjacent to residential neighborhoods, there are a variety of edge conditions including a roadway separating the Cemetery from adjacent neighborhoods (e.g., along Moraga Avenue to the south), homes backing onto the Cemetery (e.g., along Moraga Avenue between Bonita and Monte Avenue to the south, and along

Ramona Avenue to the west), and open space buffers (e.g., along Clarewood Drive to the northeast). Based on input from community meetings, Mountain View is generally regarded as an excellent neighbor and no fundamental conflicts between residential neighborhoods and cemetery use are known or anticipated.

The Project will expand cemetery uses into currently undeveloped areas of the Cemetery property, and portions of this expanded use will be immediately adjacent to homes along Stark Knoll Place. These homes are separated by the Plot 98/Panhandle portions of the Project area by an elevated hillside rising approximately 35 feet above the Cemetery Property. This elevation change will provide a measure of separation between cemetery use and the homes in this neighborhood. The Plot 82 portion of the Project will remain separated from adjacent neighborhoods to the north by the ridgeline, existing un-endowed portions of the Cemetery and undeveloped property.

Cemetery use is generally quiet, scenic and passively used, and is not considered a type of use that conflicts with adjacent residential neighbors. Furthermore, the Cemetery has filed a map and a recorded declaration with the County, providing constructive notice to all persons of the dedication of the entire Cemetery property to cemetery purposes, so expansion of cemetery use into the Project site is reasonably assumable condition. The potential for land use conflicts is less than significant.

Conflict with Land Use Plans and Policies

Impact Land Use-3: The Project will not fundamentally conflict with any applicable City of Oakland, City of Piedmont or other agency land use plan, policy, or regulation. (**LTS**)

Cemetery Dedication

Pursuant to California Health & Safety Code (CHSC) Sections 8550-8561, the entire Cemetery is already dedicated for the interment of human remains. Pursuant to CHSC section 8553, the Cemetery has filed with the County Recorder's Office a declaration that the property is to be held, occupied and used exclusively for a cemetery and for cemetery purposes. The Project is fully consistent with these regulations. The filed map and the recorded declaration serve as constructive notice to all persons of the dedication of the property to cemetery purposes.

City of Oakland General Plan

The City of Oakland General Plan Land Use and Transportation Element (LUTE) designates the entire Cemetery property, including the Project site as Urban Parks and Open Space. This land use designation provides for a desired character of land use including urban parks, school yards, cemeteries and other active outdoor recreation space. The purpose of this land use designation is to maintain an urban park, school yard, and garden system which provides open space for outdoor recreation, psychological and physical well-being, and relief from the urban environment. The Project is fully consistent with this land use designation. It should be noted that the Project site, though not yet developed for cemetery use, is not designated as Natural Conservation, under which future development would be extremely limited and would need to relate to the conservation and management of natural resources, public open space and natural hazards.

City of Oakland Zoning

The entire Mountain View Cemetery site is zoned by the City of Oakland as RD-1: Residential Low Density. According to the City Planning Code section 17.10.240, cemetery use is considered an

"extensive impact use," and the City's RD-1 zone requires approval of a Conditional Use Permit (CUP) for new or expanded cemetery use. The purpose of the CUP provisions is to provide a procedure to consider accommodation of uses (e.g., cemeteries) with special site or design requirements, operating characteristics or potential adverse effects on surroundings, through review and, where necessary, the imposition of special conditions of approval. These procedures apply to all proposals for which a CUP is required.

In addition to the CUP, the Project will require several additional City approvals, including regular Design Review process, grading permits, building permits (for the Project's proposed retaining walls and mausoleum/columbaria walls), and Tree Removal permits.

Accordingly, the Project applicant has applied for a CUP, regular Design Review approval, and a Tree Removal Permit for the Project. With approval of the CUP, the Project would be fully consistent with City zoning requirements for the RD-1 district and would not conflict with applicable City land uses plans or policies. Detailed grading and building permits will be sought in subsequent processes after Project approvals.

City of Piedmont Plans and Policies

Since the Project does not propose to expand cemetery use within the City of Piedmont's jurisdiction and does not include and building or grading operations on property within the City of Piedmont's jurisdiction, it is not expected that any type of zoning permits or approvals will be required from the City of Piedmont for this Project.

Conflict with Habitat Conservation Plan

Impact Land Use-4: the Project will not fundamentally conflict with any applicable habitat conservation plan or natural community conservation plan. (**No Impact**)

The Project site is not located within or in proximity to an area guided or regulated by a Habitat Conservation Plan or Natural Community Conservation Plan. Therefore, the Project would not conflict with any such plans. This issue is also discussed in Chapter 4.3 Biological Resources.

Mineral Resources

Would the Project:	Potentially Significant	LTS with Mitigation	LTS with SCAs	No Impact / LTS
Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	■
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?	☐	☐	☐	■

Loss of Mineral Resources

Impact Mineral-1: The Project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. (**No Impact**)

The Project site is the location of a former quarry, likely mining the hard bedrock chert that is common throughout the site. Quarry operation have been closed for decades, and according to the California Department of Conservation Division of Mines and Geology's Aggregate Resource Maps[2], the Project site is not currently considered an Aggregate Resource sector. Areas with such a designation are judged to be of prime importance in meeting future mineral needs in the region, and land use decisions must consider the importance of these resources to the region as a whole.

The Leona Quarry was the last mine in Oakland to be identified as a regionally significant source of aggregate resources. The Leona Quarry has been closed for many years, and there is no other land in Oakland with such a designation.

Mitigation Measures

None needed

Loss of a Mineral Resource Recovery Site

Impact Mineral-2: The Project would not result in the loss of a locally-important mineral resource recovery site delineated on a general plan, specific plan, or other land use plan. (**No Impact**)

The Project site is not designated as a locally important mineral resource recovery site under the City of Oakland General Plan's Land Use and Transportation Element or Open Space, Conservation and Recreation Element. Furthermore, Policy CO-3.2 of the Conservation Element prohibits new quarrying activity in Oakland except upon clear and compelling evidence that the benefits will outweigh the resulting environmental, health, safety, aesthetics and quality of life costs.

Mitigation Measures

None needed

[2] http://www.conservation.ca.gov/smgb/reports/Designation/DR%207/Documents/DR7_SR146_Plate2.60.pdf

Population and Housing

Would the Project:	Potentially Significant	LTS with Mitigation	LTS with SCAs	No Impact / LTS
Induce substantial population growth in a manner not contemplated in the General Plan, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extensions of roads or other infrastructure), such that additional infrastructure is required but the impacts of such were not previously considered or analyzed?	☐	☐	☐	■
Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere in excess of that contained in the City's Housing Element?	☐	☐	☐	■
Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere in excess of that contained in the City's Housing Element?	☐	☐	☐	■

Growth Inducement

Impact Pop-1: The Project will not induce substantial population growth in a manner not contemplated in the General Plan, either directly or indirectly. **(No Impact)**

The Project would not construct any new residences, and would not directly induce population growth. Any increase in employment at the Project site resulting from expansion of the usable cemetery area would be minimal and would not be so large as to induce population growth. Any additional employees can be found from within the existing available labor force. The Project does not require the extension of any public roads or other infrastructure that would lead to growth inducing impacts that were not previously considered or analyzed in the General Plan (LUTE) and its associated EIR.

Mitigation Measures

None needed

Housing and/or Population Displacement

Impact Pop-2: The Project would not displace existing housing or people, necessitating the construction of replacement housing elsewhere in excess of that contained in the City's Housing Element. **(No Impact)**

The Project involves the development of open undeveloped land to be used for expanded cemetery operations. No housing exists within the Project site and no housing would be removed as part of the Project.

Mitigation Measures

None needed

Public Services

Would the Project:	Potentially Significant	LTS with Mitigation	LTS with SCAs	No Impact / LTS
Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or 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 following public services:	☐	☐	☐	■
• Fire protection?				
• Police protection?	☐	☐	☐	■
• Schools?	☐	☐	☐	■

Fire Protection

Impact Public Serv-1: The Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities in order to maintain acceptable service ratios, response times or other fire protection service performance objectives. **(LTS)**

The Oakland Fire Department (OFD) provides protection from natural or man-made hazards which may cause both injury and loss of property of all citizens within the City of Oakland. The Project will not result in additional or expanded land uses that contain structures, jobs, or residents. The OFD fire station nearest to the Project site is Station 8 (located at 463 51st Street, near 51st and Telegraph) which is just over one mile from the Piedmont Avenue entrance of Mountain View Cemetery, and capable of providing prompt fire protection service to the Project site. In addition, the Piedmont Fire Department is located 1.5 miles and 6 minutes from the Cemetery entrance and could provide additional fire protection and emergency response support.

There is no expectation that the Project would result in an increase in calls for fire and emergency service. OFD would be able to provide adequate fire suppression and emergency medical response services to the Project site with existing staff. The Project would not require development of new or physically altered facilities.

The Project site is partially located within the Oakland Wildfire Prevention Assessment District, indicating that it is located in the high wildland fire zone. This issue is addressed in the Chapter 4.6: Hazards, of this Draft EIR.

Mitigation Measures

None needed

Police Protection

Impact Public Serv-2: The Project would not result in an increase in calls for police protection services or result in substantial adverse physical impacts associated with the provision of new or physically altered police facilities or the need for new or physically altered police facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other Police Department performance objectives. (**LTS**)

The Project would not result in additional housing or residents, and only a marginal increase in jobs or employees. There is no expectation that the Project would result in an increase in calls for police protection. The Project would expand an existing cemetery use and is not anticipated to result in any changes in crime. The Project will not result in the need for any new physical facilities to maintain acceptable service ratios, response times, or other Oakland Police Department performance objectives which could result in direct physical environmental effects.

Mitigation Measures

None needed

Public Schools

Impact Public Serv-3: The Project would not result in new students for local schools, and would not require new or physically altered school facilities to maintain acceptable performance objectives. (**No Impact**)

The Project does not include any proposed new residential uses and would not generate new student enrollment in the Oakland Unified School District.

Mitigation Measures

None needed

Recreation

Would the Project:	Potentially Significant	LTS with Mitigation	LTS with SCAs	No Impact / LTS
Increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	■
Include recreational facilities or require the construction or expansion of recreational facilities which might have a substantial adverse physical effect on the environment?	☐	☐	☐	■

Park Usage

Impact Rec-1: The Project would not increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. **(No Impact)**

The Project would have no effect on parks and recreation facilities. The Project would not result in any increase in residents or employment opportunities, and would not result in any increase in the resident population in Oakland or surrounding communities. The Project would not be expected to cause any increase in park usage.

Mitigation Measures

None needed

Construction or Expansion of Recreational Facilities

Impact Rec-2: The Project does not include recreational facilities nor does it require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. (**No Impact**)

The Project does not provide new public recreation areas or parks, nor does the nature of the Project require the construction or expansion of recreational facilities. Although the developed portions of the Cemetery are generally open to the public and are often used for recreational walking, the Cemetery is not a park or a recreational facility.

Mitigation Measures

None needed

Transportation and Traffic

Would the Project:	Potentially Significant Impact	LTS with Mitigation	LTS with SCAs	No Impact / LTS
Cause the motor vehicle level of service (LOS) to degrade at any signalized on unsignalized intersection to worsen below identified threshold levels within either the Downtown or elsewhere?	☐	☐	☐	■
Cause a roadway segment of the Congestion Management Program (CMP) network to degrade from LOS E or better to LOS F, the V/C ratio to increase 0.03 or more for a roadway segment that would operate at LOS F without the project, or cause congestion of regional significance on a roadway segment on the Metropolitan Transportation System (MTS) evaluated per the requirements of the Land Use Analysis Program of the CMP?	☐	☐	☐	■
Result in substantially increased travel times for AC Transit buses?	☐	☐	☐	■
Directly or indirectly cause or expose roadway users (e.g., motorists, pedestrians, bus riders, bicyclists) to a permanent and substantial transportation hazard due to a new or existing physical design feature or incompatible uses?	☐	☐	☐	■
Generate substantial multi-modal traffic traveling across at-grade railroad crossings that cause or expose roadway users (e.g., motorists, pedestrians, bus riders, bicyclists) to a permanent and substantial transportation hazard?	☐	☐	☐	■
Fundamentally conflict with adopted City policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities adopted for the purpose of avoiding or mitigating an environmental effect and actually resulting in a physical change in the environment?	☐	☐	☐	■
Result in a substantial, though temporary, adverse effect on the circulation system during construction of the project?	☐	☐	■	☐
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?	☐	☐	☐	■

Traffic Congestion

Impact Transp-1: The Project would not result in a substantial increase in motor vehicle traffic and would not impact the capacity of roadways, intersections or arterials or highways, nor would it increase travel times for AC Transit buses. **(LTS)**

Mountain View Cemetery is an existing cemetery that has been in operation for years. The expanded burial area as proposed by the Project will not result in an increase in the number of administrative staff employed at the Cemetery, and will only marginally increase the need for grounds crew staff for

maintenance and cemetery operations. There will be no measurable increase in traffic attributable to employee-based trips generated by the Project.

Operations-related vehicle trips at the Cemetery are primarily related to funeral processions and visitors. Currently, Mountain View Cemetery is an operating mortuary and cemetery facility and holds funerals as the need arises. Generally, funerals are held during off-peak hours (typically not during the AM or PM peak traffic periods) and funeral-related traffic processions are part of the current background condition. The expansion of cemetery grounds is proposed to enable Mountain View Cemetery to be able to continue to serve the funeral and burial needs of the community into the future. It is not anticipated that a significantly greater number of funerals will be held at the Cemetery with the expansion of burial grounds, only that the Cemetery will be able to remain in operation into the future as other existing burial site capacity within the Cemetery is absorbed. The desirability of burial sites at the Project site (with its panoramic views and scenic quality) may increase market demand for these particular sites, and the Cemetery may sell the Project's burial sites at a faster rate than it is able to sell other remaining burial plots elsewhere within the Cemetery. However, the number of funerals that are likely to be held at the Cemetery over a given time period is not expected to materially increase over existing conditions. Vehicle trips associated with funeral ceremonies is similarly not anticipated to measurably increase over current conditions.

With the increased number of burial sites attributable to the Project, it is possible that the Cemetery may eventually see an increased number of visitors, particularly on holidays and weekends. However, such visitor trips to do not now add a substantial or significant number of vehicle trips to the surrounding roadways, nor are future visitor trips expected to substantially or significantly increase the number of vehicle trips on the surrounding roadways in the future. Few, if any of such visitor trips would occur during either AM or PM peak hours.

The Project would not cause the level of service (LOS) to degrade at any signalized on unsignalized intersection to worsen below threshold levels, would not cause a roadway segment of the Congestion Management Program network to degrade below threshold levels, and would not result in substantially increased travel times for AC Transit buses.

Mitigation Measures

None needed

Traffic Safety

Impact Transp-2: The Project would not make, require, or result in alterations to the public circulation system, and therefore would not cause or expose public roadway users to permanent substantial transportation hazards. The Project would make alterations in the private internal circulation system of Mountain View Cemetery, which would be designed to accommodate increased vehicle and pedestrian use in the Project site, and would not expose Cemetery roadway users to permanent or substantial transportation hazards. **(LTS)**

Public Roadways

The Project is located entirely within the Mountain View Cemetery and at a portion of the Cemetery distant from the Cemetery's public entrance and abutting public roadways. The Project does not propose or require any changes to the public circulation system including roadways, pedestrian facilities, bicycle facilities, or bus stops. The Project would not increase street widths or crossing distances, add

new vehicle travel lanes or turn lanes, permanently remove existing sidewalk-street buffering elements (e.g., on-street parking lane, planting strip, street trees), or add new vehicle driveway entrances to public roadways. The Project also would not expose visitors to an existing hazardous physical design feature of a public roadway. There are no known roadway hazards along the entrance to the Cemetery on Piedmont Avenue. The Project would not create a use incompatible to roadway safety or result in a notable increase in visitors to the Cemetery and therefore would not result in an increase in pedestrian or vehicle volume at unsignalized or uncontrolled intersections, sidewalk overcrowding, or additional bus riders. Since the proposed Project would not result in increased vehicular traffic or pedestrian and bicycle activity in and around the Project area, and would not modify the roadways serving the Cemetery, the impact on traffic safety on public roadways is less than significant.

The Project is also not located near any at-grade railroad crossing and will not generate substantial traffic of any travel mode travelling across at-grade railroad crossings. This impact is also less than significant.

Internal Circulation

Mountain View Cemetery includes an internal circulation network of private roadways and pedestrian paths, used by people visiting burial sites, attending services, and touring the Cemetery. Local residents often use the Cemetery roadways for exercise as well. The roadways within the Cemetery are narrow and generally do not have sidewalks. Since vehicle traffic is infrequent and slow, the roadways provide pedestrian circulation, with pathways available to access burial sites.

The Project site is access from within the Cemetery by two existing roadways; one roadway climbs northwards up a steep slope to access Plot 82 from below, and the other roadway approaches Plot 82 from the northwest and continues southeast along the ridgeline, forming the northeastern edge of the Plot 82, Plot 98, and Panhandle sites. The Project would relocate the first roadway so that it loops around the new Plot 82 development and reconnect with the existing road at the top of the ridgeline, with a pedestrian drop-off area at the junction. The second roadway from the northwest would remain in its current alignment, with improvements to make it a more finished access road. A cul-de-sac would be added at the base of the Stark Knoll hillside, designed to accommodate emergency vehicle turn-around. A short cul-de-sac would be added to extend from the upper ridgeline road into Plot 98 for parking and pedestrian drop-off.

The Project site does not currently include any existing pedestrian pathways except for a maintenance and emergency access route that connects the end of the ridgeline road with an access gate on Maxwelton Road. The Project would improve the existing maintenance and emergency access route within the Panhandle boundaries, but these improvements would not extend into the City of Piedmont. The existing emergency route between the City of Piedmont boundary and the Maxwelton access gate would remain unimproved through this area, but remain fully functional.

The Project would involve new pedestrian pathways and staircases within the new burial Plots for pedestrian access to individual burial plots, including a new pedestrian path adjacent to the proposed mausoleum/retaining wall in Plot 82, connecting to the new outdoor amphitheater. Development of Plot 98 and the Panhandle would include construction of a pedestrian pathway and maintenance route around the perimeter of these sites, ending at an overlook platform at the southeast corner of the Plot 98 near the existing water tank.

The Project would result in increased vehicular traffic and pedestrian activity in and around the Project site. However, the nature of the additional vehicle traffic would be infrequent and slow, similar to traffic throughout the rest of the Cemetery. As a result, the Project would not expose visitors to any hazardous

physical design features. The existing circulation system of Mountain View Cemetery, slow speeds on the roadways, generally clear sightlines along the roadways, use of roundabouts at four-way intersections, and the nature of the cemetery use create a safe circulation environment.

For these reasons, the Project would not result in a permanent substantial decrease in vehicle, pedestrian or other transportation mode safety.

Mitigation Measures

None needed

Consistency with Policies Supporting Alternative Transportation

Impact Transp-3: The Project would not fundamentally conflict with adopted City policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities adopted for the purpose of avoiding or mitigating an environmental effect. **(LTS)**

The Project would not create or result in changes to the public circulation system, including roadways, sidewalks, vehicle entrances, bikeways, bus facilities, or bus stops. City policies regarding public transit, bicycle and pedestrian facilities relate to public roadways, and all circulation changes associated with the Project would occur within the private property of Mountain View Cemetery. The Project would not conflict with adopted policies, plans, or programs supporting public transit, bicycles, or pedestrians.

Mitigation Measures

None needed

Construction-Period Impacts

Impact Transp-4: The proposed Project would not result in temporary adverse effects on the circulation system during construction of the Project. **(LTS with SCA)**

Construction of the Project would occur entirely within the Mountain View Cemetery and would not require encroachment onto public rights-of-way. During the construction period, temporary and intermittent transportation impacts may result from truck and construction worker traffic to and from the Project site. The construction-related traffic may temporary reduce capacities of roadways near the Cemetery entrance because of the slower movements and larger turning radii of construction trucks compared to passenger vehicles. Construction traffic is anticipated to access the Project site via the existing maintenance road connection on Clarewood Drive. Truck traffic that occurs during the peak commute hours (7:00 to 9:00 AM and 4:00 to 6:00 pm) may result in reduced levels of service and longer delays at nearby intersections during the construction period. The proposed Project would not require substantial import or export of soil. Cut and fill would be balanced within the Project site, thereby limiting off-site construction traffic.

City of Oakland's Standard Conditions of Approval

The City of Oakland's Standard Conditions of Approval (SCA) relevant to construction-related traffic will be adopted as requirements of the Project if the Project is approved by the City to ensure that no significant impacts occur. SCA #13 requires that a Construction Traffic Management Plan be developed

as part of a larger Construction Management Plan to address potentially significant impacts during the Project's construction. This SCA is described below.

> **SCA #13: Construction Management Plan**. Prior to the issuance of the first construction-related permit, the project applicant and his/her general contractor shall submit a Construction Management Plan (CMP) for review and approval by the Bureau of Planning, Bureau of Building, and other relevant City departments such as the Fire Department and the Public Works Department as directed. The CMP shall contain measures to minimize potential construction impacts including measures to comply with all construction-related Conditions of Approval (and mitigation measures if applicable) such as dust control, construction emissions, hazardous materials, construction days/hours, construction traffic control, waste reduction and recycling, stormwater pollution prevention, noise control, complaint management, and cultural resource management (see applicable Conditions below). The CMP shall provide project-specific information including descriptive procedures, approval documentation, and drawings (such as a site logistics plan, fire safety plan, construction phasing plan, proposed truck routes, traffic control plan, complaint management plan, construction worker parking plan, and litter/debris clean-up plan) that specify how potential construction impacts will be minimized and how each construction-related requirement will be satisfied throughout construction of the project.

Implementation of this SCA would reduce any construction-period traffic impacts to a less-than-significant level.

Mitigation Measures

None needed

Change in Air Traffic Patterns

Impact Transp-5: The Project would not 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. **(No Impact)**

The Oakland International Airport is located about nine miles south of the Project site. The Project would not construct new buildings or create more than minor changes to the topography of the Project site. Therefore, the Project would not result in a change in air traffic patterns.

Mitigation Measures

None needed

Utilities and Service Systems

Would the Project:	Potentially Significant	LTS with Mitigation	LTS with SCAs	No Impact / LTS
Exceed water supplies available to serve the project from existing entitlements and resources, and require or result in construction of water facilities or expansion of existing facilities, construction of which could cause significant environmental effects?	☐	☐	■	☐
Exceed wastewater treatment requirements of the San Francisco Bay Regional Water Quality Control Board? – Or - 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 providers' existing commitments and require or result in construction of new wastewater treatment facilities or expansion of existing facilities, construction of which could cause significant environmental effects?	☐	☐	☐	■
Require or result in construction of new storm water drainage facilities or expansion of existing facilities, construction of which could cause significant environmental effects?	☐	☐	■	☐
Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs and require or result in construction of landfill facilities or expansion of existing facilities, construction of which could cause significant environmental effects? – Or – Violate applicable federal, state, and local statutes and regulations related to solid waste?	☐	☐	■	☐
Violate applicable federal, state and local statutes and regulations relating to energy standards? – Or,- Result in a determination by the energy 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 providers' existing commitments and require or result in construction of new energy facilities or expansion of existing facilities, construction of which could cause significant environmental effects?	☐	☐	☐	■

Water Supply

Impact Util-1: The Project would not exceed water supplies available from existing entitlements and resources, and would not require or result in construction of water facilities or expansion of existing facilities that could result in environmental effects. **(LTS with SCA)**

The Project will increase the water demands of the Cemetery by introducing new irrigation-dependent landscape into areas that are not presently irrigated. The Project's landscape architects have calculated the estimated increase in water demands for the Project as being approximately 8.7 million gallons per year (or approximately 26.5 acre-feet per year), as indicated in **Table 4.9-1** below. Irrigated areas of the Project are shown in **Figure 4.9-1**.

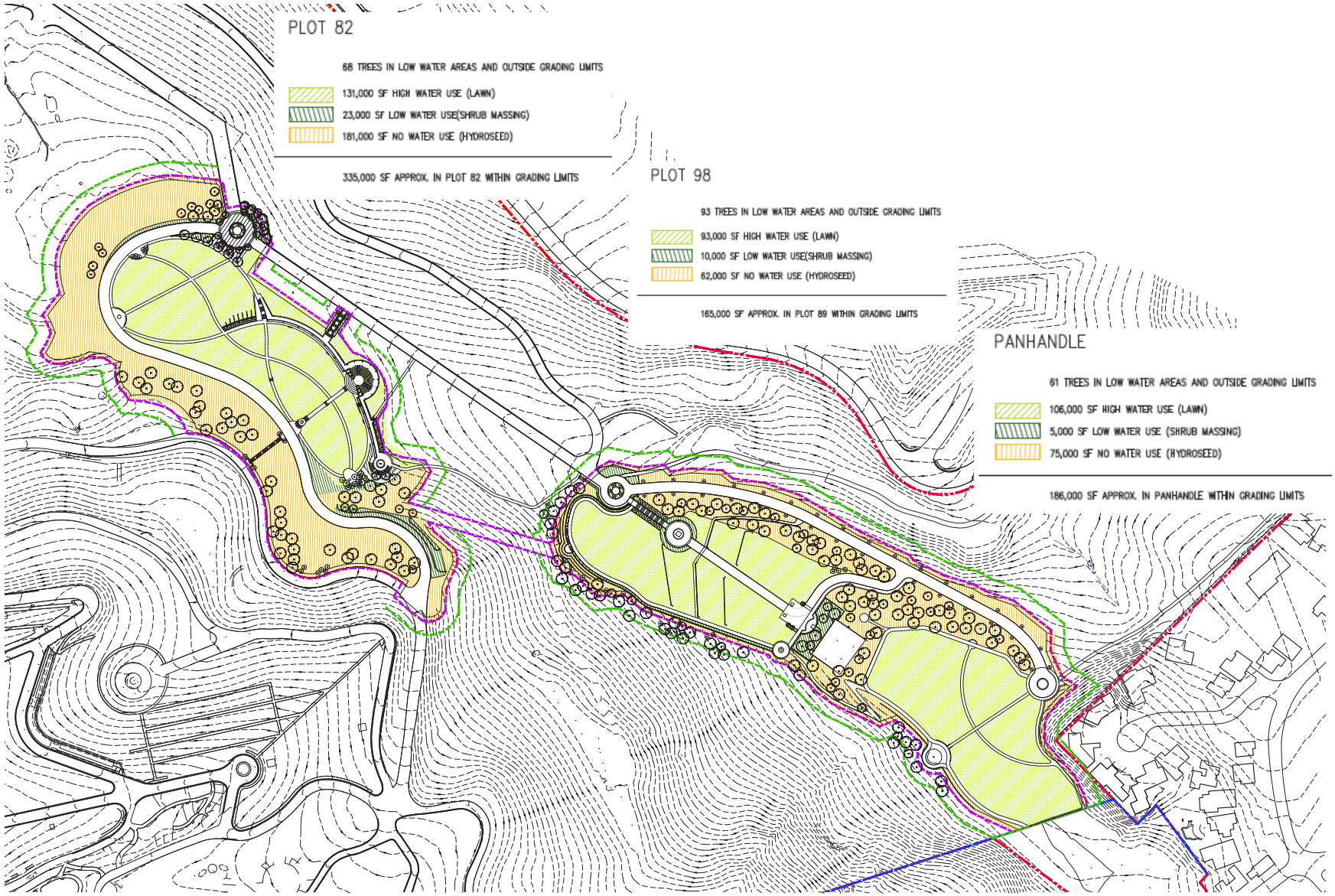


Figure 4.9-1
Irrigated Portions of the Project Site

Source: SWA

Table 4.9-1: Estimated Water Use for the Project

	Irrigated Area			Estimated Total Water Use (mg/yr.)			
	Plot 82	**Plot 98**	**Panhandle**	**Plot 82**	**Plot 98**	**Panhandle**	**Total**
Grass (high water demand)	131,000 sf	93,000 sf	106,000 sf	3.34	2.37	2.70	**8.45**
Shrubs (low water demand)	23,000 sf	10,000 sf	5,000 sf	0.12	0.04	0.08	**0.25**
Trees (low water demand)	88 trees	93 trees	61 trees	No irrigation once established			
Hydro-seed (no water demand	161,000 sf	62,000 sf	75,000 sf	none	none	none	none
				3.46	2.41	2.78	**8.65**
							26.5 AF/Yr

Estimated Total Water Use (ETWU) Gallons Per Year based on the equation: ETWU= ((ETo)(.62)(PF(HA/IE); where:

ETo = Reference evapotranspiration (41.8)

PF = Plant factor for hydro-zones (0.7 for high and 0.2 for low water demand)

HA = Hydro-zone area (square feet)

0.62 = Conversion factor (gallons per square foot per year)

IE = Irrigation efficiency (0.90 bubbler/drip, 0.71 for spray or rotors)

Source: SWA – see **Appendix 4.9A**

This total water demand for the Project is roughly equivalent to the water demands of a residential development of approximately 125 dwelling units.[3] CEQA Guidelines section 15155 requires that the City prepare or have prepared a Water Supply Assessment for any "water-demand project," which is defined as any project that would demand an amount of water equivalent to or greater than the amount of water required by a 500 dwelling unit project. The Project does not meet this definition of a water-demand project, and no Water Supply Assessment has been prepared or required.

Further, Mountain View Cemetery seeks to irrigate it cemetery grounds to the extent possible with private water derived from on-site wells and collected stormwater runoff. There is an existing well located within the immediate vicinity of Plot 98 that is anticipated to provide groundwater supplies needed to irrigate the Project. Additionally, surface runoff from the upper portions of the Cemetery is collected via a system of storm drains and drainage channels which outfall into the Cemetery's system of three lakes located along the lower, southerly portions of the Cemetery near Moraga Avenue. These lakes are filled with runoff water annually, and the stored water is pumped back through on-site irrigation system to supplement well water irrigation supplies. This system provides for on-site reuse of storm water runoff for irrigation purposes during dry summer months. Cemetery grounds crews closely

[3] Assuming a total water demand of 190 gallons per day per unit x 365 days per year, based on City average demands.

monitor water application rates to ensure that the grounds are irrigated with only enough water to keep the grounds green, and not over-water any areas.

Standard Conditions of Approval

Consistent with all new projects throughout the City, the Project will be required to comply with the following City of Oakland SCAs:

SCA #78: Green Building Requirements – Small Projects

a. Compliance with Green Building Requirements during Plan Check. The project applicant shall comply with the requirements of the California Green Building Standards (CALGreen) mandatory measures and the applicable requirements of the City of Oakland Green Building Ordinance (chapter 18.02 of the Oakland Municipal Code) for projects using the Bay Friendly Basic Landscape Checklist.

1. The following information shall be submitted to the City for review and approval with application for a building permit:

    i. Documentation showing compliance with Title 24 of the current version of the California Building Energy Efficiency Standards.

    ii. Completed copy of the green building checklist approved during the review of a Planning and Zoning permit.

    iii. Permit plans that show in general notes, detailed design drawings and specifications as necessary compliance with the items listed in subsection (b) below.

    iv. Other documentation to prove compliance.

2. The set of plans in subsection (a) shall demonstrate compliance with the following:

    i. CALGreen mandatory measures.

    ii. All applicable green building measures identified on the checklist approved during the review of a Planning and Zoning permit, or submittal of a Request for Revision Plan-check application that shows the previously approved points that will be eliminated or substituted.

    When Required: Prior to approval of construction-related permit

    Initial Approval: Bureau of Building

    Monitoring/Inspection: N/A

b. Compliance with Green Building Requirements during Construction. Requirement: The project applicant shall comply with the applicable requirements of CALGreen and the Green Building Ordinance during construction. The following information shall be submitted to the City for review and approval:

1. Completed copy of the green building checklists approved during review of the Planning and Zoning permit and during the review of the Building permit.

2. Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance.

    When Required: During construction

    Initial Approval: N/A

    Monitoring/Inspection: Bureau of Building

The Bay Friendly Basic Landscape Checklist applies to all new construction and renovation of landscapes that are 2,500 square feet of irrigated area or greater and require a permit. The Bay-Friendly Basics

represents the nine required practices from the Bay-Friendly Landscape Scorecard considered a minimum set of practices to improve the environmental performance of the landscape. These practices include:

- All soil on site shall be protected with a minimum of 3 inches of mulch after construction. It is recommended that recycled or green waste mulch be used instead of landscape fabric. Trees identified for removal may be chipped and used on site as mulch, on-site storage space permitting.
- Compost shall be specified as the soil amendment, at rates indicated by a soil analysis to bring the soil organic matter content to a minimum of 3.5% by dry weight, or 1 inch of compost. If the site's existing soil meets the organic content of 3.5% or more, then the requirement is waived.
- Divert 50% of landscape construction and demolition waste by weight.
- New tree and shrub species shall be selected and spaced to allow them to grow to their natural size and shape. Pruning for structural integrity and health of plant is permitted. In addition, plants located in a row or adjacent to buildings, sidewalks or roads shall be spaced between their minimum and maximum mature plant spread according to a published reference plant book and still fit into their planting area without significant overhang.
- None of the plant species listed by CAL-IPC's Don't Plant a Pest as invasive in the San Francisco Bay Area shall be included in the planting plan.
- A minimum of 75% of the total number of plants in non-turf areas must be species that require no or little summer watering once established. Species should be adapted to the climate in which they will be planted, as referenced by a published plant reference. If plants are given a range of water needs from "occasional to moderate" for example, the landscape designer must determine if the plant will require either occasional or moderate watering based on site, soil, and climate conditions and categorize the plant appropriately.
- A maximum of 25% of total irrigated area is to be specified as turf, with sports or multiple use fields exempted.
- Weather-based irrigation controllers, soil moisture based controllers or other self-adjusting irrigation controllers, shall be required for all irrigation systems.
- Sprinkler and spray heads are not specified in areas less than or equal to 8 feet wide to prevent overspray and runoff. Acceptable alternatives include drip, subsurface drip, bubblers or no irrigation. Bubblers shall not exceed 1.5 gallons per minute per bubbler.

With the exception of the 25% turf requirement, the Project has either proposed to meet these requirements or is capable of meeting these requirements as designed. The cemetery use proposed is dependent upon open lawn area, but the applicant should consider the potential use of Bay-Friendly Landscape Guidelines for Bay-Friendly lawn alternative plants. If such plants are not suitable for use in the cemetery, the Project applicant should submit planting plans to the City with the cemetery lawn identified, and a statement regarding the purpose of the lawn area, signed by a landscape architect, indicating that installed turf meets the intent of the sports and multi-purpose play field credit toward this requirement. With implementation of these practices, the water demands of the Project will meet all applicable criteria for water conservation, and the Project's water demand impacts will be less than significant.

Mitigation Measures

None needed

Wastewater

Impact Util-2: The Project will not generate new wastewater flows and will not affect or otherwise exceed the wastewater treatment requirements of the San Francisco Bay Regional Water Quality Control Board, exceed the capacity of existing wastewater treatment facilities, or necessitate the expansion of existing wastewater treatment facilities. **(No Impact)**

The Project would create additional locations for burials, including related ceremonial sites and access roadways, but would not construct any structures or land uses that would generate wastewater. As a result, the Project will not generate wastewater flows and will not exceed wastewater treatment requirements or capacities, nor require the construction or expansion of wastewater treatment facilities.

Mitigation Measures

None needed

Storm Drainage

Impact Util-3: The Project will include the expansion of existing storm water drainage facilities, but construction of these facilities would not cause a significant environmental effect. (**LTS**)

The Project would grade and landscape approximately 320,000 square feet (7.3 acres) of undeveloped property within the upper portions of the Cemetery. The topography of the Project site will change and result in changed runoff of stormwater from the Project site, and there would be a minor increase in impervious surface area in the form of additional paved roadway areas, new pedestrian paths, retaining walls and the outdoor amphitheater.

Specifically, the Project's grading plans provide for capturing both surface flows from impervious surfaces (roadways and paths) as well as outflows from the installed drainage system within the engineered slopes of the Project, within a new storm drain line constructed within each of the newly developed areas (i.e., within Plots 82, 98 and the Panhandle). The new storm drain system for Plot 82 will be constructed generally beneath the proposed new roadway, and will connect to an existing 12-inch storm drain line that is already located below grade of the proposed new construction, underneath the primary access road leading to Plot 82 (**Figure 4.9-2**). The new storm drain system for Plot 98 and the Panhandle will be constructed along the lower elevations of these development sites to enable the storm drain line to capture runoff and sub-grade drainage from these areas. The new storm drain line in Plot 98 and the Panhandle will also connect to the existing 12-inch storm drain line that is already located below grade of the proposed new construction, at the same junctions as the new line from Plot 82.

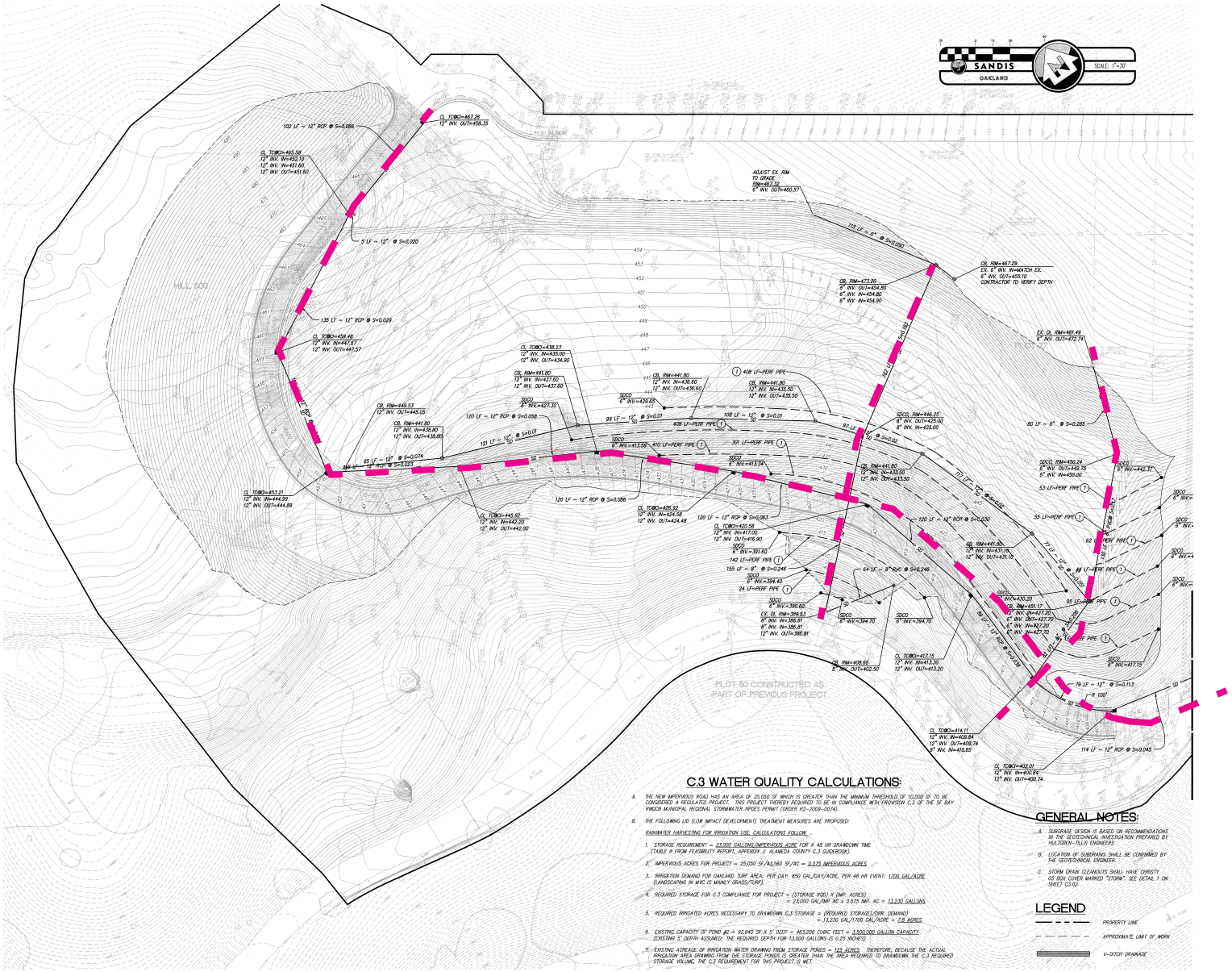


Figure 4.9-2
Prototype Storm Drainage System (per 2011 Plan)

Source: Sandis, 2011

The existing 12-inch storm drain line drains downhill into the uppermost of three interconnected lakes located near Moraga Avenue. This upper lake is estimated to have a capacity of approximately 3.5 million gallon of storage (assuming a 5-foot depth), but is also interconnected via overflow weirs to the lower two lakes, providing additional storage capacity as needed, and this system is adequately sized to retain storm flows from the Project site. As noted above under the discussion of water supply, the water stored in these lakes is pumped back through an on-site irrigation system to supplement well water irrigation supplies. This system provides for on-site reuse of storm water runoff for irrigation purposes during dry summer months.

Standard Conditions of Approval

New development that impacts an area greater than 10,000 square feet in size (i.e., the Project) is subject to Provision C.3 of the National Pollutant Discharge Elimination System (NPDES) permit. The Project will be required to implement storm water treatment measures consistent with C.3 requirements. These requirements are contained as part of City of Oakland SCAs. Please see further discussion on this topic under the Hydrology chapter of the Draft EIR.

With construction of the new private storm drain system and compliance with the regulatory requirements of the NPDES permit, the Projects effects on storm drainage systems would be less than significant.

Mitigation Measures

None needed

Solid Waste

Impact Util-4: The Project would not generate solid waste that would exceed the permitted capacity of a landfill, nor would it violate any applicable federal, state or local statutes and regulations related to solid waste. (**LTS with SCAs**)

During Project operations, the expanded cemetery use is expected to result in an increased number of visitors to the Cemetery, but not such an increase as to result in a substantial increase in solid waste that could affect landfill capacity. On-going landscaping maintenance would result in an increase in green waste, but this waste will be disposed of or composted on site, or sent to a composting center and not transferred to a landfill.

During construction there will be certain amounts of construction debris generated by the Project. The Project includes demolition of the existing roadway through Plot 82 and the removal of asphalt from the Panhandle area near Stark Knoll Place. To the extent reasonable and feasible, these materials will be crushed and ground into small pieces suitable as sub-base for the Project's excavation and re-grading operations. Any materials found not suitable for reuse within the grading operations will be subject to City of Oakland's waste reduction and recycling requirements (see SCAs, below).

Standard Conditions of Approval

The City of Oakland's Standard Conditions of Approval relevant to this impact topic are listed below for reference. The conditions of approval will be adopted as requirements of the proposed Project if the Project is approved by the City to help ensure that no significant impacts (for the applicable topic) occur. As a result, they are not listed as mitigation measures.

SCA #74: Construction and Demolition Waste Reduction and Recycling. Requirement: The project applicant shall comply with the City of Oakland Construction and Demolition Waste Reduction and Recycling Ordinance (chapter 15.34 of the Oakland Municipal Code) by submitting a Construction and Demolition Waste Reduction and Recycling Plan (WRRP) for City review and approval, and shall implement the approved WRRP. Projects subject to these requirements include all new construction, renovations/alterations/modifications with construction values of $50,000 or more (except R-3 type construction), and all demolition (including soft demolition) except demolition of type R-3 construction. The WRRP must specify the methods by which the project will divert construction and demolition debris waste from landfill disposal in accordance with current City requirements. The WRRP may be submitted electronically at www.greenhalosystems.com or manually at the City's Green Building Resource Center. Current standards, FAQs, and forms are available on the City's website and in the Green Building Resource Center.

When Required: Prior to approval of construction-related permit

Initial Approval: Public Works Department, Environmental Services Division

Monitoring/Inspection: Public Works Department, Environmental Services Division

Compliance with SCA #74 (which requires implementation of a recycling and waste reduction plan for construction and demolition activities) would reduce the amount of waste generated during the construction phases of the Project. The Project would be required to comply with existing solid waste reduction requirements and would not violate applicable federal, State and local solid waste statutes and regulations.

Mitigation Measures

None needed

Energy

Impact Util-5: The Project would not require more energy than what the local energy provider (PG&E) has the capacity to serve, nor would it require construction of new energy facilities or expansion of existing facilities which could cause significant environmental effects. The Project would be subject to the requirements of currently applicable federal, state and local statutes and regulations relating to energy standards. **(LTS)**

The Project would not construct any buildings or land uses that would consume energy. As such, the Project would have a less than significant impact on the provision of electricity and natural gas, and on energy consumption.

Mitigation Measures

None needed

5

Alternatives

Introduction and Overview

CEQA Guidelines require an EIR to analyze a reasonable range of alternatives for any project. The purpose of the alternatives section is to provide decision-makers and the public with a discussion of alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly. Evaluation of alternatives should present the proposed action and all the alternatives in comparative form to define the issues and provide a clear basis for choice among the options.

CEQA requires that the lead agency adopt mitigation measures or alternatives, where feasible, to substantially lessen or avoid significant environmental impacts that would otherwise occur. Where a lead agency has determined that even after adoption of all feasible mitigation measures, a project as proposed would still result in significant environmental effects that cannot be substantially lessened or avoided, the agency must first determine whether there are any alternatives that are both environmentally superior and feasible. CEQA provides the following guidelines for discussing project alternatives:

- An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation (§15126.6(a)).
- An EIR is not required to consider alternatives which are infeasible (§15126.6(a)).
- The discussion of alternatives shall focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project (§15126.6(b)).
- The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects (§15126.6(c)).
- The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis and comparison with the proposed project (§15126.6(d)).

Accomplishing Basic Project Objectives

CEQA requires an analysis of alternatives that would feasibly attain most of the basic objectives of the project. The Project objectives include, but are not limited to those listed in the Project Description, Chapter 3 of this EIR, as follows:

The fundamental purpose of the Project is to increase the capacity of Mountain View Cemetery to accommodate the need for future additional burial sites. The specific Project objectives include the following:

1. Create at least 7.3 acres of new burial plot sites capable of accommodating at least 6,300 new individual interment sites, which is the number of new internment sites projected to be needed by the Cemetery over the next 15-year period.
2. Utilize existing undeveloped portions of the upper Cemetery property (which are dedicated under California Health and Safety Code provisions for use as a cemetery and related uses), to create new, moderately flat burial sites that offer panoramic views of the San Francisco Bay and skyline.
3. Connect the new burial sites to the existing developed portions of the Cemetery via the extension of existing on-site roadways, and provide for appropriate parking, pedestrian drop-offs, pedestrian pathways, and maintenance access to the new sites.
4. As part of necessary grading operations to create appropriate new burial sites, balance the amount of cut and fill on-site, such that no off-haul of excess soil is necessary.

Overview of Alternatives Selected for Analysis

As explained in Chapter 3: Project Description, the proposed Project is generally comprised of two components: 1) grading the Plot 82 site to smooth the existing irregular and steep grade by removing a substantial portion of the hillside, resulting in a site capable of accommodating future graves; and 2) placing the excess earth from Plot 82 at the Plot 98 and Panhandle sites in a manner that creates additional, relatively smooth grave sites.

The alternatives selected for evaluation in this EIR are summarized below. All of the alternatives, including the No Project Alternative, would be subject to the same City of Oakland Standard Conditions of Approval (SCAs) and mitigation measures (as applicable) that would apply to the proposed Project.

Alternative #1: No Project / No Development Alternative

The No Project Alternative describes conditions that are reasonably expected to occur in the event that the Project is not approved. Under this outcome, the Project site (proposed Plots 82, 98, and the Panhandle) would remain as undeveloped cemetery property. While it is likely that Mountain View Cemetery would seek to develop a different project on this property that could accommodate at least a portion of the Cemetery's future burial site needs, no other project other than those alternatives discussed below is foreseeable.

Alternative #2: Reduced Project – Plot 82 and Plot 98 Only

The Reduced Project Alternative provides a comparative assessment of an alternative development program for the Project that reduces the extent of proposed grading operations at Plot 82 such that it would generate less excess cut material and result in a smaller cemetery site. The extent of grading at Plot 82 would be specifically designed to generate only as much excess fill as can be accommodated at the Plot 98 site. The reduced extent of grading would also reduce the number of trees to be removed as compared to the Project. This alternative would result in less total future burial sites than the Project, and would not include new cemetery development at the Panhandle site, portions of which are immediately adjacent to residential neighbors at Stark Knoll Place. Alternative #2 would lessen certain of these already less than significant impacts of the Project.

Alternative #3: Larger Plot 82 Site – Off-Haul of Excess Soil

Alternative #3 seeks to accommodate Mountain View Cemetery's primary purpose of accommodating the Cemetery's projected 15-year need for additional burial sites by utilizing a greater portion of the

undeveloped property in the Plot 82 area (i.e., expanding the Plot 82 site upwards into Hill 500). Expansion of the Plot 82 site with additional grading into Hill 500 will generate excess soil similar in quantity as that generated by the Project. However, rather than reusing this excess soil elsewhere on site to create burial sites at Plot 98 and the Panhandle, all excess soils generated by grading activity at the expanded Plot 82 location would be off-hauled to a landfill or other appropriate location.

This alternative would result in a larger Plot 82 site, expanded further towards the northwest and away from adjacent residential neighbors. It would not include cemetery development at the Plot 98 and Panhandle sites, portions of which are immediately adjacent to residential neighbors at Stark Knoll Place.

Alternative #4: Stark Knoll Buttressing Alternative

Alternative #4 is similar to the Project in that it involves grading the Plot 82 site as proposed, and uses the excess earth from Plot 82 at the Plot 98 and Panhandle sites. It differs from the Project in that this alternative explores the potential for a different grading concept for the Panhandle, whereby fill material would be placed against the Stark Knoll hillside at a 2:1 slope (run: rise) to the top of the hillside, serving as a buttress against potential slope movement, instability and erosion.

Alternative #5: Blasting to Remove Existing Bedrock

Alternative #5 is similar to the Project in all respects except in the method for removal of the large rock mass located within the approximate center of the Plot 82 site. Traditional excavation techniques may prove difficult or ineffective against this hard rock, and special excavation techniques will likely be required. The Project Description indicates removal of this large rock mass by breaking it up into smaller pieces using a pneumatic drill, and then using a ram hoe to crush the fractured pieces into smaller rock suitable for use as fill material. This alternative considers a different method for removing this rock mass, involving blasting the chert bedrock into small pieces.

Summary Comparison

Table 5-1 compares the amount of development proposed by the Project to these four identified alternatives.

Table 5-1: Summary Comparison of Project and Alternatives

Area of Development	Project	Alternative #1: No Project	Alternative #2: Reduced Project	Alternative #3: Larger Plot 82, Off-Haul	Alternative #4: Stark Knoll Buttressing
Acres of New Burial Sites					
Plot 82	2.9	–	1.4	5.0	2.9
Plot 98	2.0	–	2.0	–	2.0
Panhandle	2.4	–	–	–	2.0
Total Acres	7.3	0	3.4	5.0	6.9
Total Cubic Yards (CY) of Cut and Fill Earthwork					
Plot 82	-100,000	–	-52,000	-100,00 (+offsite)	+34,000 cy
Plot 98	+52,000	–	+52,000	–	–
Panhandle	+48,000	–	–	–	–
Total CY	Net: 0	0	Net: 0	Off-haul: 100,00	Import: 34,000
Expected Tree Removal					
Plot 82	59	–	47	Greater than Project	59
Plot 98	33	–	33	--	33
Panhandle	55	–	–	-	116
Total Trees	147	0	80	Generally similar to Project	208
Distance from Nearest Existing Residences (Stark Knoll)					
Plot 82	1,550 feet	–	1,550 feet	1,550 feet	20 feet
Plot 98	500 feet	–	600 feet	–	–
Panhandle	500 feet	–	–	–	–

Alternatives Considered but Not Analyzed Further in the EIR

CEQA Guidelines Section 15126.6 sets forth several requirements regarding the consideration of alternatives in an EIR. Section 15126.6(a) and related case law hold that alternatives that are not reasonable or are infeasible need not be discussed at length; alternatives that do not offer substantial environmental advantages over the project can be rejected from consideration; and alternatives that do not accomplish most of the basic objectives of the project can be excluded from detailed analysis. Accordingly, this section briefly summarizes other alternatives that have been considered. No further environmental analysis of these alternatives is considered necessary for the reasons described below.

No Project – Sale of Property for Residential Development

Under a No Project scenario whereby the proposed Project is not approved and no alternative future cemetery expansion potential of the upper portion of the Cemetery is found acceptable, Mountain View

Cemetery would be left with few or no other alternative uses of this property. The entire Cemetery is dedicated under California Health and Safety Code provisions for use as cemetery and related use. If such use proves untenable, Mountain View Cemetery has expressed that they would not likely retain this privately owned property as an open space buffer area. Mountain View representatives have indicated that they receive numerous calls from realtors and developers inquiring about the availability of this property, and turn these calls away. However, since the site is currently zoned for residential use, one potential outcome under a No Project scenario is that Mountain View might consider the option of selling the property. Such a sale would enable the Cemetery to increase its endowment fund to enable long-term maintenance of the remaining portions of the cemetery uses. Although it can be assumed that any purchaser of this property would seek to develop the property with residential homes, it is far too speculative to presume how such a residential development might be designed and constructed, or even if such an idea would actually be proposed.

For these reasons, plus the entire speculative nature of this alternative, it is not further evaluated in his EIR.

Plot 82 with Other On-Site Soil Disposal and Reuse Locations

During Mountain Views Cemetery's early planning and design efforts, they explored the potential for similar projects as that currently proposed, but with other on-site locations for use of the excess fill material from Plot 82. Similar to the proposed Project, these earlier options anticipated using the excess fill material from Plot 82 to re-grade other on-site locations that would then be able to accommodate cemetery burial sites.

As the aerial photograph of the Cemetery property indicates, there are only a few limited locations within the Cemetery boundary where additional cemetery uses could potentially be accommodated. The two locations that were explored in early design considerations included:

- Filling in the portion of the Cemetery known as the Clarewood bowl, which is the flag-shaped property that juts to the north, downhill from the northeasterly edge of the Cemetery near Stark Knoll Place and on the opposite (northerly) side of the ridgeline form the remainder of much of the Cemetery property, or
- Filling in the portion of the Cemetery property known as the Moraga Way canyon, near Moraga Way and nearly adjacent to Coach's Field in the City of Piedmont.

Based on early reconnaissance level investigations, both of these on-site locations were found to contain ephemeral drainages (open creeks) that would need to be filled to accommodate use as cemetery burial sites. The Moraga Canyon site drains directly into the lower Cemetery lakes and has potential to accommodate sensitive species habitat. Development at either of these locations would be environmentally inferior to the proposed Project, and so are not further evaluated in this EIR.

Alternative Site Location

In considering the range of alternatives to be analyzed in an EIR, CEQA Guidelines state that an alternative site location should be considered when feasible alternative locations are available and the significant effects of the project would be avoided or substantially lessened by putting the project in another location. The Mountain View Cemetery is an Oakland institution dating to 1863, and development of cemetery uses at any other off-site location not part of the Cemetery property is not a reasonable or feasible consideration by the Mountain View Cemetery Association.

No plans for a new cemetery at a new location are contemplated by Mountain View Cemetery Association, and any such plan, should it be developed, would need to be considered on its own merits and evaluated pursuant to CEQA in a separate environmental review process.

Project Alternatives and Comparative Environmental Assessment

The following sections of this chapter provide a more complete description of the selected alternatives for analysis, and a comparative discussion of the potential environmental effects associated with each alternative. The environmental effects of each alternative are compared to those of the Project and to existing conditions. As permitted by CEQA (CEQA Guidelines Section 15126.6[d]) the effects of the alternatives are discussed in less detail than the impact discussions of the Project. However, the alternatives analysis is conducted at a sufficient level of detail to provide the public, other public agencies, and City decision-makers adequate information to fully evaluate the alternatives and possibly to enable the City to consider approval of an alternative to the Project without further environmental review.

For each of the alternatives, potentially significant impacts are compared to City of Oakland thresholds of significance. These significance conclusions also indicate whether implementation of Standard Conditions of Approval and/or mitigation measures is assumed and/or required. The relative impacts of each alternative are also compared to the impacts of the Project to indicate whether the alternative would avoid or lessen potentially significant impacts of the Project (as indicated with the symbol "🡻"); result in impacts greater than the impacts of the Project (as indicated with the symbol "🡹"); or would avoid or lessen certain impacts of the Project, but off-set those reduced impacts with greater impacts at a different location (as indicated with the symbol "🡻🡹").

Alternative #1: No Project Alternative

CEQA Guidelines Section 15126.6(e)(3)(A) states that:

> *When the project is other than a land use or regulatory plan, for example a development project on identifiable property [such as the Project], the no project alternative is the circumstance under which the project does not proceed. Here the discussion would compare the environmental effects of the property remaining in its existing state against environmental effects which would occur if the project is approved. If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this no project consequence should be discussed. In certain instances, the no project alternative means no build, wherein the existing environmental setting is maintained. However, where failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project's non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing environmental setting*.

Description of the No Project Alternative

In this instance, failure to approve the Project as proposed is unlikely to result in preservation of the existing environmental conditions. The entire Cemetery is dedicated under California Health and Safety Code provisions for use as a cemetery and related use. Mountain View Cemetery wishes to develop portions of the upper Cemetery in accordance with the dedication of this property for cemetery use, to accommodate current market demands and future needs for additional burial sites.

Not approving the Project does not remove the Cemetery's need for additional burial sites or the market demand for such burial sites. The practical result of the Project's non-approval would most likely result in Mountain View Cemetery proposing a re-designed version of the current Project's layout; considering one of the other alternatives addressed below; or potentially re-considering one of the alternatives that were previously considered but rejected as either environmentally inferior to the Project or too speculative to consider at this time. There are no practical assumptions or reasonable scenarios that would result in preservation of the existing environmental setting within the Cemetery.

Comparative Environmental Assessment

Mountain View Cemetery has expressed that they would not likely retain this privately owned property as an open space or buffer area, and that a No Project alternative would unlikely mean a "no build" scenario wherein the existing environmental setting is maintained. The practical results and likely environmental consequences of the Project's non-approval are as summarized below:

- If the Project is not approved because its Design Review is not approved, it is likely that Mountain View Cemetery would reconsider their design proposal for the finished cemetery plan. Any such re-design would likely have similar environmental implications as those identified for the proposed Project.
- If the Project is not approved for other reasons, the potential outcome may be that one of the other alternatives described below (Alternatives #2 or #3) could be proposed instead. The comparative environmental effects of those alternatives are assessed, and the analysis is intended to provide sufficient detail to enable either of these alternatives to be considered for approval in the event that the Project as proposed is denied.

- If the Project is not approved and neither Alternatives #2 or #3 are considered acceptable to the applicant or the City, Mountain View Cemetery may reconsider one of those alternatives previously considered but rejected as being too speculative at this time. Subsequent environmental analysis of such an alternative would need to be conducted. None of these previously rejected alternatives are currently developed to a level that would permit current environmental review.

Alternative #2: Reduced Project

The Reduced Alternative is an alternative development program for the Project site that reduces the extent of proposed grading operations at Plot 82, such that it would generate only the amount of excess cut material that could be accommodated at the Plot 98 site, thereby not involving the Panhandle site and the property immediately adjacent to and below the Stark Knoll hillside. As such, this alternative is smaller in area than the Project and reduces the extent to which impacts would occur.

The Project as proposed (including new cemetery use at the Panhandle site and the property immediately adjacent to and below the Stark Knoll hillside) has not been found to result in a significant and unavoidable impact. Differences between the proposed Project and this Alternatives are therefore a matter of degree, rather than of significance as compared to City CEQA thresholds. For example, the reduced extent of grading pursuant to this Alternative would reduce the number of trees to be removed as compared to the Project. However, the Project's proposed tree protection measures and tree replacement plantings are consistent with the Tree Protection Ordinance requirements (i.e., a less than significant impact), and reducing the extent of tree removal is not necessary to reduce a significant impact of the Project pursuant to consistency with the Ordinance.

Description of the Alternative

Under the proposed Project, the Plot 98 site is designed to accommodate approximately 52,000 CY of excess material as benched, compacted and engineered fill. Thus, under this alternative the Plot 82 site would need to be redesigned such that it only generates approximately 52,000 CY of excess material, or approximately one-half of the excess material as proposed under the Project. The Panhandle site would not be used to accommodate the remainder of otherwise excess material from the full Plot 82 site.

The volume of excess material that is generated by cutting the Plot 82 site is a function of both depth of cut and the extent of area involved. Assuming a grading design that begins its cut higher up on the hillside (i.e., nearer to the location of the existing access road), the area of Plot 82 would be reduced, the beginning of the grading operation would start at a higher elevation, and the total depth of cut could be reduced. Because of the 3-dimensional aspects of this design and the need to meet existing grade at its edges, it is difficult to estimate with accuracy the resulting Plot 82 dimensions. For purposes of this alternative, it is assumed that the resulting Plot 82 site would be reduced by approximately one-half, to approximately 1.4 acres (**Figure 5-1**). It is estimated that approximately 1,400 new burial sites, in a combination of mausoleum and/or columbaria above ground and traditional in-ground plots, could potentially be accommodated within this area.

The design and construction of Plot 98 under this alternative would be essentially the same as under the proposed Project. Approximately 52,000 CY of soil from the reduced Plot 82 site would be placed onto the Plot 98 site as benched, compacted and engineered fill, partially held in place by a retaining wall. The Plot 98 site would be graded to a moderate slope with open lawn area of approximately 2 acres, providing space for between 1,200 and 2,000 new traditional in-ground burial sites.

In total, this alternative could accommodate a maximum of approximately 3,400 new burial sites, or approximately 54% of the number of burial sites as proposed under the Project. Assuming that the Project's 6,300 individual plots would provide Mountain View Cemetery with approximately 15 years of operational capacity, the Reduced Alternative would likely provide 7 to 8 years of additional burial capacity at the Cemetery.

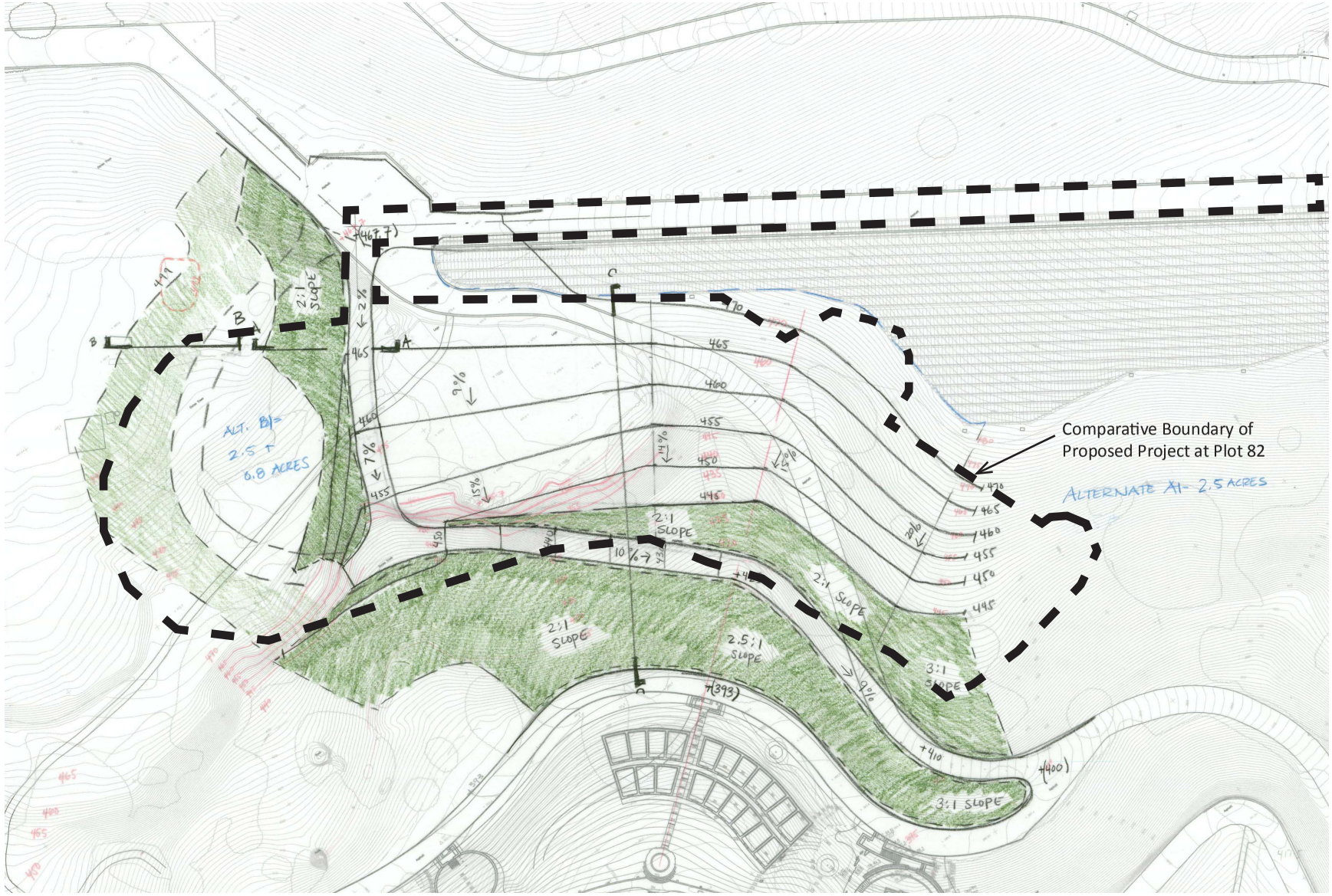


Figure 5-1
Alternative #2: Reduced Project, Reduced Plot 82 Site

Source: preliminary sketch, SWA

Impacts Different than those of the Project

The following is a comparative analysis of those environmental impacts that would occur under the Reduced Project Alternative #2, and for which there are comparative differences between this Alternative and the Project. In most instances, the Reduced Project would lessen the magnitude of environmental effects as indicated for the Project because it would occur on a smaller development site and would thus have fewer disruptions to existing conditions. Impacts that would occur under this Alternative would be mitigated through implementation of SCAs similar to those identified for the Project.

Aesthetics

Scenic Vista (🡻)

> Development of Alternative #2 would not have a substantial adverse effect on scenic views or vistas generally enjoyed by members of the public, and would transform fewer portions of the upper Cemetery from restored open grasslands and woodlands to a more manicured yet still open and pastoral cemetery use than would the Project. (LTS)

The grading efforts necessary to construct this Alternative would be less than that necessary to construct the proposed Project, resulting in reduced effects on existing landforms. At the Panhandle site, this Alternative would result in no change as compared to existing conditions. At the Plot 82 and Plot 98 sites, the steeply pitched hillside would be transformed into more gradually pitched slopes by removing rock and earth, but the extent of landform transformation would be reduced as compared to the Project.

Scenic Resources (🡻)

> Alternative #2 would remove scenic trees, including trees that are specifically visible from state and locally designated scenic routes. Pursuant to City SCAs, the Project will be required to replace all removed protected trees at a ratio consistent with City ordinance, and implementation of this requirement will reduce the effects of scenic tree loss to a level of less than significant. (LTS with SCAs)

Most of the trees in Plot 82 and Plot 98 that are assumed to be removed by the Project would also be removed under this Alternative. However, those trees proposed to be removed by the Project within the Panhandle and at the base of the Stark Knoll hillside would not be removed, as this Alternative does not use any of these sites. Additionally, many of the “at risk” trees located at the grading edge of Plot 82 may also be able to be preserved under this Alternative, due to its smaller limits of grading.

Air Quality

Construction Period Fugitive Dust (🡻)

> During construction, Alternative #2 would generate fugitive dust from grading, hauling and construction activities. Construction-related fugitive dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil, and the weather. (LTS with SCAs)

With the reduced extent of grading that would occur, this Alternative would generate less fugitive dust than would the Project. Like the Project, this Alternative would be required to implement BAAQMD

recommended construction period dust control measures pursuant to the City's SCA #19 and to comply with the requirements found under the City Municipal Code (Section 15.36.100; Dust Control Measures). These measures include both "Basic" and "Enhanced" measures.

Construction-Period Emissions of Criteria Pollutants (🡻)

> During the grading and hauling operations for Alternative #2, regional ozone precursor emissions and regional particulate matter emissions from construction equipment and haul truck exhaust will be emitted. (LTS with SCAs)

Emissions from grading operations would be less than those generated by the Project, based on the reduced quantities of earthwork associated with this Alternative. This alternative would be required to incorporate the emission reductions included in SCA #19, including but not limited to minimizing idling time of diesel powered construction equipment, and achieving a project-wide fleet average 20 percent NO_x reduction and 45 percent PM reduction compared to the most recent CARB fleet average. With implementation of these SCAs the emissions of all criteria pollutants (including NO_x emissions, which neared the threshold level) would be reduced to below threshold levels.

Construction Period Toxic Air Contaminant Emissions (🡻)

> Construction-period TAC emissions resulting from construction activity pursuant to Alternative #2 would be less than the proposed Project, and unlikely to result in an increase in cancer risk level for the maximum exposed individual of greater than 10 in one million or exceed the chronic health hazard index of 1, but may result in an exceedance of the annual average $PM_{2.5}$ concentration threshold of 0.3 $\mu g/m^3$. (LTS with SCAs)

Emissions of DPM and $PM_{2.5}$ due to exhaust emissions from equipment such as graders and bulldozers during grading operations would be similar to, but less than those emission generated by the Project as a result of the reduced amount of earthwork required of this Alternative. This Alternative would be required to incorporate the emission reductions included in SCA #19, including but not limited to implementation of construction-related best management practices (e.g., reduced diesel engine idling time, and 45% reductions in DPM emissions through such means as low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and add-on devices such as particulate filters) to reduce construction-related emissions and associated health risks.

Biological Resources

Conflicts with City of Oakland Tree Protection Ordinance (🡻)

> Alternative #2 would not fundamentally conflict with the City of Oakland's Tree Protection Ordinance. Factors considered in determining significance include the number, type, size, location and condition of the protected trees to be removed and/or impacted by construction, the number of protected trees to remain, and the proposed replacement with appropriate new tree species. (LTS with SCAs)

As assumed for the Project, any trees that are within the limits of this Alternative's proposed grading would unlikely be able to be retained. As such, most of trees in Plot 82 and Plot 98 that are assumed to be removed by the Project would also be removed under this Alternative. However, those trees proposed to be removed by the Project within the Panhandle and at the base of the Stark Knoll hillside would not be removed. Additionally, many of the "at risk" trees located at the edge of the grading limits for Plot 82 may also be able to be preserved under this Alternative, due to the reduced extent of

earthwork at Plot 82. On a net basis, this Alternative would result in fewer trees removed than would the Project.

Alternative #2 would need to comply with City of Oakland's SCA #27, including its requirements to secure a Tree Removal permit, to provide adequate protection of trees to be preserved during construction, and to provide replacement tree plantings to compensate for the protected trees to be removed.

Geology

Soil Erosion (🡻)

> Alternative #2 could result in substantial soil erosion or loss of topsoil, creating substantial risks to property or sedimentation to downhill creeks and waterways. (LTS with SCAs)

The extent of surface and sub-surface grading operations under this Alternative would be less than that of the Project, and the exposure of newly excavated earth and new soil placement would be reduced as compared to the Project, but still subject to potential erosion (both wind and water) if not properly controlled. Implementation of City of Oakland SCAs to reduce soil erosion during construction for water quality purposes and to effectively prevent excessive rilling or rutting of soil on construction sites would be required. These SCAs include SCA #45: Erosion and Sedimentation Control Plan for Construction, SCA # 46: State Construction General Permit, and SCA #50: NPDES C.3 Stormwater Requirements for Regulated Projects. With implementation of City-required SCAs, this Alternative's potential impacts pertaining to erosion would be reduced to a level of less than significant.

Slope Stability – Stark Knoll Hillside (🡹)

> Alternative #2 would have no effect related to soil erosion, loss of topsoil or exacerbation of slope instability at the Stark Knoll hill. (LTS)

This Alternative would not materially affect the Stark Knoll hill in a positive or negative manner, but would also not provide the measure of improved stability for this hill that would be provided by the Project's proposed fill at the base of this hillside.

Exposure to Seismic Hazards (🡻)

> Alternative #2 would not expose people or structures to substantial risk of loss, injury, or death involving strong seismic ground shaking or seismic-related ground failure including liquefaction, lateral spreading, subsidence, or collapse. (LTS)

Although the risk of fault rupture across the upper Cemetery site is low, there are several shear zones which have been observed in bedrock outcroppings, primarily located within the Panhandle area. One major shear parallels the northeast trending hillside below Stark Knoll Place. These shears are not known to be active, but could be subject to secondary seismic deformation in the event of seismic shaking. Under this Alternative, no retaining walls or crypt walls would be constructed in the vicinity of the shear zones in the Panhandle area.

Hydrology and Water Quality

Water Quality and Sedimentation during Construction (🡻)

During construction, Alternative #2 could result in substantial erosion, siltation and pollution that could affect the quality of receiving waters. (LTS with SCAs)

The reduced extent of surface and sub-surface grading operations under this Alternative would lessen the exposure of newly excavated earth and new soil placement as compared to the Project. Like the Project, Alternative #2 would require preparation and implementation of an Erosion and Sedimentation Control Plan pursuant to SCA #45, and to comply with all requirements of the Construction General Permit issued by the State Water Resources Control Board (including submittal of a Notice of Intent (NOI), a Stormwater Pollution Prevention Plan (SWPPP), and other required permit registration documents pursuant to SCA #46, prior to approval of this Alternative's grading permit.

Consistency with City of Oakland Creek Protection Ordinance (🡻)

Alternative #2 would not conflict with the City of Oakland Creek Protection Ordinance intended to protect hydrologic resources.

Because the entire Cemetery property contains creeks and riparian corridors, the Cemetery is considered a "creekside property" and a Creek Protection Permit would be required before any work may commence. However, the regulated feature defined under the Creek Ordinance as a "creek" that is closest to this Alternative site is the ephemeral drainage that flows into Clarewood Bowl. The beginning of this ephemeral drainage is located approximately 140 feet to the north of the limits of anticipated grading associated with the proposed Project at the Panhandle site. Under this Alternative, no grading would be conducted within the Panhandle, and the ephemeral drainage would not be located immediately downhill of construction and grading activity. While a Category II permit may still be required for this Alternative, the potential for Alternative #2 to adversely affect the water quality or hydrology of this drainage is further reduced as compared to the Project.

Noise

Construction Noise (🡻)

Construction activity under Alternative #2 would include use of heavy grading, rock breaking and other construction equipment that would temporarily increase noise levels at surrounding sensitive receptors to noise levels exceeding City construction-period thresholds. In consideration of the limited duration of grading and construction activity and the required implementation of all reasonable and feasible noise attenuation measures pursuant to the City's SCAs, construction-period noise impacts of this Alternative are considered to be less than significant. (LTS with SCAs)

Under this Alternative, the acoustic center of construction activity would be shifted further to the west, and would not include noise-generating construction activity within the Panhandle site. Resulting construction noise effects would be reduced at those sensitive receptor locations nearest to the Panhandle location, including the residences along the Stark Knoll Place cul-de-sac northeast of the Panhandle hill, residences along Maxwelton Road at the easterly end of the Panhandle, and homes along Abbott Lane and Pala Avenue south and west of the Project site.

Alternative #2 would be required to implement the same SCAs as required of the Project, including SCA #58 (providing reasonable regulation of the hours of construction); SCA #59 (requiring preparation of a

Noise Reduction Program); SCA #60 (requiring additional measures to reduce noise from those construction activities that generate extreme noise exceeding 90 dBA); and SCA #61 (requiring efforts to track and respond to noise complaints).

Groundborne Vibration (🡻)

Alternative #2 would not be expected to generate groundborne vibrations that exceed City of Oakland established criteria. (LTS)

Construction activities generate varying degrees of temporary ground vibration, depending on the specific construction equipment used and activities involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increased distance. The construction activities associated with this Alternative would not be in such close proximity to other existing land uses (and particularly not in proximity to residences at Stark Knoll Place) as to cause potential groundborne vibration impacts.

Comparative Environmental Assessment - Impacts Similar to those of the Project

The following environmental effect that would occur under the Reduced Project (Alternative #2) are similar to those expected to occur under the Project, and would be mitigated through implementation of SCAs similar to those identified for the Project.

Aesthetics (🡸🡺)

Visual Character and Quality (LTS)

Like the Project, this Alternative #2 would not substantially degrade the existing visual character or quality of the site and its surroundings. The Mountain View Cemetery is recognized as a place of high scenic character and quality, and this alternative would represent a continuation of those same characteristics.

Light and Glare (LTS)

As per the Project, Alternative #2 would not create new sources of substantial light or glare that would substantially and adversely affect day or nighttime views in the area. This Alternative would not add any new night time lighting within the expanded areas of the Cemetery.

Air Quality (🡸🡺)

Operational Emissions (LTS)

Alternative #2 would not result in significant new operational emissions of criteria pollutants, carbon monoxide (CO) concentrations, or new sources of toxic air contaminants. Emissions from routine landscape maintenance and grave site excavation equipment (i.e., lawn mowers and backhoes) would not rise to a level of significance.

Exposure of New Sensitive Receptors (LTS)

Alternative #2 would not expose new sensitive receptors to substantial levels of toxic air contaminants. The cemetery would not include any new sensitive receptors, and the site is not located in an area

where visitors to the Cemetery may be exposed to air pollutant levels that result in an unacceptable cancer risk or hazard.

Biological Resources (←→)

Special Status Species (LTS with SCAs)

Studies have determined that special-status plant species and suitable habitat for special-status animal species is absent. Like the Project, Alternative #2 would be required to conduct pre-construction surveys if vegetation removal is to be initiated during the breeding/nesting season (from March 15 through August 15) pursuant to SCA #26 which would mitigate potential impacts on bird species of concern to less-than-significant levels.

Riparian Habitat and Other Sensitive Natural Communities (LTS)

Alternative #2 would not have a substantial adverse impact on any riparian habitat or other sensitive natural community. No riparian, native grasslands or other sensitive natural community types occur. The grasslands which characterize the site do not qualify as native grasslands, and the scattered woodlands characterized by relatively common coast live oak do not comprise a natural community type considered to be sensitive. Individual trees do not represent a sensitive natural community type.

Wetlands (LTS)

Alternative #2 would not have a substantial adverse effect on federally protected wetlands or state protected wetlands. Here are no jurisdictional wetlands or other waters that occur within the reduced boundaries of this Alternative, and no direct impacts are anticipated.

Species Movement, Migration, or Nursery Sites (LTS with SCAs)

Alternative #2 would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. The site of this Alternative is not identified as a potential wildlife corridor in the City's General Plan, and no substantial adverse impacts are anticipated. Implementation of SCA #26: Tree Removal during Breeding Season would ensure that any nesting birds are adequately protected during construction.

Applicable Conservation Plans (No Impact)

Alternative #2 would not fundamentally conflict with an applicable habitat conservation plan or natural community conservation plan. There are no applicable habitat conservation plans or natural community conservation plans covering the Project site or vicinity.

Cultural and Historic Resources (←→)

Historical Resources (LTS)

Similar to the Project, Alternative #2 would not affect the eligibility of the Mountain View Cemetery for listing in any local, state, or national historical registers. The original Olmsted design for the Cemetery did not include the very upper portions of the hillside and ridgeline where this Alternative is located. This Alternative would not alter any of the existing developed portions of the Cemetery, or any existing historic buildings or other character-defining contributing features to the historic District. The grading

and landscape design for this Alternative would not directly or indirectly affect any contributing features to the historic district or individually significant buildings. Alternative #2 is separated from the most historic westerly portions of the Cemetery, and although the design of this Alternative may include curving roads and walkways similar to the Olmsted design, its modern design features would not create a false sense of history.

Archaeological or Paleontological Resources (LTS with SCAs)

Alternative #2 would be unlikely to yield archaeological information important in history or prehistory, and unlikely to directly or indirectly destroy a unique archaeological resource or site, or cause a substantial adverse change in the significance of currently undiscovered archaeological resources. Although the likelihood of encountering intact archaeological deposits is considered low, there is the possibility that archaeological material may be located during construction activities. Site preparation, grading, and construction activities could adversely impact previously undiscovered archeological resources. Implementation of the City of Oakland's SCA #29 would reduce potential impacts to undiscovered archeological resources to a less than significant level.

Human Remains (LTS with SCAs)

Alternative #2 would be unlikely to disturb any human remains, including those interred inside or outside of formal cemeteries, although it is possible that unmarked historic graves (including those of Native American and/or Euro American interments) may be present and may be identified during site-preparation and grading activities. Implementation of the City of Oakland's SCA #31 would reduce potential impacts to unanticipated human remains to a less than significant level, requiring that in the event that human skeletal remains are uncovered during construction or ground-breaking activities, all work shall immediately halt and the Alameda County Coroner shall be contacted to evaluate the remains, and appropriate procedures and protocols followed.

Geology (←→)

Unknown Fill Characteristics (LTS with SCAs)

Similar to the Project, fill soils cover much of the area that would be developed under Alternative #2. These existing fill soils are not suitable for the proposed cemetery use, as they could result in differential settlement or expansion, and do not provide adequate stability in the event of strong ground shaking or disturbance during grading. Placement of future below-ground burial sites in these fill locations, without appropriate site preparation, could render these sites unstable and unsuitable for the proposed use.

Pursuant to SCA #34: Soils Report, the Project geotechnical engineer's specific recommendations for appropriate grading practices for the Project would similarly apply to this Alternative.

Landslides (LTS with SCAs)

Like the Project, Alternative #2 would be constructed within areas containing landslide-prone materials. These existing conditions could potentially jeopardize the long-term stability and permanence of the proposed cemetery use. As with the Project, most of these landslide-prone areas are located beyond the footprint and downslope of where this Alternative would be developed, but certain of these slide areas have the potential to adversely affect this Alternative if subject to strong seismic shaking, undercut by grading activity, or subject to excessive moisture.

Pursuant to SCA #34: Soils Report, the geotechnical engineer has recommended hillside grading practices for the Project provide for slope buttressing that will resist future movement of existing landslides and provide a stable site for construction of crypt walls and burial sites. These practices would no longer be necessary at the Panhandle area, but would apply to the new areas to be developed at Plot 82 and Plot 98. Generally, these recommended grading practices include excavation of keyways at the toe of fill slopes to remove soil and weaker materials; creating wide, near-level pads and sub-surface drainage; excavating benches to remove weak soil and to support fill; building retaining walls and retaining structures in areas where existing landslides extend partially into the development sites; and then placing new engineered fill onto these benches. When implemented, these SCAs would reduce potential landslide hazards to a level of less than significant.

Located above Subsurface Hazards (LTS)

Alternative #2 would not be located above a well, pit, swamp, mound, tank vault or unmarked sewer line. There are no subsurface features that could result in substantial risks to life or property.

Located above Landfill (LTS with SCAs)

Alternative #2 is not located above a landfill for which there is no approved closure and post-closure plan. Substantial portions of this alternative are located on imported fill of various, and in some cases uncertain material, but this fill does not pose a substantial risk to life or property. The impacts of fill in this location are primarily related to the possibility of expansive soils and differential settlement, and standard requirements of the City's grading permit process address these potential issues.

Septic Disposal (No Impact)

Alternative #2 would not include the need for septic tanks or alternative wastewater disposal systems, so concerns relative to soils capable of adequately supporting such facilities are not relevant.

Hazards and Hazardous Materials (←→)

Cortese List - Exposure to Hazardous Materials (LTS)

Like the Project site, Alternative #2 would not be located on a site included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and does not represent a significant hazard to the public or the environment. No portion of the entire 226-acre Mountain View Cemetery property is contained on any list of sites with suspected or confirmed releases of hazardous materials to the subsurface soil and/or groundwater, and this Alternative would not present a significant hazard to the public or the environment.

Hazardous Materials Transport, Use and Disposal, and Accidental Release (LTS with SCAs)

Construction activities associated with Alternative #2 would likely utilize construction materials and fuels considered hazardous, and regular landscape maintenance of the expanded cemetery would likely involve the use of hazardous chemicals. Spills or accidents with these materials or chemicals could result in a significant impact to the health of workers and the environment. Compliance with existing regulations pertaining to the use, storage and disposal of hazardous chemicals typical used in landscape maintenance as regulated by the USEPA under authority of the Federal Insecticide, Fungicide and Rodenticide Act, and project-specific best management practices (BMPs) for hazardous materials used during construction as required by SCA #35, will ensure the Project will not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Wildland Fires (LTS with SCAs)

Alternative #2 would not expose people or structures to risks involving wildland fires. Like the Project site, the site for this Alternative is not in or immediately adjacent to a Fire Hazard Severity Zone as shown on CalFire's Fire Hazard Severity Zone maps. This Alternative would transform portions of the uppermost Cemetery in ways that will reduce the risk from wildland fire, and would be required to implement a Vegetation Management Plan to remove non-native plants, and dead trees and shrubs, pursuant to SCA #70. Although not addressing a significant environmental impact, the applicant would also be required to consider providing a centralized Joss paper burner, specifically fitted with a cover which can eliminate the spread of burning ashes while allowing enough oxygen in to ensure that all of the offering is completely burned, as recommended for the Project.

Emergency Access Routes and Evacuation Plans (LTS)

Alternative #2 would not impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan. Emergency access to the site for this Alternative is currently provided by three routes; the internal roadway system within the Cemetery, a maintenance road off of Clarewood Drive, and an un-paved emergency access route from a gate at Maxwelton Drive in Piedmont. This Alternative would not impair these emergency access routes, but rather would improve the existing internal roadway with a new, less steep roadway designed to accommodate emergency access vehicles.

Conflicts with Public or Private Airports (No Impact)

Alternative #2 would not be located in the vicinity of a public airport or private airstrip, and would not conflict with airport operations or result in a safety hazard regarding airport operations.

Hydrology and Water Quality (←→)

Water Quality during Operations (LTS with SCA)

Alternative #2 would result in increased storm water runoff from the site, potentially creating a new source of polluted runoff that could degrade downstream water quality. Like the Project, this Alternative's roadway improvements, paths and walls would create and/or replace more than 10,000 square feet of impervious surfaces, and would therefore be regulated under NPDES regulations pursuant to SCA #50. A post-construction SWMP would need to be submitted to the City for review and approval, and a Maintenance Agreement would need to be entered with the City to accept responsibility for the construction, operation, maintenance and inspection of all elements of the SWMP. This Alternative could potentially still rely on low-impact development treatment by using rain-water harvesting for irrigation use, but this would require a much longer pumped irrigation system than the system planned for the Project.

Flooding (No Impact)

Like the Project, Alternative #2 would be located at a high elevation within the Oakland Hills and would not be susceptible to flooding hazards of any type.

Groundwater (LTS)

Like the Project, Alternative #2 would not substantially deplete groundwater supplies, nor would it interfere substantially with groundwater recharge such that there would be a net deficit in aquifer

volume or a lowering of the local groundwater table. It is assumed that the Project's proposed rain water harvesting plan could still provide a substantial source of irrigation water supply needed for this Alternative that would provide for on-site reuse of storm water runoff for irrigation purposes during dry summer months. Unlike the Project, this Alternative would not remove the paved surface from the Panhandle area, and thus would not increase groundwater recharge and reduce surface runoff from this upper area of the site, but the vast majority of this Alternative's site would remain pervious landscaped surfaces that will retain groundwater recharge capabilities.

Noise (←→)

Operational Noise (LTS)

Like the Project, Alternative #2 would not generate operational noise that would exceed the City of Oakland Noise Ordinance standards at adjacent sensitive receivers, would not expose persons to an interior L_{dn} or CNEL greater than 45 dBA, and would not expose new or existing noise-sensitive land uses to noise levels in excess of noise levels considered normally acceptable according to the land use compatibility guidelines of the Oakland General Plan.

Aircraft Noise (No Impact)

Alternative #2's site is not located within an airport land use plan or in the vicinity of a private airstrip, and would not expose people to excessive noise levels from aircraft activity.

Other Less than Significant Effects (←→)

Similar to the Project, Alternative #2 would not result in significant environmental effects related to:

- Agriculture and Forest Resources, including Farmland conversion, agricultural zoning or Williamson Act conflicts, forest resources and other changes affecting Farmland or Forest Resources;
- GHG Emissions/Global Climate Change, including operational and construction period GHG emissions, and conflicts with GHG emission reduction plans;
- Land Use, including dividing an established community, fundamentally conflicting with adjacent land uses, conflicts with land use plans and policies, or conflicts with an established Habitat Conservation Plan;
- Mineral Resources, including loss of mineral resources or loss of a mineral resource recovery site;
- Population and Housing, including growth inducement and housing and/or population displacement;
- Public Services, including fire protection, police protection, public schools, park usage or construction or expansion of recreational facilities;
- Transportation and Traffic, including traffic congestion, traffic safety, consistency with policies supporting alternative transportation, construction-period impacts, and change in air traffic patterns;
- Utilities and Service Systems, including water supply, wastewater, storm drainage, solid waste and energy.

Alternative #2 would be required to implement SCAs as applicable, similar to those identified for the Project.

Alternative #3: Larger Plot 82 Site – Off-Haul of Excess Soil

CEQA Guidelines Section 15126.6(c) requires that the range of potential alternatives to the proposed Project include alternatives that could feasibly accomplish most of the basic objectives of the Project and could also avoid or substantially lessen one or more of the significant effects. This alternative has been developed to consider an alternative capable of achieving most of the Project's major objectives, and which may also be able to avoid or reduce certain environmental impacts by developing a much larger Plot 82 site and not developing either the Plot 98 or the Panhandle site.

This alternative would result in a larger Plot 82 site expanded further towards the northwest and away from adjacent residential neighbors, and would not include proposed cemetery development at the Plot 98 and Panhandle sites, where they would otherwise be immediately adjacent to residential neighbors at Stark Knoll Place.

Description of Alternative #3

Alternative #3 seeks to accommodate Mountain View Cemetery's primary purpose of accommodating the Cemetery's future needs for additional burial sites by utilizing a greater portion of the undeveloped property in the Plot 82 area, and expanding cemetery use higher into Hill 500 than is currently proposed (**Figure 5-2**). Expansion of the Plot 82 site with additional grading will generate even greater amounts of excess rock and soil than currently anticipated under the Project. The Hill 500 area is known to have been filled with artificial fill over the years, and portions of this fill could be removed by standard earthmoving and grading operations. However, Hill 500 is also underlain with massive chert (such as the exposed rock in the center of Plot 82), and substantial lowering of Hill 500 as would be necessary under this alternative would also likely require drilling or blasting of additional rock in this area. Expansion of cemetery use into Hill 500 will also result in lowering the ridgeline profile in this area, with potentially a greater extent of tree removal in this area than proposed under the Project.

Without relying on on-site re-use of the excess material cut from Hill 500 and from Plot 82, the overall grading scheme of the Project would need to be substantially altered. It is likely that a portion of excess material generated by cutting Hill 500 could be used to fill (rather than cut) the varying topography at Plot 82. It is estimated that this Alternative will generate as much or more excess material than does the proposed Project (i.e., in excess of 100,000 cubic yards of material). Since this material would not be reused on site, it would need to be off-hauled to an appropriate receiver site (either a landfill or a location in need of substantial fill soil).

Due to the varying sizes and haul capacities of dump trucks, load sizes vary greatly depending on the truck and the material being hauled. Typically, a large dump truck capable of navigating the Project site can hold up to 20 cubic yards (CY) of material. At 20 CY per truck and a total off-haul of upwards of 100,000 CY, this would require a total of approximately 5,000 truck-loads of off-hauled material.



Figure 5-2
Alternative #3: Larger Plot 82 Site (into Hill 500)

Source: preliminary sketch, SWA

Impacts Different than those of the Project

The following is a comparative analysis of those environmental impacts that would occur under the Larger Plot 82 Site (Alternative #3), and for which there are comparative differences between this Alternative and the Project. In some circumstances, the impacts may be similar in nature but would occur in different locations within the Cemetery. Certain impacts would be greater under this Alternative than would occur under the Project (see construction-period air quality impacts below), and in other circumstance this Alternative would reduce or avoid certain environmental impacts as indicated for the Project (see consistency with City of Oakland Creek Protection Ordinance below). Impacts that would occur under Alternative #3 would be mitigated through implementation of SCAs similar to those identified for the Project.

Aesthetics

Scenic Vista (🡻🡹)

> Similar to the Project, development of Alternative #3 would not have a substantial adverse effect on scenic views or vistas generally enjoyed by members of the public. (LTS)

This Alternative would transform portions of the upper Cemetery from restored open grasslands and woodlands to a more manicured yet still open and pastoral cemetery use. The grading efforts necessary to construct this Alternative would vary from those of the proposed Project, resulting in differing effects on the existing landform. At Plot 98 and the Panhandle site, this Alternative would have no change over existing conditions. At the Plot 82/Hill 500 site, this steeply pitched hillside would be transformed into a more gradually pitched slope by removing rock and earth. Because of the prominence of the Hill 500 hilltop, this earthwork will be much more noticeable because much of the grading would occur on the top of the hill and ridgeline.

Scenic Resources (🡻🡹)

> Alternative #3 would remove scenic trees, including trees that are specifically visible from state and locally designated scenic routes. Pursuant to City SCAs, the Project will be required to replace all removed protected trees at a ratio consistent with City ordinance, and implementation of this requirement will reduce the effects of scenic tree loss to a level of less than significant. (LTS with SCAs)

The vegetative cover for the majority of the Project site is dominated by non-native grassland. Coast live oaks form dense thickets in some locations, but primarily occur as scattered trees throughout the Project site. These grasslands and trees comprise a scenic backdrop along the upper ridgeline of the Cemetery property.

All of trees in Plot 82 that are assumed to be removed by the Project would also be removed under this Alternative. However, those tree proposed to be removed by the Project within Plot 98, the Panhandle and the trees at the base of the Stark Knoll hillside would not be removed, as this Alternative does not use any of these sites. Instead, virtually all of the existing trees that are scattered across the Hill 500 site would be removed. No tree survey or arborist report has been conducted to count the number and types of trees that are located on the Hill 500 site, but aerial photographs indicate that there is a relatively similar number of oaks that would be removed from the Hill 500 site as would be removed from the Plot 98 and Panhandle sites, as well as a visually prominent grove of mature eucalyptus trees. The net difference in numbers of trees to be removed between Alternative #3 and the Project would be

similar, and both the Project and this Alternative would remove visually scenic trees that can be seen from distant viewpoints.

Air Quality

Construction-Period Emissions of Criteria Pollutants (↑)

> During the grading and hauling operations for Alternative #3, regional ozone precursor emissions and regional particulate matter emissions from construction equipment and haul truck exhaust will be emitted. (Potentially SU)

The extent of emissions from grading operations will be similar to those emissions generated by the Project, as the general types and quantities of earthwork are similar to the Project. This alternative would be required to incorporate the emission reductions included in SCA #19, including but not limited to minimizing idling time of diesel powered construction equipment, and achieving a project-wide fleet average 20 percent NO_x reduction and 45 percent PM reduction compared to the most recent ARB fleet average. With implementation of these SCAs, the emissions of all criteria pollutants (including NO_x emissions, which neared the threshold level) would be reduced to below threshold level.

However, Alternative #3 would also include and additional process of off-hauling as much as 100,000 CY of material from the Cemetery to an acceptable off-site location. It is estimated that this would require a total of approximately 5,000 truck-loads of off-hauled material, substantially increasing regional ozone precursor emissions and regional particulate matter emissions compared to the Project as a result. Because the grading operations alone would have neared the threshold level, even with incorporation of all applicable SCAs (at 43 pounds per day, compared to the threshold of 54 pounds per day), it is likely that the additional emissions from truck off-hauling would exceed the City of Oakland's established construction-period threshold and the impact may be significant and unavoidable.

Construction Period Toxic Air Contaminant Emissions (↑)

> Construction-period TAC emissions resulting from construction activity of this Alternative would likely not result in an increase in cancer risk level for the maximum exposed individual of greater than 10 in one million or exceed the chronic health hazard index of 1, but may result in an exceedance of the annual average $PM_{2.5}$ concentration threshold of 0.3 $\mu g/m^3$. (Potentially SU)

Emissions of DPM and $PM_{2.5}$ due to exhaust emissions from equipment such as graders and bulldozers during grading operations would be similar to those emission generated by the Project, as the general types and quantities of earthwork are similar to the Project. This alternative would be required to incorporate the emission reductions included in SCA #19, including but not limited to implementation of construction-related best management practices (e.g., reduced diesel engine idling time, and 45% reductions in DPM emissions through such means as low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and add-on devices such as particulate filters) to reduce construction-related emissions and associated health risks.

However, Alternative #3 would also include and additional process of off-hauling as much as 100,000 CY of material from the Cemetery to an acceptable off-site location, estimated to require a total of approximately 5,000 additional truck-loads of off-hauled material, and substantially increasing DPM and $PM_{2.5}$ emissions. Because the grading operations alone would near the threshold level even with incorporation of all applicable SCAs (at a maximum 1-hour DPM concentration of 0.291 $\mu g/m^3$, compared to the threshold of 0.3 $\mu g/m^3$), it is likely that the additional emissions from truck off-hauling

would result in exceeding the City of Oakland's established health risk threshold for construction-period diesel concentrations and the impact may be significant and unavoidable.

Biological Resources

Conflicts with City of Oakland Tree Protection Ordinance (🡻🡹)

> Similar to the Project, Alternative #3 would not fundamentally conflict with the City of Oakland's Tree Protection Ordinance. Factors considered in determining significance include the number, type, size, location and condition of the protected trees to be removed and/or impacted by construction, the number of protected trees to remain, and the proposed replacement with appropriate new tree species. (LTS with SCAs and MM)

As assumed for the Project, any trees that are within the limits of this Alternative's proposed grading would unlikely be able to be retained. At certain locations, existing grade at which trees are rooted will be excavated, and at other locations existing grade would be excavated and then back-filled. It would not be possible to retain trees within this type of extensive grading activity.

Under Alternative #3, the 85 trees in Plot 82 that are assumed to be removed by the Project would also be removed under this Alternative. However, all of the 34 trees within Plot 98, the 39 trees within the Panhandle and the 34 trees located within the fill area at the base of the Stark Knoll hillside would no longer need to be removed, because this Alternative does not use any of these sites. Instead, virtually all of the existing tree that are scattered across the Hill 500 site would instead be removed. No tree survey or arborist report has been conducted to count the number and types of trees that are located on the Hill 500 site. Based on a review of aerial photographs, there is a relatively similar number of oaks on Hill 500 as there are at the Plot98/Panhandle sites, but the Hill 500 site also includes a large grove of mature eucalyptus trees (which are not considered a "Protected" tree under the Ordinance) that would also be removed. Whereas over 100 trees at the Plot 98/Panhandle sites would be preserved under this Alternative, tree removal at Hill 500 would likely off-set these numbers such that the net difference in tree removal between this Alternative and the Project would be similar.

Alternative #3 would need to comply with City of Oakland's SCA #27, including its requirements to secure a Tree Removal permit, to provide adequate protection of trees to be preserved during construction, and to provide replacement tree plantings to compensate for the protected trees to be removed.

Geology

Unknown Fill Characteristics (🡻🡹)

> Much of Alternative #3 would be constructed within areas containing unknown fill soils. These existing conditions could potentially jeopardize the long-term stability and permanence of the cemetery use. (LTS with SCA's)

Fill soils cover much of the area that would be developed under this Alterative. The approximate limits of artificial fill across the Cemetery's upper hillside are shown in the Geology chapter on Figure 4.5-3. Generally, the fill at the westerly portions of the upper Cemetery (Plot 98 and the Panhandle) include waste material associated with prior quarrying operations, and fill under Plot 82 and Hill 500 contains miscellaneous debris consisting primarily of wood, common trash, as well fill material from graves. These existing fill soils are not suitable for the proposed cemetery use, as they could result in differential settlement or expansion, and do not provide adequate stability in the event of strong ground shaking or

disturbance during grading. Placement of future below-ground burial sites in these fill locations, without appropriate site preparation, could render these sites unstable and unsuitable for the proposed use.

Whereas the existing fill near and below the footprint of Plot 98 and the Panhandle would not need to be removed and re-compacted under Alternative #3, substantial additional cuts within Hill 500 (not otherwise needed for the Project) would be necessary at sufficient depth to remove all existing fill. Pursuant to SCA #34: Soils Report, the Project's geotechnical engineer would need to make specific recommendations for appropriate grading practices for this Alternative pursuant to any grading permits.

Landslides (🡻🡹)

> Alternative #3 would be constructed within areas containing landslide-prone materials. These existing conditions could potentially jeopardize the long-term stability and permanence of the proposed cemetery use. (LTS with SCA's)

Existing areas of known and potential landslides are present across the Cemetery's upper hillside areas, shown in the Geology chapter on Figure 4.5-2. Additional portions of the Project site contain undifferentiated colluvium and alluvium consisting of unconsolidated silty clay with sand and rock fragments. As with the Project, most of these landslide-prone areas are located beyond the footprint and downslope of where this Alternative would be developed, but certain of these slide areas have the potential to adversely affect this Alternative if subject to strong seismic shaking, undercut by grading activity, or subject to excessive moisture.

Pursuant to SCA #34: Soils Report, the geotechnical engineer has recommended hillside grading practices for the Project to provide for slope buttressing that will resist future movement of existing landslides and provide a stable site for construction of crypt walls and burial sites. These practices would no longer be necessary at the Plot 98 and panhandle areas, but would apply to the new areas to be developed at Hill 500. Generally, these recommended grading practices include excavation of keyways at the toe of fill slopes to remove soil and weaker materials; creating wide, near-level pads and sub-surface drainage; excavating benches to remove weak soil and to support fill; building retaining walls and retaining structures in areas where existing landslides extend partially into the development sites; and then placing new engineered fill onto these benches.

Slope Stability – Stark Knoll Hillside (🡹)

> Alternative #3 would have no effect related to soil erosion, loss of topsoil or exacerbation of slope instability at the Stark Knoll hill. (LTS)

This Alternative would not materially affect the Stark Knoll hill in a positive or negative manner, but would also not provide the measure of improved stability for this hill that would be provided by the Project's proposed fill at the base of this hillside.

Exposure to Seismic Hazards (🡻)

> Alternative #3 would not expose people or structures to substantial risk of loss, injury, or death involving strong seismic ground shaking or seismic-related ground failure including liquefaction, lateral spreading, subsidence, or collapse. (LTS)

Although the risk of fault rupture across the upper Cemetery site is low, there are several shear zones which have been observed in bedrock outcroppings, primarily located within the Panhandle area. One major shear parallels the northeast trending hillside below Stark Knoll Place. These shears are not known to be active, but could be subject to secondary seismic deformation in the event of seismic shaking.

Under this Alternative, no retaining walls or crypt walls would be constructed in the vicinity of the shear zones in the Panhandle area. The expanded development of Hill 500 does not contain any of these types of geologic features.

Hydrology and Water Quality

Consistency with City of Oakland Creek Protection Ordinance (🡻)

> Alternative #3 would not conflict with the City of Oakland Creek Protection Ordinance intended to protect hydrologic resources.

Because the entire Cemetery property contains creeks and riparian corridors, the Cemetery is considered a "creekside property" and a Creek Protection Permit would be required before any work may commence. However, the regulated feature defined under the Creek Ordinance as a "creek" that is closest to this Alternative site is the ephemeral drainage that flows into Clarewood Bowl. The beginning of this ephemeral drainage is located approximately 140 feet to the north of the limits of anticipated grading associated with the proposed Project, but would be several hundred feet away from the nearest edge of grading associated with this Alternative. While a Category II permit may still be required for Alternative #3, the potential for this Alternative to adversely affect the water quality or hydrology of this drainage is remote. There is little to no potential that this Alternative's final grading plans would need to be adjusted such that grading operation would occur within 100 feet of the ephemeral drainage and a Category III Creek Protection permit would be necessary.

Noise

Construction Noise (🡻🡹)

> Similar to the Project, construction activity under Alternative #3 would include use of heavy grading, rock breaking and other construction equipment that would temporarily increase noise levels at surrounding sensitive receptors to noise levels exceeding City construction-period thresholds. In consideration of the limited duration of grading and construction activity and the required implementation of all reasonable and feasible noise attenuation measures pursuant to the City's SCAs, construction-period noise impacts of this Alternative are considered to be less than significant. (LTS with SCAs)

To estimate the construction period noise impacts of the Project, it was assumed that both Plot 82 and Plot 98/Panhandle represented two separate construction sites and that each site will be in operation at the same time. The center of each construction site was assumed to represent the acoustical center of construction activity at both Plot 82 and at Plot 98/Panhandle. The combined construction noise effect were presented for each of five separate noise sensitive land uses in proximity to the Project site, including: 1) Saint Theresa's Church and School along Clarewood Drive, 2) homes along Truitt Lane near Clarewood Drive, 3) residences along the Stark Knoll Place cul-de-sac northeast of the Panhandle hill, 4) residences along Maxwelton Road at the far east end of the Panhandle, and 5) homes along Abbott Lane and Pala Avenue south and west of the Project site.

Under Alternative #3, there would be only 1 acoustic center of construction activity, located at the center of the larger Plot 82/Hill 500 location. Construction noise at the Plot 98/Panhandle site would not occur, and the resulting construction noise effects would be reduced at those sensitive receptor locations nearest to the Plot 98/Panhandle location, including the residences along the Stark Knoll Place cul-de-sac northeast of the Panhandle hill, residences along Maxwelton Road at the far east end of the

Panhandle, and homes along Abbott Lane and Pala Avenue south and west of the Project site. However, the construction noise attributed to activity at the Plot 98/Panhandle location would effectively be replaced by increased construction activity at the Plot 82/Hill 500 site. This would have the effect of increasing construction noise at other sensitive receptors nearest to Hill 500, including at the Saint Theresa's Church and School along Clarewood Drive, and homes along Truitt Lane and near Clarewood Drive. This Alternative would also increase the number of potentially affected sensitive receptors at the northwesterly edge of the Cemetery, as the expanded Plot 82/Hill 500 site would crest the ridgeline and expose new sensitive receptors along Clarewood Lane, Harbord Drive and Merrill Court to direct, line-of-sight construction-period noise. Additionally, this Alternative would include additional areas underlain by chert bedrock. Removal of these large rock masses to accommodate cemetery use would expand the area and duration of rock removal using extremely loud pneumatic drills and ram hoes.

Alternative #3 would be required to implement the same SCAs as required of the Project, including SCA #58 (providing reasonable regulation of the hours of construction); SCA #59 (requiring preparation of a Noise Reduction Program); SCA #60 (requiring additional measures to reduce noise from those construction activities that generate extreme noise exceeding 90 dBA); and SCA #61 (requiring efforts to track and respond to noise complaints).

Groundborne Vibration (🡻)

Alternative #3 would not be expected to generate groundborne vibrations that exceed City of Oakland established criteria. (LTS)

Construction activities generate varying degrees of temporary ground vibration, depending on the specific construction equipment used and activities involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increased distance. The construction activities associated with this Alternative would not be in such close proximity to other existing land uses (and particularly not in proximity to residences at Stark Knoll Place) as to cause potential groundborne vibration impacts.

Comparative Environmental Assessment - Impacts Similar to those of the Project

The following environmental impacts that would occur under the Larger Plot 82 Site (Alternative #3) that are similar to those expected to occur under the Project, and would be mitigated through implementation of SCAs similar to those identified for the Project.

Aesthetics (🡸🡺)

Visual Character and Quality (LTS)

Like the Project, Alternative #3 would not substantially degrade the existing visual character or quality of the site and its surroundings. The Mountain View Cemetery is recognized as a place of high scenic character and quality, and this alternative would represent a continuation of those same characteristics.

Light and Glare (LTS)

As with the Project, Alternative #3 would not create new sources of substantial light or glare that would substantially and adversely affect day or nighttime views in the area. This Alternative would not add any new night time lighting within the expanded areas of the Cemetery.

Air Quality (←→)

Construction Period Fugitive Dust (LTS with SCAs)

During construction, Alternative #3 would generate fugitive dust from grading, hauling and construction activities. Construction-related fugitive dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil, and the weather. Like the Project, this Alternative would be required to implement BAAQMD recommended construction period dust control measures pursuant to the City's SCA #19 and to comply with the requirements found under the City Municipal Code (Section 15.36.100; Dust Control Measures). These measures include both "Basic" and "Enhanced" measures for the Project since this Alternative would meet several of the criteria for enhanced measures.

Operational Emissions (LTS)

Alternative #3 would not result in significant new operational emissions of criteria pollutants, carbon monoxide (CO) concentrations, or new sources of toxic air contaminants. Emissions from routine landscape maintenance and grave site excavation equipment (i.e., lawn mowers and backhoes) would not rise to a level of significance.

Exposure of New Sensitive Receptors (LTS)

Alternative #3 would not expose new sensitive receptors to substantial levels of toxic air contaminants. The cemetery would not include any new sensitive receptors, and the site is not located in an area where visitors to the Cemetery may be exposed to air pollutant levels that result in an unacceptable cancer risk or hazard.

Biological Resources (←→)

Special Status Species (LTS with SCAs)

No systematic surveys have been conducted specifically on the expanded Hill 500 site to assess the potential presence of special-status plant species or special status animal habitat. However, the habitat characteristics of Hill 500 are similar to those of the immediately adjacent Plot 82 site, where studies have determined that special-status plant species and suitable habitat for special-status animal species is absent. Prior to development of the Hill 500 site, surveys would need to be conducted to confirm that no such habitat or species are present, but no adverse impacts are anticipated. Like the Project, Alternative #3 would also be required to conduct pre-construction surveys if vegetation removal is to be initiated during the breeding/nesting season (from March 15 through August 15) pursuant to SCA #26 which would mitigate potential impacts on bird species of concern to less-than-significant levels.

Riparian Habitat and Other Sensitive Natural Communities (LTS)

Alternative #3 would not have a substantial adverse impact on any riparian habitat or other sensitive natural community. No riparian, native grasslands or other sensitive natural community types occur on the site of this Alternative. The grasslands which characterize the Project site do not qualify as native grasslands, and the scattered woodlands characterized by relatively common coast live oak do not comprise a natural community type considered to be sensitive. Individual trees do not represent a sensitive natural community type.

Wetlands (LTS)

Alternative #3 would not have a substantial adverse effect on federally protected wetlands or state protected wetlands. No specific surveys or delineation surveys have been conducted on the Hill 500 site, but it is not expected that any potential jurisdictional wetlands or other waters occur on the expanded site of this Alternative at Hill 500 and no direct impacts are anticipated.

Species Movement, Migration, or Nursery Sites (LTS with SCAs)

Alternative #3 would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. The site of this Alternative is not identified as a potential wildlife corridor in the City's General Plan, and no substantial adverse impacts are anticipated. Existing non-native grassland and trees within the limits of proposed grading would be removed and replaced with areas of turf, landscaping and replacement tree plantings. Wildlife within the limits of proposed grading would either disperse to the adjacent natural areas on the Mountain View property or could be lost during initial grubbing and grading activities. However, these would be more common and less mobile wildlife abundant in the non-native grasslands, and their temporary disruption and possible loss would not be considered a significant impact. Implementation of SCA #26: Tree Removal during Breeding Season would ensure that any nesting birds are adequately protected during construction.

Applicable Conservation Plans (No Impact)

Alternative #3 would not fundamentally conflict with an applicable habitat conservation plan or natural community conservation plan. There are no applicable habitat conservation plans or natural community conservation plans covering the Project site or vicinity.

Cultural and Historic Resources (←→)

Historical Resources (LTS)

Similar to the Project, Alternative #3 would not affect the eligibility of the Mountain View Cemetery for listing in any local, state, or national historical registers. The original Olmsted design for the Cemetery did not include the very upper portions of the hillside and ridgeline where this Alternative is located. This Alternative would not alter any of the existing developed portions of the Cemetery, or any existing historic buildings or other character-defining contributing features to the historic District. The grading and landscape design for this Alternative would not directly or indirectly affect any contributing features to the historic district or individually significant buildings. Alternative #3 is separated from the most historic westerly portions of the Cemetery, and although the design of this Alternative may include curving roads and walkways similar to the Olmsted design, its modern design features would not create a false sense of history.

Archaeological or Paleontological Resources (LTS with SCAs)

Alternative #3 would be unlikely to yield archaeological information important in history or prehistory, and unlikely to directly or indirectly destroy a unique archaeological resource or site, or cause a substantial adverse change in the significance of currently undiscovered archaeological resources. Although the likelihood of encountering intact archaeological deposits is considered low, there is the possibility that archaeological material may be located during construction activities. Site preparation, grading, and construction activities could adversely impact previously undiscovered archeological

resources. Implementation of the City of Oakland's SCA #29 would reduce potential impacts to undiscovered archeological resources to a less than significant level.

Human Remains (LTS with SCAs)

Alternative #3 would be unlikely to disturb any human remains, including those interred inside or outside of formal cemeteries, although it is possible that unmarked historic graves (including those of Native American and/or Euro American interments) may be present and may be identified during site-preparation and grading activities. Implementation of the City of Oakland's SCA #31 would reduce potential impacts to unanticipated human remains to a less than significant level, requiring that in the event that human skeletal remains are uncovered during construction or ground-breaking activities, all work shall immediately halt and the Alameda County Coroner shall be contacted to evaluate the remains, and appropriate procedures and protocols followed.

Geology (←→)

Soil Erosion (LTS with SCAs)

Similar to the Project, Alternative #3 could result in substantial soil erosion or loss of topsoil, creating substantial risks to property or downhill creeks and waterways. The extent of surface and sub-surface grading operations under this Alternative would be similar to that of the Project, but would just occur is different locations along the ridgeline of the upper Cemetery property. Exposure of newly excavated earth and new soil placement could be subject to substantial erosion (both wind and water) if not properly controlled. Implementation of City of Oakland SCAs to reduce soil erosion during construction for water quality purposes and to effectively prevent excessive rilling or rutting of soil on construction sites would be required. These SCAs include SCA #45: Erosion and Sedimentation Control Plan for Construction, SCA # 46: State Construction General Permit, and SCA #50: NPDES C.3 Stormwater Requirements for Regulated Projects. With implementation of City-required SCAs, the Project's potential impacts pertaining to erosion would be reduced to a level of less than significant.

Located above Subsurface Hazards (LTS)

Alternative #3 would not be located above a well, pit, swamp, mound, tank vault or unmarked sewer line. There are no subsurface features that could result in substantial risks to life or property.

Located above Landfill (LTS with SCAs)

Alternative #3 is not located above a landfill for which there is no approved closure and post-closure plan. Substantial portions of this alternative are located on imported fill of various, and in some cases uncertain material, but this fill does not pose a substantial risk to life or property. The impacts of fill in this location are primarily related to the possibility of expansive soils and differential settlement, and standard requirements of the City's grading permit process address these potential issues.

Septic Disposal (No Impact)

Alternative #3 would not include the need for septic tanks or alternative wastewater disposal systems, so concerns relative to soils capable of adequately supporting such facilities are not relevant.

Hazards and Hazardous Materials (←→)

Cortese List - Exposure to Hazardous Materials (LTS)

Like the Project site, Alternative #3 would not be located on a site included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and does not represent a significant hazard to the public or the environment. No portion of the entire 226-acre Mountain View Cemetery property is contained on any list of sites with suspected or confirmed releases of hazardous materials to the subsurface soil and/or groundwater, and this Alternative would not present a significant hazard to the public or the environment.

Hazardous Materials Transport, Use and Disposal, and Accidental Release (LTS with SCAs)

Construction activities associated with Alternative #3 would likely utilize construction materials and fuels considered hazardous, and regular landscape maintenance of the expanded cemetery would likely involve the use of hazardous chemicals. Spills or accidents with these materials or chemicals could result in a significant impact to the health of workers and the environment. Compliance with existing regulations pertaining to the use, storage and disposal of hazardous chemicals typical used in landscape maintenance as regulated by the USEPA under authority of the Federal Insecticide, Fungicide and Rodenticide Act, and project-specific best management practices (BMPs) for hazardous materials used during construction as required by SCA #35, will ensure the Project will not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Wildland Fires (LTS with SCAs)

Alternative #3 would not expose people or structures to risks involving wildland fires. Like the Project site, the site for this Alternative is not in or immediately adjacent to a Fire Hazard Severity Zone as shown on CalFire's Fire Hazard Severity Zone maps. This Alternative would transform portions of the uppermost Cemetery in ways that will reduce the risk from wildland fire, and would be required to implement a Vegetation Management Plan to remove non-native plants, and dead trees and shrubs, pursuant to SCA #70. Although not addressing a significant environmental impact, the applicant would also be required to consider providing a centralized Joss paper burner, specifically fitted with a cover which can eliminate the spread of burning ashes while allowing enough oxygen in to ensure that all of the offering is completely burned, as recommended for the Project.

Emergency Access Routes and Evacuation Plans (LTS)

Alternative #3 would not impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan. Emergency access to the site for this Alternative is currently provided by three routes; the internal roadway system within the Cemetery, a maintenance road off of Clarewood Drive, and an un-paved emergency access route from a gate at Maxwelton Drive in Piedmont. This Alternative would not impair these emergency access routes, but rather would improve the existing internal roadway with a new, less steep roadway designed to accommodate emergency access vehicles.

Conflicts with Public or Private Airports (No Impact)

Alternative #3 would not be located in the vicinity of a public airport or private airstrip, and would not conflict with airport operations or result in a safety hazard regarding airport operations.

Hydrology and Water Quality (←→)

Water Quality and Sedimentation during Construction (LTS with SCAs)

During Construction, Alternative #3 could result in substantial erosion, siltation and pollution that could affect the quality of receiving waters. Like the Project, this Alternative would require preparation and implementation of an Erosion and Sedimentation Control Plan pursuant to SCA #45, and to comply with all requirements of the Construction General Permit issued by the State Water Resources Control Board (including submittal of a Notice of Intent (NOI), a Stormwater Pollution Prevention Plan (SWPPP), and other required permit registration documents pursuant to SCA #46, prior to approval of this Alternative's grading permit.

Water Quality during Operations (LTS with SCA)

Alternative #3 would result in increased storm water runoff from the site, potentially creating a new source of polluted runoff that could degrade downstream water quality. Like the Project, this Alternative's roadway improvements, paths and walls would create and/or replace more than 10,000 square feet of impervious surfaces, and would therefore be regulated under NPDES regulations pursuant to SCA #50. A post-construction SWMP would need to be submitted to the City for review and approval, and a Maintenance Agreement would need to be entered with the City to accept responsibility for the construction, operation, maintenance and inspection of all elements of the SWMP. This Alternative could potentially still rely on low-impact development treatment by using rain-water harvesting for irrigation use, but this would require a much longer pumped irrigation system than the system planned for the Project.

Flooding (No Impact)

Like the Project, Alternative #3 would be located at a high elevation within the Oakland Hills and would not be susceptible to flooding hazards of any type.

Groundwater (LTS)

Like the Project, Alternative #3 would not substantially deplete groundwater supplies, nor would it interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table. It is assumed that the Project's proposed rain water harvesting plan could still provide a substantial source of irrigation water supply needed for this Alternative that would provide for on-site reuse of storm water runoff for irrigation purposes during dry summer months. Unlike the Project, this Alternative would not remove the paved surface from the Panhandle area, and thus would not increase groundwater recharge and reduce surface runoff from this upper area of the site, but the vast majority of this Alternative's site would remain pervious landscaped surfaces that will retain groundwater recharge capabilities.

Noise (←→)

Operational Noise (LTS)

Like the Project, Alternative #3 would not generate operational noise that would exceed the City of Oakland Noise Ordinance standards at adjacent sensitive receivers, would not expose persons to an interior L_{dn} or CNEL greater than 45 dBA, and would not expose new or existing noise-sensitive land uses to noise levels in excess of noise levels considered normally acceptable according to the land use compatibility guidelines of the Oakland General Plan.

Aircraft Noise (No Impact)

Alternative #3's site is not located within an airport land use plan or in the vicinity of a private airstrip, and would not expose people to excessive noise levels from aircraft activity.

Other Less than Significant Effects (←→)

Similar to the Project, Alternative #3 would not result in significant environmental effects related to:

- Agriculture and Forest Resources, including Farmland conversion, agricultural zoning or Williamson Act conflicts, forest resources and other changes affecting Farmland or Forest Resources;
- GHG Emissions/Global Climate Change, including operational and construction period GHG emissions, and conflicts with GHG emission reduction plans;
- Land Use, including dividing an established community, fundamentally conflicting with adjacent land uses, conflicts with land use plans and policies, or conflicts with an established Habitat Conservation Plan;
- Mineral Resources, including loss of mineral resources or loss of a mineral resource recovery site;
- Population and Housing, including growth inducement and housing and/or population displacement;
- Public Services, including fire protection, police protection, public schools, park usage or construction or expansion of recreational facilities;
- Transportation and Traffic, including traffic congestion, traffic safety, consistency with policies supporting alternative transportation, construction-period impacts, and change in air traffic patterns;
- Utilities and Service Systems, including water supply, wastewater, storm drainage, solid waste and energy.

Alternative #3 would be required to implement SCAs as applicable, similar to those identified for the Project.

Alternative #4: Stark Knoll Buttressing Alternatives

Alternative #4 and its variations is similar to the Project in that it involves grading the Plot 82 site as proposed to smooth the existing irregular and steep grade and remove substantial portions of the hillside to accommodate future grave sites, places the excess earth from Plot 82 at the Plot 98 site (similar to the grading concept as proposed) and at the Panhandle. It differs from the Project in that this alternative explores the potential of a different grading concept for the Panhandle site whereby the excess fill material from Plot 82 would be placed against the Stark Knoll hillside as a buttress, providing greater stability against sloughing and soil movement of this hillside.

As noted in the Geology chapter of this EIR, a relatively large and steep slope exists at the perimeter of the Mountain View Cemetery property near the Panhandle area, separating the Cemetery property from the residences at the top of the slope on Stark Knoll Place. The Panhandle and the large bowl-shaped area extending north to Clarewood Drive were formerly part of a quarry. The quarry operation ceased sometime prior to 1950, and created steep slopes at the perimeter of the Cemetery property. The northeastern corner of the Cemetery property is characterized by a steep hillside that rises approximately 50 feet from the relatively flat Panhandle area. This hillside is at a slope that is equal to or greater than 1:1 (horizontal to vertical) and the top of the slope is generally coincident with the property line. The slopes are covered by trees and other vegetation. Houses have been constructed above the slope and property owners have noted that portions of this hillside have receded over the past 21 years. The slope consists of exposed chert remaining from when the quarry ceased operation and includes areas with some loose debris and rock. The loose material has likely developed from weathering of the cut slope and from runoff from the properties above the slope. The slope has indications of local sloughing and erosion, but no definitive signs of larger zones of instability.[1]

As discussed under Impact Geo-2, the Project proposes to raise the grade elevation at the toe of this slope by 12 to 15 feet by placing fill against the lower portion of the slope within the Panhandle. The portion of the slope above the fill, and the remaining slope outside of the Project site (which is more than on-half of the linear face of the slope) will not be altered. Within the Project area, the placement of fill at the toe of slope will serve to buttress the slope and generally improve overall stability. The Project will not create or worsen erosion or slope instability along this hillside, but rather will provide a measure of improved stability, and the Projects impacts are less than significant.[2]

However, the slope above the fill and beyond the Project area will likely continue to weather and degrade with time.

Description of Alternative #4

Although the Project will not create or worsen erosion or slope instability along this hillside but rather will provide a measure of improved stability, the following design alternatives are offered to identify possible solutions to better address the issue of slope erosion and movement. Alternative #4 and its grading options are not necessary to reduce or avoid a significant impact of the Project, but are intended to consider other potential grading and geotechnical strategies to better improve the overall slope stability of this hillside. Any of the alternative grading schemes should be considered in in conjunction with better addressing existing runoff from the uphill properties by intercepting runoff from

[1] Tillis Hultgren, 2015

[2] Ibid

the upslope properties and routing this runoff into a piped system with an outfall away from the toe of the slope.

Flatten the Slope

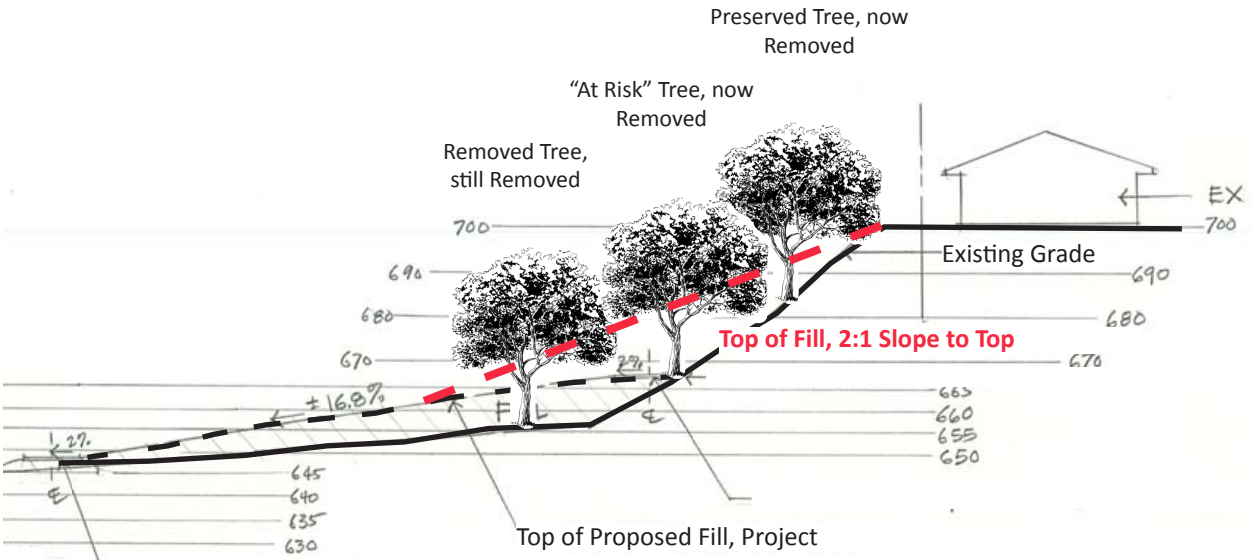
One alternative is to flatten the existing hillside slope to an inclination of 2:1 or flatter (**Figure 5-3**). The flatter slope would act as a buttress to the existing slope and have less risk of erosion and sloughing. This design would increase the total "run" length of the slope, such that it would intrude into the area that the Project proposes to use for new burial sites.

Soil Nailing

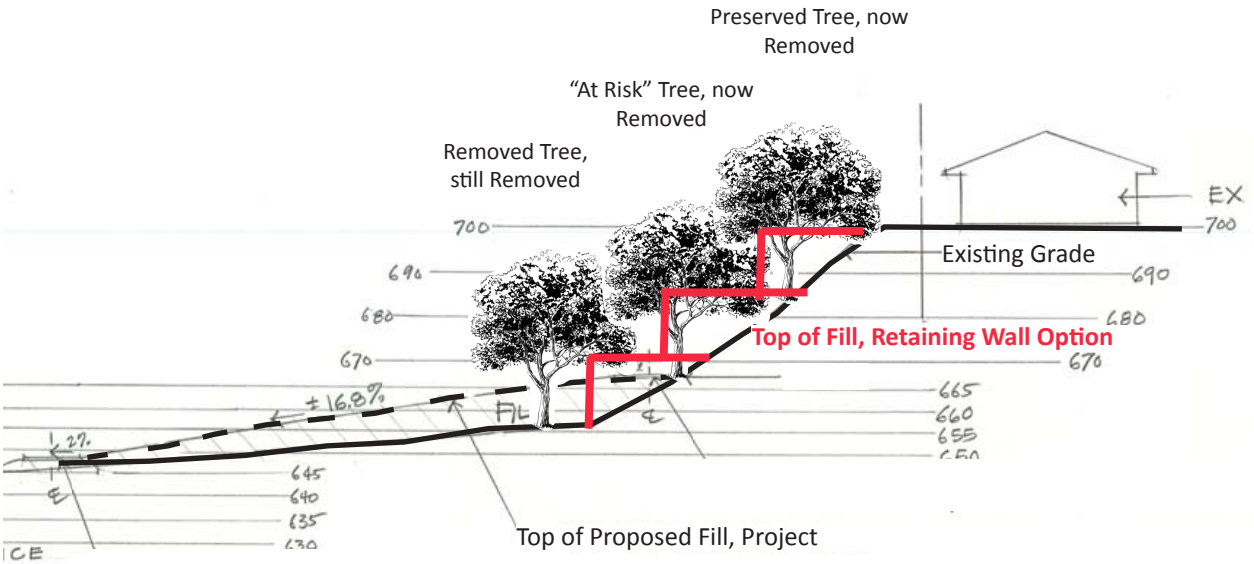
The slope performance of this hillside could also be improved through soil nailing. Soil nailing is a technique whereby shallow anchors are drilled into the slope and grouted into place. A shotcrete facing is also normally applied to the face of the slope. Typically, soil nailing is performed on steeper slopes or vertical faces, but the technique could be adapted to the current slope inclination. Alternatively, the slope could be graded to a steeper inclination as part of the soil nailing application.

Retaining Walls

Another option is that the slope could be supported by construction of new retaining walls. Retaining walls could be constructed by cutting into the existing slope to create space at the toe, or the walls could be constructed in a "stair-step" design beginning at the base of the slope, with fill placed between the retaining walls and existing slope (Figure 5-3).



Flattened Slope at 2:1, Option A



Retaining Wall, Option B

Figure 5-3
Alternative #4: Stark Knoll Buttressing

Comparative Environmental Assessment

Other than the technique for stabilizing the Stark Knoll hillside, all other elements of Alternative #4 would remain the same as the proposed Project. Therefore, other than the comparative discussion of environmental impacts associated with the placing additional fill or constructing retaining walls, all other environmental effects of this Alternative would be the same as those identified for the proposed Project, and would be mitigated in similar ways.

Aesthetics

Scenic Resources (↑)

> In addition to the trees that are within the limits of proposed grading and that would be removed by the Project, Alternative #4 would result in the additional removal of the entire stand of primarily coast live oaks that are now located on the former quarry slopes of the Stark Knoll hillside, which form a visually continuous tree cover. Pursuant to City SCAs, this alternative would be required to replace all removed protected trees at a ratio consistent with City ordinance. Implementation of this requirement will reduce the effects of scenic tree loss to a level of less than significant. (**LTS with SCAs**)

According to the Arborist's reports, there are 61 trees (50 of which are native oaks) that are growing along the steep sides of the Stark Knoll hill slope, and that are located above the Project's proposed fill line, which is approximately 12 to 15 feet above existing grade. Under the Proposed Project, these 61 trees are considered to be "at risk" and would require implementation of specific tree protection measures pursuant to the City's SCAs. However, under any of the identified techniques for further buttressing the Stark Knoll hillside, all of these existing "at risk" trees would need to be removed. They would either be filled over with the new slope, removed for adding the soil nailing and shotcrete facing to slope, or removed to enable construction and backfill of a retaining wall.

The City of Oakland's Standard Conditions of Approval would apply to Alternative #4 and its effects on scenic tree resources. These SCAs include requirements to provide replacement tree plantings to compensate for the protected native trees removed (SCA #27). The Project's proposed Landscape Plan would need to be modified to add additional tree replacement planting to compensate for the 61 protected trees to be removed. While the loss of these 61 additional trees would further increase the Project's significant visual impact to scenic resources of the site, implementation of applicable SCAs requiring replacement tree plantings would reduce this impact to a less than significant level.

Air Quality

Construction Period Fugitive Dust (↑)

> During construction of additional slope buttressing techniques, Alternative #4 would generate additional fugitive dust, in excess of that generated by the Project, from grading and construction activities on the Stark Knoll hillside. Fugitive dust could effectively be reduced to a level of less than significant with implementation of required City of Oakland Standard Conditions of Approval. (**LTS with SCA**)

Construction activities along the Stark Knoll hillside would include tree removal, excavation, and construction and backfill operations that would be conducted immediately adjacent to the Project's neighboring residences on Stark Knoll Place. These grading and construction operations would be in

addition to, and in closer proximity to these residences, than the similar operations as proposed under the Project, and could increase the potential for short-term emissions of fugitive dust.

The City of Oakland considers implementation of effective and comprehensive dust control measures (Best Management Practices) recommended by the BAAQMD as the threshold of significance for fugitive dust emissions. Like the Project, Alternative #4 would be required to implement construction period dust control measures pursuant to the City's SCA #19 and to comply with the requirements found under the City Municipal Code (Section 15.36.100; Dust Control Measures). Implementation of these SCAs would ensure that the impact of construction-period fugitive dust remains at a less than significant level.

Biological Resources

Wetlands (↑)

> Alternative #4 could have a substantial adverse effect on federally protected wetlands (as defined by Section 404 of the Clean Water Act) or state protected wetlands, through direct removal, filling, hydrological interruption, or other means. (**LTS with SCAs**)

Based on the results of the preliminary wetland assessment performed for Mountain View Cemetery property, no potential jurisdictional wetlands or other waters occur on the Project site, and no direct impacts to wetlands are anticipated. The closest potential jurisdictional waters consist of an ephemeral drainage located within Mountain View Cemetery property, but more than 100 feet to the north of the Project's anticipated limits of grading. The removal of existing vegetative cover, grading, and modifications to existing surface runoff patterns associated with construction on the Project site would not directly affect this drainage, as it is approximately 140 feet distant from the nearest edge of proposed construction.

However, under Alternative #4 the slope of the Stark Knoll hillside would be regraded to a 2:1 slope such that the toe of the new slope would be extended outward, nearer to the box culvert outlet that marks the beginning of this ephemeral drainage. As indicated in **Figure 5-3**, the new toe of slope would be approximately 50 feet from the box culvert location (approximately 90 feet closer than grading as proposed under the Project). Grading operations necessary to construct this slope could adversely affect this existing wetland feature, either as a result of indirect erosion and sedimentation of the drainage channel, or potentially direct fill (depending on final slope design).

Like the Project, Alternative #4 would be required to implement of a number of City SCAs related to stormwater pollution prevention and water quality protection, including best management practices (BMPs) necessary to ensure that potential direct and indirect effects to the nearby ephemeral drainage would be reduced to a level of less than significant.

Conflicts with City of Oakland Tree Protection Ordinance (↑)

> Alternative #4 could conflict with the City of Oakland's Tree Protection Ordinance by removing protected trees of a number, type, size, location and condition that would exceed the applicable criteria for issuance of a tree removal permit. (**LTS with SCAs, as may be found applicable**)

As indicated in the discussion of Scenic Resources above, there are approximately 61 trees (50 of which are native oaks) that are growing along the steep sides of the Stark Knoll hill slope and that are located above the Project's proposed fill line. Under the Proposed Project, these 61 trees are considered to be "at risk" and require implementation of specific tree protection measures pursuant to the City's SCAs. Under any of the techniques identified pursuant to this Alternative for further buttressing the Stark Knoll hillside, all of these existing "at risk" trees would need to be removed. They would either be filled

over with the new slope, removed for adding the soil nailing and shotcrete facing to slope, or removed to enable construction and backfill of a retaining wall. Further, if the slope buttressing were to be extended beyond the limits of the proposed Project to encompass the entire slope northward along the Clarewood bowl, and eastward into the City of Piedmont's jurisdiction, then a substantial number of additional trees would need to be removed.

In order to grant a tree removal permit for these trees, the City would need to determine that removal of these additional trees is necessary to either:

- Insure the public health and safety related to potential hazards to life or property, or
- To take reasonable advantage of views in accordance with the view preservation ordinance (Chapter 15.52 of the OMC.
- The Tree Permit finding also require a finding that removal of these trees could not be avoided by reasonable re-design of the site plan.

According to the Project's geotechnical engineer, the existing Stark Knoll slope consists of exposed chert remaining from when the prior quarry operations ceased, and includes areas with some loose debris and rock. The loose material has likely developed from weathering of the cut slope and from runoff from the properties above the slope. The slope has indications of local sloughing and erosion, but no definitive signs of larger zones of instability that jeopardize public health or safety. Removal of these 61 additional trees from the Stark Knoll hillside could be avoided by not implementing Alternative #4 in favor of the Project's proposed grading plan, which would retain these trees with implementation of appropriate tree protection measures.

Geology

Slope Stability – Stark Knoll Hillside (🡻)

Alternative #4 would further reduce the potential for soil erosion, loss of topsoil or exacerbation of slope instability. (**LTS**)

The existing steep slope at the perimeter of the Mountain View Cemetery property near the Panhandle area and between the Cemetery and the residences at Stark Knoll Place was formerly part of a quarry that ceased operations sometime prior to 1950, leaving steep slopes rising approximately 50 feet from the relatively flat Panhandle area. This hillside is at a slope of roughly 1:1 (horizontal to vertical) and the top of the slope is generally coincident with the property line. Houses have been constructed above the slope. The slope is within an area shown on geologic maps as chert, and likely consists primarily of exposed chert from when the prior quarry ceased operation. The slope also includes areas with loose debris and rock. The loose material has likely developed from weathering of the cut slope and from runoff from the properties above the slope. The slope has indications of some local sloughing and erosion, but no definitive signs of larger zones of instability. It is expected that the slope will continue to weather, and surficial movement of the debris on the slope can be expected to continue. The movement of surface material on the slope in certain places has been exacerbated by runoff from homes above the slope draining down the hillside, including locations where drainage pipes discharge to the face of the hillside. During the last 21 years, the face of the hillside has receded such that certain of these drainage pipes have new become exposed.

The intent of Alternative #4 is to consider alternative grading and geotechnical strategies to better improve the overall slope stability of this hillside by reducing soil erosion, retaining topsoil and minimizing surface movement of debris. Although this Alternative is not necessary to reduce or avoid a

significant impact of the Project, any of the techniques presented in the description of this alternative would better accomplish improved slope stability and erosion control as compared to the Project's proposed grading design.

Hydrology

Consistency with City of Oakland Creek Protection Ordinance (↑)

Alternative #4 could present a conflict with the City of Oakland Creek Protection Ordinance (OMC Chapter 13.16) intended to protect hydrologic resources. (**LTS with SCAs**)

The Project site is considered a "creekside property" because the Cemetery has creeks and riparian corridors crossing the property, and the applicant will be required to obtain a creek protection permit. The closest regulated feature is the ephemeral drainage that flows into the area known as the Clarewood Bowl immediately north of the Project site, which begins at a box culvert opening that is an outlet conveying runoff from the development area at Stark Knoll Court. This box culvert opening is located approximately 140 feet to the north (downhill) of the limits of anticipated grading associated with the proposed Project. At a distance exceeding 100 feet from the centerline of the creek, the Project would be required to obtain a Category II Creek Protection permit, clearly illustrating the relationship and distance of the Project to the creek centerline and top of the creek bank.

Although there are no numeric or quantitative criteria to assess consistency or conflicts with the Creek Ordinance, factors considered in determining potential water quality conflicts include whether there is substantial degradation of riparian or aquatic habitat through discharging a substantial amount of pollutants into the creek; significantly modifying the natural flow of the water; depositing substantial amounts of new material into the creek; or causing substantial bank erosion or instability.

As described under the analysis of this Alternatives' impacts to biological resources (see Wetlands, above), Alternative #4 would re-grade the Stark Knoll hillside to a 2:1 slope such that the toe of the new slope would be extended outward to approximately 50 feet from the box culvert outlet (approximately 90 feet closer than grading as proposed under the Project). At this distance from the creek, a Category III Creek Protection permit would be required, pursuant to SCA #54. The Category III Creek Permit would require preparation of a Creek Protection Plan incorporating all applicable erosion, sedimentation, debris, and pollution control best management practices to protect the creek during construction, the preparation of site design measures to reduce the amount of impervious surface to maximum extent practicable, and a Landscape Plan demonstrating that native plants would not be disturbed to the maximum extent feasible, and that any areas disturbed along the riparian corridor would be replanted with mature native riparian vegetation and be maintained to ensure survival. The submittal and required approval of a Class III Creek Permit as required pursuant to SCA #54 would ensure that no fundamental conflict with the City of Oakland Creek Protection Ordinance would occur, and the impact would be less than significant.

Noise

Construction Noise (↑)

Construction necessary to implement Alternative #4 would increase the use and duration of heavy grading and other construction equipment near the Stark Knoll residences, increasing the construction period noise levels beyond that anticipated under the Project. In consideration of the limited duration of grading and construction activity and the required implementation of all

reasonable and feasible noise attenuation measures pursuant to the City's Standard Conditions of Approval, the construction-period noise impacts of this Alternative are considered to be less than significant. (**LTS with SCAs**)

As estimated for the proposed Project, grading activity at Plot 98 and the Panhandle is expected to occur during approximately 8 weeks of time but spread out over an approximately 12 week period. During a continuous 5-week period, large equipment including scrapers, dozers and compactors will be at the Plot 98 and Panhandle sites almost continuously, hauling, dumping and spreading soil removed from Plot 82.

Under this Alternative, it is likely that the first phase of construction (site preparation for Plot 98 and the Panhandle) would be extended for at least another week or two in order to prepare the entire Stark Knoll hillside for extensive fill. Additionally, the 5-week period when the greatest earthmoving operations are expected to occur would likely be extended by several additional weeks under this Alternative to accommodate the more substantial engineering and earthwork requirements needed for the much taller engineered fill or other construction techniques (e.g. soil nailing and/or construction of retaining walls).

However, the grading and construction activity necessary to implement Alternative #4 would still be limited in duration relative to the City's standard practice of considering construction noise impacts to be significant only when the duration of the noise-generating construction period exceeds one construction season (typically one year or less). All construction operations necessary for this Alternative would be required to implement all reasonable and feasible noise attenuation measures pursuant to the City's SCAs, and the construction-period noise impacts of this Alternative would be considered less than significant.

Alternative #5: Blasting (rather than drilling) to Remove Existing Bedrock

Description of Alternative #5

An area within the central portion of Plot 82 is underlain by chert bedrock. The approximate surface limits of the chert exposure are shown on **Figure 5-4**. The chert is hard, strong, and relatively massive. Traditional excavation (or "ripping") may be difficult or ineffective, and excavations in the chert rock will likely require special excavation techniques. As indicated in the Project Description, removal of this large rock mass is assumed to be conducted by breaking it up into smaller pieces using a pneumatic drill to fracture the rock into pieces, and then using a ram hoe to crush the fractured pieces into smaller rock suitable for use as fill material. This process is estimated to last for approximately 10 construction days, or 2 weeks, and is characterized as a potentially extreme noise generating activity.

This alternative considers the environmental implications associated with an alternative method for removing this rock mass, involving blasting the chert bedrock down to planned excavation elevation. Commercial blasting operations involve use of an explosive, which is a compound or mixture of compounds that, when initiated by heat, impact, friction or shock, undergoes a rapid decomposition and releases energy in the form of heat and gas. This decomposition is a self-propagating exothermic reaction called an explosion. Chemically, there are two fundamentally different types of explosive materials: molecular and composite explosives. Molecular explosives are substances such as trinitrotoluene (TNT) and nitroglycerin (NG). Composite explosives are mixtures that might contain fuels and oxidizers, and other self-explosive ingredients. Most rock blasting explosives fall into the composite category, with ammonium nitrate-fuel oil (ANFO) being the most prevalent example.

If blasting is performed, it is anticipated that subsequent excavations can be made to the depth of the blasted material with traditional graders and backhoes, and that pneumatic drilling of this massive rock would not be required.

Other than the alternative technique for removing this rock mass from Plot 82 using blasting versus drilling to enable this portion of the site to be capable of supporting new burial sites for the Cemetery, all other elements of Alternative #5 would remain the same as the proposed Project.

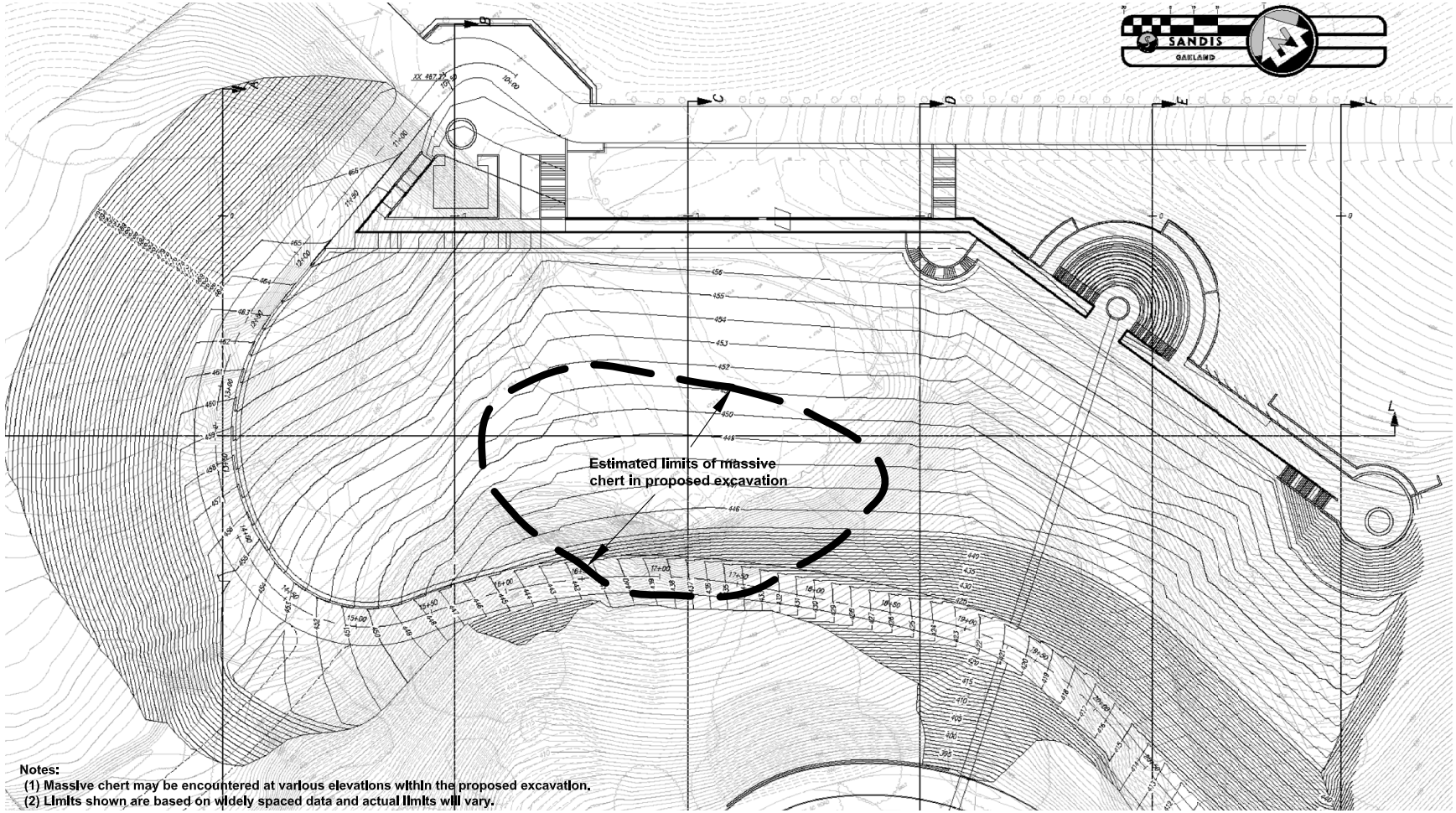


Figure 5-4
Alternative #5: Estimated Limits of Massive Chert (Bedrock), Blasting Alternative

Source: Hultgren-Tillis Engineers, 2015

Applicable Existing Regulations

Pursuant to Chapter 3.2 of the California Occupational Safety and Health Regulations (CAL/OSHA) Subchapter 2, Article 7, a Blaster's License is required of all persons using and handling of explosives.

The 2013 California Fire Code Chapter 56, and the California Code of Regulations Title 19, Subchapter 4, Article 6 includes, but is not limited to the following pertinent requirements related to potential blasting at the Project site:

a. When blasting is done in congested areas or in close proximity to a structure, railway, or highway, or any other installation that may be damaged, the blast shall be covered before firing with a mat constructed so that it is capable of preventing fragments from being thrown.

b. Appropriate provisions (e.g., water) shall be available in brush areas to extinguish a fire that may occur as a result of blasting operations.

c. Persons authorized to prepare explosive charges or conduct blasting operations shall use every reasonable precaution, including but not limited to warning signals, flags, barricades, guards or woven mats to insure the safety of the general public.

d. Blasting operations, except by special written permission of the Chief, shall be conducted during daylight hours.

e. Whenever blasting is being conducted in the vicinity of gas, electric, water, fire alarm, telephone, telegraph or steam facilities, and flammable liquid and any similar lines, the blaster shall notify the appropriate representatives of such facilities, at least 24 hours in advance of blasting, specifying the location and intended time of such blasting. In an emergency this time limit may be waived by the Chief.

f. Due precautions shall be taken to prevent the accidental discharge of electric blasting caps from current induced by radar, radio transmitters, lightning, adjacent power lines, dust storms, or other sources of extraneous electricity.

Implementation of these blasting regulations is intended to ensure that blasting operations are conducted in a manner that prevents accidental damage to surrounding properties.

Comparative Environmental Assessment

Other than the technique for removing the rock mass from Plot 82 using blasting versus drilling, all other elements of Alternative #5 would remain the same as the proposed Project. Therefore, other than the comparative discussion of environmental impacts associated with the blasting operation provided below, all other environmental effects of this Alternative would be the same as those identified for the proposed Project, and would be mitigated in similar ways.

Hazards and Hazardous Materials

Blasting (↑)

Implementation of the blasting operations considered under Alternative #5 could create a significant hazard to the public unless all appropriate regulations are carefully followed and all proper precautions are fully implemented. (**Less than Significant with Mitigation Measures**)

Upon detonation of a blast, maximum energy release occurs and forms residual water vapor (H_2O), carbon dioxide, and nitrogen (N_2), as well as small amounts of toxic gases such as oxides of nitrogen (NO_x and NO_2) and/or carbon monoxide. Limiting and controlling these gases is critical. Factors such as

explosive age, water penetration, and chemical reaction with the host rock will affect the amount of fumes produced by an explosive detonation or conflagration. Other hazards related to blasting operations include adverse geologic conditions from vibrations, air blast effects including fly rock (rock throw from the explosion) and noise.

If used, blasting at Plot 82 would occur within approximately 600 linear feet of the school at the Saint Theresa Catholic Church and 800 linear feet from the nearest residence on Clarewood Drive, although on the opposite, southerly side of the ridgeline separating the Cemetery from these properties. Residences along Stark Knoll Place would be approximately 1,500 feet from the blasting operations, with direct line of sight to the blasting area.

Mitigation Measures

If blasting is to be carries out, the applicant shall implement the following additional mitigation measures prior to, during and post the blast event.

Alt #5 Mitigation Measure Hazards-1A: Blasting Plan. A blasting plan that includes the following detailed elements shall be prepared and carefully followed:

a. The Blasting Plan shall include evidence that a State-required blasting permit has been obtained, and the Blasting Plan must meet the approval of the appropriate City department with jurisdiction over the Project and blasting (assumed to be Oakland Fire Department).

b. Submit a Blasting Plan Report to the City for review at least 30 working days prior to the day of the blast event. The report shall include localized geologic conditions, the proposed blasting program, charge loads and detonation sequencing, anticipated ground movements and other information to fully describe the blast program. The report shall also include recommended mitigation measures to eliminate any damage to nearby structures or private property, including a fabric cover to reduce fly-rock. The report will be made available to residents upon request.

c. A seismic refraction study shall be prepared to determine subsurface conditions under nearby structures.

d. The Blast Plan shall include blasting techniques capable of managing adverse geologic conditions and controlling vibration and air blast effects, including but not limited to reduction of ground vibration and air blast, improved fragmentation, and reduction of over-break and fly rock. Additional components of the Blasting Plan shall include:

   - Identification of blast officer.
   - Scaled drawings of blast locations, and neighboring buildings, streets, or other locations which could be inhabited.
   - Blasting notification procedures, lead times, and list of those notified. Public notification to potentially affected vibration receptors describing the expected extent and duration of the blasting.
   - Description of means for transportation and on-site storage and security of explosives in accordance with local, State and federal regulations.
   - Minimum acceptable weather conditions for blasting and safety provisions for potential stray current (if electric detonation).
   - Traffic control standards and traffic safety measures (if applicable).

- Requirement for provision and use of personal protective equipment.
- Minimum standoff distances and description of blast impact zones and procedures for clearing and controlling access to blast danger.
- Procedures for handling, setting, wiring, and firing explosives. Also procedures for handling misfires per Federal code.
- Type and quantity of explosives and description of detonation device. Sequence and schedule of blasting rounds, including general method of excavation, lift heights, etc.
- Methods of matting or covering of blast area to prevent fly rock and excessive air blast pressure.
- Description of blast vibration and air blast monitoring program.
- Dust control measures in compliance with applicable air pollution control regulations (to interface with general construction dust control plan).
- Emergency Action Plan to provide emergency telephone numbers and directions to medical facilities. Procedures for action in the event of injury.
- Material Safety Data Sheets for each explosive or other hazardous materials to be used.
- Evidence of licensing, experience, and qualifications of blasters.
- Description of insurance for the blasting work.

Alt #5 Mitigation Measure Hazards- 1B: Blast Survey. A Blast Survey Work Plan shall be prepared by the blaster. The Plan shall identify vibration limits protective of structures from blasting activities and identify specific monitoring points. At a minimum, a pre-blast survey shall be conducted at the nearest institutional and residential structures, prior to blasting.

a. The survey shall include visual inspection of the structures, documentation of structures by means of photographs, video, and a level survey of the ground floor of structures or the crown of major and critical utility lines, and these shall be submitted to the City. This documentation shall be reviewed with the individual owners prior to any blasting operations. The City and impacted property owners shall be notified at least 48 hours prior to the visual inspections.

b. Means for achieving a vibration and settlement threshold criteria of 0.2 inches per second (per City thresholds) shall be established by the blaster. Blast design and procedures shall established to meet or be below the threshold value, prevent settlement, slope instability, and other damage.

c. Means for achieving air blast overpressure threshold criteria of 94 VdB (per City thresholds) shall be established by the blaster. Blast design and procedures shall established to meet or be below the threshold value, prevent damage to adjacent properties and to prevent injuries to persons on-site and off-site.

d. Post-construction monitoring of structures shall be performed to identify (and repair if necessary) all damage, if any, from blasting vibrations. Any damage shall be documented by photograph, video, etc. This documentation shall be reviewed with the individual property owners.

e. Reports of the results of the blast monitoring shall be provided to the City, the local fire department, and owners of any buried utilities on or adjacent to the site within 24 hours following blasting. Reports documenting damage, excessive vibrations, etc. shall be provided to the City and impacted property owners.

Alt #5 Mitigation Measure Hazards-1C: Neighborhood Notification. The applicant shall arrange for and conduct a pre-blast neighborhood informational meeting to inform adjacent residents of the upcoming blasting program. The pre-blast meeting shall be held no later than three weeks prior to the blast event, and all residences and businesses within 2,000 feet of the blast location shall be notified in writing not later than one week prior to the meeting date.

a. The notice shall indicate the date, time and location of the meeting, the purpose of the meeting and contain a small map showing the location of the proposed blasting.

b. The meeting shall be on a date, at a time and at a location convenient to residents.

c. A representative of the Cemetery and the blasting contractor shall be present at the meeting, and shall inform residents of the nature, extent, and approximate schedule for the proposed blasting, and shall solicit input from the residents on the blasting program. The Developer shall also provide a daytime telephone number at which a responsible person representing the blasting contractor may be reached by residents in the event they have further questions or complaints during the blasting operation.

d. Prior to issuance of the blasting permit and subsequent to the above-mentioned meeting, the Developer shall submit to the City copies of the written meeting notice and any other materials sent or provided to the residents.

Resulting Level of Significance

With implementation of all applicable federal, State and local regulations, and the additional recommended mitigation measures for Alternative #5, Hazards-1A through -1C above, hazards associated with potential blasting of hard rock at the Project site will be reduced to a level of less than significant.

Noise

Construction Noise (🡻)

The use of one explosive blast, or even a limited number of smaller explosive blasts to remove the rock mass at Plot 82 would generate an instantaneous groundborne vibration and sound pressure (see discussion below), but would substantially reduce the use of extreme noise-generating impact equipment to be used near the Stark Knoll residences, decreasing construction period noise levels as compared to the Project (LTS with SCAs).

Pursuant to the Project, the large rock at Plot 82 will be drilled using a pneumatic backhoe drill or jackhammer for up to 8 hours per day and for up to 5 continuous days, and a ram hoe will crush the resulting rock into smaller pieces for up to 8 hours per day for an additional 5-day period. This rock crushing operation will use extreme noise generating machinery. The resulting noise levels at sensitive receptors is not expected to exceed the short-term (less than 10-day) threshold of 80 dBA L_{eq}, but when combined with other grading operations of the Project, will expose sensitive residential receptors at Stark Knoll Place to construction noise that will exceed the 65 dBA threshold for construction activity lasting more than 10 days.

Under Alternative #5, the extreme noise-generating pieces of equipment (the pneumatic drill and ram hoe) would either not be used, or used much less extensively than under the Project. Instead, one instantaneous explosive blast (or perhaps a limited number of smaller explosive blasts) would be used to break up the rock mass. Noise from blasting is primarily composed of sound pressures at frequencies

below the threshold-of-hearing for humans (16 to 20 Hz). Therefore, blast noise is not typically measured with an A-weighted scale (dBA) as defined under the City's threshold of significance, but rather is measured on a linear scale expressed as dB, and is therefore not comparable to thresholds that use a dBA scale.

Even though blast noise is not directly comparable and has its own effects as described below, the use of explosive blasting would substantially reduce the duration of extreme noise generating activity at the site as compared to drilling and ramming.

Groundborne Vibrations (↑)

During blasting, Alternative #5 may generate groundborne vibrations that exceed the criteria established by the Federal Transit Administration and Caltrans. (**LTS with MM**)

When a blast is detonated, only a portion of the energy is consumed in breaking up and moving the rock. The remaining energy is dissipated in the form of seismic waves expanding rapidly outward from the blast, either through the ground (as vibration) or through the air (as air overpressure or air-blast). Blasters can design a blast to stay well below any vibration or air overpressure levels that could cause damage, but it is virtually impossible to design a blast that is not perceptible by people in the vicinity. **Table 5-2** shows the typical human response to ground vibration and noise from blasting.

Table 5-2: Human Response to Blasting Ground Vibration and Air Overpressure (Blast Noise)

Average Human Response	Vibration PPV (in/sec)	Blast Noise Air-blast (dB)
Barely to distinctly perceptible	0.02-0.10	50-70
Distinctly to strongly perceptible	0.10-0.50	70-90
Strongly perceptible to mildly unpleasant	0.50-1.00	90-120
Mildly to distinctly unpleasant	1.00-2.00	120-140
Distinctly unpleasant to intolerable	2.00-10.00	140-170

Source: Caltrans 2004

Overpressure (or blast noise) at higher frequencies can be startling in a quiet surrounding, but will not normally cause damage unless it exceeds approximately 150 dB (linear, un-weighted value). Low frequency overpressures can impact the side of a residential structure, resulting in windows rattling and other noise. On hearing this noise, the average homeowner will not be able to distinguish between air overpressure or ground vibration as the source, but will generally attribute the effect to groundborne vibration (Caltrans 2004).

Blasting activities generate relatively high levels of ground vibration. The effects of ground vibration may be imperceptible at the lowest levels, result in low rumbling sounds and detectable vibrations at moderate levels, and can cause annoyance or even structural damage at high levels.

Air overpressure (blast noise) and vibration levels for confined blast charges depend on many factors, including the charge weight used for the blast, depth of burial of the charge, terrain features and other natural screening, orientation of the blast, velocity of the blast progression, atmospheric conditions, and temperature gradients. None of these variables as applicable to the Project site and Alternative #5 are

currently known, and detailed estimates of resulting vibration levels and overpressure blast noise cannot be accurately estimated in advance of a detailed blasting plan.

Mitigation Measures

Given that a blast plan has not been prepared for Alternative #5 and use of blasting as a means of removing the rock at Plot 82 is uncertain (alternative means including drilling and rock crushing are identified in the Project Description), mitigation measures related to the hazards associated with blasting operations are recommended. These measures include, but are not limited to:

- **Alt #5 Mitigation Measure Hazards-1A: Blasting Plan,** which must include measures to control vibration and air blast effects, including but not limited to reduction of ground vibration and air blast;
- **Alt #5 Mitigation Measure Hazards-1B: Blast Survey**, which must include a blast design and procedures to meet the performance standards of 0.2 inches per second vibration at receiving properties and 94 VdB of over-blast noise at receiving properties, and a post-construction monitoring program to identify (and repair if necessary) any damage from blasting vibrations; and
- **Alt #5 Mitigation Measure Hazards-1C: Neighborhood Notification**, which requires advance notice to all residences and businesses within 2,000 feet of the blast location, informing them of the nature, extent, and approximate schedule for the proposed blasting, providing opportunity for input from the residents on the blasting program.

Resulting Level of Significance

With implementation of all applicable federal, State and local regulations, and the additional recommended mitigation measures above, vibration and over-blast impacts associated with potential blasting of hard rock at the Project site could be reduced to a level of less than significant.

Summary of the Alternatives Analysis

Table 5-3 provides a summary comparison of the impacts of the alternatives relative to those of the Project. For each impact discussion found within the Draft EIR chapters, this table identifies the extent to which this impact would be significant under each alternative, for example:

- no impact (**No Impact**)
- less than significant (**LTS**)
- less than significant with implementation of City of Oakland Standard Conditions of Approval (**LTS with SCA**)
- less than significant with implementation of mitigation measures recommended for the Project (**LTS with MM**)
- significant and unavoidable (**SU**)

Table 5-3 also compares the magnitude of the impact of each alternative relative to the proposed Project. For example:

- the symbol "🡻" indicates that the alternative would have a less substantial impact relative to the Project, even if the CEQA conclusion is similar for both the Project and the alternative (e.g., an alternative could have a less substantial adverse effect than does the Project, even though both levels of impacts can be addressed through City of Oakland Standard Conditions of Approval);
- the symbol "🡹" indicates that the alternative's impact would be more substantial than the proposed Project;
- the symbols "🡹🡻" indicate that the alterative would have a less substantial specific impact relative to the Project, but would off-set that environmental benefit by causing a more substantial impact elsewhere, and
- the notation "same" indicates that the magnitude of the alternative's impact would be relatively the same or similar to that of the proposed Project.

Impacts are stated as levels of significance assuming implementation of all applicable City of Oakland Standard Conditions of Approval (SCA), and required implementation of mitigation measures as identified in this EIR (as may be applicable) for each alternative.

The following comparative analysis is organized by CEQA topic, in the same order as presented in this EIR. The final section of this comparative analysis highlights the environmentally superior alternative.

Table 5-3: Summary of Impacts for Each Alternative, and Relative Comparison to the Project

Environmental Topic	Project	Alternative #2: Reduced Project	Alternative #3: Larger Plot 82 , Off-Haul	Alternative #4: Stark Knoll Buttressing	Alternative #5: Blasting v. Drilling
Aesthetic					
Scenic Vistas	LTS	LTS (↓)	LTS (↓↑)	LTS with SCAs (↑)	Same
Visual Character and Quality	LTS	Same	Same	Same	Same
Scenic Resources	LTS with SCA	LTS with SCA (↓)	LTS with SCAs (↓↑)	LTS with SCAs (↑)	Same
Light and Glare	LTS	Same	Same	Same	Same
Air Quality					
Construction Dust	LTS with SCA	LTS with SCA (↓)	same	LTS with SCAs (↑)	Same
Construction Criteria Pollutants	LTS with SCA	LTS with SCA (↓)	Significant (↑)	Same	Same
Construction TAC	LTS with SCA	LTS with SCA (↓)	Significant (↑)	Same	Same
Operational Emissions	LTS	Same	Same	Same	Same
Exposure of New Sensitive Receptors	No Impact	Same	Same	Same	Same
Biological Resources					
Special Status Species	LTS with SCA	Same	Same	Same	Same
Riparian Habitat	LTS	Same	Same	Same	Same
Wetlands	LTS with SCA	Same	Same	LTS with SCAs (↑)	Same
Migratory Species	LTS with SCA	Same	Same	Same	Same
Conflict with HCP	No Impact	Same	Same	Same	Same
Conflict with Tree Protection	LTS with SCA and MM	LTS with SCA (↓)	LTS with SCAs (↓↑)	LTS with SCAs (↑)	Same
Cultural Resources					
Historic Resources	LTS	Same	Same	Same	Same
Paleo, Archaeo or Human Remains	LTS with SCA	Same	Same	Same	Same
Geology and Soils					
Unknown Fill Characteristics and Landslides	LTS with SCAs	same	LTS with SCAs (↓↑)	Same	Same
Slope Stability – Stark Knoll Hillside	LTS	LTS (↑)	LTS (↑)	LTS (↓)	Same

Table 5-3: Summary of Impacts for Each Alternative, and Relative Comparison to the Project

Environmental Topic	Project	Alternative #2: Reduced Project	Alternative #3: Larger Plot 82 , Off-Haul	Alternative #4: Stark Knoll Buttressing	Alternative #5: Blasting v. Drilling
Seismic Hazards	LTS with SCA	LTS with SCA (🡻)	LTS (🡻)	Same	Same
Soil Erosion	LTS with SCA	LTS with SCA (🡻)	Same	Same	Same
Subsurface Hazardous	LTS	Same	Same	Same	Same
Existing Landfill	LTS with SCA	Same	Same	Same	Same
Wastewater Disposal	No Impact	Same	Same	Same	Same
Hazards and Hazardous Materials					
Hazardous Materials Exposure	LTS	Same	Same	Same	Same
Hazardous Materials Transport	LTS with SCA	Same	Same	Same	Same
Explosive Hazards	No Impact	Same	Same	Same	LTS with MM (🡹)
Wildfire	LTS with SCAs	Same	Same	Same	Same
Emergency Access / Response	LTS	Same	Same	Same	Same
Airport Conflicts	No Impact	Same	Same	Same	Same
Hydrology					
Water Quality during Construction	LTS with SCAs	LTS with SCAs (🡻)	Same	Same	Same
Water Quality during Operations	LTS with SCAs	Same	Same	Same	Same
Flooding	No Impact	Same	Same	Same	Same
Groundwater	LTS	Same	Same	Same	Same
Consistency with Creek Protection Ordinance	LTS with SCAs	LTS with SCAs (🡻)	LTS with SCAs (🡻)	Pot. Significant (🡹)	Same
Noise					
Construction Noise	LTS with SCAs	LTS with SCAs (🡻)	LTS with SCAs (🡻🡹)	LTS with SCAs (🡻)	LTS with SCAs (🡻)
Groundborne Vibration	LTS with SCAs	LTS with SCAs (🡻)	LTS with SCAs (🡻)	Same	LTS with MM (🡹)
Operational Noise	LTS	Same	Same	Same	Same
Aircraft Noise	No Impact	Same	Same	Same	Same
Other Less than Significant Effects					
Agriculture and Forest Resources	No Impact	Same	Same	Same	Same

Table 5-3: Summary of Impacts for Each Alternative, and Relative Comparison to the Project

Environmental Topic	Project	Alternative #2: Reduced Project	Alternative #3: Larger Plot 82 , Off-Haul	Alternative #4: Stark Knoll Buttressing	Alternative #5: Blasting v. Drilling
GHG Emissions/Global Climate Change	LTS	Same	Same	Same	Same
Land Use	LTS	Same	Same	Same	Same
Mineral Resources	No Impact	Same	Same	Same	Same
Population and Housing	No Impact	Same	Same	Same	Same
Public Services	LTS	Same	Same	Same	Same
Transportation and Traffic	LTS with SCAs	Same	Same	Same	Same
Utilities and Service Systems	LTS with SCAs	Same	Same	Same	Same

Environmentally Superior Alternative

CEQA Guidelines Section 15126.6 requires that the EIR identify an environmentally superior alternative capable of reducing or avoiding, to the greatest extent, the environmental impacts associated with the proposed Project. Consideration of the environmentally superior alternative is based on the extent to which each of the CEQA alternatives reduces or avoids the significant impacts of the Project.

No significant and unavoidable impacts were identified under the proposed Project. All Project-related impacts are either less than significant or can be reduced to less than significant with implementation of applicable SCAs identified in this EIR. Accordingly, differences between the proposed Project and the Alternatives are a matter of degree, rather than of significance as compared to City CEQA thresholds.

No Project

In this instance, failure to approve the Project as proposed is unlikely to result in preservation of the existing environmental conditions. The entire Cemetery is dedicated under California Health and Safety Code provisions for use as a cemetery and related use, and Mountain View Cemetery intends to develop the Cemetery in accordance with this dedication to accommodate future needs for additional burial sites. Not approving the Project would not remove the Cemetery's need for additional burial sites. The practical result of not approving the Project would most likely result in Mountain View Cemetery either; a) proposing a re-designed version of the current Project, with resulting environmental impacts similar to those of the Project); b) considering one, or a combination of the other alternatives identified in this Chapter (i.e., Alternatives #2 or #3, potentially combined with alternative Project elements of Alternatives #4 and/or #5), with resulting environmental impacts as comparatively assessed in this Chapter of the EIR; or c) potentially re-considering one of the alternatives that were previously considered but rejected, the environmental impacts of which are too speculative to consider at this time. There are no practical assumptions or reasonable scenarios that would result in permanent preservation of the existing environmental setting within the Cemetery.

Reduced Project

The environmental effects of the Reduced Project (Alternative #2) would be similar to those of the Project, but the lesser extent of grading and associated earthwork under this Alternative would reduce the relative magnitude of many environmental effects as compared to the proposed Project. The Reduced Project would reduce the extent of Project-related impacts pertaining to:

- Aesthetic resources, including less change to existing scenic vistas and loss of fewer existing scenic tree resources;
- Air Quality, including reduced emissions of construction-period dust, construction-period criteria pollutants, and construction-period TAC emissions;
- Biological resources, including the removal of fewer trees and a reduced potential for conflicts with the City's Tree Protection ordinance;
- Geologic hazards, including reducing susceptibility to seismic hazards and soil erosion;
- Hydrology and Water Quality, including lowering the potential for sedimentation of downstream water bodies during construction, and lowering the potential risk of inconsistency with the City's Creek Protection ordinance; and

- Noise, including reducing the extent of construction noise and potential groundborne vibration received at nearby sensitive receptors.

In the absence of a practical and reasonable No Project alternative wherein the Project site is preserved in its existing condition, the Reduced Project (Alternative #2) is environmentally superior as compared to the Project and all other alternatives.

On balance, the environmental effects of the Reduced Project (Alternative #2) and the Project are both able to be mitigated to less than significant levels. The environmental effects of the Reduced Project are comparatively less than those of the Project, but the differences in the level of significance of these effects are minor. There are no significant impacts of the Project that can only be reduced or avoided by consideration of the Reduced Project Alternative. However, because the Reduced Project would result in impacts that are reduced as compared to the Project, it is marginally environmentally superior to the Project and all other alternatives considered in this EIR.

Weighing Environmental Benefits against the Project's Merits

When considering the merits of the Project as compared to other alternatives (including the environmentally superior Reduced Project Alternative), the City will also need to weigh and assess the degree to which the Project and the alternatives achieve the Project applicant's basic objectives. The fundamental purpose of the Project is to increase the capacity of Mountain View Cemetery to accommodate the need for future additional burial sites. The specific Project objectives include the following:

- Create at least 7.3 acres of new burial plot sites capable of accommodating at least 6,300 new individual interment sites, which is the number of new internment sites projected to be needed by the Cemetery over the next 15-year period.
- Utilize existing undeveloped portions of the upper Cemetery property (which are dedicated under California Health and Safety Code provisions for use as a cemetery and related uses), to create new, moderately flat burial sites that offer panoramic views of the San Francisco Bay and skyline.
- Connect the new burial sites to the existing developed portions of the Cemetery via the extension of existing on-site roadways, and provide for appropriate parking, pedestrian drop-offs, pedestrian pathways, and maintenance access to the new sites.
- As part of necessary grading operations to create appropriate new burial sites, balance the amount of cut and fill on-site, such that no off-haul of excess soil is necessary.

6

Required CEQA Assessments and Conclusions

This chapter summarizes the EIR findings for those assessment categories required by Section 21100 of the California Environmental Quality Act, including growth-inducing impacts; significant irreversible changes; unavoidable significant impacts; cumulative impacts; and effects found not to be significant.

Mandatory Findings of Significance

Appendix G of the CEQA Guidelines (Environmental Checklist) contains a list of mandatory findings of significance that may be considered significant impacts if any of the following occur.

Quality of the Environment

- *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 California history or prehistory?*

All impacts of the Project on the quality of the environment, including potential impacts to fish or wildlife species and their population levels, plant and animal communities, rare and endangered plants and animals, and important examples of California history and prehistory have been addressed in this EIR. These impacts have been found to be less than significant or reduced to levels of less than significant with required implementation of the City of Oakland Standard Conditions of Approval. There would be no residual potential for the Project to degrade the quality of the environment that have not been otherwise assessed and identified in this EIR.

Cumulative Impacts

- *Does the Project have impacts that are individually limited, but cumulatively considerable?*

Mountain View Cemetery occupies a large site of approximately 223 acres, located primarily within the City of Oakland and surrounded by the Claremont Country Club and St. Mary Cemetery on the north, the City of Piedmont on the south, and Oakland residential neighborhoods to the east and west. Most of these surrounding areas are fully developed, and there are few other current projects or probable future projects in the vicinity. As discussed in the preceding chapters of this EIR, implementation of the Project would not have impacts that are individually limited but cumulatively considerable, provided that all policies, rules and regulations pertaining to new development projects are fully adhered to, and the mitigation measures contained within this document are implemented.

Adverse Effects on Human Beings

- *Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?*

The Project would not have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly. Construction-period emissions, explosive hazards and exposure to hazardous or toxic chemical and other materials are fully addressed in this EIR. These impacts have been found to be less than significant or reduced to levels of less than significant with required implementation of the City of Oakland Standard Conditions of Approval and/or mitigation measures identified in this EIR. The Project would not expose people to significant new hazards, and there would be no other adverse effects on human beings.

Significant Irreversible Modifications in the Environment

CEQA Guidelines Section 15126(f) requires that an EIR must identify any significant irreversible environmental changes that could be caused by a project. These may include current or future uses of non-renewable resources, and secondary or growth-inducing impacts that commit future generations to similar uses. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified. These CEQA Guidelines describe three distinct categories of significant irreversible changes: 1) changes in land use which would commit future generations to specific uses; 2) irreversible changes from environmental actions; and 3) consumption of non-renewable resources.

Changes in Land Use Which Would Commit Future Generations

The Mountain View Cemetery Association is proposing development of portions of the undeveloped upper areas of the Cemetery site, in accordance with its dedication under the California Health and Safety Code for such use, to accommodate future needs for additional burial sites. This chapter describes the proposed Mountain View Cemetery development project (Project) that is evaluated in this Environmental Impact Report (EIR). The chapter begins with a description of the Project site, planning context and a discussion of relevant Project background, followed by a detailed description of the proposed Project, Project objectives and a discussion of the intended uses of the EIR for required Project approvals and entitlements.

Mountain View Cemetery is an Oakland institution dating to 1863. Although the portion of the Cemetery that is now proposed for development was not a part of the original design plans for the Cemetery, the Mountain View Cemetery Association has since acquired the additional properties where the Project site is located over time, fully intending to eventually develop these properties with cemetery use in accordance with their dedication for this use under the California Health and Safety Code. Once the Project site has been developed with cemetery use with interred human remains, it is assumed that this use will remain as such in perpetuity.

Irreversible Changes from Environmental Actions

Most of the Project site has been disturbed by past grading activity, prior improvements associated with cemetery operations, and a quarry that once operated at the eastern edge of the property. Historic grazing practices over the past century, the spread of invasive plant species and removal of stands of invasive blue gum eucalyptus have also altered the native vegetation that once covered the Project site. Non-native grassland, irrigated turf, paved roadways and former parking areas form the predominant surface over most of the Project site. Development of the Project will irreversibly commit the site for cemetery use in perpetuity, and no portion of the Project site that will be developed is likely to ever revert to a natural state.

Consumption of Nonrenewable Resources

Consumption of nonrenewable resources can include increased energy consumption, conversion of agricultural or forested lands, and lost access to mining reserves. The Project would not result in the loss of agricultural or forested lands or mining reserves. Development of the Project area as proposed would result in the commitment of non-renewable resources (e.g., gravel and petroleum products) and renewable resources (e.g., wood products) used in construction. Operation and maintenance of the Cemetery would require a commitment of water resources for irrigation.

The Project will be required to comply with the California Green Building Standards (CALGreen) which seek to minimize expenditure of non-renewable resources, and the City of Oakland's Green Building Ordinance for projects using the Bay Friendly Basic Landscape Checklist to minimize water use to the extent practicable.

Growth Inducing Impacts

The Project site is located within the Mountain View Cemetery and surrounded by the Claremont Country Club and St. Mary's Cemetery on the north, the City of Piedmont on the south, and Oakland residential neighborhoods to the east and west. The Project does not provide for new roadway or utility connection to undeveloped areas and is largely surrounded by developed properties. Development of the Project site for expanded cemetery use would not have growth-inducing effects.

Significant and Unavoidable Impacts

CEQA Guidelines section 15126.2(b) requires that the EIR discuss "significant environmental effects which cannot be avoided if the proposed project is implemented." Unavoidable significant impacts are those that could not be reduced to less-than-significant levels by mitigation measures identified in the EIR, included as part of the project, or other mitigation measures that could be implemented.

This EIR has not identified any significant environmental impacts that would be unavoidable with implementation of the proposed Project. All potential impacts would be reduced to levels of less than significant with implementation of required City of Oakland Standard Conditions of Approval and additional mitigation measures (where necessary) as identified in this EIR.

7

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