DRAFT
ENVIRONMENTAL IMPACT REPORT

SURREY FARM ESTATES
170 TWIN OAKS DRIVE
LOS GATOS, CALIFORNIA

PLANNED DEVELOPMENT APPLICATION PD-10-006

STATE CLEARINGHOUSE #2012072027

AUGUST 2015

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PREPARED FOR
TOWN OF LOS GATOS
COMMUNITY DEVELOPMENT DEPARTMENT
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CHAPTER 1 INTRODUCTION

1.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

This Draft Environmental Impact Report (EIR) has been prepared by staff and consultants for the Town of Los Gatos in compliance with the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code, § 21000 et seq.) and *CEQA Guidelines* (California Code of Regulations, Title 14, § 15000 et seq.). CEQA and the *CEQA Guidelines* require the preparation of a full disclosure document to inform the public, the Town of Los Gatos (Lead Agency), and Responsible/Trustee Agencies of the direct and indirect environmental effects of the proposed project on the environment. This document must also describe a reasonable range of potentially feasible alternatives to the project and must suggest potentially feasible mitigation measures that could reduce or eliminate any identified potentially significant impacts.

1.2 CEQA EIR PROCESS

This EIR assesses the environmental impacts of the proposed subdivision of 17.55 acres of into 10 lots for future development of single-family homes. The undeveloped project site is generally bounded by Twin Oaks Drive on the west, Cerro Vista Drive on the east, Brooke Acres Drive on the south, and Cerro Vista Court on the north. The proposed Surrey Farm Estates project, also known as the Twin Oaks Planned Development, would include development of a private street that would extend from Twin Oaks Drive (just north of 170 Twin Oaks Drive) to all proposed lots. The proposed street would not connect to any other existing streets located near or contiguous to the site (including Cerro Vista Court and Ann Arbor Way). However, a 20-foot wide emergency access road is proposed to connect Brooke Acres Drive to the project's access road, but access would be restricted by a locked gate to emergency vehicles only.

1.2.1 NOTICE OF PREPARATION

A Notice of Preparation (NOP) for the EIR was prepared and issued on July 9, 2012 and the 30-day comment period extended from July 26, 2012 to August 27, 2012. The NOP was circulated to local, state, and federal agencies and other interested parties, consistent with the requirements of CEQA. Based on the NOP, comments received on the NOP, and requirements of the *CEQA Guidelines*, the following environmental topics are evaluated in detail in this EIR:

4.1 Land Use and Planning (including Agricultural Resources)
4.2 Aesthetics
4.3 Biological Resources
4.4 Geology and Soils
4.5 Hydrology and Water Quality
4.6 Transportation and Traffic
4.7 Noise and Vibration

4.8 Air Quality
4.9 Greenhouse Gas Emissions
4.10 Hazards and Hazardous Materials
4.11 Cultural Resources
4.12 Public Services, Utilities, and Service Systems
4.13 Recreation
4.14 Energy Conservation
5.1 Effects Found Not to be Significant
5.2 Significant Unavoidable Adverse Impacts
5.3 Growth-Inducing Impacts (including Population and Housing)
5.4 Cumulative Impacts
5.5 Alternatives

Remaining environmental topics included in Appendix G of the *CEQA Guidelines* are Forestry Resources and Mineral Resources. This EIR determined that the proposed project would have a less-than-significant impact or no impact under Forestry Resources and Mineral Resources, and they are discussed under the Effects Found Not to be Significant section (see Chapter 5, Section 5.1).

1.2.2 SCOPING

In response to the NOP, comments were received from the following agency and individuals:

REGIONAL AGENCIES

- Santa Clara Valley Transportation Agency (August 10, 2012)

SPECIAL INTEREST GROUPS AND INDIVIDUALS

- Steven and Patricia Markmen (August 9, 2012)
- Catherine Briggs (August 20, 2012)
- Law Office of John A. Hickey (September 12, 2012)

The NOP and all NOP comments received are included in **Appendix A**. The Santa Clara Valley Transportation Agency had no comments. Concerns raised by individuals are summarized as follows and discussed under the following topics in Chapter 4:

- Land Use and Planning (Williamson Act contract/loss of agricultural resources; loss of privacy)
- Aesthetics (neighborhood character; changes in views of the hillside)
- Biological Resources (tree removal, impacts on wildlife and their habitat)
- Hydrology and Water Quality (drainage and flooding)
- Geology and Soils (soil erosion)
- Traffic (construction-related truck traffic; traffic safety and operation of local intersections)
- Noise (construction noise on-going for years)

- Air Quality (construction-related dirt, dust, and truck exhaust fumes on-going for years)
- Hazardous Materials (fire hazards)
- Public Services, Utilities, and Service Systems (schools, cable service, and television service)

1.2.3 DRAFT EIR

This document constitutes the Draft EIR. It contains a description of the project, description of the environmental setting (existing conditions), identification of project impacts and mitigation measures for impacts found to be significant or potentially significant, and an analysis of project alternatives. This EIR addresses all environmental topics required by CEQA as well as issues that were raised in the NOP comments.

Significance criteria vary for each environmental issue analyzed in this EIR and are defined at the beginning of each impact analysis section. Impacts are categorized as follows:

- Significant and Unavoidable (significant impact that cannot be mitigated to a less-than-significant level even with specified mitigation measures);

- Less than Significant with Mitigation (significant impact that can be mitigated to a less-than-significant level with implementation of specified mitigation measures); and

- Less than Significant (impact not significant or not significant with implementation of existing regulations or recommended conditions of approval).

Under CEQA, the significance of an environmental impact is the basis for determining whether or not mitigation, if any is feasible, is required. The ultimate determination as to whether the mitigation proposed in an EIR is “feasible” within the meaning of CEQA is made by agency decision-makers. The EIR is an informational document used by these decision-makers so that their actions will be consistent with the “substantive” duty under CEQA to substantially lessen all significant environmental effects where feasible through mitigation measures or alternatives. An EIR is therefore required to: (1) identify the potentially significant environmental effects of the proposed project on the environment; (2) indicate the manner in which those significant effects can be avoided or significantly lessened via the implementation of potentially feasible mitigation measures; (3) identify a reasonable range of potentially feasible alternatives to the proposed project that would eliminate or substantially lessen any of the significant environmental effects of the proposed project; and (4) identify any significant and unavoidable adverse impacts that cannot be mitigated or otherwise reduced.

1.2.4 PUBLIC REVIEW

The information in this report is subject to review by the Town, responsible agencies, trustee agencies, and other interested agencies, as well as the public for a period of 45 days. The EIR and all materials described as references in the topical sections of the EIR are available for public review at the following

locations: Town of Los Gatos Community Development Department, 110 East Main Street, Los Gatos and on the Town's website: http://www.losgatosca.gov/twinoaks-surreyeir.

Publication of this Draft EIR marks the beginning of the public review period, during which written comments will be received by the Town of Los Gatos at the following addresses:

Ms. Marni Moseley
Town of Los Gatos
Community Development Department
110 E. Main Street
Los Gatos, CA 95030
OR
MMoseley@losgatosca.gov

During the 45-day review period, persons are encouraged to comment on the contents of the Draft EIR, either during the Planning Commission public hearing or in writing to the Los Gatos Community Development Department.

1.2.5 FINAL EIR CERTIFICATION AND ACTION ON THE PROJECT

Following the close of the 45-day review period, significant environmental issues raised in relevant written and oral comments received on the Draft EIR will be responded to in writing in a Comments and Responses document. The Comments and Responses document, together with the Draft EIR, will constitute the Final EIR. After publication of the Final EIR, the Planning Commission and Town Council will hold public hearings on the Final EIR to consider EIR certification.

The decision-making bodies of the Town are required to consider the information in this EIR, along with any other relevant information, in making their decisions about the proposed project. Although the EIR does not determine the ultimate decision that will be made regarding approval and implementation of the proposed project, CEQA requires the Planning Commission and Town Council to consider the information in the EIR, and, if they choose to approve the project, to make findings regarding each significant effect identified in the EIR. Under CEQA, a lead agency's decision-making process includes more than one step. The first step is to consider whether to "certify" the Final EIR for a proposed project. Notably, "certification" does not, by itself, indicate that decision-makers are intending to approve the project. Rather, although certification is a necessary precondition to project approval, it is possible for a decision-making body to certify a Final EIR and then deny a project.

Certification of a Final EIR is a three-part finding: first, that the "final EIR has been completed in compliance with CEQA"; second, that the "final EIR was presented to the decision-making body of the lead agency and that the decision-making body reviewed and considered the information contained in the final EIR"; and third, that the "final EIR reflects the lead agency's independent judgment and analysis." (*CEQA Guidelines* Section 15090)

After certifying a Final EIR, lead agency decision-makers are in a position to approve a project, if they so choose. In doing so, as described in CEQA and the *CEQA Guidelines*, they will be subject to the statutory duty to avoid or substantially lessen significant environmental effects, *where feasible*. This duty is effectuated through the adoption of statutorily-mandated findings adopted as part of the actions approving the project. These findings must address how agency decision-makers have dealt with each of the significant effects of a proposed project. Possible findings are: (1) that the agency has adopted mitigation measures or alternatives to avoid or substantially lessen the significant effects; (2) that the effects can be, or have been, mitigated by other public agencies, which should adopt, or have adopted, measures to address the effects; or (3) that proposed mitigation measures or alternatives are infeasible. After imposing all feasible means of avoiding or substantially lessening such effects, a public agency may still approve a project with unmitigated significant effects, provided that the agency decision-makers issue a "Statement of Overriding Considerations" that identifies what decision-makers believe to be the project's economic, social, technological, legal, and other benefits, including any regional or statewide benefits, that render the unmitigated effects "acceptable."

1.2.6 MITIGATION MONITORING AND REPORTING

In January 1989, California enacted Assembly Bill (AB) 3180, which requires lead agencies to "adopt a reporting and mitigation monitoring program for the changes to the project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment." Accordingly, Public Resources Code (PRC) Section 21081.6, subdivision (a)(1), requires that agencies adopt a Mitigation Monitoring and Reporting Program (MMRP) for any project for which it had made findings pursuant to PRC Section 21081, and the MMRP will be prepared as part of the Final EIR. (See also *CEQA Guidelines*, Section 15097.) The MMRP will provide a list of all proposed project mitigation measures, define the parties responsible for implementation and review/approval, and identify the timing for implementation of each control measure. Any measures adopted by the Town as conditions for approval to mitigate environmental impacts of the project will be included in the MMRP to verify compliance. The MMRP must be adopted as part of the action adopting the Findings described in Section 1.2.5 above.

1.3 EIR ORGANIZATION

Pursuant to *CEQA Guidelines*, Section 15120(c), this EIR contains the information and analysis required by Sections 15122 through 15131. The Draft EIR has been organized into the following sections:

Chapter 1, Introduction. The introduction describes the purpose of the EIR, the CEQA review and certification process, and organization of the EIR.

Chapter 2, Summary. This chapter summarizes the project description, significant environmental impacts that would result from project implementation, and proposed mitigation measures and alternatives that reduce or avoid those impacts.

Chapter 3, Project Description. This chapter describes the project location and project sponsor's and Town's objectives, as well as providing a detailed project description.

Chapter 4, Environmental Setting, Potential Impacts, and Mitigation Measures. This chapter describes existing conditions in the vicinity of proposed facilities, discusses project consistency with relevant local plans and policies, identifies the environmental impacts associated with project construction and operation, and presents mitigation measures for the significant and potentially significant impacts in this Draft EIR. References are included at the end of each section.

Chapter 5, Other CEQA Considerations. This chapter discusses several issues required by CEQA, including significant unavoidable impacts, growth-inducing impacts, cumulative impacts, and alternatives to the project.

Chapter 6, Lead Agency and Consultants. This chapter identifies the lead agency and includes a list of EIR preparers and their responsibilities.

Appendices. The appendices provide relevant reference material and data that support discussions in the EIR.

1.4 REFERENCE DOCUMENTS

This EIR relies on information from the documents listed below. The relevant portions of these documents have been briefly summarized in the appropriate sections of this EIR, along with a description of how the public may obtain and review these documents.

Documents referenced in this EIR include:

- Hillside Development Standards and Guidelines (January 2004), available online at http://www.losgatosca.gov/index.aspx?NID=1117
- Hillside Specific Plan (August 1978; revised 1990), available online at http://www.town.los-gatos.ca.us/index.aspx?NID=1146
- Town of Los Gatos 2020 General Plan (September 2012), available online at http://www.losgatosca.gov/index.aspx?NID=27)
- Town of Los Gatos 2020 General Plan Final Environmental Impact Report (June, 2010)
- Town of Los Gatos General Plan Update Background Report
- Los Gatos Town Codes (available online at http://www.town.los-gatos.ca.us/index.aspx?NID=25)
- Los Gatos Sustainability Plan (available online at http://www.town.los-gatos.ca.us/index.aspx?NID=1860)

While most of the above-referenced documents are available online, all of them are available for review during counter hours from 8:00 a.m. to 1:00 p.m., Monday through Friday, at the Los Gatos Community Development Department at 110 East Main Street.

CHAPTER 2 SUMMARY

2.1 PROJECT DESCRIPTION

The 17.55-acre project site is located in southern part of the Town of Los Gatos, generally east of Twin Oaks Drive, west of Cerro Vista Drive, north of Brooke Acres Drive, and south of Cerro Vista Court.

The project applicant is requesting approval of the following:

- Amendment of the site's General Plan designation from "Agriculture" to "Hillside Residential – 0-1 du/acre";
- Rezoning of the subject property from "RC" (Resource Conservation) to "HR:1:PD" (Hillside Residential, 1 unit/acre, with Planned Development overlay);
- Tentative Tract Map indicating 10 lots for single-family residential use plus two common lots (Lots A and B); and
- Cancellation of a Williamson Act Contract.

Approval of this General Plan amendment, rezoning, and Tentative Map would allow the project applicant to subdivide the vacant 17.55-acre property into 10 lots for future development of single-family residences. In addition to the 10 residential lots, two common lots are proposed. Common Lot A would be comprised of the rights-of-way for Private Streets A and B, while Common Lot B would be the designated open space in the southeastern portion of the site. Residential lots would comprise approximately 13 acres (74%) of the site, while roads would comprise 7% and open space would comprise the balance (19%).

2.2 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION

Chapter 4 of the Draft EIR presents a description of the existing environmental setting, an analysis of environmental impacts resulting from development of the proposed project, and mitigation measures necessary to reduce potentially significant impacts to less-than-significant levels. These impacts and mitigation measures are summarized in **Table 2-1**. Based on analysis of the proposed project, technical studies completed by the applicant's consultants, technical studies completed by the EIR consultants, Town staff review, Town Consulting Arborist's peer reviews, and environmental consultant review, the project would not result in any significant environmental impacts that could not be mitigated to a less-than-significant level with recommended mitigation measures. Assuming that the applicant will voluntarily implement all mitigation measures recommended in this EIR and will comply with specified conditions of project approval and Town code requirements, the environmental review process under CEQA could have been fulfilled by preparing an Initial Study/Mitigated Negative Declaration (IS/MND).

TABLE 2-1

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance	Mitigation Measure
Land Use		
4.1-1: The project would not physically divide an established community.	Less than Significant	None Required
4.1-2: The project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.	Less than Significant	None Required
4.1-3: The project would conflict with the site's current zoning designation (Agriculture) and Williamson Act Contract, and would require rezoning and contract cancellation as proposed.	Less than Significant	None Required
Aesthetics		
4.2-1: The project would not substantially affect scenic vistas.	Less than Significant	None Required
4.2-2: The project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.	Less than Significant	None Required
4.2-3: The project would not substantially degrade the visual character or quality of the site and its surroundings.	Less than Significant	None Required
4.2-4: The project would not create new sources of substantial light or glare, which would adversely affect day or nighttime views in the area.	Less than Significant	None Required

TABLE 2-1 (CONTINUED)

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance	Mitigation Measure
Biological Resources		
4.3-1: Project development would not have a substantial adverse effect, either directly or through habitat modification, to special-status plant species.	Less than Significant	None Required
4.3-2: Project development could have a substantial adverse effect, either directly or through habitat modification, to nesting white-tailed kites and other special-status and migratory birds.	Less than Significant with Mitigation	**4.3-2, Protection of Nesting Special-status and Migratory Birds:** In order to prevent mortalities of special-status and migratory bird species during project implementation, the measures outlined below shall be implemented. Removal of trees and shrubs shall be minimized to the extent feasible, but where tree removal, pruning, or grubbing activities must occur, the following measures, shall be implemented: a. If tree removal, pruning, or grubbing activities are scheduled to occur outside of the breeding season (i.e., between September 1 and January 31), preconstruction surveys for nesting birds are not warranted as no significant adverse effects would occur. b. If tree removal, pruning, or grubbing activities are scheduled to commence during the bird breeding season (i.e., between February 1 and August 31), a preconstruction nesting bird survey shall be conducted by a qualified biologist approved by the Town. The survey shall be performed no more than two weeks prior to the initiation of work. The preconstruction survey shall include the project footprint and up to a 300-foot buffer, depending on access and lines of sight. If no active nests of special-status or other migratory birds are found, work may proceed without restriction and no further measures are necessary. If the commencement of work is delayed more than two weeks from the date of the preconstruction survey, the survey shall be repeated, if determined necessary by the project biologist. c. If occupied nests (i.e. nests with eggs or young birds present) of special-status or migratory birds are detected, the project biologist shall designate non-disturbance buffers at a distance sufficient to minimize disturbance based on the nest location, topography, cover, species, and the type/duration of potential disturbance. No work shall occur within the non-disturbance buffers until the young have fledged, as determined by a qualified biologist approved by the Town. The appropriate buffer size

TABLE 2-1 (CONTINUED)

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance	Mitigation Measure
		shall be determined by a qualified wildlife biologist approved by the Town. Typical buffer zones are 50 foot-radius for songbirds and 300 foot-radius for raptors. If, despite the establishment of a non-disturbance buffer it is determined that project activities are resulting in nest disturbance, work shall cease immediately. Work may only resume once the project biologist has determined that it is safe to do so (e.g., after the young birds have fledged). d. If project activities must occur within the non-disturbance buffer, a qualified biologist shall monitor the nest(s) to document that take of the nest (i.e., nest failure) is not likely to result. If it is determined that project activities are resulting in significant nest disturbance, work shall cease immediately. Work may only resume once the project biologist has determined that it is safe to do so (e.g., after the young birds have fledged).
4.3-3: Project development could have a substantial adverse effect, either directly or through habitat modification, to the special-status species San Francisco dusky-footed woodrat, which is present on-site.	Less than Significant with Mitigation	**4.3-3, Protection of San Francisco Dusky-footed Woodrat:** In order to prevent mortalities of San Francisco dusky-footed woodrat during project construction and implementation, the following measures shall be implemented: a. A qualified biologist shall perform a ground survey to locate and mark all woodrat nests in the proposed construction area. The survey shall be performed no less than 30 days prior to the initiation of ground disturbances. The Contractor shall walk the site to assist in determining which nests cannot be avoided. Nests to be avoided shall be fenced off with orange construction fencing and their locations marked on construction plans as being off limits to all activities. b. Any woodrat nest that cannot be avoided shall be manually disassembled by a qualified biologist, after notification of CDFW, to give any resident woodrats the opportunity to disperse to adjoining undisturbed habitat. Nest building materials shall be immediately removed off-site and disposed of to prevent woodrats from reassembling nests on-site. c. To ensure woodrats do not rebuild nests within the construction area, a qualified biologist shall inspect the construction corridor no less than once per week. If new nests appear, they shall be disassembled and the building

TABLE 2-1 (CONTINUED)

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance	Mitigation Measure
		materials disposed of offsite. If there is a high degree of woodrat activity, more frequent monitoring shall be performed, as warranted.
4.3-4: Project development could have a substantial adverse effect, either directly or through habitat modification, to special-status bats, identified as candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS, which may occur on-site.	Less than Significant with Mitigation	**4.3-4, Protection of Roosting Bats:** In order to minimize impacts to special-status bats during project implementation, impacts to suitable roost sites shall be avoided or minimized to the greatest extent feasible. Where impacts to suitable roost sites cannot be avoided, the following measures shall be implemented: a. Preconstruction surveys consisting of visual inspections and multi-night surveys with the aid of acoustic bat detectors shall be conducted no more than two weeks prior to the start of ground disturbing activities for all areas that provide suitable bat roosting habitat including man-made structures, snags, rotten stumps, mature trees with broken limbs, trees with exfoliating bark, bole cavities or hollows, dense foliage, etc. b. If suitable roost sites (trees, snags, etc.) are to be removed or trimmed, limbs smaller than 3 inches in diameter shall be cut and the tree left overnight to allow any bats that may be using the tree/snag time locate another roost. A biological monitor shall be present during the trimming or removal of trees/snags. c. Trees providing suitable roost sites shall be removed between September and March, outside of the breeding season to avoid disturbance to maternal colonies or breeding individual pallid bats. d. Prior to demolition or removal of structures, a qualified biologist shall conduct a preconstruction clearance survey to identify if any bats are roosting within the structures. If bats are roosting within the structure bat exclusion measures shall be implemented that allow bats to freely leave the structure, but prevents them from returning.
4.3-5: Project development could have a substantial adverse effect, either directly or through habitat modification, to California red-legged frogs and foothill yellow-legged frogs.	Less than Significant with Mitigation	**4.3-5, Protection of California Red-legged Frogs and Foothill Yellow-legged Frogs:** In order to avoid impacts to California red-legged frogs and foothill yellow-legged frogs during project implementation, the following measures shall be implemented: a. Construction activities shall be timed to occur outside of the wet season (i.e., April 15- October 15) when California red-legged frogs and foothill

TABLE 2-1 (CONTINUED)

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance	Mitigation Measure
		yellow-legged frogs are less likely to venture into uplands; this is the optimal season for avoiding conflict with these species. b. No work shall occur during or within 24 hours following a rain event exceeding 0.2-inch as measured by the NOAA National Weather Service. c. Prior to the start of construction, wildlife exclusion fencing shall be installed along Ross Creek and the associated riparian corridor (i.e., areas where California red-legged frogs and foothill yellow-legged frogs could enter the project site). The location of the fencing shall be determined by a qualified biologist prior to the start of staging or surface disturbing activities. The fencing specifications including installation and maintenance criteria shall be provided in the bid solicitation package special provisions. The fencing shall remain in place throughout the duration of the project and shall be regularly inspected and fully maintained. Upon project completion, the fencing shall be completely removed, the area cleaned of debris and trash, and returned to original condition or better. d. To prevent California red-legged frogs and foothill yellow-legged frogs from becoming entangled, trapped or injured, erosion control materials that use plastic or synthetic mono-filament netting, photodegradable or biodegradable synthetic netting (which can take several months to decompose) or small aperture matrix (i.e., less than 2 inches x 2 inches) shall not be used within the study area. e. Preconstruction surveys shall be conducted by a qualified biologist immediately prior (i.e., on the same morning as work occurs) to the initiation of initial site clearing activities that may result in take of California red-legged frogs and foothill yellow-legged frogs. All upland habitat including refugia such as dense vegetation, small woody debris, refuse, burrows, etc., shall be thoroughly inspected. If a California red-legged frog is observed, the qualified biologist shall contact the USFWS to determine if capturing and relocating the individual(s) is necessary and authorized. If handling of California red-legged frogs is necessary, the qualified biologist shall be in possession of a 10(a)(1)(A) Recover Permit and valid Scientific Collecting Permit. The qualified biologist shall take

TABLE 2-1 (CONTINUED)

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance	Mitigation Measure
		precautions to prevent introduction of amphibian diseases in accordance with the Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog (USFWS, 2005). f. A qualified biologist shall be on-site during all construction activities that may result in take of California red-legged frogs and foothill yellow-legged frogs, specifically, work in or adjacent to Ross Creek. The qualified biologist shall have the authority to stop work to avoid take of either species. The qualified biologist shall conduct clearance surveys at the beginning of each day and regularly throughout the workday when construction activities are occurring that may result in take of California red-legged frogs and foothill yellow-legged frogs. g. A Worker Environmental Awareness Training shall be conducted for all construction crews and contractors. The education training shall be conducted prior to the commencement of ground-clearing or grading and upon the arrival of any new worker. The training shall include a brief review of locations of sensitive areas, avoidance measures, and corrective actions in the event sensitive species are encountered. The program shall cover the mitigation measures, environmental permits and regulatory compliance requirements. Additional training shall be conducted as needed, including morning "tailgate" sessions to update crews as they advance into sensitive areas for projects with multiple work areas. In addition, a record of all personnel trained during the project shall be maintained for compliance verification. h. All slopes or unpaved areas affected by the proposed project shall be re-seeded with native grasses and shrubs to stabilize the slopes and bare ground against erosion. Following construction, native (and non-native if appropriate) plant species shall be installed at the disturbed area.
4.3-6: Project development would not substantially reduce the habitat of any wildlife species, cause any wildlife populations to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or substantially reduce the number or	Less than Significant	None Required

TABLE 2-1 (CONTINUED)

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance	Mitigation Measure
restrict the range of rare or endangered plant or animal species through the loss or fragmentation of habitats.		
4.3-7: Project development would adversely affect a surface tributary presumed to fall under the jurisdiction of the USACE, CDFG and/or RWQCB pursuant to federal and State law.	Less than Significant with Mitigation	**4.3-7, Conformance with Applicable Federal and State Regulations:** In order to conform to federal and State law and to offset significant adverse impacts on waters of the U.S. and waters of the State, the measures outlined below shall be implemented. a. Prior to initiation of project construction, the project proponent shall secure a verified jurisdictional determination from the USACE. b. For impacts to federally regulated waters of the U.S. that cannot be avoided, the applicant shall apply for and receive authorization pursuant to CWA. The project proponent shall comply with all permit conditions, as specified by the USACE. Mitigation ultimately required by the USACE could include on-site habitat creation, off-site habitat creation, purchase of credits from an approved habitat mitigation bank, and/or payment of in-lieu fees to an approved conservation organization for wetland habitat enhancement of preservation activities. c. For impacts to waters of the State or other State-regulated habitats that cannot be avoided, the applicant shall apply for and receive authorization pursuant to CFGC Section 1602 and Porter-Cologne, as applicable. Section 1602 applies to impacts to the ephemeral swale that drains into Ross Creek, while Porter-Cologne would apply to impacts to waters of the State that are not also waters of the US subject to regulation by USACE under the Clean Water Act. The project proponent shall comply with all permit conditions (including monitoring of any restoration plantings for long-term survivorship), as specified by the CDFW and RWQCB. Mitigation ultimately required by the CDFW/RWQCB could include on-site habitat creation, off-site habitat creation, purchase of credits from an approved habitat mitigation bank, and/or payment of in-lieu fees to an approved conservation organization for wetland habitat enhancement of preservation activities.

TABLE 2-1 (CONTINUED)

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance	Mitigation Measure
4.3-8: Project development would adversely affect the riparian habitat of Ross Creek and an unnamed tributary to Ross Creek located within the project site.	Less than Significant with Mitigation	**4.3-8, Creek and Swale Protection:** Mitigation for the placement of fill into the ephemeral swale is outlined in Mitigation Measure 4.3-7, above. Construction in and adjacent to Ross Creek and the ephemeral swale requires conformance to the Town's adopted sections of the Guidelines and Standards for Land Use Near Streams. In order to conform to these guidelines, the following measures shall be implemented: a. Protection of the riparian zone shall be assured by establishment of an appropriate riparian corridor buffer: • Based on site conditions, channel geomorphology, slope, size of watershed, and type of habitat, a minimum riparian setback of 25 feet from the top of bank or outer edge of the riparian zone, whichever is greater, would provide for an appropriate protection of the habitat values and water quality associated with Ross Creek. • Based on site conditions, channel geomorphology, slope, size of watershed, and type of habitat, a minimum riparian setback of 10 feet from the top of bank of the incised portion of the ephemeral swale and outer oak canopy edge would provide for an appropriate protection of the habitat values and water quality. It is recognized that the placement of fill into the ephemeral swale is necessary to construct Streets A and B. At these locations, there is no habitat meeting the definitions of "riparian vegetation" or "stream/channel/creek"[1] as provided in the Guidelines. As such, this portion of the proposed project is not in conflict with the Guidelines. Mitigation for these impacts is specified in Mitigation Measure 4.3-7. b. Grading and culvert construction to accommodate the construction of Street B would result in impacts on the portions of the ephemeral swale that are incised and situated directly beneath the canopy of mature oak woodland.

[1] See Section 2F, Subsection C (Topographic Position) of the Guidelines, p. 2.14

TABLE 2-1 (CONTINUED)

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance	Mitigation Measure
		Such grading and construction at this location would not necessarily conflict with the Guidelines,[2] but would be subject to review and permitting requirements by the regulatory agencies. Mitigation for these impacts is specified in Mitigation Measure 4.3-7. c. A 10-foot wide protective easement shall be recorded over the length of the preserved swale across Lot 9. No grading, filling, or trenching shall be permitted within this easement. d. Orange construction fencing or a similar visual barrier shall be installed to prevent accidental grading or movement of equipment beyond what is specified on the grading plans and approved under the grading permit. e. Construction activities shall conform to the Town of Los Gatos' Tree Protection Ordinance, as required in Mitigation Measure 4.3-10, Tree Mitigation and Monitoring Plan.
4.3-9: Project implementation would require an exception to the *Guidelines* by encroaching into the recommended riparian setback.	Less than Significant with Mitigation	**4.3-9, Riparian Encroachment Offsets:** In order to offset potentially significant effects of encroachments into the recommended 10-foot riparian setback, the following mitigation measures shall be implemented: a. The Town shall allow an exception to the Guidelines to permit construction of Streets A and B. b. The hydrologic connection between the ephemeral swale and upstream watershed and Ross Creek shall be maintained by the installation of appropriately sized culverts beneath Street A and Street B, and between Lots #3 and 4. c. Protective measures as recommended by the Town's arborist and required by Town Ordinance shall be implemented to preserve the health of oak trees located on Lot 9 and they include the following: "Section 29.10.1005 Protection of Trees During Construction a) Protective tree fencing shall specify the following: 1) Size and materials: A five (5) or six (6) foot high chain link

[2] See Section III.B2, B3, and B4 of the Guidelines, p. 3.9

TABLE 2-1 (CONTINUED)

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance	Mitigation Measure
		fencing, mounted on two-inch diameter galvanized iron posts, shall be driven into the ground to a depth of at least two (2) feet at no more than 10-foot spacing. For paving area that will not be demolished and when stipulated in a tree preservation plan, posts may be supported by a concrete base. 2) Area type to be fenced. Type I: Enclosure with chain link fencing of either the entire dripline area or at the tree protection zone (TPZ), when specified by a certified or consulting arborist.[3] Type II: Enclosure for street trees located in a planter strip: chain link fence around the entire planter strip to the outer branches. Type III: Protection for a tree located in a small planter cutout only (such as downtown): orange plastic fencing shall be wrapped around the trunk from the ground to the first branch with 2-inch wooden boards bound securely on the outside. Caution shall be used to avoid damaging any bark or branches. 3) Duration of Type I, II, III fencing. Fencing shall be erected before demolition, grading or construction begins and remain in place until final landscaping is required. Contractor shall first obtain the approval of the project arborist on record prior to removing a tree protection fence. 4) Warning sign. Each tree fence shall have prominently displayed an 8.5 x 11-inch sign stating: "Warning— Tree Protection Zone- this fence shall not be removed and is subject to penalty according to Town Code 29.10.1025". b) All persons, shall comply with the following precautions: 1) Prior to the commencement of construction, install the fence at the dripline, or tree protection zone (TPZ) when specified in an

[3] If it is not possible to place Type 1 or Type 2 tree protection fencing at the dripline due to the construction, then place the fencing as far from the trunk as possible, including as much of the dripline as possible, while still allowing for enough room to build improvements. If this happens to be within all or some of the dripline, then so be it. But the contractor must try to fence off as much area under the canopy as possible, do not be irresponsible about this.

TABLE 2-1 (CONTINUED)

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance	Mitigation Measure
		approved arborist report, around any tree and/or vegetation to be retained which could be affected by the construction and prohibit any storage of construction materials or other materials or vehicles inside the fence. The dripline shall not be altered in any way so as to increase the encroachment of the construction. 2) Prohibit excavation, grading, drainage and leveling within the dripline of the tree unless approved by the director. 3) Prohibit disposal or depositing of oil, gasoline, chemicals or other harmful materials within the dripline of or in drainage channels, swales or areas that may lead to the dripline of a protected tree. 4) Prohibit the attachment of wires, signs or ropes to any protected tree. 5) Design utility services and irrigation lines to be located outside of the dripline when feasible. 6) Retain the services of the certified or consulting arborist for periodic monitoring of the project site and the health of those trees to be preserved. The certified or consulting arborist shall be present whenever activities occur that pose a potential threat to the health of the trees to be preserved. 7) The director and project arborist shall be notified of any damage that occurs to a protected tree during construction so that proper treatment may be administered." d. Native trees and shrubs shall be planted in existing non-native grassland on Lots 3 and 9 to enhance the vegetative cover within the 10-foot setback.
4.3-10: Project implementation would remove about 70 protected trees and transplant approximately 30 protected trees on the project site, which would directly or indirectly affect approximately 0.52 acres of mixed oak woodland.	Less than Significant with Mitigation	**4.3-10, Tree Mitigation and Monitoring Plan:** To compensate for the loss of protected trees, a Tree Mitigation and Monitoring Plan shall be prepared by a qualified arborist, peer reviewed by an arborist selected by the Town, and implemented by the applicant. As noted above, mitigation will be based on the tree replacement ratios outlined in the Town's Tree Protection Ordinance (see Table 4.3-3). The planting of approximately 178 24-inch box size, 93 36-inch box size, and 8 48-inch box size replacement trees (or equivalent as specified by the Town's arborist) would compensate for the loss of

TABLE 2-1 (CONTINUED)

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance	Mitigation Measure
		approximately 70 trees. The following minimum standards shall be incorporated in the Tree Mitigation and Monitoring Plan: a. The primary replacement species to be planted is valley oak; blue oaks may also be planted among the existing blue oak stand at the southern boundary of Lot B. The planting stock shall be from locally collected material, and planting shall be conducted from November to January. b. Minimum container size of the replacement trees shall be 24 inches. Trees shall be staked and provided with appropriate predator and weed control devices, such as anti-browse cages and weed mats. c. To ensure successful establishment of all container plantings, a temporary drip irrigation system shall be installed, utilizing emitters, as determined by Town staff. Overhead irrigation shall not be used, as it fosters dense growth of undesirable weed species, may lead to erosion, and is not an efficient use of water. Irrigation will be supplied for up to three years, with the possibility of extending irrigation for another two years or as deemed necessary by the consulting restoration ecologist approved by the Town. The objective, however, is to turn off irrigation at the end of the third growing season. d. Site maintenance shall be conducted regularly for the first three years after initial planting, including weed control, irrigation system maintenance, and foliage protector maintenance. e. Invasive exotic species that could threaten the successful establishment of the replacement plantings, as determined by the consulting restoration ecologist (approved by the Town), shall be removed at least once annually for a five-year period. f. The success of the Tree Mitigation and Monitoring Plan shall be monitored by a qualified restoration ecologist (approved by the Town) for a period not less than five years after initial installation. Elements such as plant survival, percent cover, tree height and basal area, plant vigor / health, and natural recruitment / reproduction shall be evaluated during the annual monitoring of the replanted sites. The following criteria for monitoring the replanted trees shall be employed:

TABLE 2-1 (CONTINUED)

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance	Mitigation Measure
		i. Tree Survival. Replacement trees shall exhibit an 80% survival rate at the end of the five-year monitoring period, after two consecutive growing seasons without supplemental irrigation. Dead trees shall be replaced the following winter after each mortality is noted. If the survival drops below the 80% survival threshold, the monitoring period shall be extended another five years from the date of replanting. Survivorship following the two years without supplemental irrigation is intended to demonstrate a good indication as to whether plant roots are sufficiently developed to support the plants under natural conditions. ii. Vegetative Growth. The mean tree stem diameter, plant height and canopy spread shall show a consistent annual increase. By year five, the mean value for each of these parameters shall have increased by no less than 100%. iii. Plant Vigor / Health. The overall plant vigor and health of the installed trees shall be monitored. Taken into consideration in the qualitative observation of vigor and health would be the factors of plant color, bud development, new growth, herbivory, drought stress, fungal/insect infestation, and physical damage. If a plant's foliage is abnormally sparse, then the health/vigor rating shall be lowered accordingly, even if the foliage present is healthy. Overall health and vigor shall be rated according to the following scale:

Scale	Rating	Description
1	Excellent	Healthy plant with vigorous growth, no necrotic or chlorotic leaves; no other signs of damage.
2	Good	Plant appears healthy, but with limited signs of vigorous growth.
3	Adequate	Plant healthy but with no signs of vigorous growth; some necrosis or damage may be present.
4	Poor	Low vitality, but plant with at least some signs of life; plant severely damaged, weak or stressed, or main stem dead.

TABLE 2-1 (CONTINUED)

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance	Mitigation Measure
		5 Dead No evidence of live tissue.
4.3-11: Project development would result in the loss of habitat for native wildlife.	Less than Significant	None Required
4.3-12: Project development would not substantially interfere with the movement of any native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.	Less than Significant	None Required
Geology and Soils		
4.4-1: The proposed project would not result in exposure of people and structures to potential adverse effects, including risk of loss, injury, or death involving strong ground shaking.	Less than Significant	None Required
4.4-2: The proposed project would not result in exposure of people and structures to potential adverse effects, including risk of loss, injury, or death involving seismically-induced landslides.	Less than Significant	None Required
4.4-3: The proposed project would not result in substantial erosion, but could result in the loss of topsoil.	Less than Significant with Mitigation	**4.4-3, Topsoil Salvage:** The Town shall require the project applicant and future lot owners to ensure that topsoil, if present, is salvaged during grading. The topsoil shall be stockpiled separately from subsoils, and the stockpiles shall be protected from erosion (e.g., by covering or watering). Once construction is completed, the stockpiled topsoil shall be reused for site restoration in open or garden areas. Excess soil may be used in approved open space or landscape areas, if approved by the landscape architect.
4.4-4: The proposed project could cause a geologic unit to become unstable as a result of project construction.	Less than Significant with Mitigation	**4.4-4a, Debris Flow Protection:** The project applicant shall require construction of improvements to protect Lots 8 and 9 from damage due to a debris flow from the head of the drainage swale located to the southeast portion of the project site in accordance with the recommendations of the geotechnical report, and any associated updates or revisions. Such improvements may include a catchment basin constructed across the swale or construction of deflection walls or berms to protect Lots 8 and 9 from debris

TABLE 2-1 (CONTINUED)

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance	Mitigation Measure
		flows. When Lots 8 and 9 are proposed for development, the geotechnical engineer shall review future home designs on these lots to select the appropriate method of protection. **4.4-4b, Geotechnical Report Recommendations:** The project applicant and future lot owners shall implement all of the recommendations of the project geotechnical report, and any associated updates or revisions, related to site preparation and grading, foundation design, retaining walls, and drainage improvements. To ensure correct implementation, the geotechnical engineer shall review project plans and observe geotechnically relevant aspects of proposed initial construction of roads and infrastructure. When future homes are proposed on project lots, a site-specific geotechnical investigation shall be conducted if deemed necessary by the Town Engineer and project geotechnical engineer and the recommendations of that report shall be implemented.
4.4-5: The proposed residences and utilities could be affected by expansive soils.	Less than Significant with Mitigation	**4.4-5:** Mitigation Measure 4.4-4b, Geotechnical Report Recommendations.
Hydrology and Water Quality		
4.5-1: The proposed project could violate water quality standards or waste discharge requirements, or otherwise substantially degrade water quality.	Less than Significant with Mitigation	**4.5-1a:** Mitigation Measures 4.3-7, Conformance with Applicable Federal and State Regulations, and 4.3-8, Creek and Swale Protection. **4.5-1b, C.3 Compliance:** The following measures shall be implemented to ensure compliance with the C.3 requirements and reduce project-related water quality impacts to less than significant: a. The project applicant shall obtain coverage under the Municipal Regional Stormwater Permit pursuant to Regional Water Quality Control Board (RWQCB) Order No, R2-2009-0074. As part of the grading and improvement application for the project, the project applicant shall submit the following documents to the Engineering Division of the Town of Los Gatos Parks and Public Works Department: i. A site plan showing the locations of stormwater treatment and flow control measures. All stormwater treatment and flow control measures shall be designed to allow appropriate equipment access for maintenance.

TABLE 2-1 (CONTINUED)

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance	Mitigation Measure
		ii. A detailed maintenance plan for stormwater treatment and flow-control measures, including inspection checklists as appropriate. iii. An Operations and Maintenance report form shall be attached to maintenance agreements that are transferred to future owners or operators of the project site or portions thereof. The project applicant shall also provide a signed statement accepting responsibility for maintenance of stormwater control facilities until this responsibility is legally transferred. This statement shall also ensure site access by Town of Los Gatos, Water Quality Control Board, West Valley Clean Water Program for inspection purposes. b. Proper operation and maintenance of stormwater management facilities shall be the responsibility of the Homeowners' Association (HOA) in perpetuity. The applicant shall prepare and submit, for the Town's review, an acceptable Stormwater Control Operations and Maintenance Plan prior to the issuance of any occupancy permits and shall execute a Stormwater Management Operations and Maintenance Agreement with the Town before sale, transfer, or permanent occupancy of the site. The applicant shall accept the responsibility for maintenance of stormwater management facilities until such responsibility is transferred to another entity. The Stormwater Management Operations and Maintenance Plan shall include treatment Best Management Practices (BMPs).
4.5-2: The proposed project would not 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.	Less than Significant	None Required
4.5-3: Project implementation could substantially alter the existing drainage pattern of the site or area by altering the course of a stream or incrementally increasing surface runoff from impervious surfaces in such a manner that could result in substantial erosion, siltation, or flooding on- or off-site.	Less than Significant with Mitigation	**4.5-3:** Mitigation Measures 4.3-7, Conformance with Applicable Federal and State Regulations, 4.3-8, Creek and Swale Protection, and 4.3-9, Riparian Encroachment Offsets.

TABLE 2-1 (CONTINUED)

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance	Mitigation Measure
4.5-4: Project implementation would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or introduce new sources of polluted runoff.	Less than Significant	None Required
4.5-5: Project implementation would not cause significant risks associated with the placement of housing within a 100-year flood hazard area or placement of structures that could impede or redirect flood flows within a 100-year flood hazard area.	Less than Significant	None Required
4.5-6: Project implementation would not cause significant risk of loss, injury or death involving flooding, including flooding from the failure of a levee or dam.	Less than Significant	None Required
4.5-7: The proposed project could be subject to inundation by seiche, tsunami, or mudflow.	Less than Significant	None Required
Transportation and Traffic		
4.6-1: The project would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.	Less than Significant	None Required
4.6-2: The project would not conflict with the Santa Clara County Congestion Management Program.	Less than Significant	None Required
4.6-3: The project would not substantially increase hazards due to a design feature or incompatible uses.	Less than Significant	None Required

TABLE 2-1 (CONTINUED)

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance	Mitigation Measure
4.6-4: The project would not result in inadequate emergency access.	Less than Significant	None Required
4.6-5: The project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	Less than Significant	None Required
Noise		
4.7-1: Project construction could cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project due to operation of heavy equipment during construction.	Less than Significant with Mitigation	**4.7-1, Administrative and Source Controls:** Prior to Grading Permit issuance, the project applicant shall demonstrate to the satisfaction of the Town of Los Gatos Public Works Department that the project complies with the following: a. Pursuant to the Town of Los Gatos Municipal Code Section 16.20.035, construction activities (including operation of haul and delivery trucks) shall occur between the hours of 8:00 a.m. and 8:00 p.m. on weekdays and 9:00 a.m. and 7:00 p.m. on weekends and holidays. b. Pursuant to Municipal Code Section 16.20.035(2) the Contractor shall demonstrate, to the satisfaction of the Town of Los Gatos Public Works Department, that construction noise shall not exceed 85 dBA outside of the property line. This shall be accomplished by using the type of muffler recommended by the vehicle manufacturer. In addition, all equipment (including mufflers) should be in good mechanical condition and properly maintained so as to minimize noise created by faulty or poorly maintained engine, drive-train, and other components. If necessary to achieve compliance with the Town's Noise Ordinance, one or more of the additional noise control measures below shall also be used: • Temporary berms or noise barriers, such as lumber or other material stockpiles and construction trailers, shall be utilized where necessary to meet the Ordinance noise limit. • Stationary equipment, such as compressor and generators shall be housed in acoustical enclosures and placed as far from sensitive receptors as feasible. "Quiet" or "sound suppressed" equipment shall be utilized where the technology exists.

TABLE 2-1 (CONTINUED)

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance	Mitigation Measure
		• Use wheeled earth moving equipment rather than track equipment. • Provide a "Noise Disturbance Coordinator" with a phone number and email address so that the nearby residents have a contact person is case of a noise problem. • Keep vehicles routes clean and smooth both on-site and off-site to minimize noise and vibration from vehicles rolling over rough surfaces • Nail guns should be used where possible as they are less noisy than manual hammering.
4.7-2: Project construction could expose people to or generate excessive groundborne vibration at adjacent residences during construction.	Less than Significant	None Required
4.7-3: Occupation of proposed residences would not result in a substantial permanent increase in ambient noise levels in the project site vicinity or along local roadways.	Less than Significant	None Required
4.7-4: The project would not expose future residents to or generate noise levels in excess of standards established in the local general plan, noise ordinance, or applicable standards of other agencies.	Less than Significant	None Required
Air Quality		
4.8-1: Project-related criteria pollutant emissions would not conflict with or obstruct implementation of the applicable Air Quality Plan.	Less than Significant	None Required
4.8-2: Project construction would not violate any air quality standard or contribute substantially to an existing or projected air quality violation.	Less than Significant with Mitigation	**4.8-2, BAAQMD Basic Construction Measures:** Prior to issuance of any Grading or Demolition Permit, the Town Engineer and the Chief Building Official shall confirm that the Grading Plan, Building Plans, and specifications stipulate that the following basic construction measures be implemented as specified in the BAAQMD Guidelines during all project construction (including individual lot development): a. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

TABLE 2-1 (CONTINUED)

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance	Mitigation Measure
		b. All haul trucks transporting soil, sand, or other loose material off-site shall be covered. 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. All vehicle speeds on unpaved roads shall be limited to 15 mph. e. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. f. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to two minutes. Clear signage shall be provided for construction workers at all access points. g. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. h. Post a publicly visible sign with the telephone number and person to contact at the Town regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.
4.8-3: Project operation would not violate any air quality standard or contribute substantially to an existing or projected air quality violation.	Less than Significant	None Required
4.8-4: Project implementation could expose sensitive receptors to substantial pollutant concentrations.	Less than Significant	None Required
4.8-5: Project implementation would not create objectionable odors affecting a substantial number of people.	Less than Significant	None Required

TABLE 2-1 (CONTINUED)

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance	Mitigation Measure
Greenhouse Gas Emissions		
4.9-1: The project would generate greenhouse gas emissions, either directly or indirectly, but would not have a significant impact on the environment.	Less than Significant	None Required
4.9-2: The project would not conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing greenhouse gas emissions.	Less than Significant	None Required
Hazards and Hazardous Materials		
4.10-1: The proposed project could result in a significant hazard to the public or the environment through the routine use and disposal of household hazardous wastes.	Less than Significant with Mitigation	**4.10-1, Implement Buyer Education Program for Household Hazardous Waste:** The project applicant, working with the Town of Los Gatos and County of Santa Clara Household Hazardous Waste program, shall implement a Buyer Education Program for Household Hazardous Waste, developing materials to educate buyers about the identification of household hazardous wastes, environmental hazards associated with mishandling of the wastes, appropriate disposal methods, and how to make an appointment for disposal. Such materials shall explain that improper disposal of such materials is against the law. At a minimum, the materials shall provide a list of example household hazardous wastes, discuss the environmental impacts of improper disposal, explain how to make an appointment for disposal, and list safer and less toxic alternatives to hazardous products commonly used. The educational materials shall be provided to the buyer at the time of purchase.
4.10-2: The proposed project would not create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials to the environment during soil excavation and subsequent site use.	Less than Significant	None Required
4.10-3: The project would not to expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where	Less than Significant	None Required

TABLE 2-1 (CONTINUED)

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance	Mitigation Measure
wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.		
Cultural Resources		
4.11-1: Construction activities on the project site could adversely affect unknown subsurface archaeological resources, if encountered, including the disturbance of human remains.	Less than Significant with Mitigation	**4.11-1, Observation by Construction Personnel:** The project shall include the following conditions: a. Construction personnel involved with earthmoving shall be alerted to the potential for the discovery of prehistoric materials. Prehistoric archaeological resources could include but not be limited to the following: darker than surrounding soils of a friable nature, concentrations of rock, bone or fresh water shellfish, artifacts of these materials, and evidence of fire (ash, charcoal, fire altered earth or rock) and burials, both human and animal. b. In the event that archaeological traces are encountered, all construction within a 30-foot radius of the find shall be halted, the Community Development Director shall be notified, and a qualified archaeologist shall be retained to examine the find and determine whether the archaeological traces qualify as either "historical resources" or "unique archaeological resources." c. If the archaeologist determines that the archaeological find is neither an historical resource nor a unique archaeological resource, work may resume unless the find consists of human remains, in which case the requirements of subdivision (e) below shall be triggered. d. If the archaeologist determines, and the Community Development Director agrees, that the find is either an historical resource or a unique archaeological resource, the archaeologist shall prepare a proposed mitigation program that he or she believes could be feasible and appropriate under the circumstances, and shall submit it to the Community Development Director for his or her consideration and approval. Where the find qualifies as a unique archaeological resource but not an historical resource, the mitigation shall be in conformance with the protocol and limitations set forth in Public Resources Code Section 21083.2. Where the find qualifies as an historical resource, such limitations shall not apply. To

TABLE 2-1 (CONTINUED)

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance	Mitigation Measure
		the extent feasible in light of project design, logistics, and costs, proposed mitigation for either an historical resource or a unique archaeological resource shall reflect the policy preference for preserving the resources in place. Data recovery may be acceptable, however, where such preservation in place is not feasible under the circumstances and where the data to be recovered would be scientifically consequential. Mitigation may also take the form of additional hand excavation to retrieve and analyze significant archaeological materials, coupled with additional monitoring of earthmoving inside the zone of archaeological sensitivity. After the mitigation approved by the Community Development Director has been completed, the project archaeologist shall prepare a final report that includes background information on the completed work, a description and list of identified resources, the disposition and curation of these resources, any testing, other recovered information, and conclusions. e. If human remains are discovered, the Santa Clara County Coroner shall be notified. The Coroner will determine whether or not the remains are Native American. If the Coroner determines that the remains are not subject to his or her authority, he or she will notify the Native American Heritage Commission, who shall attempt to identify descendants of the deceased Native Americans. Provisions for identifying descendants of a deceased Native American and for reburial will follow the protocol set forth in CEQA Guidelines Section 15064.5(e).
4.11-2: Construction activities on the project site could adversely affect unknown subsurface paleontological resources, but would not affect any unique geological features.	Less than Significant with Mitigation	**4.11-2, Halt Construction and Evaluate Resource:** Prior to the commencement of construction activities, the project applicant or its successor(s) in interest shall provide for a qualified paleontologist to provide construction personnel with training on procedures to be followed in the event that a fossil site or fossil occurrence is encountered during construction. The training shall include instructions on identification techniques and how to further avoid disturbing the fossils until a paleontological specialist can assess the site. An informational package shall be provided for construction personnel not present at the meeting. In the event that a paleontological resource (fossilized invertebrate,

TABLE 2-1 (CONTINUED)

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance	Mitigation Measure
		vertebrate, plant or micro-fossil) is found during construction, excavation within 50 feet of the find shall be temporarily halted or diverted until the discovery is evaluated. Upon discovery, the Community Development Director shall be notified immediately and a qualified paleontologist shall be retained to document and assess the discovery in accordance with Society of Vertebrate Paleontology's 2010 Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources, and recommend procedures to be followed before construction is allowed to resume at the location of the find. If the Community Development Director determines that avoidance is not feasible in light of project design, logistics, and costs, the paleontologist will prepare a recommended excavation plan, subject to review and approval by the Community Development Director, for mitigating the project's impact on this resource, including preparation, identification, cataloging, and curation of any salvaged specimens.
Public Services, Utilities, and Service Systems		
4.12-1: Development of the project site with new single-family residential uses would require continued fire protection services for future residents, visitors, and property improvements, as has been required for the site; new or physically altered governmental facilities would not be required to provide adequate fire and emergency medical protection services for the proposed project.	Less than Significant	None Required
4.12-2: The proposed residential use would require police protection services for future residents, visitors, and property improvements, as has been required for the site; the project would not result in substantial adverse physical impacts associated with the provision of new or physically altered police facilities.	Less than Significant	None Required
4.12-3: Future residents of the proposed residential project would include new students, but they would	Less than Significant	None Required

TABLE 2-1 (CONTINUED)

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance	Mitigation Measure
not contribute substantially to the increase in demand for educational services within the service area of the Los Gatos Union School District and the Los Gatos-Saratoga Union High School District, and would not result in substantial adverse impacts associated with the provision of new or physically altered facilities.		
4.12-4: The proposed project would incrementally increase water demand within the service area of the San Jose Water Company, but would not require or result in the construction of new water facilities or expansion of existing facilities located off-site; sufficient water supplies are available to serve the project from existing entitlements and resources.	Less than Significant	None Required
4.12-5: Development of the proposed residential uses would result in wastewater flows requiring collection and treatment by West Valley Sanitary District Facilities. District facilities have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	Less than Significant	None Required
4.12-6: Development of proposed residential uses would result in the generation of solid wastes requiring recycling and/or disposal at local landfill sites, in compliance with federal, state, and local statutes and regulations related to solid waste.	Less than Significant	None Required
Recreation		
4.13-1: Development of the proposed project would not increase the use of neighborhood and regional parks or other recreational facilities such that substantial physical deterioration would occur or be accelerated.	Less than Significant	None Required

TABLE 2-1 (CONTINUED)

SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Potential Impact	Significance	Mitigation Measure
4.13-2: Development of the proposed project would include provision of private open space and construction of a pedestrian/equestrian trail across the project site (both publicly accessible), and would not require the construction or expansion of any other off-site recreational facilities that might have an adverse physical effect on the environment.	Less than Significant	None Required
Energy Conservation		
4.14-1: Construction of proposed roads, infrastructure, and future residences could encourage activities that use energy in a wasteful, inefficient, or unnecessary manner.	Less than Significant with Mitigation	**4.14-1:** Mitigation Measure 4.8-2, BAAQMD Basic Construction Measures.
4.14-2: Operation of residences would not encourage activities that use fuel, water, or energy in a wasteful, inefficient, or unnecessary manner.	Less than Significant	None Required

While preparation of an IS/MND would have been legally adequate, the applicant has elected to complete an EIR for this project in order to provide additional information and to ensure that all potential environmental impacts are thoroughly addressed and that the project is evaluated for consistency with goals and policies of the Town's 2020 General Plan, the Hillside Specific Plan (HSP), the Los Gatos Sustainability Plan, and Hillside Development Standards and Guidelines (HDSG).

The primary impacts of the project relate to biological and water quality impacts on the ephemeral swale, an unnamed tributary to Ross Creek. In addition, impacts related to noise and cultural resources would occur during the project's construction phase only. Geotechnical constraints would relate to individual home designs and the potential debris flow hazards. All of these impacts could be reduced to a less-than-significant level with implementation of mitigation measures included in this Draft EIR. Construction-related mitigation measures specified in this EIR would include implementation of protective measures for special-status species, establishment of appropriate setbacks from the ephemeral swale and associated riparian zone, use of noise and air pollutant emissions controls on construction equipment, and training/alerting construction personnel to protect potential subsurface archaeological or paleontological resources.

SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

No significant and unavoidable adverse impacts would occur as the result of the proposed project. All significant and potentially significant impacts identified in Chapter 4 for the proposed project would be mitigated to a less-than-significant level with implementation of mitigation measures included in Chapter 4 of this EIR.

GROWTH-INDUCING IMPACTS

As required by *CEQA Guidelines* Section 15126.2(d), an EIR must discuss ways in which a proposed project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. The EIR must also discuss the characteristics of the project that could encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. Growth can be induced in a number of ways, such as through the elimination of obstacles to growth, through the stimulation of economic activity within the region, or through the establishment of policies or precedents that directly or indirectly encourage additional growth.

The Association of Bay Area Governments (ABAG) estimates the total Regional Housing Needs Allocation (RHNA) for Los Gatos to be 562 housing units for the planning period starting July 1, 2007 and ending June 30, 2014. The draft 2015 – 2023 Housing Element has identified a total of 174 "Above Moderate" income housing units will be required to meet the RHNA for this category of housing. Based on the 2015 – 2023 Housing Element timeframe, an estimated 132 housing units for this income category would need to be developed during the 2020 General Plan build-out period (which is 2020). The proposed project would provide 10 new housing units for this income category. The project would contribute to the town's proportion of regional housing supply requirements and also be consistent with the development of 1,600 new housing units, as anticipated by the 2020 General Plan.

While the project would require the extension of an access road onto the property, the project would not induce growth beyond the boundaries of the project site itself, since it would not extend roads or infrastructure to any adjacent, undeveloped properties. As a result, the project would not promote growth beyond the project site through the elimination of obstacles to growth, through the stimulation of economic activity within the region, or through the establishment of policies or precedents that directly or indirectly encourage growth.

CUMULATIVE IMPACTS

CEQA Guidelines Section 15130 requires the analysis of cumulative impacts that may be associated with the proposed project when they are potentially significant. According to *CEQA Guidelines* Section 15355, "Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Project-specific impacts that are considered individually minor may be "cumulatively considerable" (i.e., significant in and of themselves) when combined with the environmental effects of other projects; significant cumulative impacts must be addressed, but not necessarily in "as great detail" as the discussion of project-related impacts.

With respect to land use planning, public services, utilities, service systems, and recreation, the project's population increase would contribute to community-wide growth as defined by the General Plan because impacts are more area-wide or regional (i.e., community-wide increases in demand, not one specific project, typically result in the need to expand staffing at service agencies or infrastructure capacities). As discussed in Section 5.4, the project's contribution to these cumulative impacts was determined to be less than cumulatively considerable (i.e., less than significant).

Cumulative impacts related to other environmental topics (land use, aesthetics, biological resources, geology/soils/seismicity, hydrology/water quality, traffic, noise/vibration, hazards/hazardous materials, cultural resources, and energy conservation) are more project-specific or site-specific in nature and/or depend on conditions within the site vicinity. For this project, there is only one project in the site vicinity that would contribute to cumulative impacts under these topics: Hillbrook School Expansion Project. The Hillbrook School project would not involve construction of any new facilities (only the addition of 99 students) and therefore, no cumulative effects associated with construction or operation of any new facilities would occur. The project and Hillbrook School would, however, contribute to cumulative effects related to increased operational traffic and traffic noise.[4] With mitigation measures specified in this EIR, the project's incremental contributions to cumulative impacts under these topics were determined to be less than cumulatively considerable (less than significant).

[4] The cumulative analysis in this EIR evaluates the maximum possible traffic impact that would be associated with the Hillbrook School Expansion project, which was identified in the EIR for that project. In March 2015, the Town Council approved the proposed modifications to the conditional use permit to allow a maximum of 880 trips per day, with 10 occasions of up to 960 trips. The EIR evaluated the impacts of a higher limit of an average of 960 trips per day. The Hillbrook School Expansion EIR is available for review at the Los Gatos Community Development Department (located at 110 East Main Street during counter hours from 8:00 a.m. to 1:00 p.m., Monday through Friday) and online through the Town's website: http://www.losgatosca.gov/Hillbrook.

Cumulative impacts related to air quality (criteria air pollutants) and greenhouse gas emissions are regional in nature, and the significance of a project's impact on regional air quality or climate change is determined by comparing the project's estimated emissions with significance thresholds established by the Bay Area Air Quality Management District (BAAQMD). For this project, the project's estimated air pollutant emissions and greenhouse gas emissions would not exceed significance thresholds, and therefore, the project's contribution to these regional impacts would be less than cumulatively considerable (less than significant).

ALTERNATIVES

When compared to the Town's CEQA significance criteria and thresholds, the project would not result in any significant or potentially significant impacts that cannot be mitigated to less-than-significant levels with implementation of mitigation measures outlined in this EIR. Thus, there are no significant and unavoidable adverse impacts would occur as the result of the proposed project. The EIR identifies potentially significant impacts, none of which is significant and unavoidable, under the following environmental topics: biological resources, geology/soils/seisimicity, hydrology/water quality, noise, hazards and hazardous materials, cultural resources, and energy conservation. All of these impacts could be mitigated to a less-than-significant level with recommended mitigation measures outlined in this EIR. Construction-related mitigation measures specified in this EIR would include implementation of protective (or offsetting) measures for special-status species, nesting birds, the ephemeral swale (unnamed tributary to Ross Creek), and any unknown, subsurface archaeological or paleontological resources that could be encountered during construction. The EIR also includes control measures to reduce construction noise and wasteful use of energy.

This EIR considers four possible alternatives: (1) No Project Alternative, (2) Reduced Density Alternative, (3) Two Access Alternative, and (4) Two Access + Two EVA Alternative. The Reduced Density Alternative was reviewed on a preliminary basis, but was rejected because identified potentially significant impacts could be mitigated through implementation of specified mitigation measures. CEQA Guidelines Section 15092(c) does not allow a reduction in the number of housing units as mitigation, stating, "With respect to a project which includes housing development, the public agency shall not reduce the proposed number of housing units as a mitigation measure if it determines that there is another feasible specific mitigation available that will provide a comparable level of mitigation." The Reduced Density Alternative, being legally infeasible, thus was not carried forward for full analysis in this EIR.

The three remaining potentially feasible alternatives were evaluated in Section 5.5 in detail, and impacts associated with each of these alternatives are compared to the impacts of the proposed project in Table 5-3. In summary, some the impacts under these alternatives would be less than those the proposed project while others would be greater, and all but one of these alternatives would meet key project objectives.

No Project Alternative. Under the No Project Alternative, the proposed project would not be developed and the significant environmental impacts identified in this report (summarized above), as well as the less-than-significant impacts identified in Chapter 4 (including visual impacts), would be avoided. It

should also be noted that the HSP seeks provision of secondary access for all existing dead end streets. The HSP also discourages non-residents to use these secondary accesses by allowing such accesses to be restricted to emergency access only. Twin Oaks Drive and Brooke Acres Drive are currently dead-end streets, and would continue to be so under this alternative. The HSP's Circulation Map (see Figure 4.6-1) delineates a proposed road across the project site with connections to Twin Oaks Drive and Brooke Acres Drive. This connection would not occur under this alternative. With all properties adjacent to this project site already developed with residential uses and continued pressure for more housing in the region, and with agricultural operations likely to be marginally viable at best, it is likely that there will be future proposals involving residential development of this property.

Two Access Alternative. The Two Access Alternative would modify the project's circulation design so that access to six of the project lots would be from Twin Oaks Drive, while Cerro Vista Court would provide access to four lots. This alternative would eliminate the section of Street B that crosses the drainage (ephemeral) swale, which is an unnamed tributary to Ross Creek. The proposed emergency vehicle access (EVA) between Street A and Brooke Acres Drive would remain the same as for the proposed project. In addition, the number and configuration of lots, as well as other improvements, would be essentially the same as for the proposed project (i.e., all lots would be one acre or larger). This alternative would involve less grading than the proposed project, but because some of the excess excavated material would no longer be needed to fill in the swale to accommodate Street B, more excavated material would need to be hauled off-site. The reconfiguration of Street B under this alternative would modify locations of some of the replacement tree plantings, but the same number of replacement trees would be planted as for the proposed project (approximately 178 24-inch box size, 93 36-inch box size, and 8 48-inch box size trees, or equivalent). An alternative site plan, grading/drainage plan, and landscape plan are presented in Chapter 5.

Like the project, this alternative would meet identified project applicant and Town objectives to develop 10 residential lots and provide emergency access connections by connecting Twin Oaks Drive with Brooke Acres Drive (like the project) as well as meet Town objectives, as reflected in referenced policies from the 2020 General Plan, the HDSG, and the HSP. With implementation of the same mitigation measures required for the project, this alternative would also be consistent with identified plans and policies. There is one difference, however, in this alternative's consistency with one policy of the HSP, which states that cul-de-sacs should not exceed 800 feet in length. While neither the project's Street A nor Street B would exceed this length, the length of Street B would be reduced from approximately 770 feet to 350 feet. Although both the project and this alternative would be consistent with this policy, the shorter cul-de-sac length under this alternative would be slightly more consistent with the HSP policy than the proposed project.

This alternative would reduce the project's biological and water quality impacts by avoiding the impacts associated with constructing proposed Street B across the ephemeral swale, which is an unnamed tributary to Ross Creek. These impacts were determined to be significant, but they could be reduced to less than significant under the proposed project with implementation of specified mitigation measures.

These same mitigation measures (Mitigation Measures 4.3-8, Creek and Swale Protection, and 4.3-9, Riparian Encroachment Offsets, but modified for this alternative under Biological Resources to only apply to Street A) would still be required under this alternative because construction of Street A under this alternative would still adversely affect this ephemeral swale. With less road construction, this alternative would also reduce potential construction-related impacts related to subsurface cultural resources, wasteful use of energy, greenhouse gas emissions, and construction noise.

This alternative would reduce traffic and traffic noise increases on Twin Oaks Drive, while increasing traffic and traffic noise on Cerro Vista Court. Traffic volumes and noise level changes were estimated in this EIR and determined to be noticeable but less than significant when compared to the EIR's CEQA significance thresholds. Construction-related air quality emissions would also be slightly higher under this alternative (but still less than significant) because of increased off-haul of excavated materials.

Since the number and configuration of lots would remain the same under this alternative, most other impacts would be similar to those of the proposed project. However, the fire department's response time to the project's upper lots would be shorter under this alternative than under the proposed project.

Two Access + Two EVA Alternative. The Two Access + Two EVA Alternative would have the same road alignments as the proposed project, but the north end of Street B would have the same alignment as the Two Access Alternative where it connects with Cerro Vista Court. Street B would be gated between Street A and Lot 10, however, in order to restrict access to emergency vehicles only. Since this gated section of Street B would be an EVA, it is possible that this street section could be narrowed from 22 feet (the width under the proposed project) to 15 feet (per the fire department standards) and surfaced with compacted base rock only instead of asphalt (subject to approval of the Fire Department). With this design, access to project lots would be the same as with the Two Access Alternative, with six project lots accessing from Twin Oaks Drive and four lots accessing from Cerro Vista Court.

Under this alternative, the number and configuration of lots, as well as potential building envelope locations, would be the same as those of the proposed project (i.e., all lots would be one acre or larger, as listed in Table 3-1). Since the lot layout and road alignments would be the same, it is anticipated that the road widths, lengths, and grades would be the same as for the proposed project with one exception. Under this alternative, the EVA section of Street B would be narrowed to 15 feet and possibly surfaced with compacted base rock only instead of asphalt, since access would be restricted to emergency vehicles only. Although this alternative would not reduce project impacts as much as the Two Access Alternative (which avoids crossing the ephemeral swale altogether), it would provide greater public safety benefits by providing more secondary emergency access options to the neighborhood, while also reducing the amount of grading required and impacts on the ephemeral swale as compared to the proposed project.

Proposed grading under this alternative could be less than for the proposed project with the EVA section of Street B is narrowed to 15 feet. A narrower width for the section of Street B that crosses the ephemeral swale could also reduce impacts on trees that are currently identified as being severely impacted by the proposed project or that would have to be removed to accommodate project development. However, since

the excavated material would be used as fill in the swale vicinity (like the Two Access Alternative), there would be less fill needed for the narrower road. Thus, this alternative could require slightly more off-haul than the proposed project, but less than the Two Access Alternative.

Like the project, this alternative would meet the identified project applicant's and Town's objectives to develop 10 residential lots and provide emergency access connections by connecting Twin Oaks Drive with Brooke Acres Drive (like the project) as well as meet the Town's objectives based on referenced policies from the 2020 General Plan, the HDSG, and the HSP. With implementation of the same mitigation measures required for the project, this alternative would also be consistent with identified plans and policies. However, the primary difference between the project and this alternative's consistency with pertinent plans and policies would be consistency with the HSP's policy on secondary emergency access. Consistency of this alternative with these policies would be similar, but this alternative would be more consistent than the project because it would provide secondary emergency access to three dead end streets (Twin Oaks Drive, Brooke Acres Drive, and Cerro Vista Court), whereas the project would provide secondary emergency access to two dead end streets (Twin Oaks Drive and Brooke Acres Drive). With more emergency access connectivity, this alternative is considered to be more consistent with this HSP policy than the proposed project and the Two Access Alternative.

This alternative would reduce the project's biological and water quality impacts by narrowing the EVA section of Street B from 22 feet to 15 feet wide (per the fire department standards) so that the road crossing of the ephemeral swale would be narrower, and slightly less grading would be required. These impacts were determined to be significant, but they could be reduced to less than significant with implementation of specified mitigation measures under the proposed project. These same mitigation measures would still be required under this alternative because construction of Street A under this alternative would still adversely affect this ephemeral swale. With slightly less road construction, this alternative would also reduce potential construction-related impacts related to subsurface cultural resources, wasteful use of energy, greenhouse gas emissions, and construction noise. Possible use of permeable, compacted base rock instead of asphalt for the EVA's surface under this alternative would also reduce impacts on adjacent trees to be retained. Construction-related air pollutant emissions would be slightly less with the narrower EVA section of Street B because less grading would result in lower equipment emissions, but this decrease could be offset by slight increases in haul truck emissions associated with increased off-haul; hence air quality impacts overall would be similar to those of the proposed project.

Like the Two Access Alternative, this alternative would reduce traffic and traffic noise increases on Twin Oaks Drive, while increasing traffic and traffic noise on Cerro Vista Court. Traffic volumes and noise level changes were estimated in this EIR and determined to be noticeable but less than significant when compared to the EIR's CEQA significance thresholds. Since the number and configuration of lots would remain the same under this alternative, it is expected that the significance determinations of the environmental impacts identified in Chapter 4 would be similar for this alternative; all would be less than significant or less than significant with implementation specified mitigation measures. However, the fire

department's response time to the project site's upper lots would be shorter under this alternative than the proposed project.

Environmentally Superior Alternative. The CEQA Guidelines Section 15126.6(e)(2) provides that "[i]f the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." Although neither CEQA nor the CEQA Guidelines creates a methodology for making this determination, under the Town's methodology the Environmentally Superior Alternative would be the alternative that results in the fewest overall environmental impacts.

Notably, CEQA does not require lead agencies to approve the Environmentally Superior Alternative, even if it is feasible. Rather, the requirement to identify the Environmentally Superior Alternative is informational only, except where a number of factors are present. The only scenario in which a lead agency would be required to adopt the Environmentally Superior Alternative would be where: (1) a project as proposed has significant unavoidable environmental effects; (2) the Environmentally Superior Alternative is the only EIR alternative that substantially lessens or avoids these significant unavoidable effects; (3) the Environmentally Superior Alternative is feasible; and (4) the project proponent prefers approval of the Environmentally Superior Alternative to an outright denial of the proposed project. Such circumstances do not exist with respect to the proposed Surrey Farm Estates project.

Section 5.5, Alternatives, compares the impacts of various alternatives with those of the proposed project and a tabular comparison summary is presented in Table 5-3. As noted above, all of the project's impacts were determined to be less than significant or less than significant with implementation of specified mitigation measures. The No Project Alternative would avoid these environmental impacts and therefore, would be the Environmentally Superior Alternative. However, with all properties adjacent to this project site already developed with residential uses and continued pressure for more housing in the region, it is likely that there will be future proposals involving development of this property. Thus, at some point in the foreseeable future, development of the project site would be likely to occur – if not through the present application, then through a future one.

Since the Environmentally Superior Alternative is the No Project Alternative, the CEQA Guidelines require the EIR to identify the Environmentally Superior Alternative among the other alternatives, as noted above. For reasons discussed below, the Two Access Alternative is considered to be the Environmentally Superior Alternative amongst the action alternatives. The Two Access Alternative would result in fewer impacts overall than the proposed project, and impact reductions are greater under this alternative than under the Two Access + Two EVA Alternative (noted in Table 5-3). The Two Access Alternative also would be more consistent with Town policies than the proposed project due to the shorter response time to the upper lots by the fire department and shorter length of Street B. The Two Access + Two EVA Alternative, while providing an additional secondary emergency access, would result in the same impacts as the proposed project (although slightly less because of the narrower EVA section of Street B and possible use of compacted base rock instead of asphalt along the EVA section) and would

also result in similarly noticeable (but less than significant) traffic and associated noise increases on Cerro Vista Court as the Two Access Alternative (with corresponding decreases on Twin Oaks Drive).

As explained above, the Town's final decision-making body (i.e., the Town Council) has the authority to approve the proposed project over the Environmentally Superior Alternative if the body finds that the mitigation measures recommended for the project will be adopted and will reduce the potentially significant impacts to less-than-significant levels. This is because CEQA is only concerned with *significant* environmental effects, and agencies fully satisfy their CEQA obligations by approving projects with less than significant effects, even if there are other choices with even lower levels of impacts. As noted above, all potentially significant impacts associated with the proposed project could be reduced to less than significant with the adoption of recommended mitigation measures.

AREAS OF CONTROVERSY

Section 15123(b) of the CEQA Guidelines requires the EIR Summary to identify areas of controversy known to the Lead Agency and issues to be resolved. The public noticing process was used to inform the public and public agencies regarding the plans for the proposed residential development. A Notice of Preparation (NOP) for the EIR was prepared and issued on July 9, 2012, and the 30-day comment period extended from July 26, 2012, to August 27, 2012. No comments were received from any public agencies. A comment letter was received from the Santa Clara Valley Transportation Agency (VTA), indicating it had no comments. No other comments were received from public agencies. Three letters were received from private individuals in response to the NOP, and the following issues were raised:

- Land Use and Planning (Williamson Act contract/loss of agricultural resources; loss of privacy)
- Aesthetics (neighborhood character; changes in views of the hillside)
- Biological Resources (tree removal, impacts on wildlife and their habitat)
- Hydrology and Water Quality (drainage and flooding)
- Geology and Soils (soil erosion)
- Traffic (construction-related truck traffic; traffic safety and operation of local intersections)
- Noise (construction noise on-going for years)
- Air Quality (construction-related dirt, dust, and truck exhaust fumes on-going for years)
- Hazardous Materials (fire hazards)
- Public Services, Utilities, and Service Systems (schools, cable service, and television service)

ISSUES TO BE RESOLVED

This EIR addresses the impacts of the proposed project. Specific activities that were evaluated in this EIR include proposed creation of 10 residential lots, construction of roads and infrastructure, and eventual lot development. Since the designs of future homes on individual lots are currently unknown, the impact assessment in this EIR is based on the potential building envelopes indicated in Figure 3-2. When specific home designs for individual lots become available in the future, these plans will be reviewed by the Town as part of the Architecture and Site (A&S) review process. During the A&S review process, specific tree removal, aesthetics, grading and other design-related issues will be determined and reviewed by the Town.

CHAPTER 3 PROJECT DESCRIPTION

3.1 PROJECT LOCATION

The subject property is located east of Twin Oaks Drive in the southern part of the Town of Los Gatos. The 17.55-acre is comprised of one parcel (Assessor's Parcel Number 532-16-006) and is generally east of Twin Oaks Drive, west of Cerro Vista Drive, north of Brooke Acres Drive, and south of Cerro Vista Court. The project site's location is indicated in **Figure 3-1**.

3.2 SURROUNDING AREA

The project site is surrounded by residential development: single-family residences located on the east side of Twin Oaks Drive and at the eastern terminus of Longmeadow Drive abut the project's western boundary; single-family residences off Brook Acres Drive are located along the site's southern boundary; single-family residences on Cerro Vista Court are located adjacent to the project's northeastern boundary; and single-family residences located on west side of Cerro Vista Drive abut the project's eastern boundary. In addition, Ross Creek is located along the site's southwestern project boundary in an open channel, and traverses the westernmost portion of the site via a buried culvert. Hillbrook School, a private K-8 school, is located adjacent to the site's northwestern boundary.

3.3 PROJECT OBJECTIVES

Section 15124(b) of the *CEQA Guidelines* requires that an EIR include "[a] statement of the objectives sought by the proposed project. A clearly written statement of objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and will aid the decision makers in preparing findings or a statement of overriding considerations, if necessary. The statement of objectives should include the underlying purpose of the project."

This formulation does not specify whether, for proposed private projects seeking discretionary governmental approval, such objectives shall reflect the aspirations of the project applicant, those of the lead agency, or both. Although lead agencies around California typically include a single set of objectives intended to reflect either the views of the applicant or the combined view of both the applicant and the approving agency, nothing in Section 15124(b) or any other provisions of CEQA or the *CEQA Guidelines* prevents a lead agency from formulating its own set of project objectives in addition to those of an applicant, reflecting the differing perspectives of the applicant and agency. Therefore, this section presents the project objectives, as represented by the proposed plans submitted by the project applicant, as well as the Town's objectives, as reflected in own legislative policies (i.e., Los Gatos General Plan and Hillside Development Standards and Guidelines). In creating these proposed objectives, Town staff has identified what it regards as key relevant policies from the Town's 2020 General Plan because, as with any proposed project, the pending application, if ultimately approved, must be consistent with the General

Project Location

Figure 1

Surrey Farm Estates, 170 Twin Oaks Drive

Source: Geier & Geier Consulting, Inc. (2013)

Plan. Even so, however, readers should be aware that these precise objectives will not be binding on the Town Council, which, as the elected decision-making body for the proposed project, will retain broad legislative discretion to weigh and balance competing policy considerations, as well as input from members of the public, other agencies, and Town staff, in reaching its own decision on the proposed project.

This approach to formulating tentative Town objectives reflects the proper division of labor between an unelected professional staff and a politically accountable legislative body. Similarly under CEQA, the inclusion by staff of alternatives in an EIR means simply that such alternatives are "potentially feasible," while the ultimate determination of "actual feasibility" is reserved to final decision-makers. (See, e.g., *California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, 981, 999.) So too are professional staff unable to bind elected local agency decision-makers with staff's interpretation of General Plan policies, as city councils and boards of supervisors enjoy considerable discretion in interpreting policies over whose meaning reasonable minds may differ. (See, e.g., *No Oil, Inc. v. City of Los Angeles* (1987) 196 Cal.App.3d 223, 243.)

3.3.1 APPLICANT PROJECT OBJECTIVES

The objectives of the project applicant for the Surrey Farm Estates project would be as follows:

1. Develop 10 residential lots on developable portions of the project site and designate remaining portions of the site as open space/common area on two common lots.
2. Provide emergency access connections to adjacent roadways, wherever feasible, to improve secondary emergency access to the project site and adjacent neighborhoods currently served by single-access roads.

3.3.2 TOWN PROJECT OBJECTIVES

The project site is located in the part of the Town subject to the Hillside Development Standards and Guidelines (HDSG) and Hillside Specific Plan (HSP), but the project site is also subject to the Los Gatos 2020 General Plan. While goals, objectives, and policies of these plans are presented and discussed in detail in Chapter 4, the objectives from these plans that are relevant to development of this property in general and reflect the Town's objectives are listed as follows:[1]

1. Preserve the natural beauty and ecological integrity of the Santa Cruz Mountains and surrounding hillsides by regulating new homes (2020 General Plan Community Design Element, Goal CD-14).

[1] These goals, objectives, and policies are discussed in Sections 4.1, Land Use and Planning, and 4.2, Aesthetics.

2. Preserve the natural topography and ecosystems within the hillside area by regulating grading, landscaping, and lighting (2020 General Plan Community Design Element, Goal CD-15).
3. Maintain the natural appearance of the hillsides from all vantage points including the valley floor (HDSG, Objective 4).
4. Protect ridgelines from development (HDSG, Objective 5).
5. Maintain the rural, natural, open space character of the hillsides (HDSG, Objective 7).
6. Ensure that development does not dominate, but rather visually blends and achieves harmony between the natural and built environment (HDSG, Objective 9).
7. Conserve the natural features of the site such as topography, natural drainage, vegetation, wildlife habitats, movement corridors and other physical features (HDSG, Objective 10).
8. Cluster dwelling units to preserve the scenic nature of the hillsides and allow for economies in the construction of required public and private facilities (HSP, Policy 1.3.3).
9. Site new homes to maximize privacy, livability, protection of natural plant and wildlife habitats and migration corridors, and adequate solar access and wind conditions, taking advantage of scenic views but not creating significant ecological or visual impacts affecting open spaces, public places, or other properties (2020 General Plan Community Design Element, Policy CD-6.4).

3.4 TECHNICAL PROJECT DESCRIPTION

The project applicant is requesting approval of the following:

- Amendment of the site's General Plan designation from "Agriculture" to "Hillside Residential – 0-1 du/acre";
- Rezoning of the subject property from "RC" (Resource Conservation) to "HR:1:PD" (Hillside Residential, 1 unit/acre, with Planned Development overlay);
- Tentative Tract Map indicating 10 lots for single-family residential use plus two common lots (Lots A and B); and
- Cancellation of a Williamson Act Contract.

Approval of this General Plan amendment, rezoning, and Tentative Map would allow the project applicant to subdivide the vacant 17.55-acre property into 10 lots for future development of single-family residences. In addition to the 10 residential lots, two common lots are proposed. Common Lot A would be comprised of the rights-of-way for Private Streets A and B, while Common Lot B would be the designated open space in the southeastern portion of the site. Residential lots would comprise approximately 13 acres (74%) of the site, while roads would comprise 7% and open space would comprise the balance (19%). **Table 3-1** summarizes proposed sizes of the 10 residential lots and two common lots (A and B).

TABLE 3-1

SUMMARY OF AREAL EXTENT OF PROPOSED DEVELOPMENT

	Proposed Lot Sizes	
Proposed Lots	**Square Feet**	**Acres**
Lot 1	42,648	0.98
Lot 2	42,776	0.98
Lot 3[a]	41,810	0.96
Lot 4	40,912	0.94
Lot 5	44,698	1.03
Lot 6	87,022	2.00
Lot 7	103,258	2.37
Lot 8	52,598	1.21
Lot 9[a]	57,968	1.33
Lot 10	41,270	0.95
Common Lot A - Access Road Right-of-Way (Private Streets A and B)[a]	51,798	1.18
Common Lot B – Open Space[a]	157,611	3.62
Total Project Site Area	**764,369**	**17.55**
[a] Riparian Acreage on Lots 3, A, 9, and B	13,725	0.32

3.4.1 RESIDENTIAL LOTS

As indicated in Table 3-1, proposed residential lots would be approximately one acre or larger in size, ranging between 0.94 (40,912 s.f.) and 2.37 acres (103,258 s.f.). Eight of the proposed lots would be approximately one acre in size, while the two lots at the top of the hill on-site would be two acres or more. The proposed Tentative Tract Map is presented in **Figure 3-2**, and potential building areas and driveways that were analyzed in this EIR are also indicated on this figure. **Figure 3-3a** shows the elevation differences between proposed potential building envelopes across the site, both north to south (Cross-section C) and east to west (Cross-section D). **Figure 3-3b** present Cross-sections E and F, and they demonstrate how project homes would be designed to "step" up the hill to maintain conformance with the specific height limit.

Subdivided lots would be purchased and developed by other individuals or home builders. Individual home designs would be subject to a separate Architecture and Site review at some time in the future and they are not specifically evaluated in this EIR. Development of each lot would be governed by the parameters, guidelines, and restrictions that are ultimately approved as part of the Planned Development application. If proposed development of individual lots does not conform to PD guidelines and restrictions, additional environmental review would be required.

Proposed Site Plan

Figure 3-2

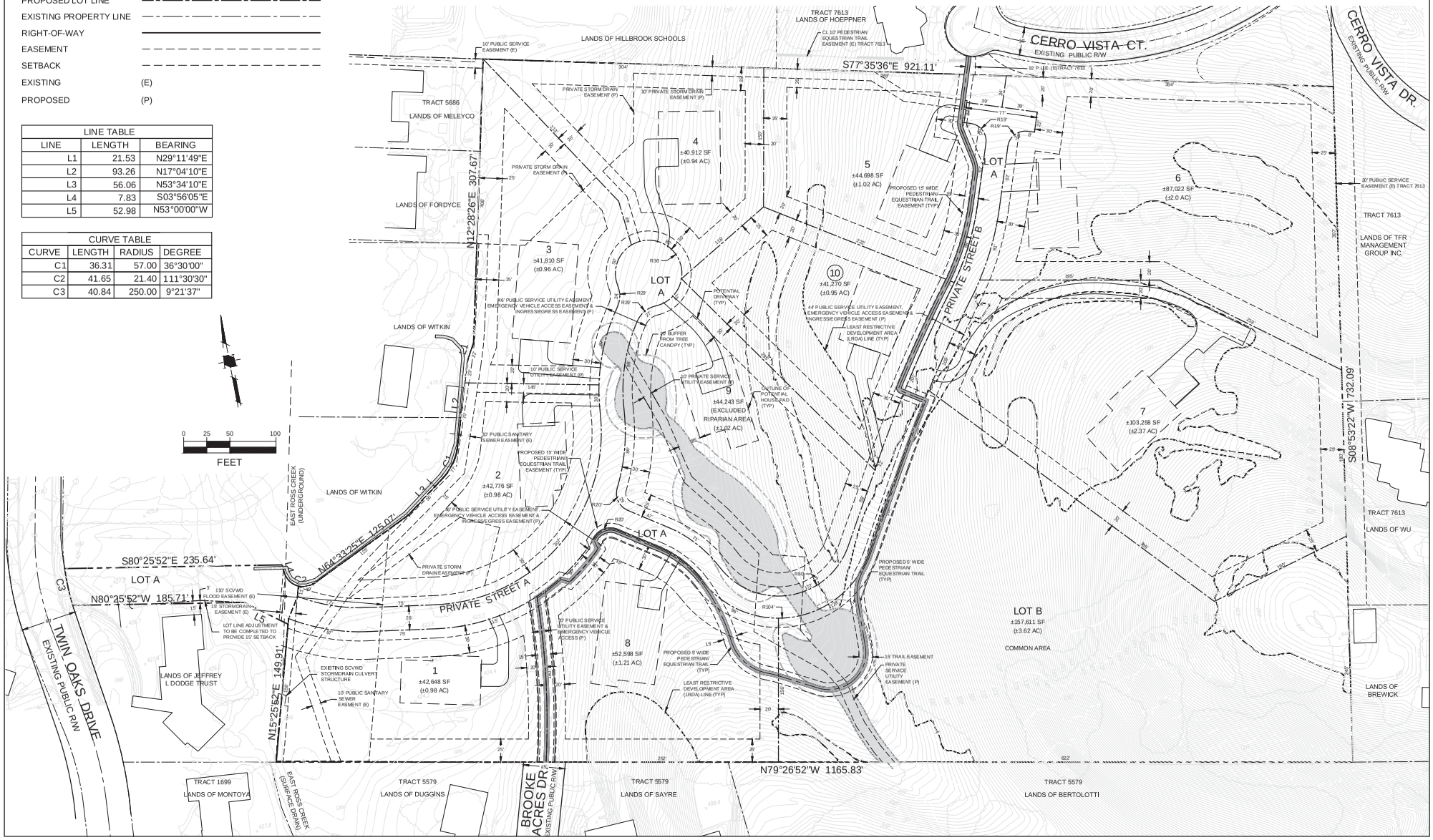
LEGEND

PROJECT BOUNDARY	
PROPOSED LOT LINE	
EXISTING PROPERTY LINE	
RIGHT-OF-WAY	
EASEMENT	
SETBACK	
EXISTING	(E)
PROPOSED	(P)

LINE TABLE		
LINE	LENGTH	BEARING
L1	21.53	N29°11'49"E
L2	93.26	N17°04'10"E
L3	56.06	N53°34'10"E
L4	7.83	S03°56'05"E
L5	52.98	N53°00'00"W

CURVE TABLE			
CURVE	LENGTH	RADIUS	DEGREE
C1	36.31	57.00	36°30'00"
C2	41.65	21.40	111°30'30"
C3	40.84	250.00	9°21'37"

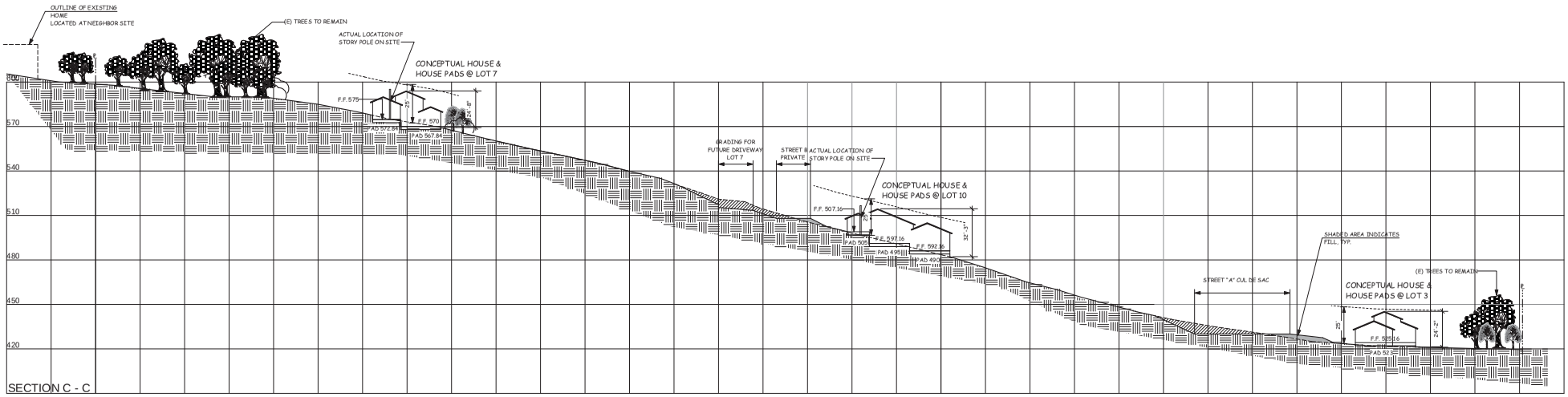
NOTES:
FUTURE HOUSE SITES ARE SHOWN FOR REFERENCE ONLY AND WILL BE SUBJECT TO A SEPARATE A&S REVIEW PROCESS AT A LATER DATE.

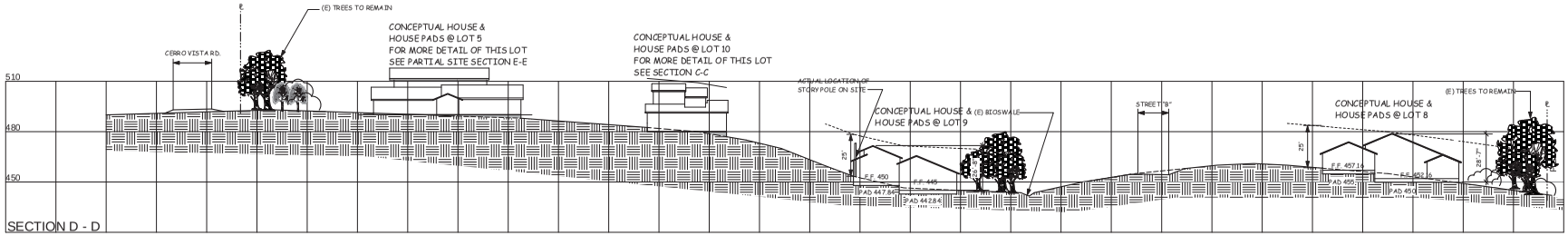


Source: HMH Engineers (2015)

Cross-sections C and D

Figure 3-3a





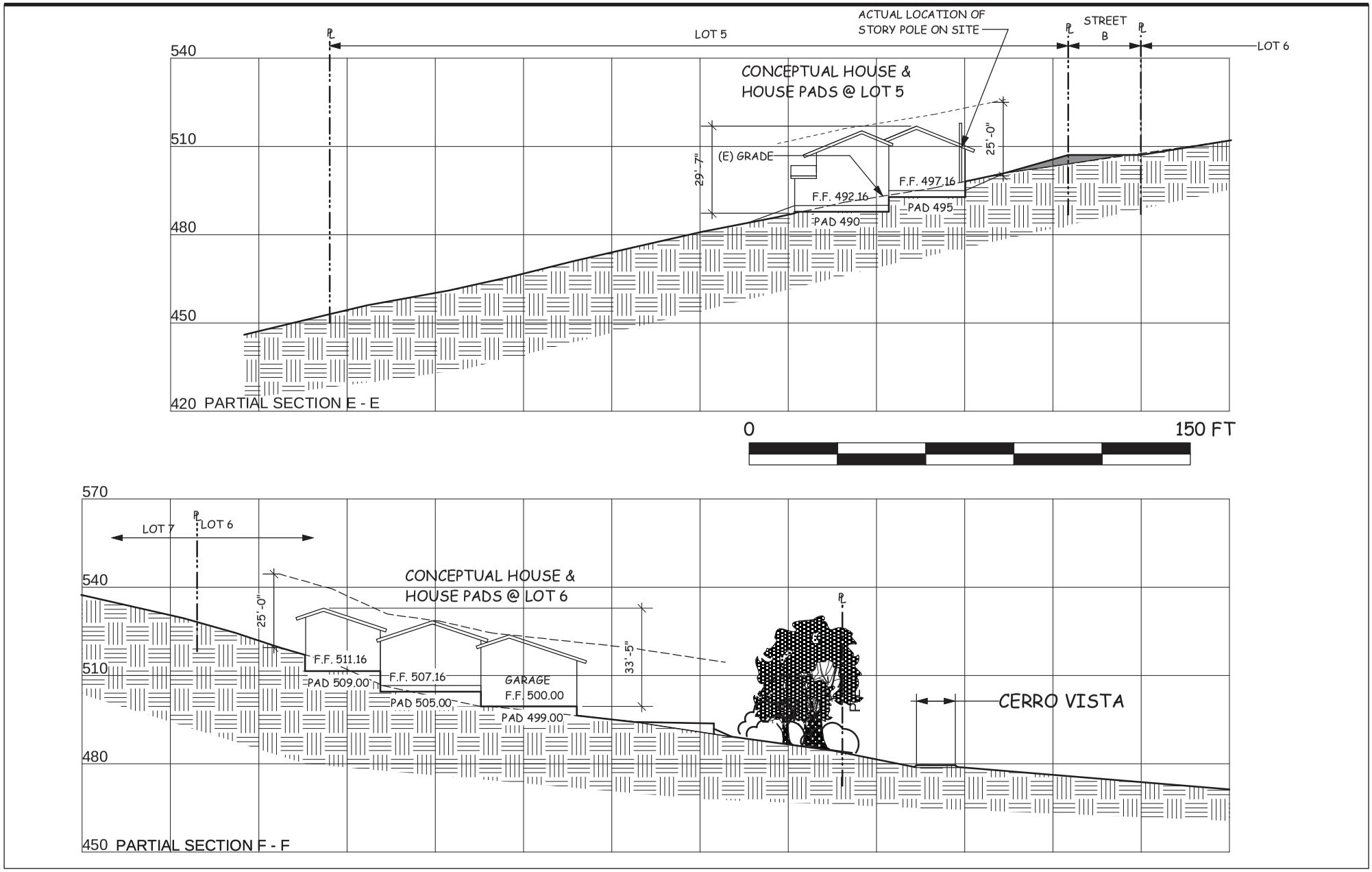
0 150 FT

Surrey Farm Estates, 170 Twin Oaks Drive

Source: Paragon Design Group, Inc. (2014)

Cross-sections E and F

Figure 3-3b



Source: Paragon Design Group, Inc. (2015)

The PD overlay zone is a specially tailored development tool that identifies site-specific zoning regulations consistent with the General Plan and establishes development standards (i.e., setbacks, road widths, etc.). Design standards for future residences will be dictated by the Town's Hillside Development Standards and Guidelines. The development of the site must comply with these standards and guidelines, as well as the standards established in the PD overlay. Compliance will be determined by the Town through the Architecture and Site ("A&S") approval process, which will occur as each lot is proposed for development.

3.4.2 ROADWAYS AND TRAILS

Project development would include the construction of two private streets (A and B; Figure 3-2), an emergency access road, and a long private driveway for access to Lot 7. The entry to the subdivision area would be at Twin Oaks Drive. Private Street A would extend eastward from Twin Oaks Drive (just north of 170 Twin Oaks Drive), and then turn northward on the lower portion of the site. Private Street B would extend eastward from Private Street A and then turn northward up the site's hillside. In addition, an 18-foot wide emergency ingress/egress with compacted base rock surface is proposed to connect Brooke Acres Drive to Private Street A, but a locked gate is proposed to be located on this access road at the southern project boundary to restrict access to emergency vehicles only. The access driveway for Lot 7 is also proposed to be extended from Private Street B. The proposed streets would not connect to any other existing streets located near or contiguous to the site (including Cerro Vista Court and Cerro Vista Drive).

Private Street A would extend eastward and then northward from Twin Oaks Drive (just north of 170 Twin Oaks Drive), providing access to four of the proposed lots (Lots 1 through 4). Private Street A would be 24 feet wide (paved width) and approximately 800 feet long, terminating at a turnaround bulb at Lot 4. Private Street A would have grades mostly ranging from 1.0% to 9.2%. Private Street B would extend eastward from Private Street A and then northward up the site's hillside, providing access to the six remaining lots (Lots 5 through 10). Private Street B would be 22 feet wide (paved width) and approximately 770 feet long, terminating at a hammerhead turnaround near the site's northern boundary adjacent to Lots 5 and 6. Private Street B would have grades of up to 15.0%. The driveway for Lot 7 would have grades at some locations of up to 20.0%.

A pedestrian/equestrian trail is proposed to traverse the site, extending between Cerro Vista Court at the northern project boundary and Brooke Acres Drive at the southern project boundary. This trail would extend along Private Street B (adjacent to proposed Lots 5, 10, and B, then across the drainage swale), along a short section of Private Street A, and then along the emergency vehicle access connection to Brooke Acres Drive at the southern project boundary. The proposed trail and open space area would be accessible to the public.

3.4.3 GRADING AND DRAINAGE

The conceptual grading and drainage plan is shown in **Figure 3-4**, and the limits of grading are indicated on this plan. For initial project development, grading activities would be limited to the construction of the

Preliminary Grading and Drainage Plan

Figure 3-4

LEGEND

- PROJECT BOUNDARY
- PROPOSED LOT LINE
- EXISTING PROPERTY LINE
- RIGHT-OF-WAY
- EASEMENT
- SETBACK
- STORM DRAIN PIPE
- STORM DRAIN PIPE (EXISTING)
- CATCH BASIN
- CURB INLET
- STORM DRAIN MANHOLE
- STORM DRAIN DIVERSION MANHOLE
- CATCH BASIN (EXISTING)
- CURB INLET (EXISTING)
- STORM DRAIN MANHOLE (EXISTING)
- TREE TO BE REMOVED
- TREE TO BE TRANSPLANTED

SITE AVERAGE SLOPE

$$S = \frac{0.00229 \times I \times L}{A}$$

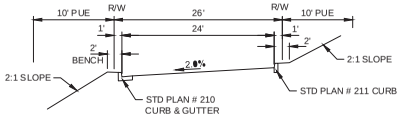
WHERE,

I = CONTOUR INTERVAL IN FEET (FT)
L = COMBINED LENGTH OF CONTOUR LINES
A = AREA IN ACRES (17.55 AC)

S = 23.92

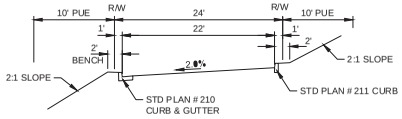
EARTHWORK:

CUT (CY) : 11,000
FILL (CY) : 7,050
NET (CY) : 3,950 (CUT)



TYPICAL STREET 'A' SECTION

NOT TO SCALE



TYPICAL STREET 'B' SECTION

NOT TO SCALE

NOTES:
FUTURE HOUSE SITES ARE SHOWN FOR REFERENCE ONLY AND WILL BE SUBJECT TO A SEPARATE A&S REVIEW PROCESS AT A LATER DATE.

Source: HMH Engineers (2015)

private streets and driveway and all underground utilities associated with the project. Private streets A and B and the access driveway for proposed Lot 7 would follow the alignment of the existing dirt road on Lot 7; utilizing this existing dirt road would help limit the extent of grading required. However, retaining walls (2 to 5 feet high) are proposed at various locations along the proposed streets (adjacent to Lots 5, 6, 7, and 9) and the Lot 7 driveway. Project implementation would result in approximately 2.9 acres of surface disturbance (1.7 acres for ten residences, including driveways, patios, etc. and 1.2 acres for roadways). The total grading quantity on-site would be approximately 11,100 cubic yards (c.y.) of cut and 7,050 c.y. of fill, resulting in the export of approximately 3,950 c.y. of soil for construction of the proposed private streets, access driveway on Lot 7, emergency access to Brooke Acres Drive, and storm drainage improvements. Proposed construction would also result in removal of approximately 70 protected trees, as indicated in Figure 3-4. Details of grading, final driveway alignments, home site layout, home design, and landscaping for the future 10 residential lots are not currently proposed. However, the applicant has provided, for the purpose of preliminary review, the grading concepts for the building layouts of the 10 lots.

The proposed stormwater control and hydromodification management plan is included as **Figure 3-5**. No untreated water flow would be allowed to be released into natural waterways during or after construction. All development would conform to the Best Management Practices (BMPs) established under the National Pollutant Discharge Elimination System (NPDES) permit. The conceptual stormwater plan includes two water quality/flow control basins to treat drainage from new impervious surfaces, which would be comprised of Private Street A, Private Street B, the emergency access road to Brooke Acres Drive, and the driveway on Lot 7. Catch basins are proposed to be located along Private Streets A and B as well as the western project boundary, collecting and directing surface runoff to the two basins. Biofiltration facilities would be required on each lot to capture and detain runoff from each residence; drainage facilities on each lot would be designed to direct any excess runoff to the two flow control basins located in the western margin of the site on proposed Lots 2, 3, and 4.

3.4.5 PROJECT UTILITIES AND EASEMENTS

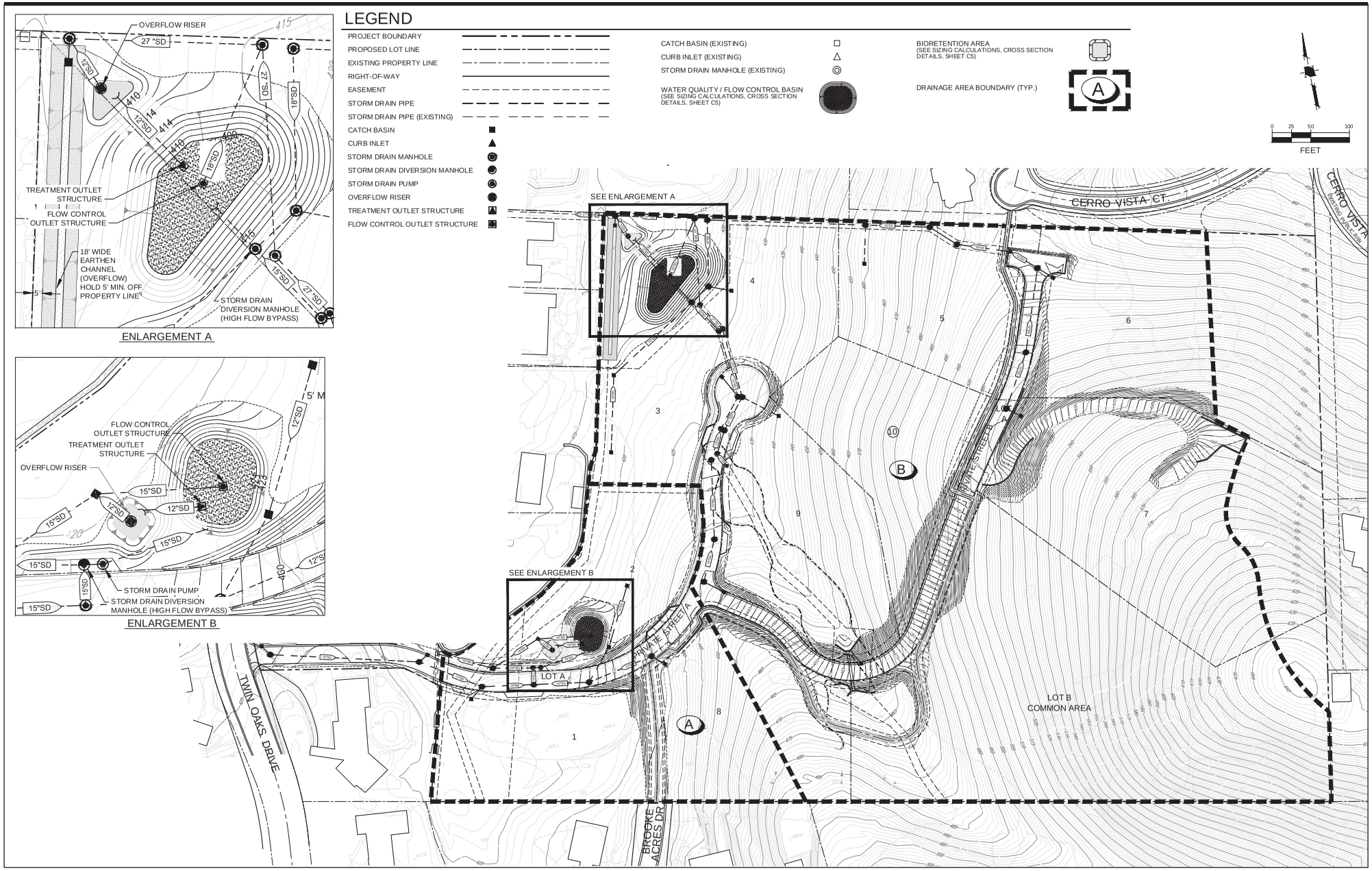
A conceptual utility plan is shown in **Figure 3-6**. Water service to the project area is provided by the San Jose Water Company (SJWC), while sewer service would be provided by the West Valley Sanitation District (WVSD). Other service agencies include: Pacific Gas & Electric (PG&E) for gas and electric services, AT&T for telephone service, and Comcast for cable service. These agencies provide service to residential development surrounding the project site.

Eight-inch water lines would be extended along Private Streets A and B, connecting with existing water lines in Twin Oaks Drive at the western project boundary, Brooke Acres Drive at the southern boundary, and Cerro Vista Court at the northern project boundary.

There is an existing 8-inch sanitary sewer line that extends onto the site from a residential property to the south (at the end of Brooke Acres Drive), and this line generally follows the western project boundary and

Preliminary Stormwater Control Plan

Figure 3-5

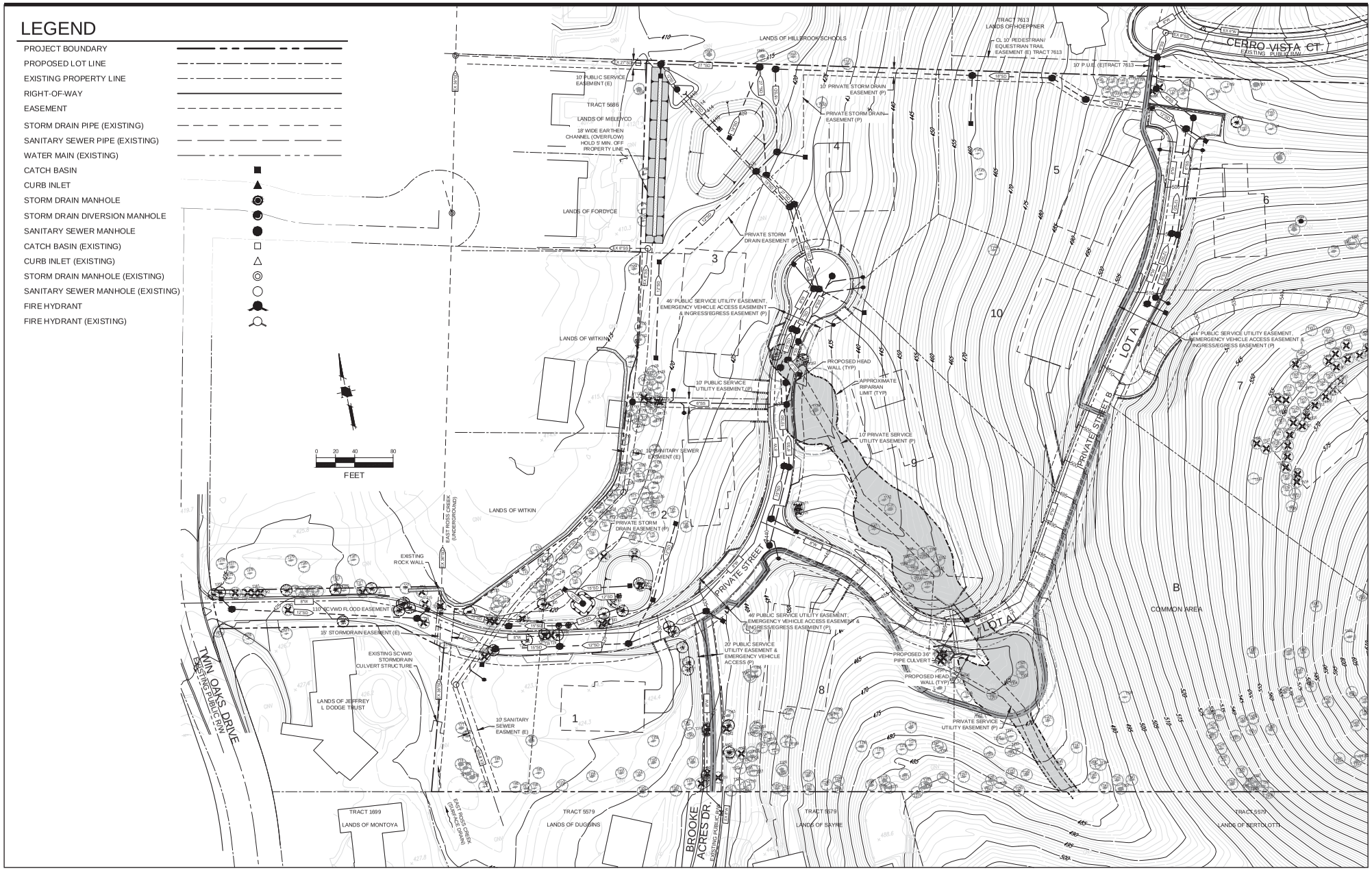


Surrey Farm Estates, 170 Twin Oaks Drive

Source: HMH Engineers (2015)

Utility Plan

Figure 3-6



Source: HMH Engineers (2015)

connects with an 8-inch sewer main that extends from the east end of Longmeadow Drive to the western project boundary. Sanitary sewer lines from the seven westerly and southerly lots (1 through 4 and 8 through 10) would connect to this sewer main via a direct connection (Lot 1) or a 6-inch sewer line that would extend along Private Street A and an easement located between Lots 2 and 3. The three upper lots (5, 6, and 7) would connect to a 6-inch line at the north end of Private Street B, which would connect to an existing sanitary sewer line in Cerro Vista Court.

The proposed project would connect to two existing storm drains: a 36-inch storm drain at the western project boundary (at the Ross Creek culvert) and a 27-inch storm drain at the northwest corner of the site. Runoff from the southern water quality/flow control basin would drain to the existing 36-inch storm drain at the western project boundary, while runoff from the northern basin would drain to the existing 27-inch storm drain at the northwestern corner. Storm drains (12- to 27-inch) would be installed in Private Street A and would connect to both basins. An 18-inch storm drain is proposed from the northern terminus of Private Street B, extending along the northern project boundary, and connecting with the northern basin.

There are two existing easements on the project site. A 110-foot wide flood easement in the southwestern corner of the site (see Figure 3-2) associated with Ross Creek and a 10-foot wide sewer easement that generally extends along most of the western project boundary. In addition to these existing easements, the following proposed easements are indicated on the proposed Tentative Tract Map (Figure 3-2):

1. Private Street A: 46-foot wide public service utility easement, emergency vehicle access easement and ingress/egress easement.
2. Private Street B: 44-foot wide public service utility easement, emergency vehicle access easement and ingress/egress easement.
3. Emergency Access Connection to Brooke Acres Drive: 20-foot wide public service utility easement and emergency vehicle access easement.
4. Drainage Swale (Common Lot B, Lot 9): 10-foot wide private service utility easement.
5. Sanitary Sewer Main (Lot 2): 10-foot wide public service utility easement.
6. Two flow control basins (Lots 2, 3, 4): Private storm drain easement.
7. Northern Project Boundary (Lots 4 and 5): 10-foot wide private storm drain easement
8. Trail Easement

3.4.6 LANDSCAPE PLAN

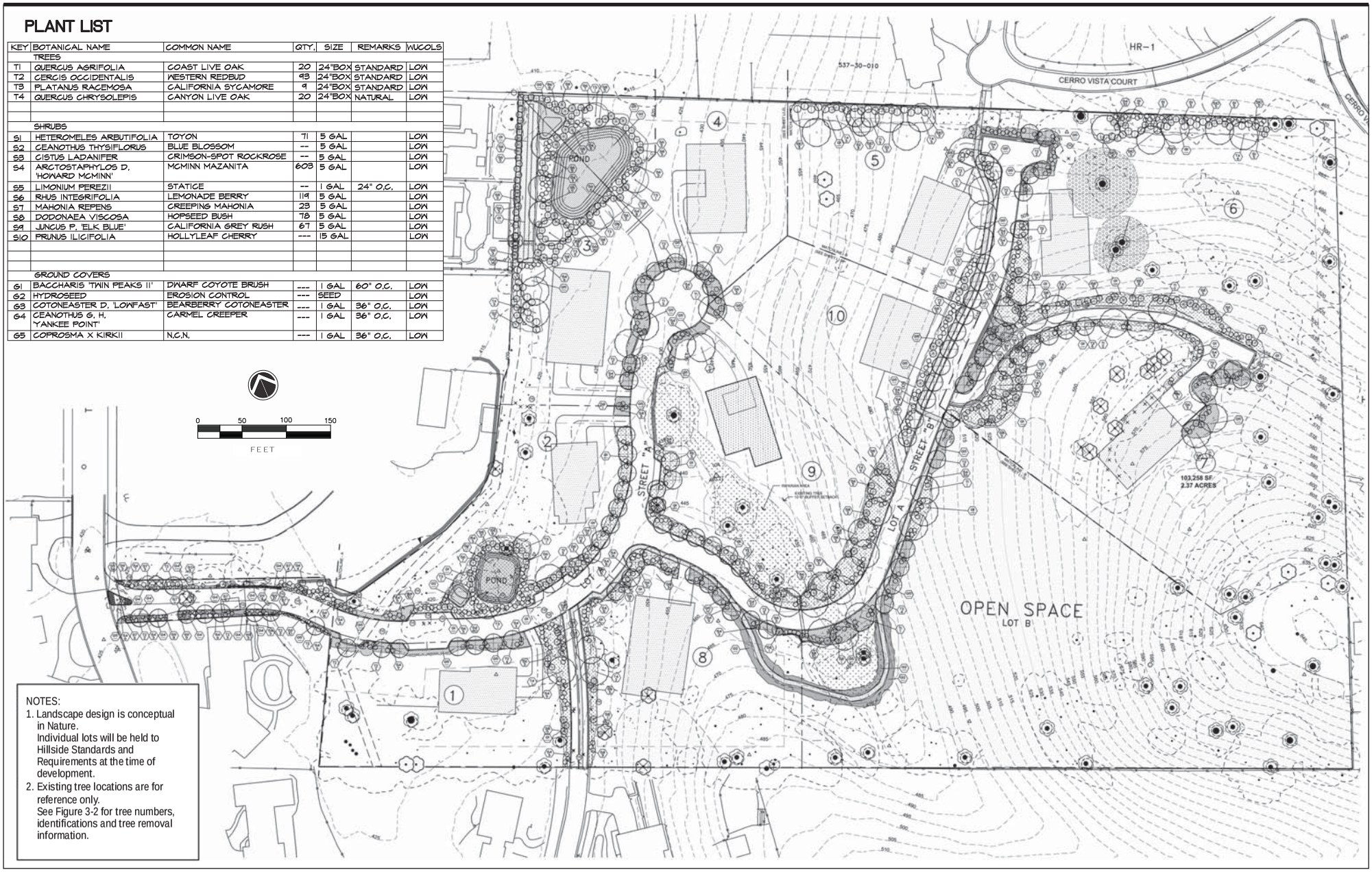
The overall landscape plan is presented in **Figure 3-7**. The overall site plan was developed with the concept of saving as many trees as possible. However, construction of new streets would require the removal of some of the existing trees. The proposed planting concept is to maximize retention of approximately 485 of the 585 Protected trees (83%) that are currently located on the project site,

Proposed Overall Landscape Plan

Figure 3-7

PLANT LIST

KEY	BOTANICAL NAME	COMMON NAME	QTY.	SIZE	REMARKS	WUCOLS
	TREES					
T1	QUERCUS AGRIFOLIA	COAST LIVE OAK	20	24"BOX	STANDARD	LOW
T2	CERCIS OCCIDENTALIS	WESTERN REDBUD	93	24"BOX	STANDARD	LOW
T3	PLATANUS RACEMOSA	CALIFORNIA SYCAMORE	9	24"BOX	STANDARD	LOW
T4	QUERCUS CHRYSOLEPIS	CANYON LIVE OAK	20	24"BOX	NATURAL	LOW
	SHRUBS					
S1	HETEROMELES ARBUTIFOLIA	TOYON	71	5 GAL		LOW
S2	CEANOTHUS THYSIFLORUS	BLUE BLOSSOM	--	5 GAL		LOW
S3	CISTUS LADANIFER	CRIMSON-SPOT ROCKROSE	--	5 GAL		LOW
S4	ARCTOSTAPHYLOS D. 'HOWARD MCMINN'	MCMINN MAZANITA	603	5 GAL		LOW
S5	LIMONIUM PEREZII	STATICE	--	1 GAL	24" O.C.	LOW
S6	RHUS INTEGRIFOLIA	LEMONADE BERRY	119	5 GAL		LOW
S7	MAHONIA REPENS	CREEPING MAHONIA	23	5 GAL		LOW
S8	DODONAEA VISCOSA	HOPSEED BUSH	78	5 GAL		LOW
S9	JUNCUS P. 'ELK BLUE'	CALIFORNIA GREY RUSH	67	5 GAL		LOW
S10	PRUNUS ILICIFOLIA	HOLLYLEAF CHERRY	---	15 GAL		LOW
	GROUND COVERS					
G1	BACCHARIS 'TWIN PEAKS II'	DWARF COYOTE BRUSH	---	1 GAL	60" O.C.	LOW
G2	HYDROSEED	EROSION CONTROL	---	SEED		LOW
G3	COTONEASTER D. 'LOWFAST'	BEARBERRY COTONEASTER	---	1 GAL	36" O.C.	LOW
G4	CEANOTHUS G. H. 'YANKEE POINT'	CARMEL CREEPER	---	1 GAL	36" O.C.	LOW
G5	COPROSMA X KIRKII	N.C.N.	---	1 GAL	36" O.C.	LOW



NOTES:
1. Landscape design is conceptual in Nature.
   Individual lots will be held to Hillside Standards and Requirements at the time of development.
2. Existing tree locations are for reference only.
   See Figure 3-2 for tree numbers, identifications and tree removal information.

Source: Reed Associates Landscape Architecture (2015)

transplant approximately 30 of Protected trees (5%), and then plant new trees, shrubs, and groundcovers along the two proposed roadways and emergency vehicle access (EVA) connecting to Brooke Acres Drive, along the northern project boundary (adjacent to proposed Lots 5 and 6), and along the project boundaries in the northwest corner of the site (adjacent to two existing residences at the end of Longmeadow Drive and Hillbrook School). In addition, trees and shrubs would be planted around the two proposed retention basins, which would obscure views of these basins.

3.4.7 CONSTRUCTION SCHEDULE

Construction of the proposed private streets and all underground utilities would be completed in one phase. The preliminary project construction schedule is estimated at completion in six to nine months. Home development would occur subsequently, as lots would be sold and developed by individual lot owners.

3.5 REQUIRED PERMITS AND APPROVALS

In conformance with Sections 15050 and 15367 of the *CEQA Guidelines*, the Town of Los Gatos has been designated as the "lead agency" for the proposed project, defined as the "public agency, which has the principal responsibility for carrying out or approving a project."

Following certification of the EIR by the Town Council, the Town must make findings for each significant effect identified in the EIR and determine whether it will adopt each mitigation measure (and if not, why). In considering approval of the proposed project, the Town Council will first consider the proposed General Plan amendment and rezoning. Approval of the Tentative Tract Map by the Town Council will require a separate public hearing process, as established by the PD Ordinance. Development of any of the residential lots will require separate review and approval under the Town's Architecture and Site review process.

Responsible agencies are those agencies that have discretionary approval over one or more actions involved with the development of the proposed project site. Trustee agencies are state agencies having discretionary approval or jurisdiction by law over natural resources affected by the project. **Table 3-2** lists the agencies from which approvals and/or permits would be required to implement the project. The Town and other responsible agencies will rely on this EIR when determining whether to issue discretionary approvals to implement the project.

REFERENCES – PROJECT DESCRIPTION

HMH Engineers, 2014. *Civil Engineer Plans, P.D. Site Development Plans, Surrey Farm Estates, Los Gatos, California*. Sheets C1 through C9. October 15, 2014.

Paragon Design Group, Inc., 2014. *Surrey Farm Estates Planned Development, Los Gatos, California*. Sheets CS, A-0 through A-5, and L1.0 through L1.5. May 1, 2014.

TABLE 3-2

MATRIX OF PROJECT APPROVALS AND PERMITS

Permit/Approval Required	Approving Agency	Lead/Trustee/ Responsible Agency Designation
General Plan Amendment	Town of Los Gatos	Lead Agency
Rezoning	Town of Los Gatos	Lead Agency
Tentative Tract Map	Town of Los Gatos	Lead Agency
Final Map	Town of Los Gatos	Lead Agency
Williamson Act Contract Cancellation	Town of Los Gatos	Lead Agency
Traffic Control Plan	Town of Los Gatos	Lead Agency
Tree Removal Permit	Town of Los Gatos	Lead Agency
Grading Permit	Town of Los Gatos	Lead Agency
Exception to *Guidelines and Standards for Land Use Near Streams*	Town of Los Gatos	Lead Agency
Site Plan Review and Approval	Santa Clara County Fire Department	Responsible Agency
Service Agreement	San Jose Water Company	Responsible Agency
Service Agreement	West Valley Sanitation District	Responsible Agency
General Permit and Stormwater Pollution Prevention Plan	Regional Water Quality Control Board (San Francisco Region)	Responsible Agency
Encroachment Permit	Santa Clara Valley Water District	Responsible Agency
Section 404 (pending jurisdiction verification)	U.S. Army Corps of Engineers	Responsible Agency
Stream Alteration Agreement and "Take" Permit (only if state-listed endangered, threatened, or candidate species are present)	California Department of Fish and Wildlife	Responsible Agency
"Take" Permit (only if federally-listed endangered or threatened species are present)	U.S. Fish and Wildlife Service	Responsible Agency

CHAPTER 4 SETTING, POTENTIAL IMPACTS, AND MITIGATION MEASURES

4.1 LAND USE, AGRICULTURE RESOURCES, PLANS, AND POLICIES

This section evaluates the project's consistency with applicable land use plans, goals, and policies, and also addresses land use compatibility issues.

4.1.1 ENVIRONMENTAL SETTING

EXISTING LAND USES

The 17.55-acre project site is undeveloped and consists of a west-facing hillside that slopes downward from east to west. The project site is surrounded by residential development: single-family residences located on the east side of Twin Oaks Drive and at the eastern terminus of Longmeadow Drive abut the project's western boundary; single-family residences off Brook Acres Drive are located along the site's southern boundary; single-family residences on Cerro Vista Court are located adjacent to the project's northeastern boundary; and single-family residences located on the west side of Cerro Vista Drive abut the project's eastern boundary. In addition, Ross Creek is located along the site's southwestern project boundary in an open channel, and traverses the southwestern portion of the site via a buried culvert. Hillbrook School, a private K-8 school, is located adjacent to the site's northwestern boundary.

Residential lot sizes in the project vicinity range from 0.35 acre to 10.5 acres, with most contiguous lots around 1 acre in size. Specifically, residential lot sizes along the northwestern project boundary (east end of Longmeadow Drive) range from 0.35 acre to 0.65 acre, while lots along the project's southwestern boundary (east side of Twin Oaks Drive) range from 0.76 acre to 2.0 acres. Lots on the west side of Twin Oaks Drive are smaller, ranging from 0.36 acre to 0.47 acre. Along the site's southern boundary, there are two residential lots that are nearly 1 acre each (0.91 and 0.98 acre) and a third lot that is much larger (10.5 acres). There are three lots that abut the site's eastern boundary, and they range from 1.0 to 1.7 acres. Residential lots on Cerro Vista Court adjacent to the site's northeastern boundary are about 1 acre in size (0.97 to 1.1 acre). Hillbrook School adjoins the site's northwestern boundary and its facilities are located on a parcel that is approximately 10 acres.

4.1.2 CONFORMANCE WITH REGIONAL AND LOCAL PLANS AND POLICIES

The following discussion identifies the extent to which the proposed project fulfills or conflicts with adopted land use objectives and policies that are applicable to the project site. There are no federal or state land use policies or regulations that are applicable to the proposed project with respect to land use regulation.

SANTA CLARA VALLEY HABITAT CONSERVATION PLAN/ NATURAL COMMUNITY CONSERVATION PLAN

The cities of Gilroy, Morgan Hill and San Jose, the County of Santa Clara, the Santa Clara Valley Transportation Authority and the Santa Clara Valley Water District have adopted the Santa Clara Valley Habitat Plan (Habitat Plan) (ICF International, 2012). The Town of Los Gatos is not a participating agency in the Habitat Plan; there is no adopted Habitat Plan that covers the project site. (see Section 4.3, Biological Resources, Regulatory and Planning Framework, for more discussion of this plan)

LOS GATOS 2020 GENERAL PLAN

The project site is subject to several planning documents and programs that have varying degrees of regulation over use of the site. The Town has preeminent authority over deciding the land use of the site. The adopted planning documents regulating land use within and around the project site are the Town of Los Gatos General Plan and the Los Gatos Town Code.

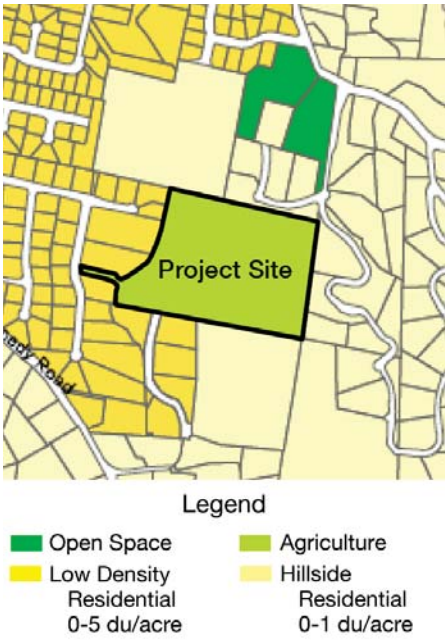
The courts have described the local general plan as "a 'constitution,' or perhaps more accurately a charter for future development[.]" (*Lesher Communications, Inc. v. City of Walnut Creek* (1990) 52 Cal.3d 531, 540.) By statute, specific plans, zoning actions, development agreements, and tentative maps all must be consistent with the general plan. (Gov. Code, § 65454 (specific plans), 65680 (zoning), 65867.5 (development agreements), and 66473.5 (tentative maps).) Case law has extended the consistency requirement to conditional use permits and public works projects. (*Neighborhood Action Group v. County of Calaveras* (1984) 156 Cal.App.3d 1176, 1183-1184 (use permits); *Friends of B Street v. City of Hayward* (1980) 106 Cal.App.3d 988, 998 (public works projects).)

The Town Council and Planning Commission use the Los Gatos 2020 General Plan to evaluate land use changes, make funding and budget recommendations and decisions, and to evaluate specific development proposals. Town staff use the General Plan to regulate building and development and to make recommendations on proposed development projects to the Town Council and Planning Commission. The General Plan contains goals and policies that address land use, open space, conservation, noise, safety, traffic, scenic resources, cultural and historic resources, and community design. Project consistency with such policies, to the extent they were adopted for the purpose of avoiding or mitigating environmental impacts, is discussed under applicable environmental topics contained in subsequent sections of Chapter 4 of this EIR.

Land Use Element. The Land Use Element is the framework of the General Plan. The patterns of development activity and land uses that are set forth in the Land Use Element are intended to support and enhance the character of the Town. The land use designations of the Land Use Element serve as a guide to land use and must be considered in conjunction with the goals and policies of the General Plan, adopted specific plans, zoning ordinances, development guidelines, regulations and review procedures.

The 2020 General Plan Land Use Element designates the project site as Agriculture (**Figure 4.1-1**), which reflects the status of its William Act contract. Agricultural land is used for raising and harvesting crops, breeding livestock, and/or housing equipment used for agricultural purposes.[1] In 1988, the Town Council adopted Resolution No. 1988-230, which required amendment of the General Plan and Hillside Specific Plan designations to reflect rezoning of properties subject to Williamson Act contracts. Therefore, as part of a subsequent General Plan update, all Williamson Act lands were redesignated to Agriculture. Prior to this redesignation, the project site was designated in the Town's 1961 General Plan as Residential, 0 to 2 families per acre.

FIGURE 4.1-1: GENERAL PLAN



The 2020 General Plan designates the area immediately west and southwest of the site (residential neighborhoods along Longmeadow Drive, Twin Oaks Drive, and Brooke Acres Drive) as Low Density Residential (0 to 5 units per acre), while contiguous areas to the north, east, and southeast (residential neighborhoods along Cerro Vista Court and Cerro Vista Drive and Hillbrook School) are designated as Hillside Residential (0 to 1 unit per acre). At 0.57 unit per acre, the proposed density would be consistent with the Hillside Residential designation and lower than the Low Density Residential designation.

Since the Williamson Act contract is proposed to be cancelled, the project site's General Plan designation will, once again, require amendment pursuant to Resolution 1988-230 if the cancellation is approved. The project applicant is requesting a General Plan amendment to change the project site's designation from "Agriculture" to "Hillside Residential (0 to 1 units per acre)." The proposed density, at 0.57 unit per acre, would be consistent with the proposed designation. In addition, the proposed density would be lower than the density that was specified for the site in the 1961 General Plan (prior to establishment of the Williamson Act contract).

The Land Use, Community Design, and Environment and Sustainability Elements of the 2020 General Plan include goals and policies for residential development in the hillside areas. In general, as shown in the table below, the proposed project would be consistent with these goals and policies, which are designed to protect the environment, because specified mitigation measures would reduce potential environmental impacts to less than significant. The project's consistency with a policy, as it relates to this CEQA analysis, is generally determined, depending on the language of the policy, by whether a project's impact on a resource is significant and the specified mitigation measure reduces the project's impact to a

[1] Land use designations do not necessarily reflect the existing land use of each parcel. The Agricultural designation identifies areas for commercial agricultural crop production.

less-than-significant level. If it does, then the project is considered to be consistent with that policy. If it does not reduce the project's impact to a less-than-significant level, then the project is considered to be inconsistent with that policy. Project consistency with those guidelines is discussed in the following project consistency analysis table.

General Plan Policies	Project Consistency Analysis
Land Use Element *Goal LU-1: To preserve, promote, and protect the existing small-town character and quality of life within Los Gatos.* *LU-1.4: Infill projects shall be designed in context with the neighborhood and surrounding zoning with respect to the existing scale and character of surrounding structures, and should blend rather than compete with the established character of the area.* *LU-6.5: The type, density and intensity of new land use shall be consistent with that of the immediate neighborhood.* *LU-6.7: Continue to encourage a variety of housing types and sizes that is balanced throughout the Town and within neighborhoods, and that is also compatible with the character of the surrounding neighborhood.* *LU-6.8: New construction, remodels and additions shall be compatible and blend with the existing neighborhood.* *LU-7.3: Infill projects shall contribute to the further development of the surrounding neighborhood (e.g. improve circulation, contribute to or provide neighborhood unity, eliminate a blighted area) and shall not detract from the existing quality of life.* *LU-7.4: Infill projects shall be designed in context with the neighborhood and surrounding zoning with respect to the existing scale and character of surrounding structures, and should blend rather than compete with the established character of the area.*	Prior to entering into a Williamson Act contract, the project site was designed for residential use at a density higher than the proposed density. With the proposed cancellation of this contract, the project is proposed to be developed with single-family residences at a density that is less than or equal to adjacent residential densities. The project's proposed density of 0.57 unit per acre would be consistent with the proposed General Plan's density of 0 to 1 unit per acre and lower than the density that was specified for the site in the 1961 General Plan (prior to establishment of the Williamson Act contract). When compared to existing lots in the project vicinity, project lots would fall within the range of lot sizes that surround the project site with lower lots smaller and upper lots larger, consistent with the lot size pattern that occurs in the immediate project vicinity. Therefore, the project would protect the quality of life for surrounding residences and blend with the established character of the area. The project site is surrounded on all sides by residential development and Hillbrook School, and is considered to be infill development. The proposed General Plan designation, zoning, and density would be consistent with those of surrounding development. While no specific home designs are proposed at this time, the scale and character of future homes on project lots will be reviewed by the Town during the Architecture & Site (A&S) review process.
LU-1.3: Preserve existing trees, natural vegetation, natural topography, and riparian and wildlife habitats, and promote tasteful, high quality, well designed, environmentally conscious and diverse landscaping in new developments. *Goal CD-4: To preserve existing trees, natural vegetation, natural topography, riparian corridors and wildlife habitats, and promote*	Project implementation would retain about 83% of the existing protected trees (about 485 out of a total of 585), removing approximately 70 protected trees (12%) and transplanting about 30 protected trees (5%). Proposed roads and lots are mostly located in areas that either have been disturbed (i.e., equestrian ring, dirt access road) or covered by less sensitive vegetation types (i.e., non-native annual grassland, ruderal). Approximately 0.51 acre of mixed oak woodland would be removed, but about 4 acres of mixed oak woodland would be retained, including the

General Plan Policies	Project Consistency Analysis
high quality, well designed, environmentally sensitive, and diverse landscaping in new and existing developments. *CD-4.3: Trees that are protected under the Town's Tree Preservation Ordinance, as well as existing native, heritage, and specimen trees should be preserved and protected as a part of any development proposal.*	oak woodland located on the 3.62-acre parcel (proposed Common Lot B) in the southeastern portion of the site, which is proposed to be retained as open space (see Impact 4.3-10 in Section 4.3, Biological Resources, for more discussion). Implementation of Mitigation Measures 4.3-10a, Tree Protection Measures, and 4.3-10b, Tree Mitigation and Monitoring Plan, would ensure that replacement tree plantings meet ordinance tree replacement requirements. As indicated in Impact 4.3-8, project implementation would directly impact the swale and its associated oak riparian habitat. Grading, filling or trenching within the drip line or tree protection zone of native riparian trees would be deemed a direct impact on trees within the riparian zone. Project implementation has the potential to adversely affect riparian habitat associated with Ross Creek and the swale, a potentially significant impact. However, implementation of Mitigation Measure 4.3-8, Creek Protection, would reduce these impacts to a less-than-significant level.
LU-4.2: Allow development only with adequate physical infrastructure (e.g. transportation, sewers, utilities, etc.) and social services (e.g. education, public safety, etc.). *LU-4.4: Project applicants shall evaluate and provide appropriate mitigation measures to reduce impacts on urban services including schools, utilities, police, and fire.*	Existing services and utilities are currently provided to existing adjacent surrounding residential development. The project would include extension of roadways and utilities onto and throughout the site pursuant to Town requirements and agency regulations. Project implementation would enhance secondary emergency access to residents on Twin Oaks Drive and Brooke Acres Drive. The development of each lot will be required to adhere to the Town's Architecture and Site (A&S) review process, which would reduce impacts to urban services because of recommendations, oversight, and approval authority of the Town and relevant public service agencies. For a discussion of project consistency with these policies, see policy consistency analysis in Section 4.12, Public Services and Utilities. The project would be required to pay school fees according to SB 50 and these fees will reduce impacts on schools.
Community Design Element *Goal CD-3: To require utilities, landscaping and streetscapes to contribute to Los Gatos's high-quality character.* *CD-3.1: Encourage the undergrounding of utilities on substantial remodels.* *CD-3.2: Street and structural lighting shall be required to minimize its visual impacts by preventing glare, limiting the amount* *of light that falls on neighboring properties, and avoiding light pollution of the night sky.* *CD-3.3: Consider new street lighting only when required for safety.*	Prior to development of each project lot, the proposed home design and landscape plan for each residence will be subject to A&S review. A&S review will also evaluate the potential for glare, shading, and nighttime illumination impacts due to exterior lighting on future homes. General Plan Policy TRA-7.8 prohibits the installation of new public street lights on hillside streets. As indicated on the proposed Utility Plan (Figure 3-7), all required utilities would be underground.
CD-5.1: Street standards shall recognize the existing character of the neighborhood, safety, and maintenance.	Proposed pavement and right-of-way widths would meet Hillside standards for cul-de-sacs. Proposed Street A would have a 24-foot paved width with 46-foot right-of-way width.

General Plan Policies	Project Consistency Analysis
	Proposed Street B, (providing access for up to six lots) would have a 22-foot paved width with 44-foot right-of-way width.
Goal CD-6: To promote and protect the physical and other distinctive qualities of residential neighborhoods. *CD-6.1: Reduce the visual impact of new construction and/or remodels on the Town and its neighborhoods.* *CD-6.2: Balance the size and number of units to achieve appropriate intensity.* *CD-6.4: New homes shall be sited to maximize privacy, livability, protection of natural plant and wildlife habitats and migration corridors, and adequate solar access and wind conditions. Siting should take advantage of scenic views but should not create significant ecological or visual impacts affecting open spaces, public places, or other properties.*	Future homes proposed on project lots would be subject to A&S review, and visual compatibility of proposed home designs will be considered at that time. With respect to achieving the appropriate intensity, project lots would fall within the range of lot sizes that surround the project site with lower lots smaller and upper lots larger, consistent with the lot size pattern that occurs in the immediate project vicinity. Therefore, the project would protect the quality of life for surrounding residences and blend with the established character of the area. As indicated in Impact 4.2-3, the project would not substantially degrade the visual character of the sites or its surroundings. Provision of landscape trees and shrubs along project boundaries and roads, as well as maximizing setbacks of proposed potential building envelopes from existing adjacent residences, would help to maximize privacy of adjacent residences and screen views of future homes from these residences. Maximizing setbacks of homes from the swale that traverses the site would help to protect the riparian habitat. See discussion below under the Hillside Standards and Guidelines consistency analysis table (first row) relating to solar access and wind conditions. Issues relating to taking "advantage of scenic views" would be considered during the A&S review process for each individual home.
Goal CD-7: To preserve the quality of the private open space throughout Los Gatos. *CD-7.1: Maximize quality usable open space in all new developments.*	Private open space associated with the 10 single-family residences would be provided as yards and hillside on the 10 project lots. In addition, the project would provide to the public approximately 3.6 acres of open space in the southeast corner of the site and a pedestrian/ equestrian trail that would provide an important connection/link between the Shannon Road neighborhood with the Kennedy Road neighborhood.

HILLSIDE DEVELOPMENT STANDARDS AND GUIDELINES (HDSG)

With respect to subdivision and planned development projects, the HDSG contains the following development standard and guideline related to lot configuration and building locations:

Hillside Development Standards and Guidelines	Project Consistency
Objective 10: Conserve the natural features of the site such as topography, natural drainage, vegetation, wildlife habitats, movement corridors and other physical features. *II. Constraints Analysis and Site Selection* *A. Prior to Selecting a Building Site* *1. Constraints Analysis. To ensure that new*	Topography. The Least Restrictive Development Area (LRDA) on the site, which is indicated in Figure 3-3, identifies areas where slopes exceed 30% as well as other factors such as vegetation (trees, shrubs), habitats, drainage courses, riparian corridors, geologic constraints. Other factors considered when determining the LRDA include visibility from off-site, septic systems, fire danger, solar orientation, prevailing wind patterns,

Hillside Development Standards and Guidelines	Project Consistency
development is sensitive to the goal and objectives of the HDSG and respects the existing site constraints, the following elements shall be mapped by appropriate professionals and taken into consideration when determining a site's LRDA: ▪ *Topography, with an emphasis on slopes over 30%* ▪ *Vegetation such as individual trees, groupings of trees and shrubs, habitat types* ▪ *Drainage courses and riparian corridors* ▪ *Septic systems* ▪ *Geologic constraints including landslides and active fault traces* ▪ *Wildlife habitats and movement corridors* ▪ *Visibility from off site* ▪ *Areas of severe fire danger* ▪ *Solar orientation and prevailing wind patterns* ▪ *Significant Ridgelines* *When all constrained areas have been identified and mapped, the remaining area(s) will be designated as the "LEAST RESTRICTIVE DEVELOPMENT AREA" (LRDA). These are the areas most appropriate for development.*	and significant ridgelines, but these factors can't be considered until A&S when specific home designs are proposed. Avoidance of areas outside the LRDA ensures that project development would avoid slopes greater than 30% and geologic constraints. All proposed potential building envelopes and driveways would be located within the LRDA (demonstrating that each lot is buildable). However, approximately ±300-feet of proposed Street B and ±140 feet of the proposed trail would be located outside the LRDA. It is not possible to extend the roadway or trail to the upper portion of the site without traversing an area outside the LRDA. However, grading for the proposed access road would be minimized by utilizing the existing roadway alignment. In addition, the HDSG makes an exception in the HSP Sub-Area 1 for proposed roads and driveways if access to the LRDA can only be attained by developing outside the LRDA. Such is the case with the proposed project even though the project site is located in HSP Sub-Area 2 (see discussion below under the Hillside Specific Plan). The Town will determine HDSG consistency of the sections of the proposed trail alignment located outside the LRDA, but grading for trail development is expected to be minimal since trails would be narrow and unpaved, and grading would be done in a manner consistent with HDSG requirements. Vegetation. Project implementation would retain about 83% of the existing protected trees (about 485 out of a total of 585), remove approximately 70 protected trees (12%) and transplant about 30 protected trees (5%). Potentially significant impacts on trees would be reduced to less than significant with implementation of Mitigation Measures 4.3-10a, Tree Protection Measures, and 4.3-10b, Tree Mitigation and Monitoring Plan. Drainage Courses and Riparian Corridors, and Wildlife Habitats. Although Ross Creek enters the property, its riparian habitat is considered to be of very limited value to terrestrial and aquatic wildlife due to habitat modifications downstream. No grading is proposed within or below the top of bank of Ross Creek, but grading would encroach upon riparian habitat adjacent to this creek and also directly affect a swale (unnamed tributary to Ross Creek) and its associated oak riparian habitat, a significant impact. However, implementation of Mitigation Measure 4.3-8, Creek Protection, would reduce these impacts to a less-than-significant level. Also, since the subject property is located within 50 feet of the top of bank of Ross Creek, the project will be subject to review for conformance to the Town's Guidelines and Standards for Land Use Near Streams. Septic Systems. There are no septic systems on the site. Nor are any proposed as part of the project. Geologic Constraints. Project construction could cause instability, but implementation of Mitigation Measures 4.4-4a, Debris Flow Protection, and 4.4-4b, Geotechnical Report

Hillside Development Standards and Guidelines	Project Consistency
	Recommendations, would reduce potential geotechnical hazards to less than significant. No active faults traverse the project site. Visibility. Lot 7 and some other project lots would be visible from various off-site locations, as described in Impact 4.2-3, which determined that the project would not significantly degrade the visual character or visual quality of the site and its surroundings. All future home designs would be subject to A&S review and visibility from viewing platforms in town would be evaluated. As indicated in Impact 4.2-1, intervening trees and buildings located near viewing platforms block views of the site. Fire Hazards. The project site is located in a high fire hazard area, and project residences, similar to surrounding homes, would also be located in this high fire hazard area. Project homes will be reviewed for conformance with the HDSG to minimize fire hazards. Homes would also be required to comply with Wildland Urban Interface (WUI) requirements. Solar Orientation and Prevailing Winds. Future homes on project lots would be subject to A&S review, and each applicant would be required to demonstrate that appropriate solar orientation has been incorporated into the proposed home design in order to maximize shade and prevailing winds. Significant Ridgelines. As indicated in Impact 4.2-1, scenic vistas of the site's hilltop and ridgelines above the site from surrounding neighborhoods are generally screened and filtered by mature trees and associated landscaping as well as local terrain. However, views of the Santa Cruz Mountains with the site's upper hillside in the foreground are available from the upper end of Cerra Vista Court (Figure 4.2-5, Viewpoint E). While future homes on Lots 5, 6, and 7 could potentially be visible from the upper end of Cerro Visa Court, Viewpoint E in Figure 4.2-5 demonstrates that these homes would be located in the foreground, while distant scenic vistas of the Santa Cruz Mountains' higher ridgeline would still be available.
2. Consultation with Neighbors. Before siting and designing the house and landscaping, the property owner, architect or builder should meet with neighbors to discuss any special concerns they might have.	The project applicant has held several neighborhood meetings where residents of the Twin Oaks, Cerro Vista, and Brooke Acres neighborhoods were invited. The Town encourages project applicants to contact their neighbors as early in the process as possible.
VIII. Subdivision and Planned Development Projects *E. Development Standards and Guidelines* *3. Lot Configuration and Building Locations – Standards:* *a. The layout of lots shall be derived from the form of the land. The development plan shall adapt to existing topography and natural features, avoiding unnecessary alteration of landforms.*	Lot patterns would vary in size and shape, while the lots appear to be large enough to accommodate variations in setbacks and allow for side-entry garages on many of the lots. Conceptual building footprints would be located within the LRDA, which accounts for topography. As shown in Figure 3-3, all proposed potential building envelopes and driveways would be located within the LRDA, which would help to minimize grading associated with future home development. Conceptual building pad designs are shown in Figures 3-4a and 3-4b, and they demonstrate how the manufactured slopes would be located on the uphill side (behind) of project homes. Approximately ±300-

Hillside Development Standards and Guidelines	Project Consistency
b. Lot patterns shall offer a variety of lot shapes and sizes influenced by topography and natural features. *c. Projects shall incorporate varied setbacks, multiple orientations, side-entry garages, and other site planning techniques to preserve open spaces, protect natural features, and reduce the monotony of repetitive designs.* *d. Building footprints shall be indicated on grading plans and shall be staked on site in order to assist in the review of proposed building locations.* *e. Graded areas shall be designed with manufactured slopes located on the uphill side of buildings, thereby hiding the slope behind the building.* *Lot Configuration and Building Locations - Guideline:* *a. Location of development is encouraged in order to preserve environmentally sensitive areas, existing natural features and open space, and to reduce the potential for fire hazard, erosion, and excess runoff.*	feet of proposed Street B and ±140 feet of the proposed trail would be located outside the LRDA. It is not possible to extend the roadway or trail to the upper portion of the site without traversing an area outside the LRDA. However, grading for the proposed access road would be minimized by utilizing the existing roadway alignment, and grading for trail development is expected to be minimal since trails would be narrow and unpaved, and grading would be done in a manner consistent with HDSG requirements. During the A&S review process for each future residence, conformance of proposed grading (including cut and fill slope heights and retaining wall heights) with HDSG requirements would be assessed by Town staff. Consistency with HDSG requirements related to landscaping would reduce risks associated with wildland fires. Erosion hazards would be less than significant because of Town requirements for an erosion and sediment control plan and Storm Water Pollution Prevention Plan (see Impact 4.4-3). The project would also be required to detain runoff so there would be no net increase in peak flows from the site. Required mitigation measures in Section 4.3 would reduce impacts on sensitive biological habitats to less than significant.

HILLSIDE SPECIFIC PLAN

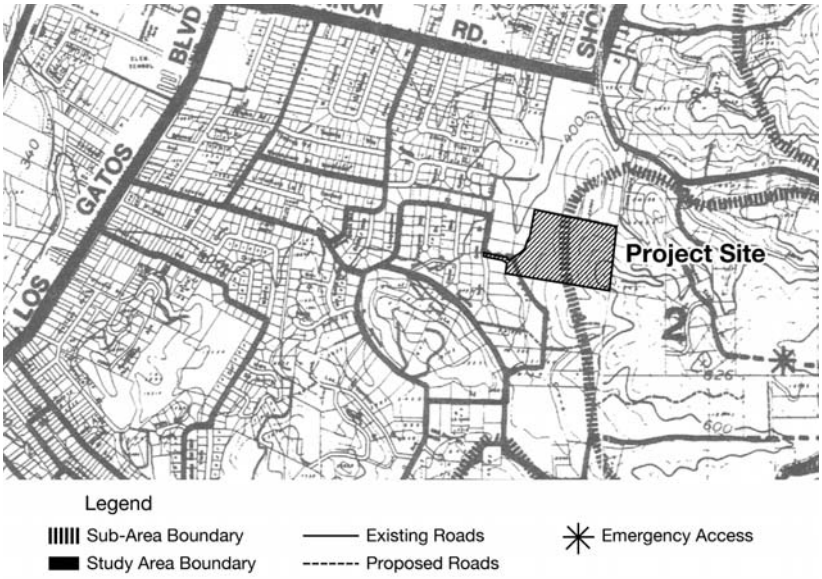
In addition to the General Plan Land Use Element, the Hillside Specific Plan establishes land use policy for the Hillside Study Area, an area of mountainous terrain in the southeastern portion of the Town designated for Hillside Residential development. Adopted by Town Council in 1978, the Specific Plan establishes a series of policies and standards related to land use, facilities, services, circulation, fire protection, safety, and open space. These policies and standards are intended to prevent deficiencies in access to water and sewer services, ensure conservation of the sensitive natural environment, and address differences in Town and County land use regulations.

Development in the Hillside Specific Plan area is prohibited outside of designated "least restrictive development areas" (LRDAs) unless it is compliant with conditions established in the Plan.

The upper portion of the project site (approximately the eastern half of the site) is located in the Hillside Specific Plan's Sub-Area 2 (**Figure 4.1-2**), Shannon-Kennedy Roads, which specifies an ultimate density of 2.5 to 10 acres per dwelling with a minimum lot size of one acre. The HSP also specifies an interim density for areas without full services to be a minimum of 10 acres per dwelling. Approximately 10 percent of the area has slopes exceeding 50 percent.

Although the HSP boundary is not precise, it appears that proposed lots 5 (1.03 acre), 6 (2.00 acres), 7 (2.37 acres), and 10 (0.95 acre) as well as Common Lot B (3.62 acres) would be within the HSP boundary (plus a portion of the Common Lot A, the private streets), yielding a density of four units on approximately 10+ acres or 2.5 units per acre while meeting the minimum lot size of one acre. This average density would be consistent with the 2.5- to 10-acre per unit range that is specified by the HSP for this sub-area.

FIGURE 4.1-2: HILLSIDE SPECIFIC PLAN



The proposed project would be subject to policies of the Hillside Specific Plan. Pertinent land use policies of the HSP and a discussion of project consistency with these policies are presented below. As with General Plan policies, the Town Council is the ultimate arbiter of the meaning of these specific plan policies.

Hillside Specific Plan Land Use Policies	Project Consistency
1.0 Land Use *1.3.3: Clustering of Dwelling Units. Clustering of dwelling units should be encouraged to preserve the scenic nature of the hillsides and to allow for economies in the construction of required public and private facilities.* *1.3.4. Architectural and Site Review.* *a. Architectural and Site Review procedure or Design Review shall be required for all development proposals in the hillsides, including buildings, grading, roads, parking areas, landscaping and outdoor lighting. The purpose is to provide for the design of building sites which will be appropriate with mountain environment.*	The proposed site plan clusters proposed lots within the LRDA and designates the southeast portion of the site (Lot B, 3.62 acres) as open space. Prior to development of each project lot, each home design would be reviewed for consistency with these HSP policies, which are related to aesthetics, grading, landscaping, outdoor lighting. For more discussion of these issues, see above project consistency analysis table under the HDSG.
3.0 Circulation *3.3.1: Design of Hillside Roads and Driveways.* *a. Hillside roadways and driveways shall be designed and located so as to:* *1. Require a minimum amount of earth movement.* *2. Be consistent with the specified standards for curves, gradients, widths, and other controlling factors.*	Project development would include development of two private streets (A and B; Figure 3-3), an emergency access road, and a driveway on Lot 7. Private Street A would extend eastward from Twin Oaks Drive (just north of 170 Twin Oaks Drive), and then turn northward on the lower portion of the site. Private Street B would extend eastward from Private Street A and then turn northward up the site's hillside. In addition, an 18-foot

Hillside Specific Plan Land Use Policies	Project Consistency
3. Be in harmony with the surrounding landscape by utilizing aesthetic design concepts, including landscaping with native plants and materials. *4. Allow for special designs where natural features such as rocks, slopes and trees require special treatment.* *b. Adequate slope easements shall be provided.* *3.3.2: Private Roads Versus Public Roads.* *a. An adequate system of publicly owned and maintained roads is the best means of providing adequate access to all properties. Access by private road shall not be allowed unless fundamental to a special approved design concept unless full provisions for construction and maintenance of the private road system have been approved and unless it is consistent with neighborhood circulation.*	wide emergency access road is proposed to connect Brooke Acres Drive to Private Street A, but a locked gate is proposed to be located on this access road at the southern project boundary to restrict access to emergency vehicles only. The access driveway for Lot 7 is also proposed to be extended from Street B. Grading for the proposed Street B and driveway for Lot 7 would be minimized by utilizing the existing roadway alignment. Landscaping is proposed to be planted along the proposed roadways (see Figure 3-8). No grading is proposed within or below the top of bank of Ross Creek, but grading would encroach upon riparian habitat adjacent to this creek and also directly affect a swale (unnamed tributary to Ross Creek) and its associated oak riparian habitat, a significant impact. However, implementation of Mitigation Measure 4.3-8, Creek Protection, would reduce these impacts to a less-than-significant level. Although the applicant's original project proposal was a subdivision with public streets (consistent with Policy 3.3.2a), the Town required the project to be revised to a Planned Development per Town Ordinance and that roads be made private. Proposed road widths, gradients, and other standards will be required to meet Town and Fire Department standards.
4.0 Open Space *4.3.1: Open Space Easements. Open space easements shall be required by the deciding body for hillside subdivisions in accordance with the topographical, ecological, aesthetic and other conditions pertinent to the making of such easements.* *4.3.4: Tree Removal. The cutting of live trees shall be controlled under Town and County policies designed to restrict cutting.* *4.3.5: Landscaping. Landscaping plans shall be submitted by land developers for approval to the deciding body.*	Lot B (3.62 acres) is proposed to be designated as open space. Although it would be retained in private ownership and maintained by the project's homeowner's association, the project applicant proposes to make it accessible to the public. A trail easement is proposed, consistent with Policy 4.3.1. The proposed pedestrian/equestrian trail, which would traverse Lot B, would also be accessible to the public. Also, by restricting development to areas within the Least Restrictive Development Area (LRDA) as required in the HDSG, the project would avoid environmentally-sensitive areas. Proposed tree removals would be subject to requirements of the Town's Tree Protection Ordinance (see Impact 4.3-10 for more discussion). In addition to compliance with this ordinance, Mitigation Measure 4.3-10, Tree Mitigation and Monitoring Plan, would be required to reduce tree removal impacts to less than significant. Replacement trees and landscaping are proposed to be planted along project roads and along site boundaries to screen views of project roads and future homes. Prior to development of each project lot, proposed streetscape and landscape plans for each residence will be subject to A&S review.

LOS GATOS ZONING ORDINANCE

Chapter 29, *Zoning Regulations*, of the Los Gatos Town Code (Zoning Ordinance) implements the overall land use planning provisions that are formulated in the Town's General Plan. The zoning ordinance is used to promote and protect the public health, safety, peace, morals, comfort, convenience and general welfare of the Town and its inhabitants, and particularly:

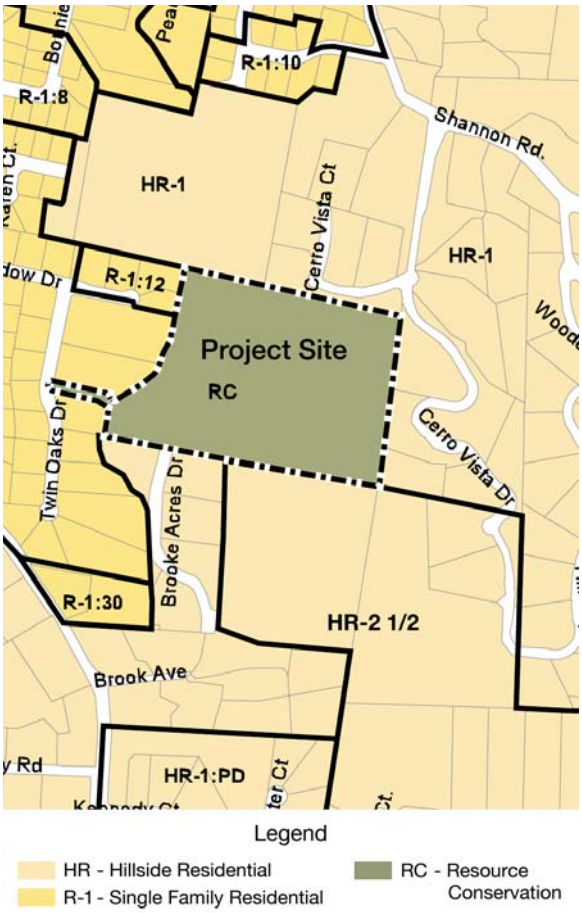
- To provide a guide for the development of the Town to preserve its character of a low density residential community with those attributes of a balanced land use program consisting of residential, commercial, industrial and recreational areas so located and controlled to promote stability of land use both existing and proposed.
- To protect the social and economic stability of the Town.
- To promote a safe, effective traffic circulation system, and to provide adequate off-street parking.
- To facilitate orderly industrial and commercial development.
- To preserve the natural beauty of the Town and protect its residential neighborhoods from the intrusion of commercial interests.
- To prevent improper disposal of toxic waste.
- To assure the orderly and beneficial development of all areas of the Town.

Existing Zoning. The project site is zoned Resource Conservation (RC), which is a classification intended to indicate the site's current Williamson Act agricultural preserve status. Prior to entering into a Williamson Act contract in 1975, the project site was zoned R-1:20 (20,000 s.f. minimum lot size) and with a corresponding General Plan designation. However, two months after the Williamson Act contract was approved, the property was rezoned to Resource Conservation.

The area immediately west and southwest of the site along Twin Oaks Drive is zoned "R-1:10" (Single Family Residential, 10,000 s.f. minimum lot size), while the lots at the east end of Longmeadow Drive and adjacent to the site are zoned "R-1:12" (Single Family Residential, 12,000 s.f. minimum lot size). Properties to the south (along Brook Acres Drive), north (Hillbrook School and along Cerro Vista Court), and east (along Cerro Vista Drive) are zoned "HR-1" (Hillside Residential, 1 to 5 acres/unit). There is one parcel located adjacent to the site's southeastern boundary and it is zoned "HR-2½" (Hillside Residential, 2½ to 10 acres/unit). Existing Town zoning designations for the project site and its vicinity are indicated in **Figure 4.1-3**.

Proposed Rezoning. The project applicant proposes to rezone the property by modifying the existing zone of "RC" (Resource Conservation) to a new "HR-1:PD" (Hillside Residential, 1 to 5 acres/ unit with a Planned Development Overlay) zone. According to Section 29.80.080 of the Town Code, the purpose of the PD or Planned Development overlay zone is to provide for alternative uses and developments more consistent with site characteristics than are allowed in other zones, and so create an optimum quantity

FIGURE 4.1-3: ZONING DESIGNATION



and use of open space and encourage good design. In addition, the General Plan encourages large properties to be developed as Planned Developments so that development criteria can be tailored to the property. The PD designation also allows roads to be narrower than typically required for new streets. The Town's Hillside Development Standards and Guidelines will restrict sizes of future homes on the project site to 6,000 square feet. However, future lot owners could request an exception to the maximum floor area or the PD designation could allow larger homes on some lots to be offset by smaller ones on other lots. On the other hand, as part of the PD, the Planning Commission or Town Council could choose to impose limits on the sizes of future homes that differ from the HDSG.

The minimum lot size for the HR-1 zone is one acre. As indicated in Table 3-1, proposed residential lots would average one acre or larger in size, ranging between 0.94 (40,912 s.f.) and 2.37 acres (103,258 s.f.). Although the HR-1 zone requires a minimum of one acre per unit, the HR zone (whether it is 1, 2½, 5, etc.) only requires a minimum lot size of 40,000 s.f. Therefore, the proposed lots (40,912 s.f. or larger) would meet this requirement. Also, in the HR zone, allowable densities are determined by applying a slope/density formula to the actual slopes on the project site. The applicant's slope density calculation for the maximum number of lots, which is based on an average slope of 23.92 percent, is 10 lots. Therefore, the proposed 10-lot project would be consistent with the Zoning Ordinance's allowable density for HR-1 zoned properties as defined by the slope/density formula.

Section 29.10.3025 of the Zoning Ordinance requires every planned development residential subdivision to comply with the Town's Below Market Price (BMP) requirements. It allows properties with an underlying zone of HR to request to pay a Below Market Price (BMP) in-lieu fee instead of providing the required unit(s) on-site. As a condition of project approval, the Town will require that either a qualifying unit is provided on-site or a BMP in-lieu fee be paid by the property owner/developer pursuant to Town Code Section 29.10.3025 and any applicable Town Resolutions. The fee amount shall be based upon the Town Council fee resolution in effect at the time of final occupancy for each unit (fee is currently equal to six percent of the building permit valuation).

WILLIAMSON ACT CONTRACT

The California Land Conservation Act of 1965, better known as the Williamson Act, works to preserve agricultural and open space lands through restrictive use contracts administered by counties and cities under State regulations. Private landowners voluntarily restrict their land to agricultural and compatible open space uses under minimum 10-year rolling term contracts, with counties and cities also acting voluntarily. In return, the property tax on a Williamson Act parcel is assessed at a rate consistent with its actual use, rather than potential market value.

A Williamson Act agricultural preserve contract was established by the Town on the project site in 1975 and this contract is currently still in effect. The Los Gatos General Plan's Land Use Element (Figure LU-2 in this Element) classifies the project site as "Non-Prime Agricultural Land." According to the Land Use Element, there are approximately 136 acres of land within the Town limits and 358 acres of land within the Town's Sphere of Influence (SOI) that are designated Williamson Act land. The 17.55-acre project site would comprise approximately 3.6 percent of the Town's total area designated as Williamson Act land.

Under state law, the preferred method of contract termination is nonrenewal. Williamson Act contracts are terminated by filing a notice of non-renewal with the Town. Under this process, the landowner must give the Town written notice of his/her desire not to renew the contract at least 90 days prior to the January 1 renewal date. The contract will then terminate nine (9) years from the January 1 renewal date following the notice of non-renewal.

However, cancellation is a second method of contract termination. It results in the immediate termination of the contract. Before approving a cancellation, the Town must make certain findings required by state law, as set forth in Government Code Section 51282. The Town Council must find either that the cancellation is consistent with the purposes of the Williamson Act or that cancellation "is in the public interest." Notably, "the uneconomic character of an existing agricultural use shall not by itself be sufficient reason for cancellation of the contract. The uneconomic character of the existing use may be considered only if there is no other reasonable or comparable agricultural use to which the land may be put."

To support a finding that cancellation is consistent with the purposes of the Williamson Act, the Town Council would have to make all of the following five findings:

(1) that the cancellation is for land on which a notice of nonrenewal has been served pursuant to Government Code ;

(2) that cancellation is not likely to result in the removal of adjacent lands from agricultural use;

(3) that cancellation is for an alternative use that is consistent with the applicable provisions of the city or county general plan;

(4) that cancellation will not result in discontiguous patterns of urban development; and

(5) either that there is no proximate noncontracted land that is both available and suitable for the use to which it is proposed the contracted land be put, or that development of the contracted land would provide more contiguous patterns of urban development than development of proximate noncontracted land.

In order to find that cancellation is "in the public interest," the Town Council would have to make the following findings:

(1) that other public concerns substantially outweigh the objectives of the Williamson Act; and

(2) that there is no proximate noncontracted land which is both available and suitable for the use to which it is proposed the contracted land be put, or that development of the contracted land would provide more contiguous patterns of urban development than development of proximate noncontracted land.

In this latter context, "proximate, noncontracted land" means land not restricted by a Williamson Act contract that is sufficiently close to land that is so restricted that it can serve as a practical alternative for the use which is proposed for the restricted land. "Suitable" for the proposed use means that the salient features of the proposed use can be served by land not restricted by Williamson Act contract.

The State Department of Conservation must also be notified of applications to cancel contracts and may submit comments to the Town. If the Town grants tentative cancellation, the landowner must also pay a cancellation fee equal to 12.5% of the unrestricted fair market value of the property (Government Code Section 51283(b)).

4.1.3 POTENTIAL IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

Based on criteria derived from Appendix G of the *CEQA Guidelines*, a project will normally have a significant land use impact or impact on agriculture resources if the proposed project would:

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect;
- Conflict with any applicable habitat conservation plan or natural community conservation plan;
- 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; or
- Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use.

Based on the project's location and design, no impacts are anticipated with respect to the above criterion:

- *Conflict with any applicable habitat conservation plan or natural community conservation plan*. As discussed in Section 4.1.2, no adopted habitat conservation plans or natural community conservation plans apply to the project site. Therefore, the proposed project would not result in a conflict with any applicable habitat conservation or natural community conservation plan.
- *Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to non-agricultural use*. The 17.55-acre project site is not classified as prime farmland and therefore, would not convert such lands to non-agricultural use.

METHODOLOGY

The impact analysis of this section considers the physical effects of the proposed project related to land use compatibility and considers potential inconsistencies of the proposed development with relevant planning documents implemented by the Town of Los Gatos and other agencies to the extent such policies are adopted for the purpose of avoiding or mitigating an environmental impact. Goals and policies from the Town of Los Gatos General Plan are also discussed in applicable topical sections of the EIR (see Regulatory and Planning Framework subsections), where policies related to physical effects are addressed.

The consistency analysis presented above in Section 4.1.2, Conformance with Plans and Policies, was prepared in compliance with State *CEQA Guidelines* Section 15125(d). The purpose of the required analysis is to identify potential inconsistencies between the proposed project and the Town's General Plan and other applicable local and regional plans to the extent such plans are adopted for the purpose of avoiding or mitigating an environmental impact. This requirement echoes an inquiry set forth in Appendix G to the *CEQA Guidelines*, the sample Initial Study checklist, as to whether a proposed project would "[c]onflict 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[.]" Under these inquiries, an inconsistency with a plan, goal, or policy is not itself an adverse impact on the physical environment. Rather, the point of assessing a proposed project's consistency with a plan, goal or policy intended to protect the environment is to determine whether an inconsistency may translate, as a practical matter, into a significant effect on the physical environment. Where any such impacts are identified, they are discussed later in applicable topical sections of this EIR.

The same reasoning applies to a proposed project's inconsistency with zoning or an existing Williamson Act contract. Notwithstanding the above-described significance threshold suggesting, if taken literally,

that such inconsistency per se translates into a significant environmental effect, such inconsistency would not indicate a significant environmental effect unless the physical consequences were themselves significant. Where, as here, a proposed project includes a proposed rezone and Williamson Act Contract cancellation, the Town's ultimate approval of such requests, should they be granted, would eliminate any suggestion of any adverse physical effects.

This EIR section determines whether any project inconsistencies with public land use plans, goals, policies, and documents would result in a significant physical environmental impact and whether mitigation appears to be feasible. For example, if the proposed project adversely affects open space, one standard for determining whether the impacts are significant would be to determine whether the project violated a plan or policy protecting open space; the environmental impact, however, would be the physical conversion of open space. Conversely, plan consistency may indicate that a potential environmental impact is less than significant. As described below under Impact 4.1-2, the analysis in this EIR presents the findings of policy review and is intended by Town staff and consultants to provide a guide to the Town's decision-makers for policy interpretation. The final determination that a project is consistent or inconsistent with an applicable plan, however, should be made by the Lead Agency decision-making body when it acts on the project. With respect to the Town's own General Plan, the Town Council, as the body that approved that legislative policy document, will be entitled to considerable deference on matters of interpretation and application.

COMPATIBILITY WITH EXISTING LAND USES

Impact 4.1-1: The project would not physically divide an established community. (Less than Significant)

No element of the proposed project would include construction of any kind of physical barrier (e.g., a freeway, levee, or railroad track) that would physically divide the existing neighborhoods surrounding the project site from one another. In fact, development of the proposed project site would tend to tie those existing neighborhoods together by inserting new residential development into an area already developed for residential uses, by extending roads onto the site and providing a new emergency access connection, and by providing pedestrian/bicycle connections between the adjacent neighborhoods. Even so, the analysis below addresses the separate, if somewhat analogous, question of whether the *type* and *extent* of the proposed residential development associated with the project could create a developed area that effectively divided these surrounding neighborhoods from each other.

Table 4.1-1 lists lot sizes of contiguous lots surrounding the project site as well as some non-contiguous lots on adjacent streets (Twin Oaks Drive, Cerro Vista Court, and Brook Acres Drive). In general, existing lot sizes on Twin Oaks Drive and Longmeadow Drive (lower in elevation with more level topography) are smaller than lot sizes on Cerro Vista Court, Cerro Vista Drive, and Brook Acres Drive (higher in elevation with hillside topography). As indicated in this table, proposed residential lots would average 1.27 acres (55,496 s.f.) in size, ranging between 0.94 (40,912 s.f.) and 2.37 acres (103,258 s.f.). In comparison, existing contiguous parcels average 1.00 acre (43,438 s.f.) without considering the two

TABLE 4.1-1

COMPARISON OF PROPOSED AND EXISTING LOT SIZES IN PROJECT VICINITY

Contiguous Parcels			Proposed Lots		
Parcel Address	**Lot Acreage**	**Lot Area (s.f.)**	**Proposed Lots**	**Lot Acreage**	**Lot Area (s.f.)**
188 Twin Oaks Dr.	2.02	87,991	Lot 1	0.98	42,648
180 Twin Oaks Dr.	1.41	61,420	Lot 2	0.98	42,776
170 Twin Oaks Dr.	0.76	33,106	Lot 3	0.96	41,810
162 Twin Oaks Dr.	0.52	22,794	Lot 4	0.94	40,912
100 Twin Oaks Dr.	0.45	19,460	Lot 5	1.02	44,698
191 Longmeadow Dr.	0.35	15,400	Lot 6	2.00	87,022
189 Longmeadow Dr.	0.65	28,314	Lot 7	2.37	103,258
15955 Cerro Vista Ct.	1.08	47,045	Lot 8	1.21	52,598
15951 Cerro Vista Ct.	0.97	42,253	Lot 9	1.33	57,968
15949 Cerro Vista Ct.	0.99	43,124	Lot 10	0.95	41,270
15975 Cerro Vista Dr.	1.70	74,052	**Average**	**1.27**	**55,496**
15995 Cerro Vista Dr.	1.14	49,658			
16025 Cerro Vista Dr.	1.02	44,431			
218 Brook Acres Dr.	0.91	39,640			
221 Brook Acres Dr.	0.98	42,881			
Average (Contiguous)	**1.00**	**43,438**			
Non-Contiguous Parcels					
Parcel Address	**Lot Acreage**	**Lot Area (s.f.)**			
126 Twin Oaks Dr.	0.47	20,300			
120 Twin Oaks Dr.	0.36	15,660			
116 Twin Oaks Dr.	0.38	16,383			
110 Twin Oaks Dr.	0.36	15,600			
104 Twin Oaks Dr.	0.43	18,900			
15959 Cerro Vista Ct.	1.00	43,560			
212 Brook Acres Dr.	0.89	38,768			
Average (Contiguous and Non-Contiguous)	**0.86**	**37,306**			
Two Large Contiguous Parcels (Hillbrook School and Residence at 150 Brook Acres Drive)					
Parcel Address	**Lot Acreage**	**Lot Area (s.f.)**			
300 Marchmont	13.45	585,882			
150 Brook Acres Dr.	10.53	458,687			
Average (All of the Above)	**1.78**	**77,721**			

NOTE: Grey Highlights indicate the smallest and largest parcels within each grouping of lots.

large contiguous parcels, which are occupied by Hillbrook School and a residence at 150 Brook Acres Drive, and 1.78 acres (77,721 s.f.) with these two contiguous parcels considered. When project lots are compared to contiguous properties (excluding the two 10.5 and 13.5-acre parcels), the proposed average lot size (1.27 acres/lot) would be larger than the existing average lot size (1.00 acre/lot), while the smallest and largest proposed lots (0.94 acre and 2.37 acres) would be larger than the smallest and largest existing contiguous lots (0.35 acre and 2.02 acres).

When project lots are compared to contiguous and non-contiguous parcels (i.e., lots in the project vicinity), the proposed average lot size (1.27 acres/lot) would be larger than the existing average lot size (0.86 acre/lot), while the smallest and largest proposed lots (0.94 acre and 2.37 acres) would similarly be larger than the smallest and largest existing contiguous lots (0.35 acre and 2.02 acres). When project lots are compared to contiguous and nearby properties (including the two contiguous 10.5 and 13.5-acre parcels and nearby non-contiguous parcels), the proposed average lot size (1.27 acres/lot) would be smaller than the existing average lot size (1.78 acres/lot).

Based on these various comparisons, project lots would fall within the range of lot sizes that surround the project site, with lower lots smaller and upper lots larger, which is consistent with the lot size pattern that occurs in the immediate project vicinity. The topography of the western portion of the site relates more closely to parcels on Twin Oaks Drive, Longmeadow Drive, and Brooke Acres Drive to the west and south, while the topography of the eastern portion of the site relates more closely to parcels located on Cerro Vista Court and Cerro Vista Drive to the north and east. Nevertheless, proposed lot sizes are more similar in size to the larger lots on Cerro Vista Court, Cerro Vista Drive, and Brook Acres Drive and larger than most of the lots on Twin Oaks Drive and Longmeadow Drive. Therefore, project implementation would not physically divide or contrast with established residential densities in the project vicinity.

Mitigation Measure 4.1-1: *None required.*

CONSISTENCY WITH LAND USE PLANS AND POLICIES

Impact 4.1-2: The project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. (Less than Significant)

The General Plan and Zoning Code designations provide guidelines for the type, scale and intensity of land use within a community. The Los Gatos 2020 General Plan Land Use Element designates the project site as Agriculture to reflect the current Williamson Act contract that is still in effect on the project site. The project site is currently zoned “Resource Conservation,” which also reflects the current Williamson Act contract. Since the project applicant proposes to have the Town Council cancel this contract as one of the actions needed for the proposed project, the project applicant also proposes to amend the General Plan designation to “Hillside Residential – 0-1 du/acre” and rezone the property to “HR:1:PD” (Hillside

Residential, 1 unit per acre, with Planned Development overlay), which would return the property to its originally planned residential land use.

In the 1961 General Plan, the project site was designated for residential use at a density of "0 to 2 families per acre", while the Zoning Ordinance previously zoned the property "R-1:20" Single Family Residential, 20,000 s.f. minimum lot size. Since all proposed single-family residential lots would be 0.94 acre (40,912 s.f.) or larger, the proposed project would be consistent with, and lower in density than, those specified in the Zoning Ordinance and General Plan prior to entering into a Williamson Act contract in 1975. The proposed lot sizes and density would also be consistent with the proposed "Hillside Residential – 0-1 du/acre" General Plan designation and "HR:1:PD" zone (Hillside Residential, 1 unit per acre, with Planned Development overlay).

As indicated in Section 4.1.2 above, the proposed Tentative Tract Map also would be consistent with goals and policies of the Town of Los Gatos 2020 General Plan, Hillside Specific Plan, and the Hillside Development Standards and Guidelines. Project consistency with policies relates to the project's physical impacts; and these impacts are discussed in Sections 4.2 (Aesthetics), 4.3 (Biological Resources), 4.4 (Geology and Soils), 4.5 (Hydrology and Water Quality), 4.6 (Traffic and Circulation), 4.7 (Noise), 4.8 (Air Quality), 4.9 (Greenhouse Gas Emissions), 4.10 (Hazards and Hazardous Materials), 4.11 (Cultural Resources), 4.12 (Public Services, Utilities, and Service Systems), 4.13 (Recreation), and 4.14 (Energy Conservation). All aesthetic, traffic, greenhouse gas emissions, public services/utilities/service systems impacts were determined to be less than significant after mitigation because identified potentially significant impacts would be reduced to less-than-significant levels with adoption and implementation of specified mitigation measures.

When specific home designs are prepared for project lots, the Town will review the consistency of specific home designs with Town policies, standards, and guidelines as part of its Architecture and Site (A&S) review process. No problems in achieving such consistency are anticipated. For these reasons, project implementation would not conflict with any applicable plans, policies, or regulations, a less-than-significant land use impact.

The PD overlay is a specially tailored development plan and ordinance that designates the zoning regulations for the accompanying project, sets specific development standards, and ensures that zoning and the General Plan are consistent. The PD overlay would also establish development parameters such as road and driveway widths, height limits, and setbacks on specific lots.

CONFLICTS WITH AGRICULTURAL ZONING AND WILLIAMSON ACT CONTRACT

Impact 4.1-3: The project would conflict with the site's current zoning designation (Agriculture) and Williamson Act Contract, and would require rezoning and contract cancellation as proposed. (Less than Significant)

At present, the site is zoned Agriculture and use of the site is restricted by its Williamson Act agricultural preserve contract. The site was used for orchards in the 1930s (and possibly the 1940s), but the orchards were removed by 1948. Although the site does not appear to have been in agricultural use since that time, a Williamson Act contract for the site was entered in 1975, which restricted use of this site to agricultural use. However, the site's agricultural potential is limited by the proximity of residential uses, which now surround the project site. Hillbrook School, a private school, adjoins the site's northwestern project boundary. If the subject property were once again devoted to active agricultural uses, these surrounding uses would be subject to increased noise and air quality impacts, as well as possible health risks associated with agricultural chemicals that could be applied to the site. In addition, agricultural use is also restricted by current lack of direct roadway access to the site, although there is a narrow site frontage on Twin Oaks Drive, a residential street.

Project implementation would require cancellation of the current Williamson Act contract. The project applicant proposes to cancel the contract (see above discussion in Section 4.1.2, Conformance with Regional and Local Plans and Policies for a description of the cancellation process). The project applicant also proposes to amend the General Plan designation from "Agriculture" to "Hillside Residential (0 to 1 units/acre)" and rezone the property from "RC" (Resource Conservation) to a "HR-1:PD" (Hillside Residential, 1 to 5 acres/ unit with a Planned Development Overlay) zone. If the Town approves these proposed actions, project implementation would be allowed.

Mitigation Measure 4.1-3: *None required.*

REFERENCES – LAND USE

ICF International, 2012. *Final Santa Clara Valley Habitat Plan, Santa Clara County, California*. August. Available online at http://scv-habitatagency.org/178/Final-Habitat-Plan.

Town of Los Gatos, 1988. *Resolution No. 1988-230, A Resolution of the Town Council of the Town of Los Gatos Concerning Establishing Procedures for Rezoning Property Subject to Williamson Act Contract*. Available online at: http://www.losgatosca.gov/198/Planning-Documents.

Town of Los Gatos, 1988. *Resolution No. 1982-14, Resolution Establishing a Fee Schedule for Processing Petitions Requesting Cancellation of Williamson Act Contracts*. Available online at: http://www.losgatosca.gov/198/Planning-Documents.

4.2 AESTHETICS

4.2.1 ENVIRONMENTAL SETTING

EXISTING VISUAL CHARACTER

The project site is located to the east of Twin Oaks Drive, which provides the sole access to the site. The subject property encompasses 17.55 acres of land, and it is currently undeveloped. The lower, western portion of the site is more gently sloping while the upper, eastern portion of the site is characterized by steeper hillsides with the site's hilltop (highest elevation on the site) located near the eastern project boundary. The overall direction of the slope is towards the northwest.

Residential neighborhoods bound the project site on all four sides (north, south, east, and west), except there is a private school, Hillbrook School, located contiguous to the site's northwestern project boundary. Existing views of the project site are principally available from the homes of these adjoining residential neighborhoods. Residences adjoining the project site include homes on the following streets: Twin Oaks Drive, Longmeadow Drive, Cerro Vista Court, and Cerro Vista Drive, and Brooke Acres Drive.

The project site largely covered with annual grasses with oak woodland vegetation along the site's drainages in the southwest portion of the site and upper hilltop on the eastern portion of the site (extending from the northern to the southern project boundary). There are rows of planted Monterey pine and incense cedar trees located on the north side of the upper hilltop, which were planted years ago to presumably screen views of a future home in this vicinity.

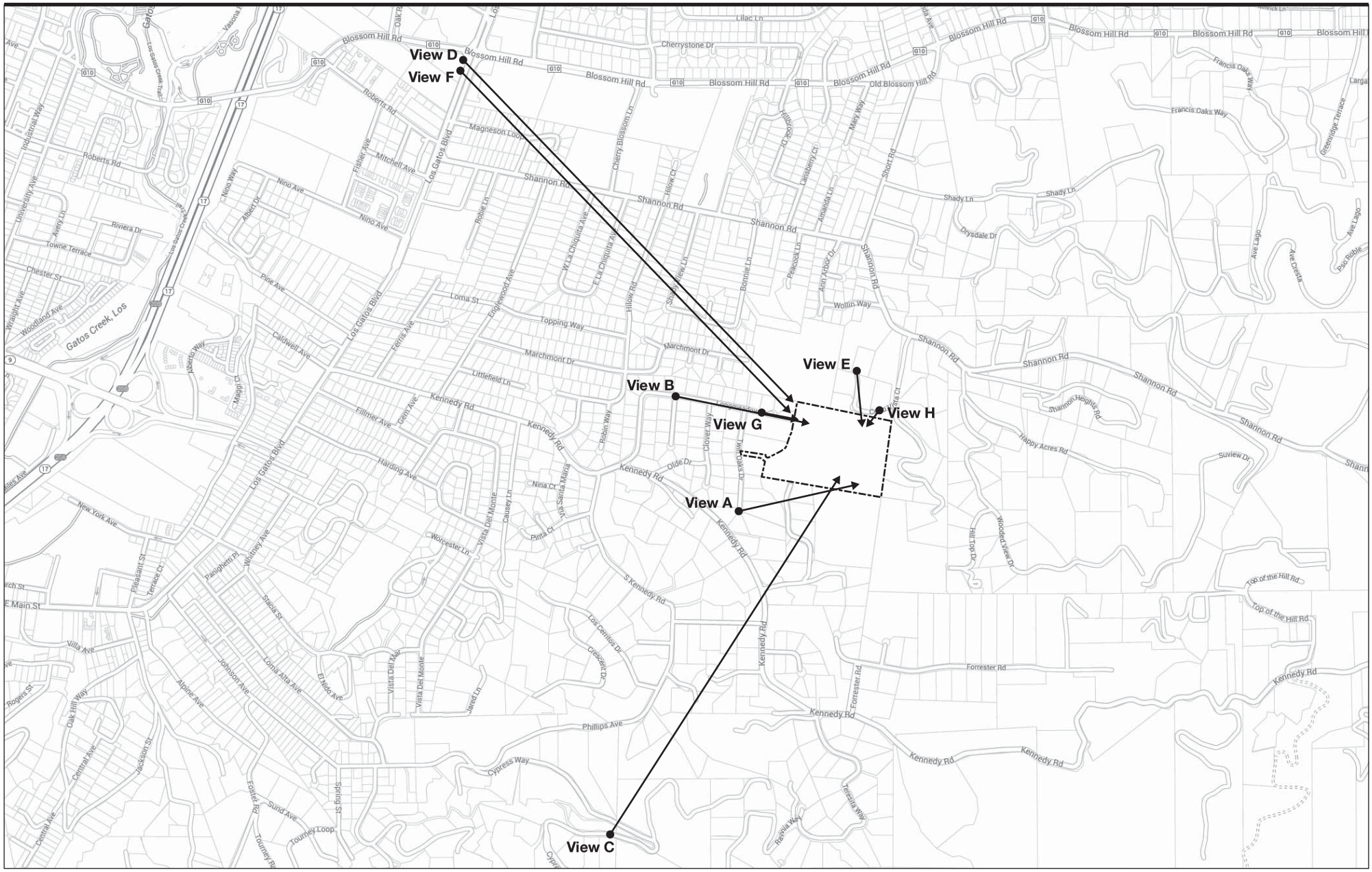
In order to characterize views of the project site from adjoining and nearby areas, photographs of the project site showing representative views of the property from various locations around it are presented as part of the aesthetics evaluation conducted for the project. These viewpoint locations are indicated on **Figure 4.2-1**.

In the project's immediate vicinity, views of the site from Twin Oaks Drive are screened by landscape trees of homes located on the east side of the this street as well as the residences, although there is a brief glimpse of the site's hilltop at one location (**Figure 4.2-2**, Viewpoint A). From Longmeadow Drive, views of the northern portion of the site's upper hillside are also available (Figure 4.2-2, Viewpoint B). The northern portion of the site is also visible from the adjacent Cerro Vista Court. Otherwise, views of the site from other nearby areas to the south, west, and east are mostly screened by intervening trees and homes or the local terrain.

From more distant locations, brief glimpses of the site and surrounding residential development are available from higher elevations such as from near the top of Cypress Way (**Figure 4.2-3**, Viewpoint C). Views from distant lower elevations are generally screened by intervening landscaping and buildings due

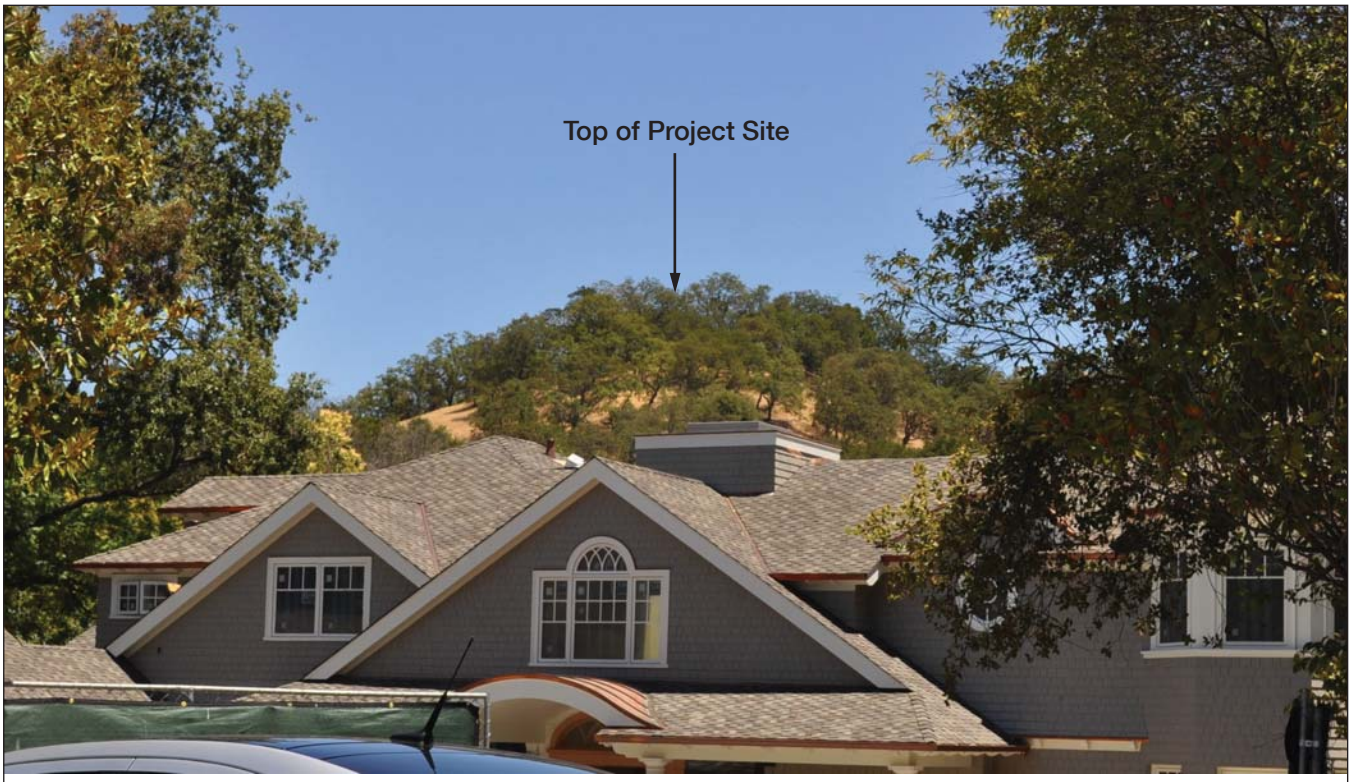
Key to Viewpoint Locations

Figure 4.2-1



Surrey Farm Estates, 170 Twin Oaks Drive

Base Map Source: Google (2014)



Viewpoint A - View of the top of the site from south end of Twin Oaks Drive

Viewpoint B - View of the site from Longmeadow Drive at Blueberry Hill Way

Source: Geier & Geier Consulting, Inc. (2014)

Viewpoint C - View of the site from near top of Cypress Way

Viewpoint D - View of the site from viewing platform at Blossom Hill Road and Los Gatos Boulevard

Source: Geier & Geier Consulting, Inc. (2014)

to the site's low elevation, as indicated by the view from the viewing platform at the southwest corner of the Blossom Hill Road/Los Gatos Boulevard intersection (Figure 4.2-3, Viewpoint D).

Potential views of scenic vistas from the surrounding neighborhoods are generally screened and filtered by mature trees and associated landscaping as well as local terrain. However, views of the Santa Cruz Mountains with the site's upper hillside in the foreground are available from the upper end of Cerra Vista Court.

4.2.2 REGULATORY AND PLANNING FRAMEWORK

ARCHITECTURE AND SITE REVIEW

Town Code Sections 29.20.140 through 29.20.150 describe the purpose and intent of the Architecture and Site (A&S) approval process, when A&S approval is required, and considerations in review of A&S applications. The purpose of architecture and site approval is to regulate the height, width, shape, proportion, siting, exterior construction and design of buildings to insure that they are architecturally compatible with their surroundings, and to promote a unified but diverse and distinctive theme which harmonizes with adjacent residential development. A&S approval is required for new construction of any principal building as well as some additions to existing residences. Section 29.20.150 requires consideration of the following matters related to aesthetics that pertain to the proposed project:

"(1) *Considerations relating to landscaping*. The location, height, and materials of walls, fences, hedges and screen plantings to insure harmony with adjacent development…Trees and plants shall be approved by the Director of Parks, Forestry and Maintenance Services for the purpose of meeting special criteria, including climatic conditions, maintenance, year-round versus seasonal color change (blossom, summer foliage, autumn color), special branching effects and other considerations.

(4) *Considerations relating to site layout*. The orientation and location of buildings and open spaces in relation to the physical characteristics of the site and the character of the neighborhood; and the appearance and harmony of the buildings with adjacent development. Buildings should maximize preservation of solar access.

(6) *Considerations relating to the exterior architectural design of buildings and structures*. The effect of the height, width, shape and exterior construction and design of buildings and structures as such factors relate to the existing and future character of the neighborhood and purposes of the zone in which they are situated, and the purposes of architecture and site approval. Consistency and compatibility shall be encouraged in scale, massing, materials, color, texture, reflectivity, openings and other details.

LOS GATOS GENERAL PLAN

General Plan policies that pertain to aesthetics and design are in the Land Use and Community Design Elements. Policies in these elements that relate to the proposed land use compatibility are discussed in Section 4.1, Land Use. The project's consistency with design-related policies in these elements is discussed below. In general, the proposed project would be consistent with these goals and policies or specified mitigation measures would avoid potential environmental impacts associated with conflicts with policies designed to protect the environment. Project consistency with those guidelines is discussed in the following project consistency analysis table.

General Plan Policies	Project Consistency Analysis
Community Design Element	
CD-1.1: Building elements shall be in proportion with those traditionally in the neighborhood. *CD-1.2: New structures, remodels, landscapes and hardscapes shall be designed to harmonize and blend with the scale and rhythm of the neighborhood and natural features in the area.*	At a proposed density of 0.57 unit per acre, the proposed project would be consistent with the Hillside Residential (0 to 1 unit per acre) designation of adjacent properties to the north, east, and south, and lower than the Low Density Residential (0 to 5 units per acre) designation of adjacent properties to the west. When compared to existing lots in the project vicinity, project lots would fall within the range of lot sizes that surround the project site with lower lots smaller and upper lots larger, consistent with the lot size pattern that occurs in the immediate project vicinity. Therefore, the project is considered to be in proportion with surrounding neighborhoods. While no specific home designs are proposed at this time, the scale and character of future homes on project lots will be reviewed by the Town during the Architecture & Site (A&S) review process.
CD-1.3: Buildings, landscapes and hardscapes shall follow the natural contours of the property.	Prior to development of each project lot, the proposed design of future residences and landscape plans for these residences will be subject to A&S review, and designs will be evaluated for consistency with this policy.
CD-3.2: Street and structural lighting shall be required to minimize its visual impacts by preventing glare, limiting the amount of light that falls on neighboring properties and avoiding light pollution of the night sky. *CD-15.7: Review all new development proposals to ensure that: (a) Outdoor lighting shall be limited. (b) Permitted lighting shall be of low intensity and for safety purposes…(d) The effects of indoor lights should be studied and reduced if found to be excessive.*	General Plan Policy TRA-7.8 prohibits the installation of new public street lights on hillside streets. Prior to development of each project lot, the proposed home design for each residence will be subject to A&S review. A&S review will also evaluate the potential for glare and nighttime illumination impacts. During A&S review, proposed residential designs would be required to demonstrate compliance with Town Code Section 29.10.09035, which prohibits the production of direct or reflected glare (such as that produced by floodlighting) onto any area outside of the boundaries of a given property.
CD-4.3: Trees that are protected under the Town's Tree Preservation Ordinance, as well as existing native, heritage and specimen trees, should be preserved and protected as a part of any development proposal.	When Policy CD-4.3 is viewed together with the intent of Goal CD-4 (to preserve existing trees, natural vegetation, natural topography, riparian corridors and wildlife habitats, and promote high quality, well designed, environmentally sensitive, and diverse landscaping in new

General Plan Policies	Project Consistency Analysis
CD-4.5: New development shall promote visual continuity through tree planting, consistent use of low shrubs and ground cover. *CD-4.7: Landscaping plans should maximize the use of trees for energy efficiency, climate control, screening, shading (especially of parking lots) and aesthetics.* *CD-4.8: Landscaping plans shall maximize the use of local native plants and/or drought resistant plants.* *CD-6.1: Reduce the visual impact of new construction and/or remodels on the Town and its neighborhoods.*	and existing developments) and the Town's Tree Protection Ordinance (to "retain as many trees as possible"), this policy is intended to preserve as many protected trees as possible. Project implementation would retain about 83% of the existing protected trees (about 485 out of a total of 585), which would help minimize changes in existing views of the site from surrounding areas and reduce the visual impact of new construction from surrounding areas. Replacement tree plantings would conform to requirements of the Tree Protection Ordinance and tree plantings are proposed along proposed roads and along certain project boundaries to minimize visual impacts on adjacent residences.
Goal CD-14: To preserve the natural beauty and ecological integrity of the Santa Cruz Mountains and surrounding hillsides by regulating new homes. *CD-14.1: Minimize development and preserve and enhance the rural atmosphere and natural plant and wildlife habitats in the hillsides.* *CD-14.2: Limit hillside development to that which can be safely accommodated by the Town's rural, two-lane roads.* *CD-14.3: Effective visible mass shall be reduced through such means as stepping structures up and down the hillside, following topographical contours, and limiting the height and mass of wall planes. A maximum of two stories shall be visible from every elevation.* *CD-14.4: Projection above the ridge view protection line is prohibited. All building plans shall indicate height in relationship to the ridge view protection line when viewed from specific vantage points and the valley floor.* *CD-14.5: Staff shall require adequate environmental analysis for projects in the hillside area to ensure appropriate consideration of potential environmental impacts associated with projects.* *CD-14.6: Preserve and protect the natural state of the Santa Cruz Mountains and surrounding hillsides by discouraging inappropriate development on and near the hillsides that significantly impacts viewsheds.*	There are currently no specific home designs to determine the project's consistency with the listed design-related policies. Specific homes designs would be prepared for each project lot and would be subject to the Town's Architectural and Site A&S review process. During this process, each home design will be subject to review for consistency with these policies. As noted in Impact 4.2-1, views of the Santa Cruz Mountains with the site's upper hillside in the foreground are available from the upper end of Cerro Vista Court. While views of the Santa Cruz Mountains' higher ridgeline from this location would still be available with project implementation, project homes would also be visible from this location, but not expected to project above the ridgeline. Since this scenic vista already includes views of single-family homes on the distant hillside to the southwest and views of the ridgeline would be maintained, project implementation is considered to have a less-than-significant impact on scenic vistas of the Santa Cruz Mountains from this location. In addition, the protection of ridgelines views will be reviewed again during the A&S review process, when specific home designs are prepared. As part of project implementation, the hillside comprising the southeastern portion of the site (3.62 acres) would be retained as open space, which would help preserve the existing oak woodland habitat that contributes to this viewshed. As indicated in Impact 4.6-1, project implementation would not result in any significant traffic impacts on intersections, streets, or highways. Chapters 4 and 5 of this EIR evaluate the impacts of the proposed project under all environmental topics specified in Appendix G of the CEQA Guidelines. All identified impacts were determined to be less than significant with implementation of mitigation measures specified in this EIR.

General Plan Policies	Project Consistency Analysis
Goal CD-15: To preserve the natural topography and ecosystems within the hillside area by regulating grading, landscaping, and lighting. *CD-15.1: Protect the natural ridge lines as defined in the Hillside Specific Plan and Hillside Development Standards and Guidelines.* *CD-15.2: Prohibit any grading that would alter the natural ridge line.* *CD-15.3: New construction shall be designed to follow natural land contours and avoid mass grading. When possible, flat pads should be avoided and houses should be designed to conform to or step down the contours rather than be designed for flat pads. Grading large, flat yard areas should be avoided.* *CD-15.4: Hillside landscaping shall be designed with the following goals in mind:* *a. Minimizing formal landscaping and hardscape.* *b. Siting formal landscaping and hardscape close to the house.* *c. Following the natural topography.* *d. Preserving native trees, native plant and wildlife habitats, and migration corridors.*	Specific homes designs would be prepared for each project lot and would be subject to the A&S review process. During this process, each home design would be subject to review for consistency with the HDSG and these policies, which relate to grading, landscaping, and lighting. As indicated in the proposed grading and drainage plan (Figure 3-4), grading would be limited to roadways and infrastructure; no mass grading is proposed. Grading for future residences would be evaluated as part of A&S review for each residence. In addition, project implementation would retain about 83% of the existing protected trees (about 485 out of a total of 585), which would help minimize changes in existing views of the site from surrounding areas and reduce the visual impact of new construction from surrounding areas. Replacement tree plantings are proposed along project roadways and along some sections of the project site boundaries, which would help screen views of project development.
CD-16.1: Prevent development that significantly depletes, damages or alters existing landscape vistas. *CD-16.2: Encourage the use of scenic easements to preserve viewsheds.* *CD-16.3: New structures or remodels shall be designed to respect views from surrounding properties while allowing all affected properties reasonable access to views.*	The proposed project would not significantly impact existing scenic and landscape vistas (see Impact 4.2-1 for more discussion). The project would retain as many existing trees as possible along the site perimeter to help minimize changes in existing views of the site from adjacent areas. The proposed home site on Lot 7, which is the highest lot on the site, is proposed to be located behind an existing tree screen and below the site's hilltop. The A&S process will ensure that future residences allow neighboring properties to maintain reasonable access to their current views to the extent feasible. In addition, retention of most existing oaks on the hilltop (top of Lot 7) and the oak woodland on the hillside below this hilltop (Lot B) would help to maintain existing landscape vistas of the site. However, it should be noted that there are approximately 15 trees on this hilltop and hillside that are identified as being in poor health and removal is recommended by the arborist, although their removal is optional and not an essential part of the project. If the applicant opts to remove these trees on this hilltop, the tree canopy might appear more open. While a more open tree canopy would not constitute a substantial change in visual character, tree removal on this hilltop would require development of an access drive or path, which would cross areas located outside the LRDA (slopes of over 30%) and be visible. Any such tree removal or other development on this hilltop and associated grading for an access drive or path in the future would be subject to review and approval as part of

General Plan Policies	Project Consistency Analysis
	the tree removal and grading permit processes. Conformance with the HDSG and visual impacts would be considered by the Town as part of these permit processes, thereby ensuring that this potential future impact would be less than significant.

HILLSIDE DEVELOPMENT STANDARDS AND GUIDELINES (HDSG)

As with the General Plan, the Hillside Development Standards and Guidelines (HDSG) provide objectives for future development within the community, focusing on the Town's hillside areas. The HDSG includes a Hillside Area Map that identifies those portions of Los Gatos subject to the provisions of the HDSG; the project site is located within an area subject to the HDSG.

With respect to projects involving land subdivisions, the HDSG contains the following development standard and guideline related to lot configuration and building locations:

Hillside Development Standards and Guidelines	Project Consistency Analysis
Objective 4: Maintain the natural appearance of the hillsides from all vantage points including the valley floor. *II. Constraints Analysis and Site Selection* *B. View Analysis* *1. Viewing Platforms. Each development project with the potential for being visible from any established viewing platform shall be subject to a view analysis. ("Potential" is defined as capable of being seen from a viewing platform if trees or large shrubs are removed, significantly pruned, or impacted by construction.) The view analysis shall be conducted in compliance with established Town procedures using story poles that identify the building envelope.* *2. Determination of Significant Ridgelines.*	There are two viewing platforms located in the project vicinity: (1) southwest corner of Blossom Hill Road/Los Gatos Boulevard intersection; and (2) west of the SR 17 southbound on-ramp on Highway 9/Los Gatos Saratoga Road intersection. The site is not visible from the Blossom Hill Road/Los Gatos Boulevard intersection Viewing Platform (see Figure 4.2-3, View D and Profile A-A in Figure 4.2-4), nor would it be visible from the Highway 9/Los Gatos Saratoga Road Viewing Platform (see Profile B-B in Figure 4.2-4). As shown in Profiles A-A and B-B, intervening trees and buildings located near the viewing platforms block views of the lower elevations of the distant hills. Thus, although the proposed project has the *potential* for being visible from two established viewing platforms, thereby justifying a "view analysis" under Objective 4 of the HDSG, the analysis undertaken for this EIR has determined that the project site will not be visible, after all, from those platforms. (See discussion of Impacts 4.2-1 and 4.2-3 below.) Through the Architecture and Site Application process each proposed residence will be further analyzed for potential visibility from the established viewing platforms and will be required to comply with the limitations and regulations in place at time of application.
Objective 5: Protect ridgelines from development. *Objective 7: Maintain the rural, natural, open space character of the hillsides.* *Objective 9: Ensure that development does not dominate, but rather visually blends and achieves*	As indicated in Figure 3-2, proposed development would be located almost entirely within the Least Restrictive Development Area, which would help to minimize grading requirements. No development is proposed to occur on the wooded hillside located in the southeastern

Hillside Development Standards and Guidelines	Project Consistency Analysis
harmony between the natural and built environment. *C. Selecting the Building Site - Standards* *1. Locate Buildings within the Least Restrictive Development Area.* *2. Preserve Views of Highly Visible Hillsides.* *3. Reduce Visual Impact.* *4. Ridgeline View Protection.* *5. Preserve Natural Features.* *6. Avoid Hazardous Building Sites.* *7. Protect Riparian Corridors.* *8. Protect Wildlife.* *Guidelines* *1. Solar Orientation.* *2. Impact on Adjacent Properties.* *3. Minimize Grading*	portion of the site, which would minimize visual impacts from areas to the west and south (where views of the upper hillside are available), as well as preserve the site's natural features and avoid slope instability hazards. However, future homes on the upper hillside (Lots 5, 6, 7, and 10) and in the northwest corner of the property would be visible from adjacent and nearby properties at the end of Longmeadow Drive and on Cerro Vista Court (see Impact 4.2-3 for more discussion). Specific homes designs would be prepared for each project lot and would be subject to the A&S review process. During this process, each home design would be subject to review for consistency with the HDSG and General Plan policies related to minimizing visual impacts and protecting ridgelines views. The applicant would also have to demonstrate that appropriate solar orientation has been incorporated into the proposed home design. No grading is proposed within or below the top of bank of Ross Creek, but grading would encroach upon riparian habitat adjacent to this creek and also directly affect a swale (unnamed tributary to Ross Creek) and its associated oak riparian habitat, a significant impact. However, implementation of Mitigation Measure 4.3-8, Creek Protection, would reduce these impacts to a less-than-significant level.

HILLSIDE SPECIFIC PLAN

Policies of the Hillside Specific Plan that relate to aesthetics along with a discussion of the project's consistency with these policies are presented below.

Hillside Specific Plan Land Use Policies	Project Consistency
1.0 Land Use *1.3.4. Architectural and Site Review.* *b. In subdivision design, home sites shall be so located as not to interfere with the natural ridge silhouette as viewed from the valley floor.* *c. New construction shall not be allowed which would protrude above the natural ridgeline or otherwise alter its natural contour as determined by the deciding body.*	As indicated in Impact 4.2-1 below, project implementation would not adversely affect existing ridgeline views from the valley floor or from surrounding areas. General Plan Policy TRA-7.8 prohibits the installation of new public street lights on hillside streets.

4.2.3 POTENTIAL IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

Based on criteria derived from Appendix G of the *CEQA Guidelines*, an impact to aesthetics is considered significant if the proposed project would:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- Substantially degrade the existing visual character or quality of the site and its surroundings; or
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

METHODOLOGY

The impact analysis for Aesthetics is based on a review of potential visual changes from public viewing areas as a result of the project, and a comparison of these changes to the above CEQA significance criteria: scenic vistas, scenic resources, visual character of the site and its surroundings, and light/glare. The Town's HDSG requires a view analysis for each development project located within the hillside area with the potential for being visible from any established viewing platform and specifies locations to be used for visual or aesthetic analysis of hillside development.

Story poles were erected on proposed Lots 5, 6, 7, and 10 to demonstrate potential visibility of proposed homes on the upper lots. These story poles were 20 feet high and were located at the uphill (highest) side of the potential building envelope (as depicted in Figure 3-2). This height represents the maximum height of a proposed home, 25 feet above grade, assuming a five-foot cut slope above the proposed home to accommodate the structure (HDSG limits cuts for homes and garages to eight feet). Story pole locations/heights for proposed homes are indicated in Cross-sections C through F, presented in Figures 3-4a and 3-4b.

Once the story poles were placed and locations were verified by a surveyor, photographs of the project site and story poles were taken from streets located closest to the site: Longmeadow Drive and Twin Oaks Drive (both located near the site's western boundary) and Cerro Vista Court (fronts along the site's northeastern boundary). These locations are the closest public viewpoint locations where future residences permitted by the project's planned development would have the greatest visual impact, since they would be in foreground view. Photographs of the site and story poles were taken from more distant locations where they were visible: Los Gatos Boulevard (near Blossom Hill Road) and Cypress Way (near Mireval Road). Future residences on proposed lots would become part of background views from more distant viewpoint locations.

The significance conclusions reached in this chapter reflect the professional judgment of the authors and their interpretation of Town policies and guidelines related to aesthetics. Recognizing that judgments regarding aesthetics are often subjective in nature, final determination of the project's consistency with Town policies and guidelines will be made by the Town's decision-makers, as Lead Agency for this project.

CHANGES IN SCENIC VISTAS

Impact 4.2-1: The project would not substantially affect scenic vistas. (Less than Significant)

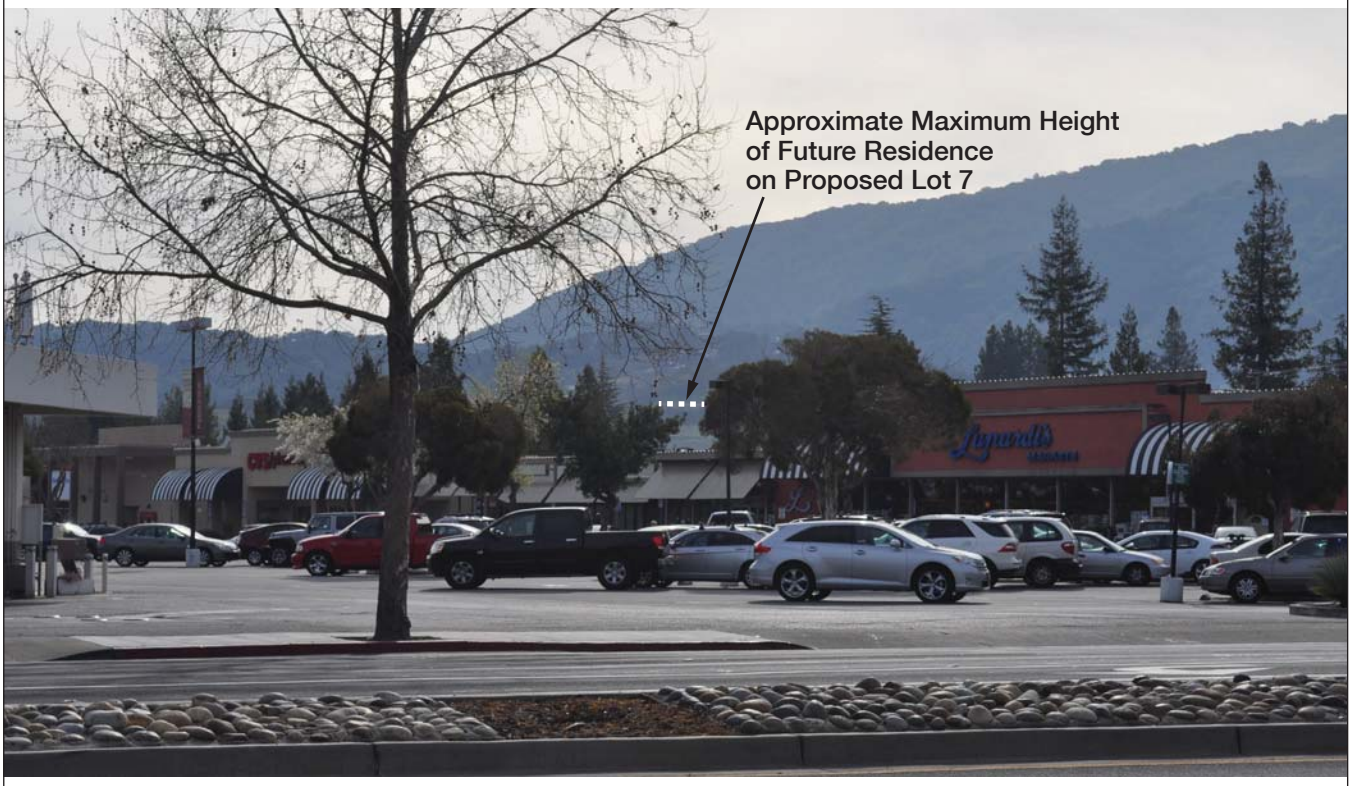
The proposed project would allow for subdivision of approximately three-fourths (74%) of the 17.55-acre project site into 10 residential lots, construction of roadways on approximately 7% of the site, and designation of open space on the remaining 19% of the site. Project implementation would result in the removal of approximately 70 protected trees (12% of a total of 485 protected trees on the site), transplantation of approximately 30 protected trees (5%), construction of the access road, and extension of utilities onto the site. The project site would be subdivided into 10 residential lots ranging in size from 0.94 to 2.37 acres, one 3.62-acre lot that would be designated as open space, and one 1.18-acre lot for project roads. The project applicant proposes to sell all 10 lots for residential development; residences would be designed and constructed individually by future property owners. Each of the future residences would be subject to separate Architecture and Site (A&S) review by the Town.

As discussed in Section 4.2.1, the Town's HDSG require a view analysis for each development project with the potential for being visible from any established viewing platform. There are two viewing platforms located in the project vicinity: (1) southwest corner of Blossom Hill Road/Los Gatos Boulevard intersection; and (2) west of the SR 17 southbound on-ramp on Highway 9/Los Gatos Saratoga Road. The site is not visible from the Blossom Hill Road/Los Gatos Boulevard intersection Viewing Platform (see Figure 4.2-3, View D and Profile A-A in **Figure 4.2-4**), nor would it be visible from the Highway 9/Los Gatos Saratoga Road Viewing Platform (see Profile B-B in Figure 4.2-4). As shown in Profiles A-A and B-B, intervening trees and buildings located near the viewing platforms block views of the lower elevations of the distant hills.

Scenic vistas of the site's hilltop and ridgelines above the site from surrounding neighborhoods are generally screened and filtered by mature trees and associated landscaping as well as local terrain. However, views of the Santa Cruz Mountains with the site's upper hillside in the foreground are available from the upper end of Cerra Vista Court (**Figure 4.2-5,** Viewpoint E). While future homes on Lots 5, 6, and 7 could potentially be visible from the upper end of Cerro Visa Court, Viewpoint E in Figure 4.2-5 demonstrates that these homes would be located in the foreground, while distant scenic vistas of the Santa Cruz Mountains higher ridgeline would still be available. Depending on their design, portions of future homes on Lots 5, 6, or 7 could be visible from this viewpoint or the upper section of Cerro Vista Court, although visibility of the future home on Lot 7 would be limited by existing tree plantings. However, since this scenic vista already includes views of single-family homes on the hillside to the southwest

Source: Paragon Design Group, Inc. (2014)

Viewpoint E - View of proposed Lots 6 and 7 from end of Cerro Vista Court



Viewpoint F - View of the site from Los Gatos Boulevard, 90 feet south of viewing platform

Source: Geier & Geier Consulting, Inc. (2014)

(albeit more distant than project homes) and since views of the ridgeline would be maintained, project implementation is considered to have a less-than-significant impact on scenic vistas from this location. Any potential visibility of future homes on Lots 5, 6, and 7 in the foreground could also be minimized through sensitive design and location of these homes. Future homes on these lots would be subject to A&S review, and visibility of the proposed future homes from adjacent areas will be reviewed and evaluated.

Since the project would not alter the visibility of the Santa Cruz Mountains hillsides and associated ridgelines from nearby areas and would not alter views from any of the established viewing platforms, the project's impact on scenic vistas would be less than significant.

Mitigation Measure 4.2-1: *None required.*

CHANGES IN SCENIC RESOURCES

Impact 4.2-2: The project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. (Less than Significant)

The project site is located approximately 1.1 miles east of the State Route (SR) 17 freeway and 1.9 miles east of the State Route 9. SR 17 is not a state-designated scenic highway, but Highway 9 (Saratoga-Los Gatos Road) is a state-designated scenic highway. However, the state scenic designation starts at the Los Gatos town limit and extends westward, away from the site (ending at the Santa Cruz County line). As noted under Impact 4.2-1, the project site is not visible from the viewing platform located on Highway 9/Los Gatos-Saratoga Road (west of the SR 17 southbound on-ramp) and since this designated scenic highway is farther from the site, the project site would likewise not be visible from this scenic highway.

In addition, there are no scenic resources such as historic buildings or rock outcroppings occur on the project site. Therefore, the proposed project would not affect scenic resources as defined by CEQA, which include, but are not limited to, trees, rock outcroppings, and historic buildings within a State-designated scenic highway. Even though the SR 17 freeway is not a state-designated highway, it is noted that the section of the SR 17 freeway closest to the site has an embankment along the east side. The embankment and intervening development and landscaping screen views of the project area from this freeway. Views of the project area, which is generally located at the base of the Santa Cruz Mountains, are further reduced by the intervening distance as well as the viewers' high travel speeds. Consequently, potential impacts on scenic resources within a State scenic highway would be less than significant, and no mitigation measures are required.

Mitigation Measure 4.2-2: *None required.*

CHANGES IN VISUAL CHARACTER

Impact 4.2-3: The project would not substantially degrade the visual character or quality of the site and its surroundings. (Less than Significant)

The project site is located in the hillsides of Los Gatos in an area that transitions from lower elevations characterized by relatively level terrain, higher residential densities, and smaller lot sizes (to the west) to higher elevations characterized by more steeply sloping terrain, lower residential densities, and larger lot sizes (to the east). The difference in residential densities in combination with the change in terrain contributes to differences in the visual character of the neighborhood to the west versus to the east. Residences and landscape plantings dominate views in the neighborhoods to the west, while views to the east are dominated by native vegetation because lots are typically larger and residential setbacks more variable. The native vegetation, combined with the steeper terrain, contribute to a more rural character for the hillside neighborhoods to the east.

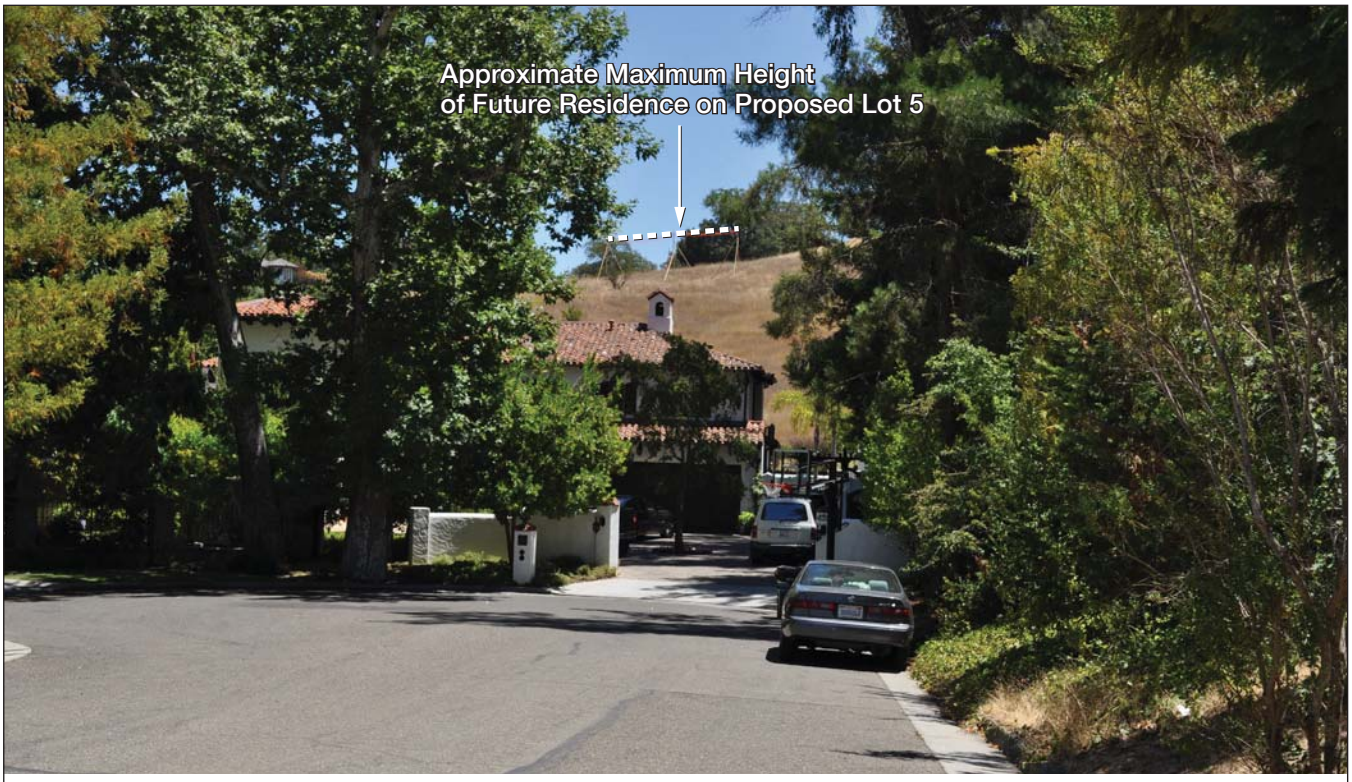
Views of the site from distant locations to the west and northwest are screened by intervening terrain, trees, and buildings. However, there are brief glimpses between buildings and trees where views of the upper part of Lot 7 (including story poles indicating maximum building height) are available (Figure 4.2-5, Viewpoint F). As indicated by these story poles, the future residence on proposed Lot 7 would not interrupt ridgeline views, but could be visible from distant locations to the northwest. However, this future residences would be subject to the Town's A&S review, and any potential visibility of the future residence on Lot 7 could be minimized through sensitive design and location of this home, particularly because there is an existing tree screen below the proposed home site. The future home on Lot 7 would be subject to A&S review, and visibility of the proposed future home from adjacent areas will be reviewed and evaluated. For these reasons, potential impacts on distant views of the site from the northwest are considered to be less than significant because the Town's A&S review would ensure that visibility of the future home on proposed Lot 7 would be screened by existing tree plantings on that lot.

Distant views of the site are also available from higher elevations to the south and northeast, while closer views are available from adjoining neighborhoods to the west, north, and south. Project implementation would eventually alter views of the site from distant locations to the south and northeast as well as adjoining neighborhoods, replacing views of an undeveloped hillside with (future) single-family residences. From distant locations to the south (Figure 4.2-3, Viewpoint C), the site vicinity is in the foreground of panoramic views of the Santa Clara Valley. From this viewpoint, future homes on proposed Lots 7, 9, and 10 would be visible because the existing grassland vegetation would not screen project homes. The oak woodland in the southern and southeastern portions of the site is visible from this viewpoint and these views would remain unchanged because this area is proposed to remain as open space (proposed Lot B). Trees in the southwestern portion of the site and topography would appear to screen views of other proposed lots from this viewpoint. From distant locations to the northeast, the northeastern portion of the project site is visible and future homes on proposed Lots 6 and 7 would be visible because the existing grassland vegetation would not screen project homes. Since existing homes in

the project vicinity are also visible from these viewpoints, the addition of project homes would not significantly alter the visual character or views from distant neighborhoods to the south or northeast. With proposed tree plantings along project roads and the northern project boundary, as well as future landscape plantings on residential lots, it is expected that distant views from the south would eventually change from views of a grassland hillside to a wooded hillside interspersed with project homes (similar to existing views of surrounding hillside homes).

As mentioned previously, views of the site from the neighborhood to the west are obscured by intervening landscape trees and buildings, with brief views of the uppermost hilltop available at some locations like the south end of Twin Oaks Drive (see Figure 4.2-2, Viewpoint A). Since the visible portion of this hilltop is located either on Lot B (proposed to be retained as open space) or at the upper portion of Lot 7 (outside the potential building envelope and proposed driveway), these views would remain unchanged. **Figure 4.2-6,** Viewpoint G, shows the most prominent view of the site from Longmeadow Drive. From this street, views of the site are limited to the grass-covered hillside in the northwest portion of the site. With project implementation, the future home on proposed Lot 5 would be visible because there are few trees on this grass-covered hillside to screen views of the future home on this lot. The dotted line delineated on Figure 4.2-6, Viewpoint G, demonstrates the maximum potential height of a future residence located in the building shown on Lot 5 in Figure 3-2. Views from Longmeadow Drive would change from an undeveloped, grass-covered hillside to a developed hillside. However, since foreground views include single-family residences that line Longmeadow Drive and the visual character from this viewpoint is a suburban, residential neighborhood, the project would not significantly change the existing visual character from public viewing locations west of the site, such as Longmeadow Drive. In addition, the proposed landscape plan (Figure 3-7) indicates that landscape trees would be planted as part of the proposed subdivision along the northwestern and northern project boundaries (where there are existing adjacent homes), as well as along proposed access roads. These landscape trees, in addition to future tree plantings required by the Town during A&S review of Lot 5 (when a future home is proposed), would eventually help to obscure views of future homes on Lot 5. Even in the short-term, however, the impact would be less than significant due to the facts that the existing foreground views already include single-family residences and that the visual character of the affected area is already of a suburban, residential neighborhood.

Views of the site from the neighborhood to the north on Cerro Vista Court are limited to the site's upper hillside. Figure 4.2-5, Viewpoint E, as well as Figure 4.2-6, Viewpoint H, demonstrate that the future homes on Lot 6 and 7 would be visible. The future home on Lot 5 could possibly be visible from some locations on Cerro Vista Court, but visibility would depend on its design. While the future home on proposed Lot 7 could be designed to be obscured from view by the existing tree screen, the future home on Lot 6 would be clearly visible from the lower (southern) end of Cerro Vista Court. Views from this street would change from a view of an undeveloped, grass-covered hillside to a developed hillside. However, since existing single-family homes are visible along both Cerro Vista Drive and Cerro Vista Court, visibility of the future residences on Lot 6 (and possibly future residences on Lots 5 and 7) would



Viewpoint G - View of proposed Lot 5 at east end of Longmeadow Drive

Viewpoint H - View of proposed Lot 6 from Cerro Vista Court

Source: Geier & Geier Consulting, Inc. (2014)

not significantly alter the existing visual character of this neighborhood. Moreover, proposed retention of most of the existing trees along the northern site boundary, in addition to proposed tree plantings along this boundary, would eventually help to screen views of future homes on Lots 5 and 6 from these streets. Proposed tree and shrub landscape plantings along the northern project boundary would eventually be consistent with the tree-lined visual character of the lower section of Cerro Vista Drive. In addition, the future homes on Lots 5 and 6 would be subject to A&S review, and visibility of these homes from adjacent areas will be reviewed and evaluated. The Town's A&S review would ensure that visibility of the future homes on proposed Lots 5, 6, and 7 would be screened by existing trees and proposed tree plantings along the northern boundary as well as on these lots. For these reasons, the project would not significantly alter the existing visual character or views from neighborhoods to the north.

The overall landscape plan is presented in Figure 3-7. Approximately 485 of the 585 Protected trees (83%) that are located on the project site would be retained, and this would help to minimize project-related changes in the existing character of views from adjacent areas. For example, existing trees located along the western and southern project boundaries to be retained would help obscure views from the existing adjacent residence on the north end of Twin Oaks Drive (located west of proposed Lot 2) and from two residences at the end of Brooke Acres Drive (located south of proposed Lots 1 and 8). In addition, retention of existing oaks on the hilltop (top of Lot B) and the oak woodland on the hillside below this hilltop (on Lots 7 and B) would further help to maintain existing views of the site. The potential building envelope on Lot 7 would be located below the existing oak woodland on the upper part of this lot. Conformance with the HDSG and visual impacts would be considered by the Town as part of any future development application for Lot 7, thereby ensuring that any potential future visual impacts related to tree removal below this hilltop would be less than significant.

While proposed retention of existing trees would help to minimize views of project development, there are two existing homes at the east end of Longmeadow Drive (near the northwest project boundary) that have unobstructed views of the northern portion of the project site. These properties have a few trees located along their eastern boundaries, which help to partially obscure views of the site from the backyards of these two homes. Although potential building envelopes indicated in Figure 3-2 are conceptual, the building envelope on Lot 3 is located approximately 120 feet southeast of the residence at 191 Longmeadow Drive, while the building envelope on Lot 4 is located as close as 250 feet from these two residences. In addition, future homes on upper lots could be visible from these two homes. Since proposed replacement trees would be planted during the initial stages of project implementation and development of homes on project lots would occur afterward, it is possible that landscape trees could grow large enough during the interim to screen views. However, if future homes on these lots were constructed prior to the proposed tree plantings growing large enough to screen views, these future homes could be visible from the two existing homes on Longmeadow Drive. Visibility of project homes from these two existing homes during this interim period is considered to be a less than significant visual impact given the small number of viewers affected.

While this analysis acknowledges that some future project homes could be visible from adjacent or nearby areas, the Town's A&S review process would ensure that tree removal, building design, and landscape planting for future residences that are eventually proposed on lots created by project implementation would be consistent with the Town's design standards that guide residential development in hillside areas. The application of these guidelines, appropriate construction standards, and building code requirements would help to reduce any potential degradation of the visual character of the project vicinity. The Town's A&S review for all future residences proposed on project lots will also include the installation of story poles and netting to demonstrate to what extent the future residence could affect the visual character of adjacent areas. With the required A&S review process for all future homes and proposed tree and landscape plantings along project roads and project boundaries (with planting to occur with project implementation, i.e., before homes are built), the project is considered to have a less-than-significant adverse effect on the visual character or quality of the site and its surroundings.

Mitigation Measure 4.2-3: *None required.*

LIGHTING

Impact 4.2-4: The project would not create new sources of substantial light or glare, which would adversely affect day or nighttime views in the area. (Less than Significant)

Since the project site is currently undeveloped, there are currently no sources of light or glare. The initial phase of project implementation (i.e., when roads and infrastructure are constructed) would not introduce any new sources of light or glare because General Plan Policy TRA-7.8 prohibits installation of new public street lights on hillside streets and no street lights would be installed along project roads. When future homes are eventually constructed, they would introduce new sources of indoor and outdoor lighting. The closest uses that would be most affected by nighttime lighting from the project would be the residences to the west near the east end of Longmeadow Drive, to the north on Cerro Vista Court, and to the south at the end of Brook Acres Drive. Proposed retention of existing trees along portions of the site boundaries and planting of additional landscape trees, combined with the separation between residences and the location of proposed buildings within the project site, would reduce the potential for significant disturbance due to nighttime lighting. During A&S review, proposed residential designs would be required to demonstrate project compliance with Town Code Section 29.10.09035, which prohibits the production of direct or reflected glare (such as that produced by floodlighting) onto any area outside of the boundaries of a given property. This requirement would also preclude project lighting spillover onto any area outside of the property boundary, thereby avoiding potential lighting impacts on the residences along adjacent streets. Therefore, potential impacts with regard to project lighting are considered to be less than significant, and no mitigation measures are required.

The project would create a new intersection where the proposed Street A intersects with Twin Oaks Drive. During the evening, night or early morning hours, the headlights of cars turning right from Street A to Twin Oaks Drive could shine into the home located at 110 Twin Oaks Drive, while the headlights of

cars turning left from Twin Oaks Drive to Street A could shine into the home at 170 Twin Oaks Drive. As shown on Figure 3-4, this intersection would be flared with a median and this design would force cars to approach Twin Oaks Drive at an angle (instead of perpendicular). With this design, potential impacts from headlights would be less than significant because car headlights would be oriented to the northwest instead of the west, and this would limit potential illumination of 110 Twin Oaks Drive to its garage instead of its front windows. Likewise, potential illumination of 170 Twin Oaks Drive by headlights as cars turned left from Twin Oaks Drive to Street A would be less than significant; the house is slightly higher than the street, setback from the street, and there is intervening topography and landscaping. Potential headlight illumination would also be limited to its garage.

Mitigation Measure 4.2-4: *None required.*

REFERENCES – AESTHETICS

California Department of Transportation. *Officially Designated State Scenic Highways*. Available online at http://www.dot.ca.gov/hq/LandArch/scenic/schwy.htm.

4.3 BIOLOGICAL RESOURCES

This section provides a discussion of the existing biological resources within the boundaries of the proposed project site and provides an analysis of potential impacts on biological resources from implementation of the proposed project. Where significant impacts are identified, appropriate mitigation measures pursuant to the California Environmental Quality Act (CEQA), the State and federal Endangered Species Act (CESA and FESA respectively), and other pertinent regulations are outlined.

4.3.1 ENVIRONMENTAL SETTING

EXISTING CONDITIONS

The subject property occupies about 17.6 acres of level to steeply sloping terrain of mostly unimproved land supporting grasslands and woodlands. A small portion of the site is improved with landscaping, a corral, and two detached outbuildings (associated with the adjacent home at 170 Twin Oaks Drive). An existing single-family residence is situated just west of the subject property, fronting Twin Oaks Drive. Adjacent land uses include the residential neighborhood known as Surrey Farm, constructed in the 1950s on the site of the original farmlands, and another smaller residential subdivision at the end of Longmeadow Drive built in the mid-1970s. The Hillbrook School, a private elementary/middle school built in the 1935, abuts the property's northwestern corner. Hillside residences are present to the northeast, east and southeast.

Ross Creek, an intermittent "blue-line" stream course, abuts the subject property at the southwestern corner, where it crosses the property via a buried 36" corrugated metal pipe constructed prior to 1920[1]; the culvert outfalls into an open section of channel approximately 650 feet downstream at the Hillbrook School campus. The headwaters of Ross Creek originate on the north-facing slopes of Sierra Azul Open Space Preserve above Kennedy Road, approximately one mile southeast of the subject property. Draining a watershed of approximately 10 square miles, Ross Creek flows northward through Los Gatos then east through urbanized portions of San Jose to the Guadalupe River. Portions of Ross Creek are conveyed through buried culverts and open concrete flood channels.

A second, minor drainage swale crosses the middle of the subject property from the southeast to northwest. Draining a watershed of approximately 10 acres, this ephemeral swale was not shown to have a centerline in topographic maps from the 1950s. However, the ephemeral swale is incised for only short reaches in the upper portions of the site. Surface flows from the ephemeral swale and surrounding watershed are picked up at a culvert inlet located near the property's northwestern corner and conveyed via a buried pipe approximately 200 feet to the west, where it empties into the buried culvert conveying Ross Creek.

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[1] Personal communication from Tom Dodge, project applicant, to Mike Wood of Wood Biological Consulting, Inc. on July 20, 2012.

REGIONAL CONTEXT

The subject property is situated at the base of the foothills on the north side of the Santa Cruz Mountains. Elevations of the west- to north-facing property range from 425 to 645 feet above mean sea level. Lands to the west of the property are developed with residential neighborhoods. Lands to the east and southeast support rural residences on wooded hillsides extending into the Sierra Azul Open Space Preserve managed by the Mid-Peninsula Regional Open Space District, about 0.6 mile to the southeast.

SITE BIOLOGICAL RESOURCES

Although altered by historic disking, grazing, and other rural land uses, the subject property is in a primarily natural condition (i.e., it is not developed and completely vegetated). The vegetation and associated habitat on the perimeter of the project site is characteristic of that typically found on upland terrain in the project area. In terms of area, the largest portion of the property is characterized as non-native annual grassland, followed by mixed oak forest. Also occurring on-site is riparian habitat associated with East Ross Creek. Finally, highly altered ruderal habitat and anthropogenic habitat, consisting of maintained landscaping and non-maintained tree plantings, are also present on-site.

PLANT COMMUNITIES

The dominant plant communities present on the subject property are non-native annual grassland and mixed oak forest. Ruderal and anthropogenic habitats are also present. A summary of habitat areas occurring on the subject property is presented in **Table 4.3-1**; a map of all plant communities is provided in **Figure 4.3-1**. A preliminary inventory of plant species occurring on-site is provided in **Appendix B.**

TABLE 4.3-1

SUMMARY OF HABITATS OCCURRING ON-SITE

Habitat Type	Total Acreage On-site	Percent of Site
Mixed Oak Forest		
– Coast Live Oak/Valley Oak	4.15	23.6%
– Blue Oak	0.43	2.5%
Total Mixed Oak Forest	4.58	26.1%
Riparian (Mixed Oak Forest)	0.55	3.1%
Non-Native Annual Grassland	11.33	64.4%
Ruderal	0.63	3.6%
Anthropogenic	0.50	2.8%
Total	**≈17.6**	**100%**

Site Habitats and Jurisdictional Waters

Figure 4.3-1

Surrey Farm Estates, 170 Twin Oaks Drive

Source: Wood Biological Consulting, Inc. (2013)

Non-Native Annual Grassland

Non-native annual grassland is generally found in open areas in valleys and foothills throughout coastal and interior California (Holland 1986). It typically occurs on soils consisting of fine-textured loams or clays that are somewhat poorly drained. This vegetation type is dominated by non-native annual grasses and weedy annual and perennial forbs, primarily of Mediterranean origin, that have replaced native perennial grasslands, scrub and woodland as a result of human disturbance. Scattered native wildflowers and grasses, representing remnants of the original vegetation may also be common. On-site, non-native annual grassland intergrades with oak woodland.

On the lower slopes and valley bottom of the site, grassland habitat is dominated by the non-native species Mediterranean canarygrass (*Phalaris minor*) with foxtail fescue (*Festuca myuros*) and broadleaf filaree (*Erodium botrys*). On the upper hillslopes, grassland habitat is dominated by the non-native species ripgut brome (*Bromus diandrus*), wild oats (*Avena fatua*), and Italian ryegrass (*Festuca perennis*), along with Italian thistle (*Carduus pycnocephalus*). On the steeper and drier slopes and exposures, remnants of native perennial grasslands can be found, including purple needlegrass (*Stipa pulchra*), Coast Range melic (*Melica californica*), hayfield tarweed (*Hemizonia congesta* ssp. *luzulifolia*), slender tarweed (*Madia gracilis*), blue-eyed grass (*Sisyrinchium bellum*), and Kellogg's yampah (*Perideridia kelloggii*). The highly invasive grass medusa-head (*Elymus caput-medusae*) is fairly prominent at the middle elevations of the northwest-facing slopes of the main hillside.

Approximately 11.3 acres of non-native annual grassland are present on-site, comprising 64% of the parcel. Non-native annual grassland most closely conforms to wild oats grasslands (*Avena* Semi-Natural Herbaceous Stands) as described in Sawyer et al. (2009; CA Vegetation Code 44.150.00). Following Holland (1986), it corresponds to non-native grassland (Holland Code 42200). This widespread non-native plant community has no global or state rarity ranking. Non-native annual grassland would be classified as an upland, following Cowardin et al. (1979). Unless found to harbor special-status species, the removal non-native annual grassland would typically not meet the significance criteria developed pursuant to the CEQA Guidelines.

Mixed Oak Forest

Mixed oak forest is characterized as an assemblage of coastal oak species found in valleys and gentle to steeply sloping land between 800 and 6500 feet in elevation. It can be found along the Coast Ranges from Sonoma to Santa Barbara counties. Mixed oak forests are dominated by three or more oak species including coast live oak (*Quercus agrifolia*), blue oak (*Q. douglasii*), Oregon oak (*Q. garryana*), black oak (*Q. kelloggii*), valley oak (*Q. lobata*) and interior live oak (*Q. wislizenii*). Other characteristic tree species include California bay (*Umbellularia californica*), California buckeye (*Aesculus californica*), Douglas-fir (*Pseudotsuga menziesii*), foothill or gray pine (*Pinus sabiniana*), and madrone (*Arbutus menziesii*). Mature stands include oaks less than 100 feet tall and frequently with a two-tiered, continuous or intermittent canopy. A shrubby understory might or might not be present. Grasses or herbs might be abundant or sparse.

The California Fish and Game Code (CFGC) defines oak woodlands as "an oak stand with a greater than 10% canopy cover or that may have historically supported greater than 10% canopy cover".[2] The California Board of Forestry and Fire Protection (CBFFP) has regulatory authority over all of California's forested landscapes, including the power to regulate oak woodlands at the local or State level (Gaman and Firman, 2006; California Oak Foundation, 2007).

Within the study area, mixed oak forest consists of a dense to isolated patches of coast live oaks and valley oaks at the lowest elevations and on the north-facing slope of the main hillside; a single stand of blue oaks is present on the steep south- to southwest-facing slopes in the southeastern corner of the property (Figure 4.3-1). The oak understory varies from ruderal to non-native annual grassland. Native understory species present include poison oak (*Toxicodendron diversilobum*), rigid hedge-nettle (*Stachys ajugoides* var. *rigida*), purple needlegrass, blue wildrye (*Elymus glaucus*), and Coast Range mule ears (*Wyethia glabra*). Mixed oak forest on-site intergrades with non-native annual grassland.

On the site, coast live oak woodland most closely conforms to the *Quercus agrifolia* Woodland alliance as described by Sawyer et al. (2009) and Holland (1986; Holland Code 71160), and the *Quercus douglasii-Quercus lobata-Quercus agrifolia/Toxicodendron diversilobum* Association following the CDFW[3] (CDFG, 2010; CA Vegetation Code 71.100.14). The plant association is classified as an upland habitat following Cowardin et al. (1979). Mixed oak forest has been assigned a rarity ranking of G4/S4 (CDFG, 2010), where impacts to this plant community in upland or non-riparian settings would typically not be regarded as significant under thresholds developed pursuant to the CEQA Guidelines, except where protected under local policies or ordinances. Approximately 5.13 acres of mixed oak forest is present on-site, comprising 26% of the parcel.

Riparian Habitat

An open section of Ross Creek abuts the property and crosses it via a buried culvert. At the ordinary high water mark (OHWM[4]), the section of the channel on site is approximately 6 feet across and two feet deep; on site, the open channel segment is approximately 70 feet long between the southern property boundary and the culvert inlet. No emergent wetlands or typical riparian vegetation is associated with the watercourse. The channel substrate consists of coarse gravels and cobbles. On site, bank and channel vegetation is characterized as ruderal, including such native species as stinging nettle (*Urtica dioica*), blue elderberry (*Sambucus mexicana*), and such non-native species as poison hemlock (*Conium maculatum*), Washington fan palm (*Washingtonia robusta*), knotweed (*Polygonum* sp.) and Himalayan blackberry

[2] CA Fish and Game Code Section 1361(h)

[3] On January 1, 2013, legislation effective as of that date changed the name of the California Department of Fish and Game (CDFG) to the CDFW; all publications released prior to that date are referenced by the former name CDFG.

[4] The OHWM as it pertains to non-wetland waters of the U.S. is defined in 33 CFR Part 328.3 as the line on the shore established by fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, or the presence of litter and debris.

(*Rubus armeniacus*), and planted or sprouted northern California black walnut (*Juglans hindsii*). The stream course has an overhanging tree canopy comprised of valley oak, coast live oak and, rooted over 30 feet from the channel, California sycamore (*Platanus racemosa*).

Although essentially indistinguishable from the mixed oak forest habitat described above, the fact that this otherwise upland habitat is overhanging Ross Creek qualifies if for consideration as riparian, making it subject to Town's adopted Guidelines and Standards for Land Use Near Streams (SCVWRPC, 2007; hereafter referred to as Guidelines), discussed below.[5] Approximately 0.55 acres (3.1%) of riparian habitat is present on the site.

Immediately upstream of the subject property (i.e., off site), the banks of Ross Creek are encroached upon by residential development and landscaping, and the channel is highly modified. Although clumps of native arroyo willows (*Salix lasiolepis*) are present in the channel, vegetation in and on the banks is dominated by the non-native species such as Algerian ivy (*Hedera canariensis*) and Himalayan blackberry.

Ruderal Habitat

Ruderal habitat is that from which the native vegetation has been completely removed by grading, cultivation, or other surface disturbances. Left undeveloped, such areas typically become recolonized by invasive exotic species. Scattered native species might recolonize the site after disturbance has ceased. Ruderal sites are typically dominated by herbaceous species, although scattered woody shrubs and trees may also begin to appear if left undisturbed long enough. Ruderal sites are characteristic of road sides, fallow agricultural fields, vacant lots, and large landslides.

Within the study area, ruderal habitat is present along the proposed access road from Twin Oaks Drive and the fenced corral area. These lands support very low vegetative cover, consisting of non-native herbs such as Bermuda grass (*Cynodon dactylon*), stinkwort (*Dittrichia graveolens*), puncture vine (*Tribulus terrestris*), fluellin (*Kickxia spuria*), and spotted spurge (*Chamaesyce maculata*).

Ruderal habitat is not specifically described by Sawyer et al. (2009); it would be classified as upland following Cowardin (1979). This habitat has no rarity ranking. Approximately 0.63 acres (3.6%) of ruderal habitat is present on site.

Anthropogenic Plant Associations

Anthropogenic plant associations are those dominated by plant species introduced by humans and established or maintained by human disturbances or activities. Some are entirely artificial, such as areas

[5] Chapters 2 and 3 of the Guidelines contain the adopted requirement of the Town of Los Gatos for construction near streams. Chapter 4 contains detailed specifications for use by architects, engineers and other project designers. Available online at http://www.losgatosca.gov/index.aspx?NID=1335.

under active cultivation (e.g., row crops, orchards, vineyards). Others include areas used as rangeland or pasture, and areas influenced by urban or suburban landscaping or plantings. On such sites, the native vegetation has typically been removed by clearing in preparation for cultivation, landscaping, or development. Cleared areas that are planted with or colonized by non-indigenous plant species can create distinct communities dominated by annual grasses and forbs, shrubs, or trees. Some of these communities are only perpetuated with direct human intervention such as irrigation or grazing, while others are able to persist on their own. In some situations, introduced non-indigenous species invade native habitats, altering the composition of the native understory or canopy, or both.

Three areas within the study area are characterized as anthropogenic (human-created) habitats. The planted side yard within the proposed access road from Twin Oaks Drive supports plantings of privet (*Ligustrum* sp.), Aleppo pine (*Pinus halepensis*) and incense cedar (*Calocedrus decurrens*). On the west-facing hillside is a densely planted grove of Monterey pine (*Pinus radiata*) and incense cedar. A stand of Monterrey pines and incense cedar trees is also present on the northern project boundary near Cerro Vista Court.

This vegetation type is not classified by Sawyer et al. (2009); it would be classified as an upland following Cowardin (1979). This habitat has no rarity ranking. Approximately 0.5 acres (2.8%) of anthropogenic habitat is present on-site.

WILDLIFE HABITATS

The value of a site to wildlife is influenced by a combination of the physical and biological features of the immediate environment. Species diversity is a function of diversity of abiotic and biotic conditions and may be greatly affected by human use and occupation. The wildlife habitat quality of an area, therefore, is ultimately determined by the type, size, and diversity of vegetation communities present and their degree of disturbance. For example, as a plant community is degraded by the loss of understory diversity, creation of openings, or reduction in area, a loss of structural diversity generally results. Degradation of the structural diversity of a community typically diminishes wildlife habitat quality and usually results in a reduced ability to support a diversity of animal species.

Wildlife habitats are typically distinguished by vegetation type, with varying combinations of plant species providing different resources for use by wildlife. While the subject property is dominated by woodland and herbaceous cover and is marginally contiguous with similar habitats, the site is at the edge of completely built-out residential neighborhoods. Therefore, its value to wildlife may be considered moderate. A brief discussion of these habitat types and the characteristic wildlife species found in each, along with actual observations, is presented below.

Non-native Annual Grassland Habitat

Bird species associated within non-native grasslands include the grasshopper sparrow (*Ammodramus savannarum*), western meadowlark (*Sturnella neglecta*), American goldfinch (*Carduelis tristis*) and

loggerhead shrike (*Lanius ludovicianus*). Grassland habitat also serves as optimal foraging habitat for a variety of predatory bird species such as the red-tailed hawk (*Buteo jamaicensis*), northern harrier (*Circus cyaneus*), American kestrel (*Falco sparverius*) and barn owl (*Tyto alba*). California ground squirrels (*Spermophilus beecheyi*) are frequent grassland inhabitants that utilize the soft, loose-textured soils to create burrows that are used by other species such as brush rabbits (*Sylvilagus bachmani*), coyotes (*Canis latrans*), California meadow voles (*Microtus californicus*) western toads (*Bufo boreas*) and gopher snakes (*Pituophis catenifer*).

Mixed Oak Forest Habitat

Wildlife known to frequent mixed oak forest habitat, several of which nest in cavities of older oak trees, include bird species such as the acorn woodpecker (*Melanerpes formicivorus*), oak titmouse (*Baelophus inornatus*), California quail (*Callipepla californica*), Anna's hummingbird (*Calypte anna*), California towhee (*Pipilo crissalis*), great horned owl (*Bubo virginianus*) and ash-throated flycatcher *(Myiarchus cinerascens*). Woodrats (*Neotoma fuscipes*) often inhabit mixed oak forest/savannah where fallen trees and debris can be used to build ground and arboreal stick nests. Resident and transitory species that utilize mixed oak forest habitats include the red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), Columbian black-tailed deer (*Odocoileus hemionus columbianus*) and coyote (*Canis latrans*).

Riparian Habitat

The small patch of riparian habitat onsite provides marginal habitat for passerine birds such as song sparrow (*Melospiza melodia*), white-crowned sparrow (*Zonotrichia leucophrys*), black phoebe (*Sayornis nigricans*), yellow warbler (*Setophaga petechia*), Wilson's warbler (*Wilsonia pusilla*), Bewick's wren (*Thryomanes bewickii*) and wrentit (*Chamaea fasciata*). Bat species common to this habitat include the California myotis (*Myotis californicus*) and Yuma myotis bat (*Myotis yumanensis*). Stream habitat, when combined with understory vegetation and woody debris within the riparian forest, supports amphibians such as Pacific chorus frog (*Pseudacris regilla*), and California newt (*Taricha torosa*). Predators that likely utilize the riparian habitat upstream and downstream of the project area include raccoon (*Procyon lotor*), gray fox (*Urocyon cinereoargenteus*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*) and aquatic garter snakes (*Thamnophis* sp.), among others.

Ruderal Habitat

Ruderal habitats are composed of a highly variable selection of plant species and are often located in areas that are less than suitable for most wildlife species. Thus, generalist species with wide niches, as well as wildlife with wide ranges for foraging, are most commonly found in this type of habitat. Bird species include the American crow (*Corvus brachyrhynchos*), Brewer's blackbird (*Euphagus cyanocephalus*), white-tailed kite (*Elanus leucurus*), western scrub-jay (*Aphelocoma californica*), house finch (*Haemorhous mexicanus*) and turkey vulture (*Cathartes aura*). Mammal species may include California ground squirrels (*Otospermophilus beecheyi*), brush rabbits (*Sylvilagus bachmani*), house mouse (*Mus musculus*), Virginia opossum (*Didelphis virginiana*) and domestic cat (*Felis silvestris catus*).

Anthropogenic Habitat

Urban and suburban habitats are most often utilized by bird species, including the American robin (*Turdus migratorius*), western scrub-jay (*Aphelocoma californica*), mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), as well as several species observed less frequently, including the Cooper's hawk (*Accipiter cooperii*) and white-tailed kite (*Elanus leucurus*). Mammal species commonly associated with anthropogenic habitat include the raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), black rat (*Rattus rattus*) and striped skunk (*Mephitis mephitis*).

WILDLIFE MOVEMENT CORRIDORS

Under significance criteria derived from the CEQA Guidelines, project impacts are considered significant if they would interfere substantially with the movement of 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. Wildlife corridors (i.e., linear habitats that naturally connect and provide passage between two or more large habitats or habitat fragments) are important for persistence of wildlife over time. Wildlife must have access to adequate resources, and corridors are used to find suitable forage, nesting and resting sites, mates and new home ranges. In addition, corridors for dispersal within breeding populations will decrease the likelihood that subpopulations will go extinct or become locally extirpated. Even where patches of pristine habitat are fragmented, as commonly occurs with riparian vegetation, wildlife movement between populations is facilitated through habitat linkages, migration corridors and movement corridors.

Wildlife movements include migration (i.e., usually one direction per season), inter-population movement (i.e., long-term genetic exchange) and small travel pathways (i.e., daily movement within an animal's home range). Daily movement patterns define an animal's home range where activities such as foraging, resting and conspecific (i.e., individuals of the same species) interactions occur. Generally, longer movements (usually by dispersing individuals) connect breeding populations, permitting gene flow between these subpopulations. Functional corridors must generally provide adequate habitat cover to permit animal dispersal between areas large enough to serve as home ranges. Corridor requirements vary between organisms; a suitable corridor for a butterfly or bird may be a series of "stepping stones" of suitable habitat, while a terrestrial vertebrate may need a continuous band of suitable habitat for successful movement. Habitat loss, fragmentation, and degradation resulting from a change in land use or habitat conversion can alter the use and viability of corridors.

As discussed above, the subject property is dominated by woodland and herbaceous cover and is marginally contiguous with similar habitats. However, the rural surroundings also support a relatively high number of large fenced yards and moderately busy surface streets. These facts reduce the attractiveness the woodlands might otherwise have for terrestrial wildlife species. The site is located at the edge of completely built-out residential neighborhoods further decreases the opportunities for the movement of wildlife across the site between suitable habitats. And while Ross Creek can be expected to

serve as a movement corridor for wildlife, it is both constrained by fenced backyards and partially culverted. It is therefore not expected to serve as an important movement corridor for wildlife other than those species commonly found among human habitations.

SPECIAL-STATUS BIOLOGICAL RESOURCES

Special-status Natural Communities

Special-status natural communities are those that are considered rare in the region, support special-status plant or wildlife species, or receive regulatory protection under the Clean Water Act (CWA Sections 401 and 404), CDFW's Lake and Streambed Alteration Program (LSAP; Cal. Fish and Game Code Sections 1600-1607), and/or the Porter-Cologne Water Quality Control Act (Porter-Cologne; Cal. Water Code Sections 13000-14920). A number of communities have been designated as rare, and these communities are given the highest inventory priority (CNDDB, 2014; CDFG, 2010). Vegetation alliances given a rarity ranking of G1, G2 or G3 are considered to be of high inventory priority; thus, impacts to habitats with these rankings may be regarded as significant pursuant to criteria derived from the CEQA Guidelines. Alliances ranked as G4 or G5 are generally considered common enough to not be of concern (Sawyer et al., 2009; CDFG, 2010; for a definition of rarity rankings, see Appendix B).

Riparian habitats are considered by federal and State regulatory agencies to represent a rare and declining resource. Wetlands and riparian areas can serve significant biological functions by providing nesting, breeding, foraging, and spawning habitat for a wide variety of resident and migratory wildlife and fish species. Impacts to stream channels with a defined bed and bank, as well as adjacent riparian vegetation, are addressed specifically by the California Fish and Game Code (CFGC Sections 1600, et seq.) and may be regulated under the CWA and Porter-Cologne.

No special-status natural communities, *per se*, are present on the subject property. However, a short section of Ross Creek, an intermittent stream, enters the property from the southwest and crosses the site via a buried culvert (Figure 4.3-1). Ross Creek qualifies as both a waters of the U.S.[6] and waters of the State.[7] No wetlands are present on-site. An ephemeral swale crosses the middle of the property, conveying sheet flow to the northwestern corner of the site, where it is collected in a storm drain system that outfalls into Ross Creek. While only incised portions of the ephemeral swale are expected to qualify as waters of the U.S., the entire swale is expected to qualify as a waters of the State, given that it conveys

[6] Waters of the U.S. are defined in 40 CFR Section 232.2, and include traditional navigable waters; interstate waters; wetlands adjacent to either traditional navigable waters or interstate waters; non-navigable tributaries to traditional navigable waters that are relatively permanent, meaning they contain water at least seasonally; and wetlands that directly abut relatively permanent waters.

[7] Waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" California Water Code Section 13050(e). These include nearly every surface or ground water in California, or tributaries thereto, and include drainage features outside USACE jurisdiction (e.g., dry and ephemeral/seasonal stream beds and channels, etc.), isolated wetlands (e.g., vernal pools, seeps, springs and other groundwater-supplied wetlands, etc.), and storm drains and flood control channels.

concentrated flows from an off-site watershed to a named tributary. As such, impacts to this feature are expected to be regulated by the CDFW pursuant to the LSAP[8] and the RWQCB pursuant to Porter-Cologne.

Although not comprised of species considered aquatic obligates, mixed oak forest canopy overhanging Ross Creek and the ephemeral swale are regarded as riparian in nature (Figure 4.3-1). In its publication, *User Manual: Guidelines and Standards for Land Use Near Streams*, the Santa Clara Valley Water Resources Protection Collaborative (SCVWRPC, 2007[9]) emphasizes the vital role of riparian vegetation in "maintaining stream stability, providing valuable wildlife habitat, and moderating downstream flooding", as well as regulating water quality by filtering pollutants from stormwater, such as oil and grease from roadways, fertilizer runoff from lawns, and excess sediments from upstream. Specifically, the stream-side environment supports riparian vegetation and the functions riparian vegetation provides. In general, riparian vegetation is considered beneficial to terrestrial species, as well as semi-aquatic amphibians and reptiles and fish. Development near these areas of riparian habitat must conform to the Town's adopted guidelines for such projects.

As defined in the Guidelines, a riparian buffer is, "Land next to a stream or river that is vegetated, usually with trees and shrubs that serves as a protective filter for streams. A buffer helps to stabilize stream banks from washing away and to reduce the impact of upland sources of pollution by trapping, filtering, and converting sediments, nutrients, and other chemicals. In addition, a buffer helps supply food, cover, and thermal protection to fish and other wildlife. Riparian buffers can be 300 feet wide or 20 feet wide; it depends on the stream and the land around the stream."

Buffer zones also play an important role in protecting the biological values of riparian vegetation and stream habitats, they are also important in providing long-term protection of property and structures from flooding and erosion. The Guidelines recommend minimum "slope stability protection areas", measured from top of bank, ranging from as wide as 25 feet for unarmored streams to as little as 10 feet for ephemeral streams.

Special-status Plant Species

Special-status plants include those listed as endangered, threatened, or rare or as candidates for listing under FESA (50 CFR Section 17.12) or CESA (Cal. Fish and Game Code Sections 2050, et seq.), CDFW 2015b), those listed as rare under the CNPPA (Cal. Fish and Game Code Sections 1900, et seq.), those that meet the definition of rare or endangered under CEQA (CFGC Section 15380[b] and [d]), and species

[8] Email communication with D. Johnston, Environmental Specialist, CDFW, July 17, 2012.

[9] Chapters 2 and 3 of the Guidelines contain the adopted requirement of the Town of Los Gatos for construction near streams. Chapter 4 contains detailed specifications for use by architects, engineers and other project designers. Available online at http://www.losgatosca.gov/index.aspx?NID=1335.

considered to be locally significant[10] (CDFG, 2009). Plant species routinely regarded as having special-status include plants listed by the California Natural Diversity Database (CNDDB, 2014), CDFW (2015a), as well as those found on lists 1B and 2 of the CNPS (2014). A summary of the special-status plant species evaluated for this project is presented in Appendix B; an explanation of all rarity status codes is presented in Appendix B. All database print-outs are provided in Appendix B.

In addition, plant species have been assigned global and state rarity rankings (for a definition of these rankings, see Appendix B). Species ranked as S1, S2, or S3 are considered to be critically imperiled, imperiled or vulnerable to extinction within the boundaries of the state (CDFW, 2015a). As such, these species, despite not being formally listed under CESA, may nevertheless be considered to meet the criteria for listing as endangered, threatened or rare under CESA (CEQA Section 15380(d)). Species ranked as S4 or S5 are generally considered common enough to be secure and not at risk of extinction. Impacts on special-status plants species, as thusly defined, would be regarded as significant pursuant to CEQA (CEQA Guidelines Section 15065(a)) and should be addressed in environmental review documents (CEQA Guidelines Section 15065(b), (c)).

Based on a review of the above-listed databases, a total of 75 special-status plant species have been recorded in the project region. No federally or State-listed plant species or other special-status plant species have been recorded as occurring on the subject property or in the immediate vicinity.

A focused, three-season floristic survey of the subject property was conducted between 2012 and 2013 and an inventory of plant species prepared (Wood Biological Consulting, Inc. 2013; Appendix B). The survey conformed to published protocol (CDFG, 2009; CNPS, 2001; USFWS, 2000), which stipulates that a survey must be performed during each season in which the target species would be identifiable.

Based on the floristic surveys, the presence of all of the target species can be ruled out due to a lack of suitable habitat and/or the fact that they would have been recognizable during the survey. A summary of the special-status plant species evaluated for this project is presented in Appendix B.

Special-status Animal Species

Special-status animal species include those listed as Endangered, Threatened, Rare, or as Candidates for listing under the FESA or CESA (CDFW, 2015d). Other species regarded as having special status include those listed a Special Animals by the CDFW (2015c). Additional animal species receive protection under the Bald and Golden Eagle Protection Act (BGEPA; 16 USC 668, et seq.) and the Migratory Bird Treaty Act (MBTA; 16 U.S.C. 703-711). The CFGC provides specific language protecting non-game birds (Section 3513) and raptors (Sections 3503 and 3503.5), “fully protected birds” (Section 3511), “fully protected mammals” (Section 4700), “fully protected reptiles and amphibians” (Section 5050) and “fully

[10] See CEQA Guidelines Section 15125(c) or CEQA Guidelines, Appendix G, Sample Questions, IV Biological Resources, question e.

protected fish" (Section 5515). The California Code of Federal Regulations (Title 14) prohibits the take of Protected Fish (Chapter 5 Section 5.93), certain furbearing mammals (Chapter 5 Section 460), and restricts the taking of amphibians (Chapter 5 Section 5.05) and reptiles (Chapter 5 Section 5.60). Additional definitions are given in CEQA (Section 15380[d]). A summary of the special-status plant species evaluated for this project is presented in Appendix B; an explanation of all rarity status codes is presented in Appendix B. All database print-outs are provided in Appendix B.

In addition, animal species have been assigned global and state rarity rankings (for a definition of these rankings, see Appendix B). Species ranked as S1, S2, or S3 are considered to be critically imperiled, imperiled or vulnerable to extinction within the boundaries of the state (CDFW, 2015c). As such, these species may be considered to meet the criteria for listing as endangered, threatened or rare under CESA (CEQA Section 15380(d)). Species ranked as S4 or S5 are generally considered common enough to be secure and not at risk of extinction. Impacts on special-status animal species, as thusly defined, would be regarded as significant pursuant to CEQA (CEQA Guidelines Section 15065(a)) and should be addressed in environmental review documents (CEQA Guidelines Section 15065(b),(c)).

The potential for occurrence of a total of 66 special-status animal species on the subject property was evaluated. The presence of two special-status species on site, San Francisco dusky-footed woodrat and oak titmouse, was determined during the 2012 surveys. Another ten target species were determined to have the potential to occur within the study area or in adjacent habitats. These include one federally listed species (California red-legged frog), one State fully protected species (white-tailed kite), and eight other special-status species (foothill yellow-legged frog, Cooper's hawk, sharp-shined hawk, Bell's sage sparrow, loggerhead shrike, Nuttall's woodpecker, Allen's hummingbird, pallid bat). During the June 2012 survey, one large stick nest was observed on the project site, potentially belonging to a great-horned owl (*Bubo virginianus*); and two barn owls (*Tyto alba*) were also observed. Both are protected raptor species.

Although they are not expected to occur on site, the presence of an additional 16 target species could not be entirely ruled out based on the marginal habitat conditions or limited distribution information. The potential for occurrence of the remaining 38 target species can be ruled out based on the lack of suitable habitat (e.g., serpentine, vernal pool, vernal swale, interior dune, tidal salt marsh, etc.), local extirpations, lack of connectivity between areas of suitable and occupied habitat, incompatible land use and/or habitat degradation. A summary of the special-status plant species evaluated for this project is presented in Appendix B.

Presented below is a discussion of potentially occurring special-status wildlife species, as well as those not expected but that are prominent in the current regulatory environment.

Federal/State-Listed, Proposed, Candidate or Fully-Protected Fish and Wildlife Species

Invertebrates. The potential for occurrence of seven federally or State-listed, proposed, candidate, or fully protected invertebrate species[11] was evaluated as part of this analysis; none was determined to have the potential to occur within the study area (Appendix B).

Fish. The potential for occurrence of eight federally or State-listed, proposed, candidate, or fully protected fish species[12] was evaluated as part of this analysis. None was determined to have the potential to occur within the study area (see Appendix B). However, the study area is within the range of the Central California Coast ESU of steelhead, although the reach of Ross Creek within the study area does not provide suitable habitat for steelhead (or any other fish species of concern) because of low water flows and long reaches of creek that have been culverted, some of which date back to the 1920s. The study area is outside of the range of each of the remaining target species (Appendix B).

Amphibians. The potential for occurrence of two federally or State-listed, proposed, candidate, or fully protected amphibian species One special-status amphibian species was determined to have the potential to occur within the study area; each is discussed below.

California Red-legged Frog *(Rana draytonii).*

- *Status, Distribution and Habitat Requirements:* The California red-legged frog was listed by the USFWS as a threatened species on May 23, 1996 (61 FR 25813) and is designated a California Species of Special Concern by CDFW (2015c). The United States Fish and Wildlife Service published a recovery plan for the California red-legged frog on September 12, 2002 (7 FR 57830 57831). The California red-legged frog is one of two species of red-legged frog endemic to the Pacific Coast. The northern red-legged frog (*Rana aurora*) ranges from southern British Columbia, Canada, south to northern Marin County. The California red-legged frog is distributed throughout 26 counties in California, but is most abundant in the San Francisco Bay Area. Populations have become isolated in the Sierra Nevada, northern Coast, northern and southern Transverse and Peninsular Ranges (Jennings and Hayes, 1994). Red-legged frogs occurring from southern Del Norte County to northern Marin County are known to hybridize, often exhibiting characteristics of both species.

  California red-legged frogs predominately inhabit permanent water sources such as streams, lakes, marshes, natural and man-made ponds, and ephemeral drainages in valley bottoms and foothills up to 4,921 feet in elevation (Jennings and Hayes, 1994; Bulger et al., 2003). Adults breed in a variety of aquatic habitats, while larvae and metamorphs use streams, deep pools, backwaters of streams and creeks, ponds, marshes, sag ponds, dune ponds, and lagoons. Stock ponds are frequently used for breeding when they provide suitable hydroperiod, pond structure,

[11] Ohlone tiger beetle, Smith's blue butterfly, Bay checkerspot butterfly, Mount Hermon June beetle, callippe silverspot, Myrtle's silverspot, and Zayante band-winged grasshopper.

[12] Tidewater goby, Delta smelt, Coho salmon – Central California Coast ESU; steelhead – Central California Coast ESU, California Central Valley DPS, South/Central California Coast DPS; and Chinook salmon – Central Valley spring-run ESU, Sacramento River winter-run ESU.

vegetative cover, and are managed to control of nonnative predators such as bullfrogs and exotic fish. Breeding occurs between November and April within still or slow-moving water with light to dense, riparian or emergent vegetation, such as cattails (*Typha* spp.), tules (*Scirpus* spp.) or overhanging willows (*Salix* spp.) (Hayes and Jennings, 1988). Egg masses are attached to vegetation below the surface and hatch after 6 to 14 days (Jennings and Hayes, 1994). Larvae undergo metamorphosis 3½ to 7 months following hatching and reach sexual maturity two to three years of age (Jennings and Hayes, 1994).

- *Critical Habitat:* Critical habitat was designated for this species on April 13, 2006 (71 FR 19244) and revisions to the critical habitat designation were published on March 17, 2010 (75 FR 12816). The nearest edge of designated critical habitat for California red-legged frog is over 10 miles to the northwest.

- *Habitat Assessment and Occurrence in the Project Vicinity:* The reach of Ross Creek located within the study area does not provide suitable breeding habitat for California red-legged frogs based on shallow water depth of less than 6 inches and lack of emergent and overhanging vegetation. However, it does provide suitable year-round, non-breeding aquatic habitat. Suitable upland habitat is present within the Ross Creek riparian corridor and adjacent grasslands. Occurrences are spread throughout non-urbanized areas of Santa Clara County along the contiguous grassland/lowland habitat to the south and east. The nearest potential breeding site consists of a pond within a horse pasture at 233 Forrester Road, approximately 0.5 mile to the southeast. The nearest occurrence (EONDX #44889) is located approximately 4 miles to the east comprising 3 consecutive sightings of a single California red-legged frog in Guadalupe Creek just downstream of Guadalupe Reservoir in August 2000. Occurrences (EONDX #22249) have also been reported from Los Gatos Creek upstream of Lexington Reservoir approximately 5 miles to the south (CNDDB, 2014). The study area is on the southern edge of urban habitat and connected to contiguous woodland/grassland habitat, thereby, providing dispersal potential from known occurrences from Guadalupe Creek.

Reptiles. No federally or State-listed, proposed, candidate, or fully protected reptile species are known from the project region.

Birds. The potential for occurrence of eight federally or State-listed, proposed, candidate, or fully protected bird species[13] was evaluated as part of this analysis (see Appendix B); one was determined to have the potential to nest, roost and forage within the study area (see below).

White-tailed Kite (*Elanus leucurus*).

- *Status, Distribution, and Habitat Requirements:* The white-tailed kite nesting sites are designated as fully protected by §3511 of the California Fish and Game Code. This species receives additional protection under the Migratory Bird Treaty Act (MBTA) and Migratory Bird Treaty Reform Act (MBTRA). White-tailed kites inhabit open grasslands and savannahs. They breed in a variety of habitats, including grasslands, cultivated fields, oak woodlands and suburban areas

[13] Golden eagle, marbled murrelet, Swainson's hawk, western snowy plover, white-tailed kite, American peregrine falcon, California clapper rail and California least tern.

where prey is abundant. Nests are typically built in trees near a water source and may occur in suburban areas with adjacent open areas with abundant prey. Breeding occurs between February and July, and may be double-brooded in some years (i.e., two broods can be produced in a single year). During the non-breeding season, white-tailed kites may roost communally (Dunk, 1995). The species occurs throughout California west of the Sierra Nevada and is more commonly seen in the Central Valley and among the foothills (Dunk, 1995). White-tailed kites prey on small mammals, reptiles and, occasionally, birds.

- *Critical Habitat:* No critical habitat is designated for this species.
- *Habitat Suitability and Occurrence Data:* Suitable nesting habitat is located within the study area in mixed oak woodland and riparian habitats. Suitable foraging habitat is present throughout the study area. Analysis of barn owl pellets confirmed that California meadow voles, a primary prey species of white-tailed kites, inhabit the study area in relatively high abundance. Five occurrences of the white-tailed kite have been reported within 20 miles of the study area, spread across Santa Clara County. The nearest reported occurrence (EONDX #63807) is located approximately 8.5 miles to the northwest, comprised of a pair nesting in a Monterey pine along Stevens Creek in 2005 (CNDDB, 2014). The Santa Clara County Breeding Bird Atlas identifies white-tailed kites as a confirmed breeder in central, northwestern and northern regions of the County (Mammoser, 2007). This species was observed flying and perching just north of the study area during the field visit on June 26, 2012.

Mammals. The potential for occurrence of two federally or State-listed, proposed, candidate, or fully protected mammal species[14] was evaluated as part of this analysis; it was determined that neither has any potential to occur within the study area (see Appendix B).

Other Special-status Wildlife Species

Invertebrates. The potential for occurrence (see Appendix B) of five other special-status invertebrate species[15] was evaluated as part of this analysis; none was determined to have the potential to occur within the study area (see Appendix B).

Fish. Other than those federally or State-listed fish species discussed above, no additional special-status fish species were evaluated.

Amphibians. The potential for occurrence of two other special-status amphibian species[16] was evaluated as part of this analysis (see Appendix B); one was determined to have the potential to occur within the study area (see below).

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[14] Townsend's big-eared bat, San Joaquin kit fox.

[15] Western pearlshell mussel, Opler's longhorn moth, *Calasellus californicus* (an isopod), Hom's micro-blind harvestman and Antioch specid wasp.

[16] Foothill yellow-legged frog and Coast Range newt.

Foothill Yellow-legged Frog (*Rana boylii*).

- *Status, Distribution and Habitat Requirements:* The foothill yellow-legged frog, designated by CDFW (2015c) as a California Species of Special Concern, ranges from the Cascade Mountains in Oregon south to the Transverse Ranges in Los Angeles County, and from the coast to western Sierra Nevada foothills. This species inhabits small to moderately-sized, perennial rocky streams characterized by cobble-rocky substrate and shallow, flowing water in valley-foothill riparian, hardwood-conifer, mixed conifer, coastal scrub, mixed chaparral and wet meadow communities (Hayes and Jennings, 1988). Foothill yellow-legged frog larvae feed on algae, while adults feed primarily on terrestrial and aquatic insects. Reproduction occurs between March and June, and requires 15 weeks to reach metamorphosis typically between July and September.

- *Habitat Suitability and Occurrence Data:* Ross Creek provides marginally suitable habitat for the foothill yellow-legged frog based on low water flows and poor habitat quality, e.g. stagnant pools, low dissolved oxygen, and extended culverted portions of the stream. Nearby occurrences are concentrated in the foothills and lowlands bordering urban development of the Western Diablo Range. The nearest occurrence (EONDX #75809) is located approximately 3.5 miles to the southeast, comprising two adults observed in Guadalupe Creek just downstream of Guadalupe Reservoir in 2000 (CNDDB, 2014). The study area is on the southern edge of urban habitat and connected to contiguous woodland/grassland habitat; thereby, providing dispersal potential from known occurrences from Guadalupe Creek.

Reptiles. The potential for occurrence of two special-status reptile species[17] was evaluated as part of this analysis; none was determined to have the potential to occur within the study area (see Appendix B).

Birds. The potential for occurrence of 23 other special-status bird species[18] was evaluated as part of this analysis (see Appendix B); one was determined to occur on-site and another six were determined to have the potential to nest, roost and/or forage within the study area, (see below).

Allen's Hummingbird *(Selasphorus sasin).*

- *Status, Distribution and Habitat Requirements:* Allen's hummingbird inhabits a variety of woodland and scrub habitats, and breeds in a variety of habitats including moist coastal areas, scrub, chaparral and woodlands. Breeding begins in February and is double-brooded.

- *Habitat Suitability and Occurrence Data:* Suitable nesting habitat is present in oak woodland and scrub habitat throughout the study area. There are no occurrences reported in the CNDDB (CNDDB, 2014). The Santa Clara County Breeding Bird Atlas identifies the Allen's hummingbird as a confirmed nester in the western, southwestern and northern regions of the county (Bousman, 2007).

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[17] Pacific pond turtle and coast horned lizard.

[18] Cooper's hawk, sharp-shinned hawk, tricolored blackbird, grasshopper sparrow, Bell's sage sparrow, burrowing owl, oak titmouse, Vaux's swift, lark sparrow, northern harrier, olive-sided flycatcher, black swift, hermit warbler, yellow warbler, prairie falcon, loggerhead shrike, osprey, Nuttall's woodpecker, purple martin, Allen's hummingbird, Lawrence's goldfinch, black-chinned sparrow and chipping sparrow.

Bell's Sage Sparrow (*Amphispiza belli belli).*

- *Status, Distribution and Habitat Requirements:* Bell's sage sparrow inhabits dry brushy foothills, chaparral and coastal sage scrub habitats west of the Sierras from Redding south into Baja California, Mexico. Breeding begins in March and is double-brooded.

- *Habitat Suitability and Occurrence Data:* Marginal nesting habitat is present in shrubby portions of non-native annual grasslands and mixed oak woodland habitat. The Santa Clara County Breeding Bird Atlas identifies the Bell's sage sparrow as a confirmed nester in the eastern and western regions of the county (Rogers, 2007).

Cooper's Hawk *(Accipiter cooperii).*

- *Status, Distribution and Habitat Requirements*: The Cooper's hawk (nesting) is included on the CDFW Watchlist (CDFW, 2015c). They are distributed throughout most of California, and their range extends across the contiguous United States extending into southern Canada and Mexico (Curtis et al., 2006). This species inhabits dense stands of oak woodlands, riparian deciduous forests, or other forest habitats often near water and suburban areas. This woodland raptor hunts in broken woodlands, along forest edges and suburban areas for medium-sized birds and mammals (Curtis et al., 2006). Typical nest site selection is characterized by mature trees with significant canopy cover, although species will nest in suburban areas in a variety of trees (Curtis et al., 2006). Breeding begins in April and is single-brooded.

- *Habitat Suitability and Occurrence Data*: Suitable nesting habitat is present in mixed oak woodland and riparian habitats. The study site is located on the southern edge of suburban Los Gatos, bordering a corridor connecting the site to contiguous woodland and grassland habitat. Occurrences are more concentrated north of Santa Clara County; however, the nearest occurrence (EONDX #51557) is located approximately 5 miles to the northeast, comprising two adults nesting in an ornamental tree stand in a parking lot in 2003 (CNDDB, 2014). The Santa Clara County Breeding Bird Atlas identifies the Cooper's hawk as a confirmed nester in the western, northwestern, northern and central Santa Clara County (Bousman, 2007).

Loggerhead Shrike *(Lanius ludovicianus).*

- *Status, Distribution and Habitat Requirements*: The loggerhead shrike is a year-round resident in California. This species inhabits shrublands and open woodlands that are associated with grasslands that provide areas of bare ground and impaling sites such as thorny vegetation, multi-stemmed plants or barbed wire (Shuford and Gardali, 2008). The loggerhead shrike breeds from early February through July; double- to triple-brooded Shuford and Gardali, 2008).

- *Habitat Suitability and Occurrence Data*: Suitable nesting habitat is present within mixed oak woodland and riparian habitats. There are no CNDDB occurrences reported from Santa Clara County (CNDDB, 2014). The Santa Clara County Breeding Bird Atlas identifies the loggerhead shrike as a confirmed nester in the central, southern, northern and northwestern regions of the county (Bousman, 2007).

Nuttall's Woodpecker *(Picoides nuttallii).*

- *Status, Distribution and Habitat Requirements:* The Nuttall's woodpecker (nesting) is included on the American Bird Conservancy Watch List (CDFW, 2015c). The primary habitat for Nuttall's

woodpecker includes riparian woodlands and oak woodlands in canyons and shaded areas, characterized especially by coast live and valley oaks, oftentimes mixed with willows and western sycamore (*Platanus racemosa*) (Lowther, 2000). This species forages for insects along bark of trees, and will feed on acorns (Lowther, 2000). The Nuttall's woodpecker is a cavity nester, building its nests in soft woods such as oaks, willows, cottonwoods, maple, alders, elderberry, snags, and, on some occasions, fence posts (Lowther, 2000). Breeding begins in March and is single-brooded.

- *Habitat Suitability and Occurrence Data:* Suitable nesting habitat is present in cavities within mixed oak woodland and riparian habitats. The Santa Clara County Breeding Bird Atlas identifies the Nuttall's woodpecker as a confirmed nester throughout the county (Bousman, 2007). No Nuttall's woodpeckers were observed during the field visit on June 26, 2012; however, several suitable cavities were found in scattered oak trees throughout the study area.

Oak Titmouse *(Baeolophus inornatus).*

- *Status, Distribution and Habitat Requirements*: The oak titmouse (nesting) is included on the American Bird Conservancy Watch List (CDFW, 2015c). Primarily an oak obligate species, the oak titmouse inhabits oak woodlands, oak savannahs, piñon and juniper woodlands and occasionally suburban areas with oaks (Cicero, 2000). This species is a year-round resident throughout much of California in oak woodlands and oak savannah communities. Nests are situated in natural or excavated cavities in trunks, primary and secondary branches, and stumps (Cicero, 2000). Breeding begins in March and is single-brooded.

- *Habitat Suitability and Occurrence Data*: Suitable nesting habitat is present in cavities within mixed oak woodland and riparian habitats. The Santa Clara County Breeding Bird Atlas identifies the oak titmouse as a confirmed nester throughout the county (Bousman, 2007). A single oak titmouse was observed foraging among several old oak trees during the site visit on June 26, 2012. Also, several tree cavities were found in scattered oaks throughout the woodland. The site visit did not correspond to the oak titmouse breeding season.

Sharp-shinned Hawk (*Accipiter striatus).*

- *Status, Distribution and Habitat Requirements*: The sharp-shinned hawk inhabits north-facing slopes in conifers, including ponderosa pine, black oak, and Jeffrey pines, preferably in riparian areas. This species forages primarily for small birds along woodland edges & openings, hedgerows, brushy pastures, & shorelines. Breeding begins in April and is single-brooded.

- *Habitat Suitability and Occurrence Data*: Suitable nesting habitat is present in mixed oak woodland and riparian habitat. The Santa Clara County Breeding Bird Atlas identifies the oak titmouse as a confirmed nester in the northern and central regions of the county (Bousman, 2007).

Mammals. The potential for occurrence of seven special-status mammal species[19] was evaluated as part of this analysis; one rodent and one bat species were determined to have the potential to occur within the study area.

[19] Pallid bat, Santa Cruz kangaroo rat, hoary bat, long-eared myotis bat, Yuma myotis bat, San Francisco dusky-footed woodrat

Of the 25 known bat species in California, 11 are listed as Species of Special Concern by the CDFW (2015c). Bats are classified as non-game mammals and are afforded protection under various sections of the CFGC (e.g., CFGC Sections 86, 2000, 2014, 3007, and 4150). They also receive protection under the California Code of Regulations (e.g., Title 14, Section 251.1, Article 20; Section 15380. In general, bats exhibit a wide range of habitat usage, depending on the species, season, time of day, resource availability, level of disturbance, and other such factors, but often exhibit a high site fidelity and specificity for roost selection. Roost sites consist of maternity (nursery colonies), bachelor, day, night and feeding sites within caves, mines, cliffs, rock crevices, tree hollows, stumps, foliage, under exfoliating bark, and in man-made structures such as buildings and bridges, among other sites. Some species require a complex network of habitat characteristics that fulfill foraging, water intake, shelter, and thermoregulatory requirements that vary seasonally. The survey effort necessary to document presence of some species, particularly those that roost and forage high off the ground, may require several weeks of monitoring based on the species roost selection, solitary roosting and foraging behaviors during non-breeding periods, rarity within the region, and current limitations of monitoring methods. Given these parameters, bat species and their habitat should be managed on a temporal and spatial scale that accounts for each species' specific habitat requirements, resource availability, and sensitivity to disturbance.

San Francisco Dusky-Footed Woodrat *(Neotoma fuscipes annectens).*

- *Status, Distribution and Habitat Requirements*: San Francisco dusky-footed woodrat *(Neotoma fuscipes annectens)* is a California Species of Special Concern (CDFW, 2015c) and one of eleven recognized subspecies of woodrats. The San Francisco dusky-footed woodrat is found on the San Francisco Peninsula south to the southern edge of Santa Cruz County, and inland to the East Bay hills (Matocq, 2002). It is a medium-sized native rodent with large ears and a long, scantily haired tail. They inhabit oak and riparian woodlands with a well-developed understory, as well as chaparral scrub habitats. These nests are conspicuous and may reach 6 feet in height, containing multiple chambers used for sleeping and food storage. Nests are usually occupied by single adults or females with young, and can be used by successive generations of woodrats. They exhibit high site fidelity, are highly arboreal and build stick nests that may last for 20 years or more. Woodrat nests provide habitat for many other species, including small mammals, reptiles, amphibians, and arthropods, thereby increasing local biodiversity. Woodrats are generalist herbivores and live in loosely-cooperative societies, but maintain well-defend home ranges. The diet of woodrats consists primarily of broadleaf plant foliage, such as poison oak (*Toxicodendron diversilobum*), coffeeberry (*Rhamnus californica*), elderberry (*Sambucus* spp.), toyon (*Heteromeles arbutifolia*.), and gooseberry (*Ribes* spp.). Reproduction occurs from February through September.

- *Habitat Suitability and Occurrence Data:* Suitable nesting habitat is present in fallen and standing trees within the mixed oak woodland and riparian habitats. Although the species was not directly observed onsite, 11 woodrat nests were observed during the June 26, 2012 site visit.

and American badger.

Pallid Bat *(Antrozous pallidus).*

- *Status, Distribution, and Habitat Requirements*: The pallid bat is designated as a California Species of Special Concern by CDFW and a Medium Priority species by the Western Bat Working Group (CDFW, 2015c). The pallid bat is a relatively large, light-colored bat ranging throughout the western North America from interior British Columbia to Mexico (Sherwin and Rambaldini, 2005). They inhabit foothills and lowlands near water throughout California below 6,560 feet in elevation, but are most abundant in arid deserts and grasslands, particularly in areas with rock outcrops near water. Pallid bats typically roost in small groups in a variety of roosts including bridges, buildings, tree hollows in coast redwoods, bole cavities in oaks, exfoliating bark, rock crevices in outcrops and cliffs, caves and mines as both day and night roosts (Sherwin and Rambaldini, 2005). Roost sites may change seasonally and are typically reused for a few days to weeks. Pallid bats primarily feed on a variety of arthropods by capturing prey on the ground or gleaning from surfaces near the ground. Parturition varies with latitude, but generally occurs from late-April to August; maternal colonies disperse by October. Overwintering is common along the California coast, but individuals may migrate short distances between winter and summer roosts.

- *Habitat Suitability and Occurrence Data:* Suitable roosting habitat is present in mature trees onsite. The study site is centered within evenly scattered and widespread occurrences. The nearest reported occurrence (EONDX #61285) is located approximately 2.3 miles to the east, comprised of a single pallid bat roosting with approximately 30 Mexican free-tailed bats in a barn in 2004, all removed prior to demolition (CNDDB, 2014). No bats, roost sites or secondary signs were observed during the field surveys.

PROTECTED TREES

An inventory of trees located on the project site was completed by consulting arborist Michael Bench in December 2010, and revised on January 8, 2013. A total of 599 trees were tallied, 585 of which qualified as "protected" under the Town's tree protection ordinance. A summary of the trees proposed for removal, transplantation and preservation is presented in **Table 4.3-2**. The inventory identifies 20 different tree species and indicates the percentage of the total number of trees each species comprises. The oak dominated woodland on the project site supports 452 native coast live oak, and valley oak trees (comprising over 75% of all inventoried trees), each of which is considered a "protected tree" under the Town of Los Gatos' Tree Protection Ordinance (see Section 4.3.2 of this report for additional discussion of the ordinance).

4.3.2 REGULATORY AND PLANNING FRAMEWORK

FEDERAL

U.S. Army Corps of Engineers

Section 404 of the Clean Water Act of 1972. Section 404 of the CWA (33 U.S.C. 1344) regulates activities that result in the discharge of dredged or fill material into waters of the U.S., including wetlands. Section 10 of the Rivers and Harbors Act authorizes the USACE to regulate dredging, filling, and construction activities in navigable waters. The primary intent of the CWA is to authorize the USEPA

TABLE 4.3-2

SUMMARY OF TREE INVENTORY RESULTS

Common Name	Scientific Name	Total	Percent of Total All Trees On-Site	Total Protected Trees: Total Protected Trees On-Site	Total Protected Trees: Remove	Total Protected Trees: Trans-plant	Total Protected Trees: Preserve
Native Trees (Indigenous to Site)							
Blue Oak	*Quercus douglasii*	53	8.85%	53	0	0	53
Cal. Bay Laurel	*Umbellularia californica*	1	0.17%	1	0	0	1
Cal. Black Walnut	*Juglans hindsii*	1	0.17%	1	1	0	0
Cal. Buckeye	*Aesculus californica*	1	0.17%	1	0	0	1
Cal. Sycamore	*Platanus racemosa*	4	0.67%	4	0	0	4
Coast Live Oak	*Quercus agrifolia*	194	32.39%	194	18	21	157
Elderberry	*Sambucus mexicana*	2	0.33%	2	0	0	2
Poison Oak	*Toxicodendron diversilobum*	1	0.17%	0	0	0	0
Valley Oak	*Quercus lobata*	205	34.22%	205	10	4	196
Non-Native/Non-Indigenous Trees							
Aleppo Pine	*Pinus halepensis*	62	10.35%	62	22	0	40
Crabapple	*Malus* sp.	1	0.17%	1	0	0	1
Cypress	*Cypress* sp.	1	0.17%	1	0	0	1
English Walnut	*Juglans regia*	1	0.17%	1	1	0	0
European Olive	*Olea europea*	18	3.01%	12	1	0	11
Hybrid Oak	*Quercus* sp.	1	0.17%	1	0	0	1
Incense Cedar	*Calocedrus decurrens*	43	7.18%	43	14	4	28
Monterey Cypress	*Cupressus macrocarpa*	1	0.17%	1	0	0	0
Monterey Pine	*Pinus radiata*	1	0.17%	1	0	0	1
Southern Magnolia	*Magnolia grandiflora*	1	0.17%	1	0	0	0
Wild Plum	*Prunus cerasifera*	7	1.17%	2	2	0	0
Total (rounded)		599	100.00%	585	70	30	485

SOURCE: Bench (2013)

to regulate water quality through the restriction of pollution discharges. The USACE has the principal authority to regulate discharges of dredged or fill material into waters of the U.S. However, the USEPA has oversight authority over the USACE and retains veto power over the USACE's decision to issue permits in some circumstances. Pursuant to 40 CFR 232.2, waters of the U.S. are defined to include:

- All waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of tide;

- All interstate waters, including interstate wetlands;
- All other waters, such as interstate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, vernal pools, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce;
- Tributaries of the above;
- Territorial seas; and
- Wetlands adjacent to waters defined above.

Under Section 404, projects may be authorized under existing general permits (a nationwide permit) or may require an individual permit. A nationwide permit is a more streamlined permit process than an individual permit, although supporting compliance efforts, such as interagency consultation under the FESA, are identical regardless of permit type. If the USACE decides that a project is ineligible for a nationwide permit, then a Section 404 Individual Permit would be required. The requirements of a Section 404 Nationwide Permit allow less than 0.5 acre of permanent impacts on federal-jurisdiction wetlands. If permanent structures would require more than 0.5 acre within delineated federal wetlands, then a Section 404 Individual Permit would automatically be required. As a part of the Section 404 Individual Permit process, National Environmental Policy Act (NEPA) review would also be required.

Waters of the U.S. are present on site; the proposed project will be regulated under the CWA.

Section 10 of the Rivers and Harbors Act. Section 10 of the Rivers and Harbors Act (RHA; 33 USC 201, et seq.) authorizes the USACE to regulate dredging, filling, and construction activities in navigable waters. The Rivers and Harbors Act of 1899 makes it a misdemeanor to discharge refuse matter of any kind into the navigable waters of the United States without a permit.[20] The RHA also makes it a misdemeanor to excavate, fill, or alter the course, condition, or capacity of any port, harbor, channel, or other jurisdictional areas within without a permit. Although many activities covered by the RHA are regulated under the CWA, the 1899 Act retains independent vitality. The RHA is administered by the USACE.

The proposed project will not be regulated under the RHA.

Executive Order 11990, Protection of Wetlands. Executive Order 11990 (May 24, 1977) provides for the protection of wetlands. The administering agency for this Order is the USACE. The proposed project is not regulated under Executive Order 11990 as there are no federally-defined wetlands on-site.

[20] This specific provision is known as the Refuse Act.

U.S. Fish and Wildlife Service

Federal Endangered Species Act. Section 9 of the FESA (16 USC 1531, et seq.; 50 CFR Parts 17 and 222) generally prohibits the "take" of federally listed endangered species of fish or wildlife and many plant species (16 USC 1538[a][1][B]). The FESA defines take to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or attempt to engage in any such conduct" (16 USC 1532[19]). Section 7(a)(2) of the FESA requires that actions authorized, funded, or carried out by federal agencies (i.e., issuing a permit pursuant to the CWA) do not "jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of lands determined by the USFWS to be 'critical habitat'" for such species (16 USC 1536[a][2] and 16 USC 1532[5]). If a federal agency determines that a proposed federal action (i.e., issuance of a CWA Section 404 permit for wetland fill) "may affect" a listed species and/or designated critical habitat, the agency must consult with the USFWS and/or the NMFS (for marine and anadromous species) in accordance with Section 7 of the FESA. If take of a federally listed species may occur, the applicant may be required to obtain an incidental take permit from the USFWS or NMFS. This permit allows the taking of federally listed species if the take is "incidental to and not the purpose of, the carrying out of an otherwise lawful activity" (16 USC 1539[a][1][B]). The USFWS and/or NMFS issues an Incidental Take Permit only if the applicant, to the maximum extent possible, has minimized and mitigated for the impacts of the taking and provided adequate funding for the mitigation plan, and if the taking would not appreciably reduce the likelihood of the survival and recovery of the species in the wild (16 USC 1539[a][2][B]).

Incidental take permits may be obtained as part of the Section 7 consultation between the USACE and USFWS and/or NMFS. These agencies review the consulting federal agency's Biological Assessment and determine the potential effects of a project on listed species. The project applicant must demonstrate efforts to avoid or minimize impacts on listed species and their habitat. If the project largely avoids impacts on federally listed species, USFWS may determine the project would either "not affect" or is "not likely to affect" federally listed species. If the project would result in more substantial impacts, the USFWS usually issues either a Biological Opinion (BO) or a jeopardy opinion. A BO typically imposes conditions (reasonable and prudent measures) on the project, whereas a jeopardy opinion finds that the proposed project would jeopardize the continued existence of federally listed species and proposes reasonable and prudent alternatives for the consulting agency to consider. In such a case, the USACE is prohibited from approving the project until modifications have been made to avoid jeopardizing the species and the USFWS has been consulted about the modified project.

A single federally listed species, California red-legged frog, could occur on site; the proposed project would need to conform to the FESA.

Bald and Golden Eagle Protection Act. The Bald and Golden Eagle Protection Act, as amended (BGEPA; 16 U.S.C. 668-668c), provides protection for the bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*) by prohibiting the taking, possession, and commerce of such birds, their nests, eggs, or feathers unless expressly authorized by permit pursuant to federal regulations.

Neither of these species is considered likely to occur on site; the proposed project would not be in potential conflict with BGEPA.

Migratory Bird Treaty Act. The Migratory Bird Treaty Act of 1918, as amended (MBTA: 16 USC Section 703–711; 50 CFR Subchapter B) includes provisions for the protection of migratory birds, including basic prohibitions against any taking not authorized by federal regulation. The MBTA makes it unlawful, unless expressly authorized by permit pursuant to federal regulations, to pursue, hunt, take, capture, kill, attempt to take, capture or kill, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export at any time, or in any manner, any migratory bird, or any part, nest, or egg of any such bird. The administering agency for the above authority is the USFWS. A majority of the bird species occurring within the project region receive project under the MBTA.

Migratory birds are likely to occur on site; the proposed project would need to conform to the MBTA.

STATE

California Department of Fish and Wildlife

California Fish and Game Code – Plant and Animal Species. The CESA (CFGC Sections 2050-2068) includes provisions for the protection and management of species listed by the State as endangered or threatened or designated as candidates for such listing. The CESA states that "it is the policy of the state that state agencies should not approve projects as proposed which would jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species" (CFGC Section 2053). The CESA also contains a general prohibition, applicable generally and not just to state agencies, against the "take" of listed species absent approval of an Incidental Take Permit or, in the case of plants, except in conformity with the CNPPA (CFGC Sections 1900-1913) and the California Desert Native Plants Act (CDNPA; CFGC Sections 2080, 2081). The California Fish and Game Commission has formally listed plant and animal species as endangered, threatened, or rare (14 CCR 670.2 and 14 CCR 670.5, respectively).

Four sections of the CFGC (3511, 4700, 5050, and 5515) list 36 "fully protected species". These statutes prohibit take or possession of fully protected species at any time, even pursuant to an incidental take permit granted under CESA. Senate Bill 618 (Stats. 2011, ch. 596), enacted by the State Legislature on February 18, 2011, amended these statutes so as to enable the CDFW to authorize the incidental take of fully protected species in connection with approval of a Natural Community Conservation Plan (see CFGC Section 2835).

Birds of prey are protected under provisions of the CFGC (Section 3503.5), which states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey)

or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFW.

Bats are classified as non-game mammals and are afforded protection under various sections of the CFGC (e.g., CFGC Sections 86, 2000, 2014, 3007, and 4150). It is unlawful to take or possess a number of species, including bats, without a license or permit. They also receive protection under the California Code of Regulations (e.g., Title 14, Section 251.1, Article 20; Section 15380), which make it unlawful to harass, herd, or drive a number of species, including bats. Harassment is defined as "an intentional act which disrupts an animal's normal behavior patterns, which includes, but is not limited to, breeding, feeding or sheltering." For these reasons, bat colonies in particular are considered to be sensitive and therefore, disturbances that cause harm to bat colonies are unlawful.

State law also prohibits the take, possession, purchase or sale of certain furbearing mammals (14 CCR Section 460). Additionally, the CDFW maintains lists of "Species of Special Concern" that are defined as species that appear to be vulnerable to extinction because of declining populations, limited ranges, and/or continuing threats (CDFW, 2015c).

California Fish and Game Code – Habitats. Habitats potentially falling under the regulatory jurisdiction of CDFW are described in the CFGC (Division 2, Chapter 6, Sections 1600–1607). Absent a "Lake and Streambed Alteration agreement," CFGC Section 1602 provides that "[a]n entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake[.]" The CDFW has traditionally taken a broad view of its jurisdiction under this statute and its predecessors, asserting that the definition of "stream," as used in this context, includes "intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams, and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife".

The Significant Natural Areas Program (CFGC Section 1930–1940) was established to encourage the cooperation of federal, state, local, and private sectors, including private organizations and individuals, in efforts to maintain areas containing diverse ecological and geological characteristics, which are vital to the continual health and well-being of the State's natural resources and of its citizens.

The Natural Community Conservation Planning Act (NCCPA) authorizes the NCCP Program, which is designed to promote conservation of natural communities at the ecosystem scale, while accommodating compatible land uses. The NCCP Program is broader in its orientation and objectives than the CESA and

FESA. Those two laws are designed to identify and protect individual species that have already significantly declined in number, while the primary objective of the NCCP program is to conserve natural communities at the ecosystem level while accommodating compatible land uses. The program seeks to anticipate and prevent the controversies and gridlock caused by species' listings by focusing on the long-term stability of wildlife and plant communities and including key interests in the process. Working with landowners, environmental organizations, and other interested parties, a local agency oversees the numerous activities that compose the development of a conservation plan. Both the CDFW and USFWS provide the necessary support, direction, and guidance to NCCP participants.

The California Fish and Game Code (CFGC) defines oak woodlands as any significant stand of oak tree species, meaning those stands with a canopy cover of 10% or greater.[21] The following State legislation governs development in oak woodlands.

Public Resources Code 21083.4 (Senate Bill 1334), Oak Woodland Conservation**.** This legislation became effective on January 1, 2005, and contains three elements: (A) counties must determine whether a project may result in the conversion of oak woodland (an "oak" is defined as oak trees 5 inches or more in diameter at breast height); (B) if so, the county must determine if the conversion would have a significant impact on the environment; and (C) if there is a conversion and it is determined to be a significant impact, the county must impose one or more of the following mitigation measures:

(1) Conserve oak woodlands, through the use of conservation easements;

(2) Plant an appropriate number of trees, including maintaining plantings and replacing dead trees;

   a. Maintain planted oak trees for seven years; and

   b. The planting of oak trees shall not fulfill more than one-half of the mitigation requirements for the project.

(3) Contribute funds to the Oak Woodlands Conservation fund; and/or

(4) Other mitigation measures developed by the county.

Public Resources Code 21083.4 only applies to CEQA determinations by county governments and does not apply to those of other local lead agencies, including cities and unincorporated towns such as Los Gatos. However, other public agencies are still subject to the general guidelines of CEQA, including the oak woodlands scientific information that acknowledges the need to conserve oak woodland resources.[22] The proposed project would not be in conflict with Public Resources Code 21083.4.

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[21] CA Fish and Game Code Section 1361(h)

[22] See California Oak Foundation's website: http://www.californiaoaks.org/html/oak_report_03-05.html.

LOCAL

County of Santa Clara

Santa Clara County Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP). The cities of Gilroy, Morgan Hill and San Jose, the County of Santa Clara, the Santa Clara Valley Transportation Authority and the Santa Clara Valley Water District have initiated a collaborative process to prepare and implement a Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP) for the Santa Clara Valley (ICF International 2010); the HCP/NCCP as prepared for Santa Clara Valley has been titled, "Santa Clara Valley Habitat Plan." The San Jose City Council approved the Santa Clara Valley Habitat Conservation Plan on January 29, 2013. The Plan had previously been approved by the Santa Clara County Board of Supervisors, Santa Clara Valley Water District (SCVWD), City of Gilroy, City of Morgan Hill, and Santa Clara Valley Transportation Authority. San Jose was the last remaining partner that needed to approve the Plan for it to be adopted. The Town of Los Gatos is not one of the partnering jurisdictions participating in the Plan; there is no adopted Habitat Plan that covers the project site.

The Santa Clara Valley Habitat Plan (Plan) is intended to provide an effective framework to protect, enhance, and restore natural resources in specific areas of Santa Clara County, while improving and streamlining the environmental permitting process for impacts on threatened and endangered species. These entities are collectively referred to as the *Local Partners*. The Local Partners intend the Plan to allow for reasonable development, growth, and needed infrastructure construction and maintenance while accommodating the Plan's conservation goals and complying with state and federal regulatory requirements (ICF, 2012).

Chapter 2 of the Plan describes the jurisdictions and land uses that would be subject to the provisions of the Plan as well as the activities that are covered by the Plan. Briefly, over 80 land-use designations from the four jurisdictions were aggregated into six categories, including Urban Development. Figure 2-5 of the Plan indicates that Urban Development equal to or greater than 2 acres is covered by the Plan and its provisions. Chapter 2 of the Plan also discusses the conditions under which specific private development projects would be subject to Plan requirements and fees.

As noted above, the Town of Los Gatos has not adopted the Plan, and the project site is not currently located within the project area for the Plan. As also noted above, however, the SCVWD is a participating member (Partner) and has formally adopted the Plan. The segment of Ross Creek from the Guadalupe River to Kirk Road in San Jose (located approximately four miles downstream of the project site) is part of SCVWD's right-of-way and is within the Plan boundaries.[23] This portion of the Creek is too far

[23] HCP boundaries are indicated in Figure 2-2 of the HCP/NCCP. Available online at: http://scv-habitatagency.org/178/Final-Habitat-Plan.

downstream to be affected by the proposed project. Therefore, the proposed project would not hinder the ability of the Plan partnering jurisdictions to establish a preserve system.

Town of Los Gatos

The Los Gatos Tree Protection Ordinance (Section 29.10.0950 – 29.10.1045 of the Zoning Ordinance) prohibits the removal of any "protected" tree without first obtaining a permit. Under the ordinance, "protected" tree is defined as: 1) any tree with a trunk diameter of 12 inches or greater; 2) any tree of the following species having a trunk diameter of 4 inches or greater: blue oak, black oak, California buckeye, and Pacific madrone; 3) where zoning or subdivision approval is required, any tree having a trunk diameter of 4 inches or greater; 4) any tree existing at the time of zoning or subdivision approval which was a subject of the approval; 5) any tree required to be planted or retained under a development application, building permit or subdivision approval; 6) any tree with a trunk diameter of 4 inches or greater located on a vacant or undeveloped property; 7) any tree with a trunk diameter of 4 inches or greater which is on any developed commercial, office, or industrial property; 8) any publicly owned trees; and 9) any stand of trees, where each individual tree is dependent on the others for survival of the entire stand. Under the ordinance, trunk diameter for single-trunk trees is measured at 3 feet above the natural grade and the diameter of any multi-trunk tree is measured as the sum of diameters of all trunks, taken at a height just above the trunk union. Trees not covered under the Ordinance include fruit and nut trees with a trunk diameter of less than 18 inches.

Under the ordinance, both a Tree Survey Plan and Tree Preservation Report prepared by a qualified arborist must accompany any application for new property development. The tree survey must include the trunk diameter, canopy spread, species, condition and location of all protected trees occurring within thirty feet of the proposed development, as well as all protected trees which may be directly or indirectly impacted by the project. The tree preservation report must include specific steps that will be taken in order to ensure that retained protected trees are not impacted during construction and operation phases of the project.

As a condition on which a Protected Tree removal permit is granted, two or more replacement trees of a species and a size designated by the Director of Parks and Public Works Department, shall be planted in the following order of preference:

1. Two or more replacement trees, of a species and size designated by the Director of Parks and Public Works Department, shall be planted on the subject private property. The Tree Canopy-Replacement Standard (**Table 4.3-3**) shall be used as a basis for this requirement. The person requesting the permit shall pay the cost of purchasing and planting the replacement trees.

TABLE 4.3-3
TREE REPLACEMENT TABLE

Canopy of the Removed Tree (Maximum distance across the canopy)	Replacement Trees	Alternative Tree
4'-9'	Two 24" Box Size (Minimum)	One 36" Box Size
10'-27'	Three 24" Box Size	Two 36" Box Size
28'-40'	Four 24" Box Size	Two 48" Box Size
40'-56'	Six 24" Box Size	Two 36" Box Size Two 48" Box Size
56'-60'	Two 24" Box and Two 36" Box plus Two 48" Box Size	Determined by the Director
60'+	Determined by the Director	Determined by the Director

2. If a tree cannot be reasonably planted on the subject property, the value of the removed tree(s) shall be paid to the Town Forestry Fund to:

   - Add or replace trees on public property in the vicinity of the subject property or
   - Add trees or landscaping on other Town property. Replacement value of a tree shall be determined using the most recent edition of the Guide for Plant Appraisal, as prepared by the Council of Tree and Landscape Appraisers.

The proposed project will be subject to the regulations contained in the Tree Protection Ordinance.

Guidelines and Standards for Land Use Near Streams. The riparian zone is at the interface between upland and wetland or aquatic systems. Biologically, healthy riparian zones are species diverse, highly productive environments, providing structural diversity, breeding and foraging opportunities for a wide host of organisms. Riparian vegetation is particularly critical for the support and maintenance of native fisheries. Tree canopies shade the surface of flowing streams, keeping water temperatures low. Riparian vegetation preserves water quality by restricting erosion and sedimentation. Tree roots stabilize channel banks and contribute to the formation of riffles and pools, which are essential for breeding, feeding, and over-summering. Riparian vegetation also slows the movement of water downstream and through the soil profile, resulting in its gradual release into stream channels, prolonging the availability of surface water into the dry summer season. Large woody debris creates hiding spaces for fry and adult fish, and leaf litter promotes invertebrate populations, an essential food source for fish species.

The publication *Guidelines and Standards for Land Use Near Streams* (SCVWRPC, 2007; hereafter referred to as *Guidelines*) emphasizes the vital role of riparian vegetation in "maintaining stream stability, providing valuable wildlife habitat, and moderating downstream flooding", as well as in regulating water quality by filtering "pollutants from stormwater, such as oil and grease from roadways, fertilizer runoff from lawns, and excess sediments from upstream" (p. 4.3). Specifically, the streamside environment supports riparian vegetation and the functions riparian vegetation provides. Riparian vegetation benefits

terrestrial species, as well as semi-aquatic amphibians and reptiles and fish. Such habitat functions include:

- Sediment stabilization: provided by riparian trees, shrubs, and grasses.
- Shading and water temperature moderation: provided by mature riparian shrubs and trees.
- Overhanging escape cover: provided by shrubs and grasses near the stream edge.
- Coarse particulate organic matter: organic material dropping into the stream in the form of leaves, insects, etc., that provide input for aquatic food webs.
- Bird breeding and foraging habitat: provided by mature native riparian species, such as cottonwoods and willows, oaks, other trees, shrubs, forbs, grasses, and the streambank itself.
- Foraging, refugia, aestivation, and breeding habitat for semi-aquatic amphibian and reptile species: provided by low vegetation, rocks, downed materials, and the streambanks itself.
- Foraging, breeding, hibernacula, and dispersal habitat for mammals: provided by the riparian vegetation and the streambanks substrate.

Pursuant to the Guidelines, riparian vegetation is defined as including:

1. Vegetation which occurs in and/or adjacent to a watercourse. For the purpose of administering Fish and Game Code Section 1600, et seq., this should be expanded to include vegetation adjacent to lakes as well.
2. Vegetation growing on or near the banks of a stream or other body of water on soils that exhibit some wetness characteristics during some portion of the growing season.
3. Vegetation that occurs along watercourse, and is structurally or floristically distinct from nearby, non-streamside vegetation.
4. Riparian vegetation is terrestrial vegetation that grows beside rivers, streams, and other freshwater bodies and that depends on these water sources for soil moisture greater than would otherwise be available from local precipitation.

The Town of Los Gatos has adopted the Guidelines, which contain the adopted requirements of the Town of Los Gatos for construction near streams. Under the *Guidelines*, Streamside Protection Areas include "all properties abutting or in proximity to a stream, including all properties located with 50 feet from the top of bank." Development of any property within a Streamside Protection Area shall be subject to review by the Town unless the activity is specifically exempted under the *Guidelines* (e.g., Section 2C). Regulated projects must conform to the *Guidelines*, which provide specifications for protection of the riparian corridor, bank stabilization, encroachments, erosion prevention, grading, site drainage, channelization, utility encroachments, trail construction, septic systems, trash control and removal, protection of water quality, groundwater protection, and flood protection (Sections 3B.I through 3B.XIV).

Although not distinct from upland (i.e., non-riparian) stands of mixed oak forest on site, oak trees canopies that overlap Ross Creek and the ephemeral swale are regarded as riparian for purposes of the Guidelines. The riparian zone is therefore defined as the outer (i.e., upland) canopy edge of all trees whose canopies overlap the top of bank of Ross Creek or the ephemeral swale. Development of the subject property is subject to review for conformance to the *Guidelines*.

Los Gatos General Plan. The goals, policies, and implementation measures in the General Plan for biological resources applicable to the proposed project are provided below. In general, the proposed project would be consistent with these goals and policies (as indicated by less-than-significant impacts) or specified mitigation measures would reduce potential environmental impacts to less-than-significant levels such that conflicts with policies designed to protect the environment would be avoided. Project consistency with those guidelines is discussed in the following project consistency analysis table.

General Plan Policies	Project Consistency Analysis
Environment and Sustainability Element	
Goal ENV-1: To preserve and protect native plants and plant communities in the Town, and promote the appropriate use of local, native plants in habitat restoration and landscaping. *ENV-1.1: Preserve trees that are protected under the Town's Tree Protection Ordinance, as well as other native heritage, heritage and specimen trees.* *ENV-1.2: Public and private projects shall protect special-status native plant species.* *ENV-1.3: Prohibit development that significantly depletes, damages or alters existing special-status plants.* *ENV-1.5: Prohibit the use of invasive plant species listed by the California Invasive Plant Council (Cal-IPC) for all new construction.* *ENV-1.7: Require new development to use native plants or other appropriate non-invasive plants to reduce maintenance and irrigation costs and the disturbance of adjacent natural habitat.*	When Policy ENV-1.1 is viewed together with the intent of Goal ENV-1 (to preserve native plants and plant communities) and the Town's Tree Protection Ordinance (to "retain as many trees as possible"), this policy is intended to preserve as many native trees as possible. Project implementation would result in development of a 17.55-acre undeveloped parcel that supports natural habitats with moderate value to native wildlife species. Project implementation would retain about 83% of the existing protected trees (about 485 out of a total of 585), remove approximately 70 protected trees (12%) and transplant about 30 protected trees (5%). With respect to protected native trees, about 30 protected oaks would be removed, while about 25 protected oaks would be transplanted. Compliance with the Tree Protection Ordinance and implementation of Mitigation Measures 4.3-10, Tree Mitigation and Monitoring Plan, would reduce this impact to less than significant. As indicated in Impact 4.3-1, project implementation would not result in any significant adverse direct or indirect impacts to special-status plant species. The proposed landscape plan (Figure 3-7) indicates that trees, shrubs, and groundcovers (including native species) would be planted along project roads, around proposed drainage improvements, and along sections of the project boundary.
ENV-3.1: Preserve riparian corridors and riparian habitats and avoid disturbances to these areas. *ENV-3.2: Ensure development prevents damage to native plants in the hillsides, riparian areas, watersheds and other sensitive natural habitats.* *ENV-3.3: Retain creek beds, riparian corridors,*	Although Ross Creek enters the property, its riparian habitat is considered to be of very limited value to terrestrial and aquatic wildlife due to habitat modifications downstream. No grading is proposed within or below the top of bank of Ross Creek, but grading would encroach upon riparian habitat adjacent to this creek and also directly affect an ephemeral swale (unnamed tributary to Ross Creek) and its

General Plan Policies	Project Consistency Analysis
water courses and associated vegetation in their natural state to assist groundwater percolation and prevent erosion and downstream sedimentation. *ENV-3.4: Require setbacks or other protective measures as appropriate to protect riparian corridors.* *ENV-3.5: Promote the planting of local native trees and shrubs on land surrounding reservoirs and streams, especially adjacent to areas where banks or channels have been modified for flood protection.*	associated oak riparian habitat, a significant impact. However, implementation of Mitigation Measure 4.3-8, Creek and Swale Protection, would reduce these impacts to a less-than-significant level. Also, since the subject property is located within 50 feet of the top of bank of Ross Creek, the project will be subject to review for conformance to the Town's Guidelines and Standards for Land Use Near Streams. The proposed landscape plan (Figure 3-7) indicates that trees, shrubs, and groundcovers (including native species) would be planted around proposed drainage improvements, including the culvert proposed under Street B in the ephemeral swale.
ENV-4.1: Development shall not significantly deplete, damage or alter existing wildlife habitat or populations. *ENV-4.2: Coordinate with the California Department of Fish and Game, the U.S. Fish and Wildlife Service and other appropriate agencies to protect wildlife species and habitats.* *ENV-4.3: Maintain open space and native plant communities that provide habitat and migration corridors for native wildlife species.* *ENV-4.4: Identify and protect areas with significant habitat diversity or importance for wildlife, such as riparian corridors, wildlife movement corridors and large tracts of undeveloped land.* *ENV-4.5: Public and private projects shall provide the maximum protection of wildlife populations.* *ENV-4.7: Nesting sites shall be preserved in new development and within existing development unless a mitigation plan is approved.* *ENV-4.11: The Town shall require open space dedications as a means to protect wildlife.* *ENV-4.12: Town staff shall review site plans to ensure that existing significant wildlife habitats and migration corridors are not adversely affected by either individual or cumulative development impacts.*	While project implementation would result in development of a 17.55-acre vacant parcel that supports natural habitats with moderate value to native wildlife species, the project development would not substantially reduce the habitat of any wildlife species, cause any wildlife populations to drop below self-sustaining levels, or threaten to eliminate a plant or animal community (see Impact 4.3-6 for more discussion). However, project development could have a substantial adverse effect, either directly or through habitat modification, to the following special-status wildlife species or migratory birds, if they occur on the site: nesting white-tailed kites, other special-status and migratory birds, the special-status San Francisco dusky-footed woodrat, special-status bats, or California red-legged frogs and foothill yellow-legged frogs. However, potential impacts on special-status or migratory birds would be reduced to a less-than-significant level with implementation of Mitigation Measure 4.3-2, Protection of Nesting Special-status and Migratory Birds, Mitigation Measure 4.3-3, Protection of San Francisco Dusky-foot Woodrat, Mitigation Measure 4.3-4, Protection of Roosting Bats, and Mitigation Measure 4.3-5, Protection of California Red-legged Frogs and Foothill Yellow-legged Frogs.
ENV-5.2: Apply land use regulations, scenic easements, or other appropriate measures to keep the maximum amount of land immediately contiguous to reservoirs and stream channels undeveloped and undisturbed. *ENV-5.3: Cooperate with the Santa Clara Valley Water District and other agencies to protect watersheds and riparian habitats from degradation.* *ENV-5.4: Preserve existing creeks and avoid disturbances to these areas.* *ENV-5.5: When a development project is adjacent to*	No grading is proposed within or below the top of bank of Ross Creek, but grading would encroach upon riparian habitat adjacent to this creek and also directly affect an ephemeral swale (unnamed tributary to Ross Creek) and its associated oak riparian habitat, a significant impact. However, implementation of Mitigation Measure 4.3-8, Creek and Swale Protection, would reduce these impacts to a less-than-significant level. Because the subject property is located within 50 feet of the top of bank of Ross Creek, the project would be subject to review for conformance to the Town's Guidelines and

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a designated creek, the approval shall include a condition that the creek be dedicated to the Town in fee with a maintenance easement granted to the Santa Clara Valley Water District.	Standards for Land Use Near Streams. Although no creek channels would be affected by project implementation, the Town will solicit input on the development from the Santa Clara Valley Water District. The Santa Clara Valley Water District already has jurisdiction over Ross Creek.

4.3.3 POTENTIAL IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

Based on Appendix G and Section 15065 of the CEQA Guidelines, an impact on biological resources is considered significant if the proposed project would:

- 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;
- Substantially reduce the number or restrict the range of an endangered, rare or threatened species;
- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community (i.e., aquatic and wetland habitat) identified in local or regional plans, policies, regulations or by the CDFW or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Have a substantial adverse effect on wetlands protected under the Porter-Cologne Water Quality Control Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- 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;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

For the purposes of this report, it is assumed that impacts would occur primarily in areas where grading, the building, driveways, roadways, and other infrastructure are proposed.

METHODOLOGY

The information in this biological resources section is based upon the findings of a biological reconnaissance, wetland evaluation, a focused three-season floristic survey (Wood Biological Consulting, Inc., 2013), and a tree inventory prepared for the subject property.

The biological evaluation, prepared by Wood Biological Consulting, Inc. with the assistance of Nomad Ecology, identifies the existing plant communities and biotic resources, and assesses biotic habitats that could be suitable for special status plants and animals. Summaries of the special-status plant and animal species included in this analysis are presented in Appendix B of this report.

A preliminary determination of jurisdictional habitats (i.e., streams and wetlands) was prepared by Wood Biological Consulting, Inc. (2012);[24] input was solicited from the U.S. Army Corps of Engineers (USACE) and California Department of Fish and Wildlife (CDFW), but none was received as of this writing.

Existing habitats were mapped onto a 1" = 50' scale black and white aerial photograph and the area of each polygon calculated. Habitat polygons were transferred onto the preliminary grading and drainage plan (dated August 15, 2014) and the all habitat areas that overlapped the limits of grading, building pads, roads, and the proposed 10-foot to 25-foot riparian setback were calculated. A summary of anticipated surface impacts on existing habitats is presented in **Table 4.3-4**.

A focused, three-season floristic survey of the subject property was conducted between 2012 and 2013 (Wood Biological Consulting, Inc. 2013). No special-status plant species occur in the study area and project implementation would result in no significant impacts to special-status plants. A preliminary inventory of plant species recorded on-site is presented in Appendix B. A tree inventory was prepared by consulting arborist Michael Bench (2010) and updates were completed in 2013 and 2014 (included as **Appendix C** of this EIR). The Bench reports were reviewed and an analysis of the project impacts were performed by the Town's consulting arborist, Deborah Ellis, in 2011 (March 30 and September 21), 2012 (June 12), 2013 (January 29, February 23, and May 7), and 2014 (November 7). Debbie Ellis' reports were then consolidated into one report (dated November 19, 2014) and included in Appendix C.

[24] This report is available for review during counter hours (from 8:00 a.m. to 1:00 p.m., Monday through Friday) at the Los Gatos Community Development Department, which is located at 110 East Main Street.

TABLE 4.3-4

SUMMARY OF HABITAT IMPACTS

Habitat Type	Total Acreage On Site	Total Acreage Impacted	Percent of Total Impacted
Mixed Oak Forest			
– Coast Live Oak/Valley Oak	4.15	0.50	12.0%
– Mixed Oak in Riparian Setback	0.55	0.02	3.6%
– Blue Oak	0.43	0.00	0%
Total Mixed Oak Forest	5.13	0.52	10.1
Riparian			
– Mixed Oak Forest	0.55	0.11	20.0%
– Non-Native Annual Grassland	0.47	0.47	100%
Total Riparian	1.02	0.58	56.9%
Non-Native Annual Grassland	9.89	3.26	33.0%
– Grassland in Riparian Setback	1.44	0.47	32.6%
Total Grassland	11.33	3.73	32.9%
Ruderal	0.63	0.26	41.3%
Anthropogenic	0.50	0.18	36.0%
Total	**18.61**	**5.27**	**28.3%**

IMPACTS ON SPECIAL-STATUS SPECIES

Impact 4.3-1: Project development would not have a substantial adverse effect, either directly or through habitat modification, to special-status plant species. (Less than Significant)

Based on the results of a focused three-season floristic survey, no federally or State-listed plant species or other special-status plant species occur in the study area and none is considered likely to be present. An inventory of plant species detected is provided in Appendix B. Based on the floristic surveys, the presence of all of the target species can be ruled out due to a lack of suitable habitat and/or the fact that they would have been recognizable during the survey.

Project implementation would not result in any significant adverse direct or indirect impacts to special-status plant species; no mitigation measures are warranted.

Mitigation Measure 4.3-1: *None required.*

Impact 4.3-2: Project development could have a substantial adverse effect, either directly or through habitat modification, to nesting white-tailed kites and other special-status and migratory birds. (Less than Significant with Mitigation)

Within the study area, ornamental trees, shrubs, and ground cover, as well as structures, provide nesting habitat for white-tailed kite and other special-status migratory bird species. Site clearing activities (e.g., structure demolition, tree and shrub removal or pruning) could result in direct or indirect impacts to nesting birds by causing the destruction or abandonment of occupied nests. Direct and indirect impacts to

special-status and migratory bird species would be considered potentially significant under the CEQA Guidelines. However, with implementation of Mitigation Measure 4.3-2, Protection of Nesting Special-status and Migratory Birds, this potential impact would be reduced to a less-than-significant level by ensuring no impacts occur.

Mitigation Measure 4.3-2, Protection of Nesting Special-status and Migratory Birds: *In order to prevent mortalities of special-status and migratory bird species during project implementation, the measures outlined below shall be implemented. Removal of trees and shrubs shall be minimized to the extent feasible, but where tree removal, pruning, or grubbing activities must occur, the following measures shall be implemented:*

a. *If tree removal, pruning, or grubbing activities are scheduled to occur outside of the breeding season (i.e., between September 1 and January 31), preconstruction surveys for nesting birds are not warranted as no significant adverse effects would occur.*

b. *If tree removal, pruning, or grubbing activities are scheduled to commence during the bird breeding season (i.e., between February 1 and August 31), a preconstruction nesting bird survey shall be conducted by a qualified biologist approved by the Town. The survey shall be performed no more than two weeks prior to the initiation of work. The preconstruction survey shall include the project footprint and up to a 300-foot buffer, depending on access and lines of sight. If no active nests of special-status or other migratory birds are found, work may proceed without restriction and no further measures are necessary. If the commencement of work is delayed more than two weeks from the date of the preconstruction survey, the survey shall be repeated, if determined necessary by the project biologist.*

c. *If occupied nests (i.e., nests with eggs or young birds present) of special-status or migratory birds are detected, the project biologist shall designate non-disturbance buffers at a distance sufficient to minimize disturbance based on the nest location, topography, cover, species, and the type/duration of potential disturbance. No work shall occur within the non-disturbance buffers until the young have fledged, as determined by a qualified biologist approved by the Town. The appropriate buffer size shall be determined by a qualified wildlife biologist approved by the Town. Typical buffer zones are 50 foot-radius for songbirds and 300 foot-radius for raptors. If, despite the establishment of a non-disturbance buffer it is determined that project activities are resulting in nest disturbance, work shall cease immediately. Work may only resume once the project biologist has determined that it is safe to do so (e.g., after the young birds have fledged).*

d. *If project activities must occur within the non-disturbance buffer, a qualified biologist shall monitor the nest(s) to document that take of the nest (i.e., nest failure) is not likely to result. If it is determined that project activities are resulting in significant nest disturbance, work shall cease immediately. Work may only resume once the project biologist has determined that it is safe to do so (e.g., after the young birds have fledged).*

Impact Significance After Mitigation: Less than significant since take of special-status or other migratory birds would be avoided with implementation of the mitigation measures.

Impact 4.3-3: Project development could have a substantial adverse effect, either directly or through habitat modification, to the special-status species San Francisco dusky-footed woodrat, which is present on-site. (Less than Significant with Mitigation)

Within the study area, 11 nests of San Francisco dusky-footed woodrat were detected in the wooded portions of the subject property; abundant suitable habitat is present elsewhere on-site. Site clearing activities (e.g., grading, tree and shrub removal) could result in direct or indirect impacts to woodrats by causing the destruction or abandonment of occupied nests. Direct and indirect impacts to this special-status species would be considered potentially significant under the CEQA Guidelines. However, with implementation of Mitigation Measure 4.3-3, Protection of San Francisco Dusky-footed Woodrat, this potential impact would be reduced to a less-than-significant level.

Mitigation Measure 4.3-3, Protection of San Francisco Dusky-footed Woodrat: *In order to prevent mortalities of San Francisco dusky-footed woodrat during project construction and implementation, the following measures shall be implemented:*

a. A qualified biologist shall perform a ground survey to locate and mark all woodrat nests in the proposed construction area. The survey shall be performed no less than 30 days prior to the initiation of ground disturbances. The Contractor shall walk the site to assist in determining which nests cannot be avoided. Nests to be avoided shall be fenced off with orange construction fencing and their locations marked on construction plans as being off limits to all activities.

b. Any woodrat nest that cannot be avoided shall be manually disassembled by a qualified biologist, after notification of CDFW, to give any resident woodrats the opportunity to disperse to adjoining undisturbed habitat. Nest building materials shall be immediately removed off-site and disposed of to prevent woodrats from reassembling nests on-site.

c. To ensure woodrats do not rebuild nests within the construction area, a qualified biologist shall inspect the construction corridor no less than once per week. If new nests appear, they shall be disassembled and the building materials disposed of offsite. If there is a high degree of woodrat activity, more frequent monitoring shall be performed, as warranted.

Impact Significance After Mitigation: Less than significant. With implementation of these mitigation measures, project implementation would neither substantially reduce the habitat of San Francisco dusky-footed woodrat nor would not cause the population of the subspecies to drop below self-sustaining levels.

Impact 4.3-4: Project development could have a substantial adverse effect, either directly or through habitat modification, to special-status bats, identified as candidate, sensitive, or special

status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS, which may occur on-site. (Less than Significant with Mitigation)

The study area provides suitable roosting and foraging habitat for the pallid bat. If present at the time of construction, direct and indirect impacts could occur. Direct and indirect impacts to this special-status species would be considered potentially significant under the CEQA Guidelines. However, with implementation of Mitigation Measure 4.3-4, Protection of Roosting Bats, this potential impact would be reduced to a less-than-significant level.

Mitigation Measure 4.3-4, Protection of Roosting Bats: *In order to minimize impacts to special-status bats during project implementation, impacts to suitable roost sites shall be avoided or minimized to the greatest extent feasible. Where impacts to suitable roost sites cannot be avoided, the following measures shall be implemented:*

a. Preconstruction surveys consisting of visual inspections and multi-night surveys with the aid of acoustic bat detectors shall be conducted no more than two weeks prior to the start of ground disturbing activities for all areas that provide suitable bat roosting habitat including man-made structures, snags, rotten stumps, mature trees with broken limbs, trees with exfoliating bark, bole cavities or hollows, dense foliage, etc.

b. If suitable roost sites (trees, snags, etc.) are to be removed or trimmed, limbs smaller than 3 inches in diameter shall be cut and the tree left overnight to allow any bats that may be using the tree/snag time locate another roost. A biological monitor shall be present during the trimming or removal of trees/snags.

c. Trees providing suitable roost sites shall be removed between September and March, outside of the breeding season to avoid disturbance to maternal colonies or breeding individual pallid bats.

d. Prior to demolition or removal of structures, a qualified biologist shall conduct a preconstruction clearance survey to identify if any bats are roosting within the structures. If bats are roosting within the structure bat exclusion measures shall be implemented that allow bats to freely leave the structure, but prevents them from returning.

Impact Significance After Mitigation: Less than significant since impacts to special-status bats would be avoided or reduced to a less-than-significant level with implementation of these mitigation measures.

Impact 4.3-5: Project development could have a substantial adverse effect, either directly or through habitat modification, to California red-legged frogs and foothill yellow-legged frogs. (Less than Significant with Mitigation)

Within the study area, Ross Creek provides suitable non-breeding aquatic habitat for California red-legged frog and foothill yellow-legged frog. The associated riparian corridor and adjacent uplands provide suitable foraging, dispersal and refugia habitat. Direct and indirect impacts to California red-legged frogs

and foothill yellow-legged frogs would be considered potentially significant under the significance thresholds set forth earlier in this chapter. However, with implementation of Mitigation Measure 4.3-5, Protection of California Red-legged Frogs and Foothill Yellow-legged Frogs, this potential impact would be reduced to a less-than-significant level.

Mitigation Measure 4.3-5, Protection of California Red-legged Frogs and Foothill Yellow-legged Frogs: *In order to avoid impacts to California red-legged frogs and foothill yellow-legged frogs during project implementation, the following measures shall be implemented:.*

a. *Construction activities shall be timed to occur outside of the wet season (i.e., April 15- October 15) when California red-legged frogs and foothill yellow-legged frogs are less likely to venture into uplands; this is the optimal season for avoiding conflict with these species.*

b. *No work shall occur during or within 24 hours following a rain event exceeding 0.2-inch as measured by the NOAA National Weather Service.*

c. *Prior to the start of construction, wildlife exclusion fencing shall be installed along Ross Creek and the associated riparian corridor (i.e., areas where California red-legged frogs and foothill yellow-legged frogs could enter the project site). The location of the fencing shall be determined by a qualified biologist prior to the start of staging or surface disturbing activities. The fencing specifications including installation and maintenance criteria shall be provided in the bid solicitation package special provisions. The fencing shall remain in place throughout the duration of the project and shall be regularly inspected and fully maintained. Upon project completion, the fencing shall be completely removed, the area cleaned of debris and trash, and returned to original condition or better.*

d. *To prevent California red-legged frogs and foothill yellow-legged frogs from becoming entangled, trapped or injured, erosion control materials that use plastic or synthetic mono-filament netting, photodegradable or biodegradable synthetic netting (which can take several months to decompose) or small aperture matrix (i.e., less than 2 inches x 2 inches) shall not be used within the study area.*

e. *Preconstruction surveys shall be conducted by a qualified biologist immediately prior (i.e., on the same morning as work occurs) to the initiation of initial site clearing activities that may result in take of California red-legged frogs and foothill yellow-legged frogs. All upland habitat including refugia such as dense vegetation, small woody debris, refuse, burrows, etc., shall be thoroughly inspected. If a California red-legged frog is observed, the qualified biologist shall contact the USFWS to determine if capturing and relocating the individual(s) is necessary and authorized. If handling of California red-legged frogs is necessary, the qualified biologist shall be in possession of a 10(a)(1)(A) Recover Permit and valid Scientific Collecting Permit. The qualified biologist shall take precautions to prevent introduction of amphibian diseases in accordance with the Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog (USFWS, 2005).*

f. A qualified biologist shall be on-site during all construction activities that may result in take of California red-legged frogs and foothill yellow-legged frogs, specifically, work in or adjacent to Ross Creek. The qualified biologist shall have the authority to stop work to avoid take of either species. The qualified biologist shall conduct clearance surveys at the beginning of each day and regularly throughout the workday when construction activities are occurring that may result in take of California red-legged frogs and foothill yellow-legged frogs.

g. A Worker Environmental Awareness Training shall be conducted for all construction crews and contractors. The education training shall be conducted prior to the commencement of ground-clearing or grading and upon the arrival of any new worker. The training shall include a brief review of locations of sensitive areas, avoidance measures, and corrective actions in the event sensitive species are encountered. The program shall cover the mitigation measures, environmental permits and regulatory compliance requirements. Additional training shall be conducted as needed, including morning "tailgate" sessions to update crews as they advance into sensitive areas for projects with multiple work areas. In addition, a record of all personnel trained during the project shall be maintained for compliance verification.

h. All slopes or unpaved areas affected by the proposed project shall be re-seeded with native grasses and shrubs to stabilize the slopes and bare ground against erosion. Following construction, native (and non-native if appropriate) plant species shall be installed at the disturbed area.

Impact Significance After Mitigation: Less than significant since take of California red-legged frogs and foothill yellow-legged frogs would be minimized with implementation of the mitigation measures.

IMPACTS ON SPECIAL-STATUS HABITATS

Impact 4.3-6: Project development would not substantially reduce the habitat of any wildlife species, cause any wildlife populations to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or substantially reduce the number or restrict the range of rare or endangered plant or animal species through the loss or fragmentation of habitats. (Less than Significant)

A total of 66 special-status animal species have been recorded in the project region (Appendix B). Of these, 54 species are considered absent from or unlikely to occur on the site. The presence of two special-status species on-site, San Francisco dusky-footed woodrat and oak titmouse, was determined. Another 10 target species were determined to have the potential to occur within the study area or in adjacent habitats. These include one federally listed species (California red-legged frog), one State fully protected species (white-tailed kite), and eight other special-status species (foothill yellow-legged frog, Cooper's hawk, sharp-shined hawk, Bell's sage sparrow, loggerhead shrike, Nuttall's woodpecker, Allen's hummingbird, pallid bat). During the June 2012 survey, one large stick nest was observed on the project site, potentially belonging to a great-horned owl and two barn owls were also observed; both are protected raptor species. These species may occur more frequently as regular foragers or may be resident to the site.

Approximately 19% of the property is proposed for designation as open space (Lot B), which includes the only stand of blue oaks, along with mixed oak woodland and non-native annual grassland. In addition, at least 1.8 acres of dense mixed oak woodland on Lots 6, 7, and 8 are at the periphery of the project boundaries and located outside delineated potential building envelopes. Therefore, it is assumed that this oak woodland would be retained when these lots are developed, and the loss or fragmentation of these habitats is expected to result in a less-than-significant impact, with the exception of possible impacts to nesting raptors (see Impact 4.3-2).

Mitigation Measure 4.3-6: *None required.*

Impact 4.3-7: Project development would adversely affect a surface tributary presumed to fall under the jurisdiction of the USACE, CDFG and/or RWQCB pursuant to federal and State law. (Less than Significant with Mitigation)

Although the proposed grading and drainage improvements would not extend beyond the top of bank of Ross Creek, project implementation would result in direct impacts on an ephemeral swale that drains into Ross Creek, a significant impact. A preliminary jurisdictional evaluation was prepared (Wood Biological Consulting, Inc. 2012) and has been submitted to the USACE for verification; verification of USACE jurisdiction is pending. Preliminary input from the CDFW (D. Johnston, e-mail dated 7/17/2012) indicates that impacts to the ephemeral swale would require authorization under the Lake and Streambed Alteration Program (CFGC Section 1600, et seq.). Work within the ephemeral swale is also expected to require issuance of either individual or general waste discharge requirements from the RWQCB pursuant to Porter-Cologne (see Section 4.5, Hydrology and Water Quality, Impact and Mitigation Measure 4.5-1). Implementation of Mitigation Measure 4.3-7, Conformance with Applicable Federal and State Regulations, would ensure that project-related impacts on surface waters would be reduced to less than significant.

Mitigation Measure 4.3-7, Conformance with Applicable Federal and State Regulations: *In order to conform to federal and State law and to offset significant adverse impacts on waters of the U.S. and waters of the State, the measures outlined below shall be implemented.*

a. *Prior to initiation of project construction, the project proponent shall secure a verified jurisdictional determination from the USACE.*

b. *For impacts to federally regulated waters of the U.S. that cannot be avoided, the applicant shall apply for and receive authorization pursuant to CWA. The project proponent shall comply with all permit conditions, as specified by the USACE. Mitigation ultimately required by the USACE could include on-site habitat creation, off-site habitat creation, purchase of credits from an approved habitat mitigation bank, and/or payment of in-lieu fees to an approved conservation organization for wetland habitat enhancement of preservation activities.*

c. *For impacts to waters of the State or other State-regulated habitats that cannot be avoided, the applicant shall apply for and receive authorization pursuant to CFGC Section 1602 and Porter-*

Cologne, as applicable. Section 1602 applies to impacts to the ephemeral swale that drains into Ross Creek, while Porter-Cologne would apply to impacts to waters of the State that are not also waters of the US subject to regulation by USACE under the Clean Water Act. The project proponent shall comply with all permit conditions (including monitoring of any restoration plantings for long-term survivorship), as specified by the CDFW and RWQCB. Mitigation ultimately required by the CDFW/ RWQCB could include on-site habitat creation, off-site habitat creation, purchase of credits from an approved habitat mitigation bank, and/or payment of in-lieu fees to an approved conservation organization for wetland habitat enhancement of preservation activities.

Impact Significance After Mitigation: Less than significant since impacts would either be avoided or impacts would be offset with implementation of the agency-required mitigation measures.

Impact 4.3-8: Project development would adversely affect the riparian habitat of Ross Creek and an unnamed tributary to Ross Creek located within the project site. (Less than Significant with Mitigation)

Although no grading is proposed within or below the top of bank of Ross Creek, grading would encroach upon riparian habitat adjacent to the creek. In addition, project implementation would directly impact an ephemeral swale that traverses the site (unnamed tributary to Ross Creek) and its associated oak woodland habitat. Grading, filling or trenching within the drip line or tree protection zone of native riparian trees would be deemed a direct impact on trees within the riparian zone. Project implementation has the potential to adversely affect riparian habitat associated with Ross Creek as well as oak woodland adjacent to the ephemeral swale, and would result in the filling of the section of the ephemeral swale that traverses proposed Street A; these are significant impacts. However, implementation of Mitigation Measure 4.3-8, Creek and Swale Protection, would reduce impacts to a less-than-significant level.

Mitigation Measure 4.3-8, Creek and Swale Protection: *Mitigation for the placement of fill into the ephemeral swale is outlined in Mitigation Measure 4.3-7, above. Construction in and adjacent to Ross Creek and the ephemeral swale requires conformance to the Town's adopted sections of the Guidelines and Standards for Land Use Near Streams. In order to conform to these guidelines, the following measures shall be implemented:*

- *Protection of the riparian zone shall be assured by establishment of an appropriate riparian corridor buffer. Based on site conditions, channel geomorphology, slope, size of watershed, and type of habitat, a minimum riparian setback of 25 feet from the top of bank or outer edge of the riparian zone, whichever is greater, would provide for an appropriate protection of the habitat values and water quality associated with Ross Creek.*
- *Based on site conditions, channel geomorphology, slope, size of watershed, and type of habitat, a minimum riparian setback of 10 feet from the top of bank of the incised portion of the ephemeral swale and outer oak canopy edge would provide for an appropriate protection of the habitat values and water quality. It is recognized that the placement of fill into the ephemeral swale is*

necessary to construct Streets A and B. At these locations, there is no habitat meeting the definitions of "riparian vegetation" or "stream/channel/creek"[25] as provided in the Guidelines. As such, this portion of the proposed project is not in conflict with the Guidelines. Mitigation for these impacts is specified in Mitigation Measure 4.3-7.

a. *Grading and culvert construction to accommodate the construction of Street B would result in impacts on the portions of the ephemeral swale that are incised and situated directly beneath the canopy of mature oak woodland. Such grading and construction at this location would not necessarily conflict with the Guidelines,[26] but would be subject to review and permitting requirements by the regulatory agencies. Mitigation for these impacts is specified in Mitigation Measure 4.3-7.*

b. *A 10-foot wide protective easement shall be recorded over the length of the preserved swale across Lot 9. No grading, filling, or trenching shall be permitted within this easement.*

c. *Orange construction fencing or a similar visual barrier shall be installed to prevent accidental grading or movement of equipment beyond what is specified on the grading plans and approved under the grading permit.*

d. *Construction activities shall conform to the Town of Los Gatos' Tree Protection Ordinance, as required in Mitigation Measure 4.3-10, Tree Mitigation and Monitoring Plan.*

Impact Significance After Mitigation: Less than significant since riparian habitat associated with Ross Creek and the ephemeral swale would be protected, and all proposed grading and filling in jurisdictional areas would be required to conform to regulatory permitting and mitigation requirements.

Impact 4.3-9: Project implementation would require an exception to the *Guidelines* by encroaching into the recommended riparian setback. (Less than Significant with Mitigation)

Based on an evaluation of the proposed grading pads for home sites and road alignments, maintenance of the full 10-foot setback (see Mitigation Measure 4.3-8 above) would not be achievable. As proposed, Streets A and B would cross the riparian setback. These encroachments affect primarily non-native annual grassland (0.47 acres) and a small area of oak woodland (0.01 acre).

Although such encroachments are not consistent with the *Guidelines*, the Town may make exceptions to the *Guidelines*, at its discretion. The Guidelines recommend minimum "slope stability protection areas", measured from top of bank, ranging from as wide as 25 feet for unarmored streams to as little as 10 feet for ephemeral streams. Encroachments may be considered justifiable in this case due to the very limited riparian function of the ephemeral swale in terms of wildlife and water quality. In addition, implementation of Mitigation Measure 4.3-9, Riparian Encroachment Offsets, would reduce the potentially significant effects of these encroachments to a less-than-significant level.

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[25] See Section 2F, Subsection C (Topographic Position) of the Guidelines, p. 2.14

[26] See Section III.B2, B3, and B4 of the Guidelines, p. 3.9

Mitigation Measure 4.3-9, Riparian Encroachment Offsets: *In order to offset potentially significant effects of encroachments into the recommended 10-foot riparian setback, the following mitigation measures shall be implemented:*

a. The Town shall allow an exception to the Guidelines to permit construction of Streets A and B.

b. The hydrologic connection between the ephemeral swale and upstream watershed and Ross Creek shall be maintained by the installation of appropriately sized culverts beneath Street A and Street B, and between Lots #3 and 4.

c. Protective measures as recommended by the Town's arborist and required by Town Ordinance shall be implemented to preserve the health of oak trees located on Lot 9, and they include the following:

"Section 29.10.1005 Protection of Trees During Construction

a) Protective tree fencing shall specify the following:

1) Size and materials: A five (5) or six (6) foot high chain link fencing, mounted on two-inch diameter galvanized iron posts, shall be driven into the ground to a depth of at least two (2) feet at no more than 10-foot spacing. For paving area that will not be demolished and when stipulated in a tree preservation plan, posts may be supported by a concrete base.

2) Area type to be fenced. Type I: Enclosure with chain link fencing of either the entire dripline area or at the tree protection zone (TPZ), when specified by a certified or consulting arborist.[27] Type II: Enclosure for street trees located in a planter strip: chain link fence around the entire planter strip to the outer branches. Type III: Protection for a tree located in a small planter cutout only (such as downtown): orange plastic fencing shall be wrapped around the trunk from the ground to the first branch with 2-inch wooden boards bound securely on the outside. Caution shall be used to avoid damaging any bark or branches.

3) Duration of Type I, II, III fencing. Fencing shall be erected before demolition, grading or construction begins and remain in place until final landscaping is required. Contractor shall first obtain the approval of the project arborist on record prior to removing a tree protection fence.

4) Warning sign. Each tree fence shall have prominently displayed an 8.5 x 11-inch sign stating: "Warning— Tree Protection Zone-this fence shall not be removed and is subject to penalty according to Town Code 29.10.1025".

b) All persons, shall comply with the following precautions:

1) Prior to the commencement of construction, install the fence at the dripline, or tree protection zone (TPZ) when specified in an approved arborist report, around any tree and/or vegetation to be retained which could be affected by the construction and prohibit any

[27] If it is not possible to place Type 1 or Type 2 tree protection fencing at the dripline due to the construction, then place the fencing as far from the trunk as possible, including as much of the dripline as possible, while still allowing for enough room to build improvements. If this happens to be within all or some of the dripline, then so be it. But the contractor must try to fence off as much area under the canopy as possible, do not be irresponsible about this.

storage of construction materials or other materials or vehicles inside the fence. The dripline shall not be altered in any way so as to increase the encroachment of the construction.

2) *Prohibit excavation, grading, drainage and leveling within the dripline of the tree unless approved by the director.*
3) *Prohibit disposal or depositing of oil, gasoline, chemicals or other harmful materials within the dripline of or in drainage channels, swales or areas that may lead to the dripline of a protected tree.*
4) *Prohibit the attachment of wires, signs or ropes to any protected tree.*
5) *Design utility services and irrigation lines to be located outside of the dripline when feasible.*
6) *Retain the services of the certified or consulting arborist for periodic monitoring of the project site and the health of those trees to be preserved. The certified or consulting arborist shall be present whenever activities occur that pose a potential threat to the health of the trees to be preserved.*
7) *The director and project arborist shall be notified of any damage that occurs to a protected tree during construction so that proper treatment may be administered."*

d. *Native trees and shrubs shall be planted in existing non-native grassland on Lots 3 and 9 to enhance the vegetative cover within the 10-foot setback.*

Impact Significance After Mitigation: Less than significant since the remaining riparian habitat associated with the ephemeral swale will be protected and enhanced.

TREE REMOVAL IMPACTS

Impact 4.3-10: Project implementation would remove about 70 protected trees and transplant approximately 30 protected trees on the project site, and would directly or indirectly affect approximately 0.52 acre of mixed oak woodland. (Less than Significant with Mitigation)

Protected Trees, as defined under the Los Gatos Tree Protection Ordinance (Division 2 of the Zoning Code), are defined in Section 4.3.2, above. As identified by the project arborist, Michael Bench (2013), a total of 585 protected trees are present on the subject property (see Table 4.3-2). Of these, about 485 trees (about 83%) would be retained and adequately protected. Construction of proposed roadways, infrastructure, and the driveway to Lot 7 would require the removal of approximately 70 protected trees (12%), while a total of about 30 protected trees (5%) would be transplanted elsewhere on-site, a potentially significant impact. Bench (2010) mentions that blue oaks grow at a much slower rate than the other oaks on-site; all (100%) of the blue oaks on-site would be preserved.

The health of all trees inventoried was assessed (Bench, 2013). As shown in **Table 4.3-5,** below, there are approximately 100 trees that could be removed, transplanted, or adversely affected by project construction. Of these, approximately 55% of these trees are considered to be in excellent, good or good/fair condition. The remaining 45% are considered to be in fair or worse condition (or are dead).

TABLE 4.3-5

SUMMARY OF HEALTH OF INVENTORIED TREES

Tree Condition	Number of Trees Affected by Project Construction	Percentage of Affected Trees
Excellent	12	12%
Good	33	33%
Good/Fair	9	9%
Fair	25	25%
Fair/Poor	3	3%
Poor	11	11%
Extra Poor	6	6%
Dead	2	2%

During project construction, there would be the potential for damage to the approximately 38 trees that are proposed to be retained. However, implementation of protective measures Mitigation Measure 4.3-10, Tree Mitigation and Monitoring Plan, would reduce potential impacts on trees proposed to be retained to a less-than-significant level.

Project implementation (construction of roadways, infrastructure, and the driveway to Lot 7) would require the removal of about 28 protected oaks and the transplantation of about 25 protected oaks (12% of the 452 oak trees on-site) comprising mixed oak forest (Bench, 2014). There are at least 2 additional oaks that could be severely affected by construction of the section of proposed Street B that crosses the ephemeral swale. Of these, the arborist's report (Bench, 2014) indicates that the longevity of three of these trees (#545, 546, and 162) would be severely affected by construction of proposed retaining walls and culvert, living an estimated 5 to 10 years); the other two trees (#550 and 544) are expected to survive in good condition. The Town Arborist (Ellis, 2014a) also identified severe impacts on the same three oaks (#545, 546, and 162) but also identified an additional oak (#544, 10-inch valley oak) that would also be severely impacted. These affected trees consist entirely of coast live oaks and valley oaks; all existing blue oaks on-site would be preserved. Direct impacts on the mixed oak woodland would occur by causing fragmentation of the landscape, and would result in a total impact on mixed oak woodlands of approximately 0.52 acre, or 13% of the total number of oaks on-site.

While there is no quantitative measure to classify the value of the oak-dominated habitat on the project site, it is reasonable to conclude that the value of the habitat for wildlife species is moderate given the character of the woodlands to the south and east combined with anthropogenic factors that may reduce their overall value (e.g., other scattered homes and associated paved roads). Approximately 55 protected oaks could be removed, severely damaged, or transplanted (equivalent to approximately 0.52 acre of woodland habitat) for the proposed project. Although the removal of individual trees is regulated under the Town's Tree Protection Ordinance, the 2020 General Plan does not provide a defined threshold for determining significance beyond which the removal of woodlands is considered significant. Furthermore,

CEQA does not specify a significance threshold for loss of oak woodlands and mixed oak woodlands have a state rarity rating of G4 (common enough to not be of concern). In addition, as indicated in the results of the three-season survey (above), the mixed oak woodlands on the site do not support rare species. For these reasons, the removal of up to 0.52 acre of moderate value woodland habitat (13% of the woodland habitat occurring on-site) would constitute a less-than-significant impact. In addition, the short-term temporal loss[28] of this woodland habitat would likewise be less than significant because of the abundance of woodland habitat that would be retained on the project site, which would provide refuge for displaced wildlife.

Compliance with the Town's Tree Ordinance would ensure that trees removed or damaged by proposed development would be replaced. With project implementation, there are approximately 28 protected oak trees that would be removed, which includes 4 protected oaks (#162, 544, 545, and 546) that could be severely damaged and would probably be ultimately removed; approximately 25 more protected oak trees would be transplanted. The project would also require the removal of about 40 protected non-native/non-indigenous and the transplantation of another 4 protected non-native, non-indigenous trees. Proposed removal of approximately 70 trees would require planting of approximately 178 24-inch box-size, 93 36-inch box-size, and 8 48-inch box-size trees (or equivalent; Ellis, 2014b). In addition, the project applicant and future lot owners will be required to comply with the Los Gatos Tree Protection Ordinance, including standard tree protection measures (see Mitigation Measure 4.3-9c). Compliance with this ordinance would reduce tree removal impacts to less than significant by ensuring that proposed tree removals would not conflict with the Tree Protection Ordinance. However, given the extent of tree removals and number of replacement tree plantings, implementation of Mitigation Measure 4.3-10, Tree Mitigation and Monitoring Plan, would ensure long-term survival of replacement tree plantings and long-term reduction of this impact to less than significant.

Mitigation Measure 4.3-10, Tree Mitigation and Monitoring Plan: *To compensate for the loss of protected trees, a Tree Mitigation and Monitoring Plan shall be prepared by a qualified arborist, peer reviewed by an arborist selected by the Town, and implemented by the applicant. As noted above, mitigation will be based on the tree replacement ratios outlined in the Town's Tree Protection Ordinance (see Table 4.3-3). The planting of approximately 178 24-inch box size, 93 36-inch box size, and 8 48-inch box size replacement trees (or equivalent as specified by the Town's arborist) would compensate for the loss of approximately 70 trees. The following minimum standards shall be incorporated in the Tree Mitigation and Monitoring Plan:*

a. The primary replacement species to be planted is valley oak; blue oaks may also be planted among the existing blue oak stand at the southern boundary of Lot B. The planting stock shall be from locally collected material, and planting shall be conducted from November to January.

[28] Temporal loss is the amount of time it takes for newly planted trees to reach the level of maturity to replace the wildlife value lost by tree removal.

b. Minimum container size of the replacement trees shall be 24 inches. Trees shall be staked and provided with appropriate predator and weed control devices, such as anti-browse cages and weed mats.

c. To ensure successful establishment of all container plantings, a temporary drip irrigation system shall be installed, utilizing emitters, as determined by Town staff. Overhead irrigation shall not be used, as it fosters dense growth of undesirable weed species, may lead to erosion, and is not an efficient use of water. Irrigation will be supplied for up to three years, with the possibility of extending irrigation for another two years or as deemed necessary by the consulting restoration ecologist approved by the Town. The objective, however, is to turn off irrigation at the end of the third growing season.

d. Site maintenance shall be conducted regularly for the first three years after initial planting, including weed control, irrigation system maintenance, and foliage protector maintenance.

e. Invasive exotic species that could threaten the successful establishment of the replacement plantings, as determined by the consulting restoration ecologist, (approved by the Town) shall be removed at least once annually for a five-year period.

f. The success of the Tree Mitigation and Monitoring Plan shall be monitored by a qualified restoration ecologist (approved by the Town) for a period not less than five years after initial installation. Elements such as plant survival, percent cover, tree height and basal area, plant vigor / health, and natural recruitment / reproduction shall be evaluated during the annual monitoring of the replanted sites. The following criteria for monitoring the replanted trees shall be employed:

i. Tree Survival. Replacement trees shall exhibit an 80% survival rate at the end of the five-year monitoring period, after two consecutive growing seasons without supplemental irrigation. Dead trees shall be replaced the following winter after each mortality is noted. If the survival drops below the 80% survival threshold, the monitoring period shall be extended another five years from the date of replanting. Survivorship following the two years without supplemental irrigation is intended to demonstrate a good indication as to whether plant roots are sufficiently developed to support the plants under natural conditions.

ii. Vegetative Growth. The mean tree stem diameter, plant height and canopy spread shall show a consistent annual increase. By year five, the mean value for each of these parameters shall have increased by no less than 100%.

iii. Plant Vigor / Health. The overall plant vigor and health of the installed trees shall be monitored. Taken into consideration in the qualitative observation of vigor and health shall be the factors of plant color, bud development, new growth, herbivory, drought stress, fungal/insect infestation, and physical damage. If a plant's foliage is abnormally sparse, then the health/vigor rating shall be lowered accordingly, even if the foliage present is healthy. Overall health and vigor shall be rated according to the following scale:

Scale	*Rating*	*Description*
1	*Excellent*	*Healthy plant with vigorous growth, no necrotic or chlorotic leaves; no other signs of damage.*
2	*Good*	*Plant appears healthy, but with limited signs of vigorous growth.*
3	*Adequate*	*Plant healthy but with no signs of vigorous growth; some necrosis or damage may be present.*
4	*Poor*	*Low vitality, but plant with at least some signs of life; plant severely damaged, weak or stressed, or main stem dead.*
5	*Dead*	*No evidence of live tissue.*

Impact Significance After Mitigation: Less than significant since replacement tree plantings would comply with the Town of Los Gatos Tree Protection Ordinance and the Tree Mitigation and Monitoring Plan would ensure long-term survival of replacement tree plantings.

IMPACTS ON WILDLIFE

Impact 4.3-11: Project development would result in the loss of habitat for native wildlife. (Less than Significant)

The net effect of project implementation on the landscape would involve the conversion of non-native annual grassland and mixed oak forest to homes, roads and landscaping. Although common and widespread locally and regionally, the loss of these habitats would have an effect on wildlife species that currently utilize or could utilize the site for foraging, breeding, resting and movements. It is expected that most presently using the site do so as part of their normal daily or seasonal movements associated with foraging, mating, and caring for young. While wildlife usage of the site is likely to continue after development, the frequency and intensity of use is likely to be reduced due to a reduction of grassland and woodland habitat and an increase in human activities and disturbances. This reduction in use by native wildlife is considered to be less than significant. Furthermore, as mitigation for impacts on protected trees, as required under the Town's Tree Protection Ordinance, planting of replacement trees will be required. The loss of mature tree canopies, even when replaced by tree plantings, represents a temporal impact on wildlife habitats.

Finally, such tree plantings would further alter the landscape by ultimately converting areas of open grassland habitat to woodland, thereby reducing the existing mosaic of woodland/grassland interface on which many species are dependent for foraging and shelter.

Mitigation Measure 4.3-11: *None required.*

Impact 4.3-12: Project development would not substantially interfere with the movement of any native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. (Less than Significant)

While the subject property is dominated by woodland and herbaceous cover and is marginally contiguous with similar habitats, the site is at the edge of completely built-out residential neighborhoods, and the rural surroundings support a relatively high number of large fenced yards and moderately busy surface streets. Therefore, its value to wildlife may be considered moderate. And while Ross Creek could be expected to serve as a movement corridor for wildlife, it is both constrained by fenced backyards and partially culverted. It is therefore not expected to serve as an important movement corridor for wildlife other than those species commonly found among human habitations.

Project implementation is not expected to interfere substantially with the local or regional 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; impacts would not be considered significant pursuant to the CEQA Guidelines.

Mitigation Measure 4.3-12: *None required.*

REFERENCES – BIOLOGICAL RESOURCES

Bench, M., 2010. An Evaluation of Trees at the Surrey Farm Estates, Los Gatos, California. (Included as Appendix C of this EIR)

Bench, M., 2013. Letter from Michael Bench to Roger Griffin regarding the results of the review of the revised grading and drainage plan. January 8. (Included as Appendix C of this EIR)

Bench, M., 2014. A Comparison Between A Single Access Entry Road Plan and A Two Access Entry Road Plan, Surrey Farm Estates, Los Gatos, California. October 20. (Included as Appendix C of this EIR)

Bousman, W.G., 2007. Allen's Hummingbird; Coopers Hawk; Loggerhead Shrike; Nuttall's Woodpecker; Oak Titmouse; Sharp-Shinned Hawk. In Bousman, W.G. (ed.) *Breeding Bird Atlas of Santa Clara County, California*. *Santa Clara Valley Audubon Society, Cupertino, California*. P. 172.

Bulger, J.B., N.J. Scott Jr. and R. Seymour. 2003. *Terrestrial Activity and Conservation of Adult California Red-legged Frogs Rana aurora draytonii in Coastal Forests and Grasslands*. Biological Conservation. Vol. 110: pp. 85-95.

California Department of Fish and Game (CDFG), 2009. *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities*. November 24. Available online at http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/Protocols_for_Surveying_and_Evaluating_Impacts.pdf.

California Department of Fish and Game (CDFG), 2010. *Hierarchical List of Natural Communities with Holland Types*. Natural Diversity Database, Wildlife and Habitat Data Analysis Branch. September. Available online at https://nrmsecure.dfg.ca.gov/FileHandler.ashx?DocumentID=24716&inline=1.

California Department of Fish and Wildlife (CDFW), 2015a. *Special Vascular Plants, Bryophytes, and Lichens List*. Biogeographic Data Branch, Natural Diversity Database. Quarterly publication. July. 144 pp. Available online at https://www.dfg.ca.gov/biogeodata/cnddb/pdfs/SPPlants.pdf.

California Department of Fish and Wildlife (CDFW), 2015b. S*tate and Federally Listed Endangered, Threatened, and Rare Plants of California*. Biogeographic Data Branch, Natural Diversity Database. Quarterly publication. 7 pp. July. Available online at http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/TEPlants.pdf.

California Department of Fish and Wildlife (CDFW), 2015c. *Special Animals List*. Natural Diversity Database. September. 65 pp. Available online at https://www.dfg.ca.gov/biogeodata/cnddb/pdfs/SPAnimals.pdf.

California Department of Fish and Wildlife (CDFW), 2015d. S*tate and Federally Listed Endangered and Threatened Animals of California*. Biogeographic Data Branch, Natural Diversity Database. August. 14 pp. Available online at http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/TEAnimals.pdf.

California Native Plant Society (CNPS), 2001. *Botanical Survey Guidelines*. Revised June 2. Available online at http://www.cnps.org/cnps/rareplants/pdf/cnps_survey_guidelines.pdf.

California Native Plant Society (CNPS), 2014. *Inventory of Rare and Endangered Plants (online edition, v8-02)*. Online search for the Los Gatos, San Jose West, San Jose East, Castle Rock Ridge, Felton, Cupertino, Santa Teresa Hills, Laurel, Loma Prieta 7.5-minute USGS quadrangles. California Native Plant Society. Sacramento, CA. Accessed October 19 at www.rareplants.cnps.org/.

California Natural Diversity Data Base (CNDDB), 2014. Data Base Print Out for the Los Gatos, San Jose West, San Jose East, Castle Rock Ridge, Felton, Cupertino, Santa Teresa Hills, Laurel, and Loma Prieta USGS 7.5-minute Quadrangles. RareFind 5.0. California Department of Fish and Wildlife, Biogeographic Data Branch. Sacramento, California. Information dated October 7.

California Oak Foundation, 2007. *California Oak Report*. June. Available online at http://www.californiaoaks.org/html/oak_report_06-07.html.

Cicero, Carla, 2000. Oak Titmouse (Baeolophus inornatus). In *The Birds of North America Online* (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/485a.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe, 2013. *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. 131 pp. August (Adapted from 1979). Available online at https://www.fgdc.gov/standards/projects/FGDC-standards-projects/wetlands/nvcs-2013.

Curtis, Odette E., R. N. Rosenfield and J. Bielefeldt, 2006. Cooper's Hawk (Accipiter cooperii). In The *Birds of North America Online* (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/075.

Dunk, J. R., 1995. White-tailed kite (Elanus leucurus). In *The Birds of North America Online* (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/178.

Ellis, D., 2014a. *Arborist Report, Surrey Farm Estates, Los Gatos*. November 19. (Included as Appendix C of this EIR)

Ellis, D., 2014b. *Surrey Farm Estates Replacement Tree Calculations*. November 26. (Included as Appendix C of this EIR)

Gaman, T. and J. Firman, 2006. *Oaks 2040: The Status and Future of Oaks in California*. Produced for the California Oak Foundation. November. Available online at http://www.californiaoaks.org/ExtAssets/Oaks2040%20Final.pdf.

Hayes, M., and M. Jennings, 1988. *Habitat Correlates of Distribution of the California Red-legged Frog and the Foothill Yellow-legged Frog: Implications for Management*. In R. Sarzo, K. Severson, and d. Patton (technical coordinators). Proceedings of the Symposium on the Management of Amphibians, Reptiles and Small Mammals in California. U.S.D.A. Forest Service, Rocky Mountain Range and Experiment Station, Fort Collins, Colorado. General Technical Report (RM-166): 1-458.

Holland, R., 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. California Department of Fish and Game, The Resources Agency. 156 pp. Available on line at http://www.cal-ipc.org/ip/inventory/pdf/HollandReport.pdf.

ICF International, 2012. *Final Santa Clara Valley Habitat Plan,* Santa Clara County, California. December. Available online at http://scv-habitatagency.org/178/Final-Habitat-Plan.

Jennings, M.R. and Hayes, M.P., 1994. A*mphibian and Reptile Species of Special Concern in California*. Prepared for the Calif. Dept. of Fish and Game Inland Fisheries Div. Rancho Cordova, Calif. November 1. 255 pp. Available online at: http://www.dfg.ca.gov/wildlife/nongame/ssc/amphibian-reptile.html.

Lowther, Peter E., 2000. Nuttall's Woodpecker (Picoides nuttallii). In *The Birds of North America Online* (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Available online: http://bna.birds.cornell.edu/bna/species/555.

Mammoser, M.J., 2007. White-tailed Kite. In Bousman, W.G. (ed.) *Breeding Bird Atlas of Santa Clara County, California*. Santa Clara Valley Audubon Society, Cupertino, California. P. 172.

Matocq, M.D., 2002. *Morphological and Molecular Analysis of a Contact Zone in the Neotoma fuscipes Species Complex*. Journal of Mammalogy, 83(3):866–883.

Rogers, M.M., 2007. Sage Sparrow. In Bousman, W.G. (ed.) *Breeding Bird Atlas of Santa Clara County, California*. Santa Clara Valley Audubon Society, Cupertino, California. P. 172.

Santa Clara Valley Water Resources Protection Collaborative (SCVWRPC), 2007. *Guidelines and Standards for Land Use Near Streams*. Revised July. Available online at http://www.valleywater.org/Programs/WRPC.aspx.

Sawyer, J.O., T. Keeler-Wolf, and J.M. Evans, 2009. *A Manual of California Vegetation (2nd Edition)*. California Native Plant Society, Sacramento. 1300 pp.

Sherwin, R., and D.A. Rambaldini, 2005. *Pallid Bat (Antrozous pallidus). Species Account*. Western Bat Working Group. Available online at http://wbwg.org/western-bat-species/.

Shuford, W.D. and T.G. Gardali. Eds., 2008. *California Bird Species of Special Concern*. A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California. Studies of Western Birds No. 1. Western Field Ornithologists and California Department of Fish and Game. 450 pp.

United States Fish and Wildlife Service (USFWS). 2000. *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants*. January. Available online at http://www.fws.gov/ventura/docs/species/protocols/botanicalinventories.pdf.

United States Fish and Wildlife Service (USFWS), 2005. *Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog*. August. Available online at http://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/Documents/crf_survey_guidance_aug2005.pdf.

United States Fish and Wildlife Service (USFWS), 2014. *Species List for Surrey Farm Estates, Los Gatos*. Threatened and Endangered Species System (TESS) database query for the Los Gatos, San Jose West, San Jose East, Castle Rock Ridge, Felton, Cupertino, Santa Teresa Hills, Laurel, Loma Prieta 7.5-minute USGS quadrangles. Database accessed October 19 at http://ecos.fws.gov/ecp/.

Wood Biological Consulting, Inc., 2012. *Request for Jurisdictional Determination, Surrey Farm Estates, Los Gatos*. Letter to U.S. Army Corps of Engineers. June 30.

Wood Biological Consulting, Inc., 2013. *Floristic Analysis for the Proposed Surrey Farm Estates Residential Subdivision, Town of Los Gatos, Santa Clara County, California*. Unpublished technical report prepared for the Town of Los Gatos. May 10.

4.4 GEOLOGY, SOILS, AND SEISMICITY

A geotechnical investigation, including the installation of 8 soil borings, was conducted by GeoForensics, Inc., in November and December 2010 to evaluate the subsurface conditions at the proposed project site and provide geotechnical recommendations for construction of site improvements and residences (GeoForensics, 2010). This investigation was peer reviewed by the Town's consulting geotechnical engineer, AMEC Environment & Infrastructure (AMEC, 2011a), and GeoForensics provided a response to the peer review comments (GeoForensics, 2011). The final peer review concluded that GeoForensics' response adequately addressed AMEC's initial peer review comments (AMEC, 2011b). The geotechnical report concluded that there are no substantial geotechnical hazards that would preclude the construction of residential structures on any of the lots, provided that the recommendations of the geotechnical report are implemented; and the peer review concurred with this conclusion. A copy of the GeoForensics report, peer reviews, and the response to peer review comments are included in **Appendix D** of this EIR.

4.4.1 ENVIRONMENTAL SETTING

GEOLOGY

Regional Physiography. California has been divided into 12 geomorphic provinces that are topographic-geologic groupings of convenience based primarily on landforms and geologic history (Norris and Webb, 1976). The proposed project is located in the Coast Ranges province, which extends approximately 600 miles, from the Santa Ynez River in Santa Barbara County to the Oregon border in northern Humboldt County. The province consists of northwest-trending mountain ranges, broad basins, and elongated valleys generally parallel to the San Andreas Fault. In the Coast Ranges, older consolidated rocks are characteristically exposed in the mountains, but are buried beneath younger, unconsolidated alluvial fan and fluvial sediments in the valleys and lowlands. In the coastal lowlands, these younger sediments commonly inter-finger with marine deposits.

The Coast Ranges are generally divided in two sub-provinces, north and south of San Francisco Bay. The proposed project is located in the southern Coast Ranges sub-province. The major geographic features in this sub-province include: the Diablo Range, Santa Cruz Mountains, San Francisco Peninsula, and San Francisco Bay. Significant physiographic features include San Francisco Bay and the broad alluvial fans (or flatlands) that were formed between the mountain ranges and the bay. The proposed project site is located near the southwestern margin of the Santa Clara Valley, which is an elongated northwest-trending extension of the San Francisco Bay structural trough that is bounded on the east by the Diablo Range and on the west by the Santa Cruz Mountains.

Site Geology. The subject property is a gently to steeply sloping flag-shaped area that spans from the lower density hillside residences on the east to more densely populated area on the west. Overall, the site slopes downward to the west and the slopes range from 5 to 50% (GeoForensics, 2010), with a calculated average slope of 23.92%. A drainage swale bisects the site and extends across the center of the property, draining toward the northwestern corner of the site. Site elevations on the project site range from

approximately 645 feet above mean sea level (msl) at the highest point in the southeast corner of the site to about 410 feet (msl) in the northwest corner of the site.

The project site is underlain by bedrock of the Santa Clara Formation (QTsc), Temblor Sandstone (Tmt), and Monterey Shale (Tmm); Older Alluvial Fan Deposits (Qfo) are present in the easternmost portion of the site (GeoForensics, 2010). The geotechnical investigation included installation of six borings completed within the Santa Clara Formation, which consisted of clay, sand, and gravelly materials. Borings 1 and 2, completed on the steep eastern slope, encountered 2.5 to 5 feet of residual soils consisting of silty clayey sand or sandy clay underlain by weathered bedrock consisting of silty sands with varying amounts of clay and gravel to a depth of 12.5 to 19.5 feet. Boring 7 was completed on a secondary ridge and encountered weathered bedrock at a depth of 2.5 feet. Further down the slope, Borings 3, 4, and 6 encountered weathered bedrock at depths of 6 to 9 feet. Borings B-5 and B-8, completed near the drainage swale, encountered silts, sands, and clays of the Older Alluvial Fan Deposits to a depth of 14.5 feet. Bedrock was not encountered in these borings.

Groundwater was only encountered at a depth of 16.5 feet in Boring B-6 installed near the base of the slope, and the groundwater level rose to a depth of 16 feet after 1.5 hours. Although groundwater was not encountered in the other borings, the geotechnical investigation concluded that groundwater seepage could occur during periods of heavy rain or due to heavy irrigation practices. If this occurred, the groundwater would occur at relatively shallow levels, perched about the bedrock or other clay-rich layers.

The site has not been developed, and there are no indications of previous grading at the site, other than a dirt road that climbs from the bottom of the property to the hilltop area.

GEOLOGIC HAZARDS

Slope Failure. Slope failures, commonly referred to as landslides, include many phenomena that involve the downslope displacement and movement of material, triggered either by static (i.e., gravity) or dynamic (i.e., earthquake) forces. Exposed rock slopes undergo rockfalls, rockslides, or rock avalanches, while soil slopes experience soil slumps, rapid debris flows, and deep-seated rotational slides. Slope stability can depend on several complex variables, including the geology, structure, topography, slope geometry, and amount of groundwater present, as well as external processes such as climate and human activity.

Slope stability is standardly assessed based on a factor of safety against sliding. This factor is the sum of factors which resist sliding divided by the sum of driving forces attempting to make the slope fail. If the resistance is greater than the driving forces, the factor of safety is greater than 1, indicating a stable slope. If there is insufficient resistance to sliding, then the factor of safety is less than 1, indicating the potential for a slope failure to occur. A factor of safety of 1.0 implies that there is a balance between the resisting and driving forces, but the slope could be susceptible to failure with a slight change in conditions.

The eastern portion of the project site is located in a landslide hazard zone (Santa Clara County, 2012). However, the slope stability analysis completed as part of the geotechnical investigation found that under static conditions, the site slopes have a factor of safety of approximately 2.0, indicating that they are stable. Further, the geotechnical investigation observed that the trees in the area are straight and that the site slopes are generally smooth with no hummocky terrain, suggesting that the area has not been affected by substantial slope creep, landsliding, or other slope instabilities in the past. Evidence of landsliding was not observed in the 1956 and 1965 aerial photographs of the project site reviewed as part of the geotechnical investigation.

The geotechnical investigation observed no evidence of active erosion, soil slips, or debris flows at the head of the drainage swale, located off-site to the southeast of the project site in more steeply inclined terrain. However, the geotechnical investigation concludes that this area could be the source of shallow soil slips and could potentially produce debris flow landslides that could extend onto the project site.

Soils. Problematic soils, such as those that are expansive, can damage buried utilities and building foundations and increase maintenance requirements. Expansive soils are characterized by their ability to undergo significant volume change (i.e., to shrink and swell) as a result of variations in moisture content. Changes in soil moisture can result from rainfall, landscape irrigation, utility leakage, roof drainage, and/or perched groundwater.[1] Expansive soils are typically very fine-grained and have a high to very high percentage of clay. Expansion and contraction of expansive soils in response to changes in moisture content can lead to differential and cyclical movements that can cause damage and/or distress to structures and equipment. The geotechnical investigation for the project site included Plasticity Index tests on near surface soil and claystone bedrock samples (GeoForensics, 2010). The near surface soil samples had a plasticity index of 13 and 22, which corresponds to a low to moderate potential for expansion. The deeper claystone bedrock samples had a plasticity index of 24 and 27, which corresponds to a moderate potential for expansion.

REGIONAL FAULTING AND SEISMIC HAZARDS

Seismicity. The San Francisco Bay Area is situated near the boundary between two major tectonic plates, the Pacific Plate to the southwest and the North American Plate to the northeast. Since the Miocene epoch (approximately 23 million years ago), about 200 miles of right-lateral movement[2] has occurred along the San Andreas Fault Zone to accommodate the relative movement between these two plates. The movement between the Pacific Plate and the North American Plate generally occurs across a 50-mile zone extending from the San Gregorio fault in the southwest to the Great Valley Thrust Belt to the northeast. In addition to the right-lateral slip movement between the two tectonic plates, portions of the North American Plate

[1] Perched groundwater is a local saturated zone above the water table that typically exists above an impervious layer (such as clay) of limited extent.

[2] The Pacific Plate and the North American Plate are moving past each other along the San Andreas Fault Zone; "right-lateral movement" means that they are moving to the right relative to each other.

have moved toward each other during the last 3.5 million years, resulting in compressional forces at the latitude of San Francisco Bay (Fenton and Hitchcock, 2001).

Active[3] and potentially active[4] faults in the San Francisco Bay region have the greatest earthquake potential. The San Andreas, San Gregorio, Hayward, Rodgers Creek, Calaveras, and Greenville strike-slip faults[5] are active faults of the San Andreas system that predominantly accommodate lateral movement between the North American and Pacific tectonic plates. Active blind- and reverse-thrust faults[6] in the San Francisco Bay region that accommodate compressional movement include the Monte Vista–Shannon and Mount Diablo faults.

The United States Geological Survey (USGS) estimates that there is a 63 percent probability of a strong earthquake (magnitude [Mw] 6.7 or higher) occurring on one of these regional faults in the 30-year period between 2003 and 2032, with a 16 percent chance of such an earthquake within the San Andreas fault system located 4.3 miles southwest of the proposed project site (USGS, 2008). The other active faults with the greatest potential to affect the proposed project are the Hayward and Calaveras faults. Each of these faults is capable of generating large (greater than Mw 7[7]) earthquakes,[8] and could cause groundshaking at the project site. The Monte Vista-Shannon fault, a thrust fault, is also located approximately 0.2 miles to the southwest of the project site (GeoForensics, 2010).

Fault Rupture. Surface rupture occurs when movement on a fault deep within the earth breaks through to the surface. Surface ruptures associated with the 1906 San Francisco earthquake extended for more than 260 miles, with displacements of up to 21 feet. However, not all earthquakes result in surface rupture. The Loma Prieta earthquake of 1989 caused major damage in the San Francisco Bay Area, but the fault movement did not break through to the ground surface.

Fault rupture almost always follows preexisting faults, which are zones of relative weakness in the earth's crust. Rupture may occur suddenly during an earthquake or slowly in the form of fault creep. Sudden

[3] An active fault is one that shows geologic evidence of movement within Holocene time (approximately the last 11,000 years).

[4] A potentially active fault is one that shows geologic evidence of movement during the Quaternary (approximately the last 1.6 million years).

[5] Strike-slip faults involve the two blocks moving parallel to each other without a vertical component of movement.

[6] A reverse fault is one with predominantly vertical movement in which the upper block moves upward in relation to the lower block; a thrust fault is a low-angle reverse fault. Blind-thrust faults are low-angled subterranean faults that have no surface expression.

[7] An earthquake is classified by the amount of energy released, expressed as the magnitude of the earthquake. Traditionally, magnitudes have been quantified using the Richter scale. However, seismologists now use a moment magnitude (Mw) scale because it provides a more accurate measurement of the size of major and great earthquakes.

[8] Earthquake magnitude is a logarithmic measure of earthquake size. In simple terms, this means that at the same distance from the earthquake, the shaking will be 10 times as large during a Mw 5 earthquake as during a Mw 4 earthquake. The total amount of energy released by the earthquake, however, goes up by a factor of 32. Depending on their location, earthquakes with a magnitude of 7 and greater are capable of causing large amounts of damage.

displacements are more damaging to structures because they can displace structures and are accompanied by shaking. Fault creep is the slow rupture of the earth's crust.

The site is not located within an Alquist-Priolo Earthquake Fault Zone (California Department of Conservation, 1991). No active faults cross the proposed project site, and the site is not located in a fault rupture hazard zone identified by Santa Clara County (Santa Clara County, 2012). Therefore the potential for fault rupture, including fault creep, is low.

Groundshaking. The intensity of seismic shaking, or strong ground motion, during an earthquake affecting the project site would depend on the distance to the epicenter of the earthquake, the magnitude of the earthquake, and the geologic conditions underlying and surrounding the area. Earthquakes occurring on faults closest to the project site would have the potential to generate the largest ground motions.

The intensity of earthquake-induced ground motions and the potential forces that could affect structures within the project area can be described in terms of "peak ground acceleration," which is represented as a fraction of the acceleration of gravity (g).[9] The geotechnical report for the project estimates the peak ground accelerations for the 10 percent probability of exceedance in 50 years to be 0.63g. **Table 4.4-1** shows the relation of average peak ground accelerations to shaking intensities based on the modified Mercalli intensity scale. As shown, the specified ground acceleration correlates to a shaking intensity value of VII (very strong). At this intensity, damage would be slight in specially designed structures but considerable in ordinary buildings, and there could be some building collapse.

Liquefaction. Liquefaction is a phenomenon in which saturated granular sediments such as sands and gravels temporarily lose their shear strength during periods of strong groundshaking such as during an earthquake. The susceptibility of a site to liquefaction is a function of the depth, density, and water content of the granular sediments and the magnitude of earthquakes likely to affect the site. Saturated, unconsolidated silts, sands, silty sands, and gravels within 50 feet of the ground surface are most susceptible to liquefaction. Liquefaction-related phenomena include vertical settlement from densification, lateral spreading, ground oscillation, flow failures, loss of bearing strength, subsidence, and buoyancy effects.

The proposed project site is not located within a liquefaction hazard zone identified by the California Department of Conservation or the County of Santa Clara (California Department of Conservation, 2002 and Santa Clara County, 2012). In addition, the geotechnical investigation for the project site indicates that the potential for liquefaction is low based on analysis of an alluvial soil samples that showed that the silt and clay content of the soil is 53 percent (GeoForensics, 2010).

[9] The acceleration of gravity (g) = 980 centimeters per second squared. 1.0 g of acceleration is a rate of increase in speed equivalent to a car traveling 328 feet from rest in 4.5 seconds.

TABLE 4.4-1

MODIFIED MERCALLI INTENSITY SCALE

Intensity Value	Intensity Description	Average Peak Ground Acceleration[a]
I	Not felt except by a very few persons under especially favorable circumstances.	< 0.0017 g
II	Felt only by a few persons at rest, especially on upper floors on buildings. Delicately suspended objects may swing.	0.0017-0.014 g
III	Felt noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly, vibration similar to a passing truck. Duration estimated.	0.0017-0.014 g
IV	During the day felt indoors by many, outdoors by few. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.	0.014–0.039 g
V (Light)	Felt by nearly everyone, many awakened. Some dishes and windows broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles may be noticed. Pendulum clocks may stop.	0.035 – 0.092 g
VI (Moderate)	Felt by all, many frightened and run outdoors. Some heavy furniture moved; fallen plaster or damaged chimneys. Damage slight.	0.092 – 0.18 g
VII (Strong)	Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving motor cars.	0.18 – 0.34 g
VIII (Very Strong)	Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motor cars disturbed.	0.34 – 0.65 g
IX (Violent)	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.	0.65 – 1.24 g
X (Very Violent)	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from riverbanks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.	> 1.24 g
XI (Very Violent)	Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.	> 1.24 g
XII (Very Violent)	Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted. Objects are thrown upward into the air.	> 1.24 g

NOTE:

[a] Value is expressed as a fraction of the acceleration of gravity.

SOURCE: ABAG (2003)

Lateral Spreading. Of the liquefaction hazards, lateral spreading generally causes the most damage. Lateral spreading involves large blocks of intact, non-liquefied soil moving downslope on a liquefied substrate of large aerial extent (Youd and Perkins, 1978). Lateral spreading occurs as a result of liquefaction of a shallow underlying deposit during an earthquake. The mass moves toward an unconfined area, such as a descending slope or stream-cut bluff, and can occur on slope gradients as gentle as 1 degree. The geotechnical investigation concluded that conditions that would lead to lateral spreading are not present at the project site (GeoForensics, 2010). Therefore, the potential for lateral spreading is very low.

Earthquake-Induced Settlement. Settlement of the ground surface can be accelerated and accentuated by earthquakes. During an earthquake, settlement can occur as a result of the relatively rapid rearrangement, compaction, and settling of subsurface materials (particularly loose, non-compacted, and variable sandy sediments). Settlement can occur both uniformly and differentially (i.e., where adjoining areas settle at different rates). Areas are susceptible to differential settlement if underlain by compressible sediments, such as poorly engineered artificial fill. The geotechnical investigation for the proposed project site concluded that because of the fine grained nature of the geologic materials underlying the site, the potential for ground subsidence is considered low (GeoForensics, 2010).

Seismic Slope Instability. Earthquake motions can also induce substantial stresses in slopes, causing earthquake-induced landslides or ground cracking when the slope fails. Earthquake-induced landslides can occur in areas with steep slopes that are susceptible to strong ground motion during an earthquake. The 1989 Loma Prieta earthquake triggered thousands of landslides over an area of 770 square miles.

The proposed project site is partially located in a zone of potential earthquake-induced landsliding identified by the California Geological Survey (California Department of Conservation, 2002). To evaluate the potential for seismically-induced landslides, the geotechnical investigation included a preliminary slope stability analysis completed in accordance with the guidelines of the California Geological Survey (CGS, 2008). Based on standard bedrock strength parameters specified in the California Geological Survey guidelines, this analysis estimated that during seismic shaking from a major earthquake (Mw=7.9) on the San Andreas Fault, the factor of safety for the slopes would be 0.987 (just under 1) and the projected permanent displacement of the soil would be approximately 6 inches (GeoForensics, 2010). Using values for bedrock strength determined as part of the geotechnical investigation, the slopes would have a factor of safety of 1.3 in the event of a major earthquake on the San Andreas fault, indicating that the slopes would be stable. The geotechnical investigation concludes that, on the basis of this analysis, the probability of a deep seated bedrock landslide occurring at the project site is extremely low.

4.4.2 REGULATORY AND PLANNING FRAMEWORK

There are no federal laws or regulations pertaining to geology and soils that are applicable to the proposed project.

Alquist-Priolo Earthquake Fault Zoning Act. The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. In accordance with this act, the state geologist established regulatory zones, called "earthquake fault zones," around the surface traces of active faults and has published maps showing these zones. Within these zones, buildings for human occupancy cannot be constructed across the surface trace of active faults. Each earthquake fault zone extends approximately 200 to 500 feet on either side of the mapped fault trace because many active faults are complex and consist of more than one branch that may experience ground surface rupture.

Title 14 of the California Code of Regulations (CCR), Section 3601(e), defines buildings intended for human occupancy as those that would be inhabited for more than 2,000 hours per year. Although the structures that would be constructed under the proposed project meet this definition, the proposed project does not cross any Alquist-Priolo Earthquake Fault Zones. Therefore the project would not be subject to the requirements of the Alquist-Priolo Earthquake Fault Zoning Act.

Seismic Hazards Mapping Act. The Seismic Hazards Mapping Act was passed in 1990 following the 1989 Loma Prieta earthquake to reduce the potential impacts of earthquakes on public health and safety and to minimize property damage caused by earthquakes related to ground deformation. The Act directs the California Department of Conservation to identify and map areas prone to the earthquake hazards of liquefaction, earthquake-induced landslides, and amplified groundshaking. The act requires site-specific geotechnical investigations to identify potential seismic hazards and formulate mitigation measures before permitting most developments designed for human occupancy within the Zones of Required Investigation.

Under the Seismic Hazards Mapping Act, areas of potential liquefaction and earthquake-induced landslides are mapped on a broad scale based on regional information. The act requires that site-specific geotechnical investigations be performed prior to permitting most urban development projects within the identified hazard zones. Evaluation and mitigation of seismic hazards identified must be conducted in accordance with guidelines established by the California Geological Survey (CGS, 2008). The project site is included on the Los Gatos Quadrangle of the Seismic Hazard Zone Maps (CGS, 2002) and is partially located within an earthquake-induced landslide hazard zone. Therefore, the Seismic Hazards Mapping Act applies to the proposed project.

California Building Code. The California Building Code (CBC), which is codified in CCR Title 24, Part 2, was promulgated to safeguard the public health, safety, and general welfare by establishing minimum standards related to structural strength, egress facilities, and general building stability. The purpose of the CBC is to regulate and control the design, construction, quality of materials, use/occupancy, location, and maintenance of all building and structures within its jurisdiction. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24 or they are not enforceable.

The CBC is based on the International Building Code. The 2013 CBC is based on the 2012 International Building Code published by the International Code Conference. In addition, the CBC contains necessary California amendments that are based on the American Society of Civil Engineers (ASCE) Minimum Design Standards 7-05. ASCE 7-05 provides requirements for general structural design and includes means for determining earthquake loads as well as other loads (flood, snow, wind, etc.) for inclusion in building codes. The CBC design provisions prescribe minimum lateral forces applied statically to the structure, combined with the gravity forces of dead and live loads. The prescribed lateral forces are generally considered to be substantially smaller than the actual peak forces that would be associated with a major earthquake. Consequently structures should be able to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse, but with some structural as well as nonstructural damage. Conformance to the current building code recommendations does not constitute any kind of guarantee that significant structural damage would not occur in the event of a maximum magnitude earthquake. However, it is reasonable to expect that a well-designed and well-constructed structure will not collapse or cause loss of life in a major earthquake.

The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients, all of which are used to determine a Seismic Design Category (SDC) for a project. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site and ranges from SDC A (very small seismic vulnerability) to SDC E/F (very high seismic vulnerability and near a major fault). Design specifications are then determined according to the SDC. 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.

LOCAL

Los Gatos Grading, Erosion, and Sediment Control Requirements. The Town of Los Gatos requirements related to grading, erosion, and sediment control are specified in Chapter 12 of the Town of Los Gatos Municipal Code. This chapter specifies that the Town can require a grading permit for any grading that could result in a discharge into or connection to a watercourse. The application for a permit must include a site map and grading/drainage plan as well as an erosion and sediment control plan. An interim erosion and sediment control plan is required if construction is started before October 1st, and the final erosion and sediment controls are not in place. Interim erosion control measures can include methods such as silt fences, fiber rolls, erosion control blankets, seeding, filter berms, check dams, and retention basins. Further, excavation, grading, and drainage activities must meet the design standards specified in Chapter 12. The Town would not issue a grading permit until the site map, grading plan, and interim and final erosion and sediment control plans are approved. All grading must be conducted in a manner that the levels of dirt, rock, debris, and other materials are not discharged to a water body in excess of natural levels and shall be constructed or protected so that they do not endanger life and property.

Los Gatos General Plan. Construction and operation of the project are subject to policies and regulations contained within the Town of Los Gatos General Plan, which includes policies for the avoidance of geologic hazards and/or the protection of unique geologic features (see Section 4.11, Cultural Resources, for discussion of paleontological resources relevant to the project). The goals, policies, and implementation measures in the General Plan for geology and soils applicable to the proposed project are provided below. In general, the proposed project would be consistent with these goals and policies or specified mitigation measures would avoid potential environmental impacts associated with conflicts with policies designed to protect the environment. Project consistency with those guidelines is discussed in the following project consistency analysis table.

General Plan Policies	Project Analysis
Environment and Sustainability Element	
ENV-2.1: All developments in areas subject to soil erosion and slippage shall furnish effective erosion control plans to minimize soil erosion. The erosion control plans shall be implemented prior to construction operations and maintained throughout the construction process.	As a condition of approval, the Town would require the project applicant to prepare an erosion control plan and a Stormwater Pollution Prevention Plan in accordance with the Construction General Stormwater Permit (see Impact 4.4-2 for more discussion). Implementation of these plans would ensure that erosion hazards at the site would be less than significant.
ENV-2.2: Construction plans shall be reviewed to determine the adequacy of erosion control plans during and after construction.	As discussed in Impact 4.4-2, the erosion control plan will be reviewed and approved by the Town Engineer prior to issuance of the grading permit for the project.
ENV-2.3: Require grading permits to ensure that the grading of slopes and sites proposed for development will be minimized.	As discussed in Impact 4.4-2, the project applicant would be required to obtain a grading permit for the project.
Safety Element, Geologic and Seismic Hazards	
Goal SAF-1 To minimize exposure to geologic hazards, including slope instability, subsidence, and expansive soils, and to seismic hazards, including groundshaking, fault rupture, liquefaction, and landslides. *SAF-1.1: Require reliable evaluations of the existing geologic conditions of sites proposed for development where conditions indicate the possibility of weak supporting soils or geologic structures.* *SAF-1.2: Restrict new development and redevelopment based on the levels of acceptable risk and potential severity of geologic hazards.* *SAF-1.6: Require geological investigations for any development or project as mandated by the State or deemed warranted by the Town.* *SAF-1.8: Require preparation of a report from an engineering geologist and/or geotechnical engineer that discusses the geologic, seismic and geotechnical engineering conditions and potential hazards for developments in hazard zones mapped by the State or identified by the Town.*	A geotechnical investigation was completed for the proposed project by GeoForensics, Inc. in November and December, 2010. The project would be required to comply with the California Building Code requirements regarding seismic safety, protect future residences from debris flows, and implement GeoForensics' recommendations (see Mitigation Measures 4.4-4a and 4.4-4b below), which would ensure that project risks related to identified geologic and seismic hazards would be less than significant. As discussed in the Setting, there are no active faults that traverse the project site; therefore, the potential for ground rupture/deformation is low. As a condition of project approval, the Town would require preparation of an erosion control plan and a Stormwater Pollution Prevention Plan in accordance with the Construction General Stormwater Permit (see Impact 4.4-2 for more discussion). Consistent with the California Building Code, the Town required a geological and geotechnical report during the environmental review process and identified

General Plan Policies	Project Analysis
SAF-1.9: Enforce the California Building Code seismic safety restrictions. Require fault investigations for structures for human habitation and all critical facilities. Investigation may include field investigations. Reports shall include appropriate design measures to mitigate potential fault ground rupture/deformation to acceptable levels, and shall be reviewed by the Town. *SAF-1.10 Require geologic and geotechnical reports and Town review during the development review process for projects with significant grading, potential erosion and sedimentation hazards.* *SAF-1.11: Require geologic and geotechnical reports to specify construction methods to protect the proposed project, as well as existing residences in the vicinity, from identified hazards.*	construction methods to protect the project development as well as existing and future residences in the vicinity from potential hazards.

HILLSIDE DEVELOPMENT STANDARDS AND GUIDELINES (HDSG)

With respect to projects involving land subdivisions, the HDSG contains the following development standard and guideline related to lot configuration and building locations:

Hillside Development Standards and Guidelines	Project Consistency Analysis
III. Site Planning *A. Grading – Standards:* *1&2. Cuts and fills in excess of those listed in Table 1 of the HDSG, Maximum Graded Cuts and Fills, and categorized as specified, are considered excessive and contrary to the objectives of the HDSF. Grade to the minimum amount necessary to accommodate buildings and to site structures consistent with slope contours. These are maximum numbers and may be reduced by the deciding body if the project does not meet other grading standards or in not consistent with the goals and objectives of the HDSG.* *3. Buildings shall be located in a manner that minimizes the need for grading and preserves natural features such as prominent knolls, ridgelines, ravines, natural drainage courses, vegetation, and wildlife habitats and corridors to the maximum extent possible.* *4. Unless specifically approved by the Town, strip grading for the purpose of clearing land of native vegetation is prohibited except for small areas adjacent to buildings, access drives, and parking areas.* *5. Graded areas shall not be larger than the area of the footprint of the house, plus that area necessary to accommodate access, guest parking, and turnaround areas.*	Future homes on project lots would be subject to A&S review and approval, and each applicant would be required to demonstrate that the proposed home design meets these HDSG standards and guidelines. While most of these standards and guidelines would not apply to the design and construction of proposed roads and infrastructure, proposed grading would be limited to the roadways, the driveway to Lot 7, and the two detention basins (see Figure 3-4). The proposed grading plan indicates that the edges of cut slopes would be contour graded (rounded) and slopes would have a slight undulating pattern. The proposed landscaping plan (Figure 3-7) indicates that cut and fill slopes would be planted with replacement tree plantings, shrubs, and groundcover.

Hillside Development Standards and Guidelines	Project Consistency Analysis
6. After placing development the site shall be restored as closely as possible to its original topography. *7. Contour grading techniques shall be used to provide a variety of both slope percentage and slope direction in a three-dimensional undulating pattern similar to existing, adjacent terrain.* *8. Grading plans shall include provisions for restoration of vegetation on cuts and fills. All manufactured slopes shall be planted with native, fire-resistant, low water using plantings to control erosion.* *9. An erosion/sedimentation control plan shall be included with all site plans and/or grading plans. The erosion/sedimentation control plan shall provide interim (during construction) and ultimate plans for control of erosion and sedimentation or describe in detail why this is not necessary.*	
VIII. Subdivision and Planned Development Projects *E. Development Standards and Guidelines* *1. Site Preparation – Standards:* *a. Grading shall be kept to a minimum and shall be performed in a way that respects all significant natural features and visually blends with adjacent natural areas.* *b. The existing natural grade as well as the proposed final grade shall be shown on all elevations submitted with plans.* *c. Graded areas shall appear as smooth flowing contours of varying gradients, preferably with slopes of 2:1 to 5:1. Sharp cuts and fills and long linear slopes that have uniform grade should be avoided.* *1. Site Preparation – Guidelines:* *a. Grading should be avoided in areas where the slope is greater than 25 percent.* *b. Pad and terrace grading should be avoided to the maximum extent possible. However, if these techniques are used, the pad configuration should be softened with variable, undulating slopes created to give a more natural appearance (i.e. contour grading techniques – see Chapter III section A).*	Initial grading would only be associated with construction of the private streets, pedestrian/equestrian trail, and infrastructure as well as for proposed landscaping. Project grading would result in 11,100 cy of cut and 7,050 cy of fill, or a net cut (export) of 3,950 cy. The proposed grading plan (Figure 3-4) shows the natural grade and proposed final grade. There would be additional grading associated with the development of future homes on project lots. Figure 3-3 delineates LRDA boundaries (areas outside the LRDA are shaded), and all proposed potential building envelopes and driveways would be located within the LRDA (demonstrating that each lot is buildable). Four of the proposed lots would be located completely within the LRDA (Lots 1 through 4), while the remaining six lots would have areas that are both within and outside of the LRDA. Approximately 300-feet of proposed Street B would be located outside the LRDA. However, grading for the proposed access road would be minimized by utilizing the existing roadway alignment. The trail would be located within the LRDA. During the A&S review process for each future residence, conformance of proposed grading (including cut and fill slope heights and retaining wall heights) with HDSG requirements would be assessed by Town staff.

4.4.3 POTENTIAL IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

Based upon the criteria derived from Appendix G of the CEQA Guidelines, the proposed project would result in a significant impact if it would:

- Expose people or structures to substantial adverse effects, including the risk of loss, injury, or death involving: rupture of a known earthquake fault; strong seismic ground shaking; seismic-related ground failure, including liquefaction; and landslides;
- Result in substantial soil erosion or the loss of topsoil;
- Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial risks to life or property; or
- 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.

The geotechnical investigation conducted for the proposed project evaluates the geologic and soil conditions on the project site and provides an assessment of the potential geologic and seismic risks associated with project implementation. The impact assessment uses the results of the investigation as the basis for evaluating potential geologic and seismic effects of the project and presents mitigation measures to reduce significant or potentially significant impacts to a less-than-significant level.

Based on project characteristics and the geology of the project site, no impacts are anticipated with respect to the following topics:

- *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault*. As discussed in the Setting, the site is not located in an Alquist-Priolo Earthquake Fault Zone or a fault rupture hazard zone identified by the County of Santa Clara, and no known active faults cross the project site. Therefore, the potential for fault rupture is low and this impact is not discussed further.
- *Liquefaction and Seismically-Induced Ground Failures*. As discussed in the Setting, the proposed project site is not located in a liquefaction hazard zone identified by the California Geological Survey or Santa Clara County, and testing performed for the geotechnical investigation determined that the potential for liquefaction and related effects such as lateral spreading and seismically-induced settlement is low. Therefore, this impact is not discussed further.
- *Soils Capable of Supporting the Use of Septic Tanks*. The proposed project would be served by the West Valley Sanitation District sanitary sewer, and would not require the use of septic tanks or alternative waste disposal systems. Therefore, there would be no impact related to this topic.

METHODOLOGY

This analysis below is based on the results of the GeoForensics geotechnical investigation, AMEC's peer review, and published geologic information, all of which serve as the basis for the evaluation of geologic and seismic impacts associated with implementation of the proposed project.

SEISMIC HAZARDS

Impact 4.4-1: The proposed project would not result in exposure of people and structures to potential adverse effects, including risk of loss, injury, or death involving strong ground shaking. (Less than Significant)

Ground shaking is the cause of most damage during earthquakes. The degree of shaking that would be expected at a particular site is dependent on the distance from the earthquake source, the magnitude of the earthquake, and the type, thickness, and condition of the geologic materials (bedrock, sediment, soil, fill). As discussed in Section 4.4.1, Environmental Setting, the geotechnical report for the project estimates the peak ground accelerations at the project site would be 0.63 g, which correlates to a Mercalli shaking intensity value of VII (very strong).

In accordance with the CBC, applicants for a building permit are required to determine the appropriate seismic design criteria for the proposed structures on the basis of soil type, the magnitude of the controlling seismic event, slip rate of the nearest fault, and distance to the nearest active fault. The structural design for the proposed structures would be based on Chapter 16 of the 2013 CBC, which provides criteria for the seismic design of buildings. The factors used to determine the seismic coefficients and other parameters that would be used to design the proposed buildings are listed in **Table 4.4-2**. They are established based on a series of tables and figures provided in Chapter 16 of the CBC that address different site factors, including the soil profile in the upper 100 feet below grade and mapped spectral acceleration parameters based on distance to the controlling seismic source/fault system.

Based on soil conditions identified during the geotechnical investigation, the site is classified as Soil Classification C (GeoForensics, 2010). The spectral acceleration parameters were calculated using the USGS computer program *Java Ground Motion Parameter Calculator*, and based on the site coordinates and site classification.

Seismic design provisions of the CBC prescribe minimum lateral forces, applied statically to the structure, combined with the gravity forces of dead-and-live loads. Therefore, structures designed in accordance with the CBC should be able to: (1) resist minor earthquakes without damage, (2) resist

TABLE 4.4-2

CBC SITE CATEGORIZATION AND SITE COEFFICIENTS

Classification/Coefficient	Design Value
Site Class	C
0.2-second Period, Maximum Considered Earthquake Spectral Response Acceleration Adjusted for Site Effects – SM_S	2.541 g
1-second Period, Maximum Considered Earthquake Spectral Response Acceleration Adjusted for Site Effects – SM_1	1.294 g
0.2-second Period, Design Earthquake Spectral Response Acceleration – SD_S	1.694 g
1-second Period, Design Earthquake Spectral Response Acceleration – SD_1	0.863 g

SOURCE: GeoForensics (2010)

moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse but with some structural as well as nonstructural damage. While conformance to the current building code recommendations does not constitute any kind of guarantee that significant structural damage would not occur in the event of a maximum magnitude earthquake, it is reasonable to expect that a well-designed and well-constructed structure would not collapse or cause loss of life in a major earthquake.

As part of its review, the Town of Los Gatos Building Division would review the planned design of individual developments to confirm compliance with the CBC. With design review and approval in accordance with the CBC, impacts related to groundshaking would be less than significant.

Mitigation Measure 4.4-1: *None required.*

Impact 4.4-2: The proposed project would not result in exposure of people and structures to potential adverse effects, including risk of loss, injury, or death involving seismically-induced landslides. (Less than Significant)

As discussed in the Setting, the eastern portion of the site is located in a landslide hazard zone identified by Santa Clara County, and a seismically-induced earthquake hazard zone identified by the California Geological Survey. However, the geotechnical investigation included a slope stability analysis in accordance with the guidelines of the California Geological Survey and determined that under static conditions the site slopes have a factor of safety of 2.0 and under seismic conditions the factor of safety would be 1.3 using site-specific values for bedrock strength. Further, based on field observations, there is no indication that past slope failures have occurred. Therefore, the potential for seismically-induced landslides is extremely low and impacts related to seismically-induced landslides would be less than significant.

EROSION HAZARDS

Impact 4.4-3: The proposed project would not result in substantial erosion hazards, but could result in the loss of topsoil. (Less than Significant with Mitigation)

Erosion Hazards. Without proper soil stabilization controls, construction activities such as excavation, backfilling, and grading can increase the potential for soil loss and erosion by wind and stormwater runoff through the removal of stabilizing vegetation and exposure of areas of loose soil. Newly constructed and compacted engineered slopes can also undergo substantial erosion through dispersed sheetflow runoff, and more concentrated runoff can cause the formation of small erosional channels and larger gullies, each compromising the integrity of the slope and resulting in significant soil loss.

Initial grading would be conducted for development of the proposed roadways and other infrastructure. Once this is completed, grading would be conducted in the future when individual lots are developed for construction of project residences and ancillary structures. Site preparation and grading could increase the potential for soil erosion during construction, and runoff from lots adjacent to slopes could increase erosion on the slopes once the proposed roadways and residences are constructed. However, as discussed in Section 4.5, Hydrology and Water Quality (Impact 4.5-1), the project sponsor would be required to obtain a Town of Los Gatos grading permit and also comply with the requirements of the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ (Construction General Stormwater Permit) to control erosion during construction. The Los Gatos grading permit requirements are discussed above in Section 4.4.2, Regulatory and Planning Framework, while the Construction General Permit requirements are discussed in Section 4.5, Hydrology and Water Quality, Subsection 4.5.2, Regulatory and Planning Framework.

As specified by Town Code (Chapter 12, Grading, Erosion and Sediment Control), the Town would require the project applicant to prepare and implement an approved erosion and sediment control plan, subject to review and approval by the Town Engineer. In addition, the project applicant would be required to prepare and implement a Storm Water Pollution Prevention Plan in accordance with the State of California's Construction General Stormwater Permit. These plans would specify the use of best management practices to restrict soil erosion during construction and post-construction stormwater controls that would restrict soil erosion once the project is constructed. Compliance with requirements specified in the Town of Los Gatos Grading Permit and the Construction General Stormwater Permit (required as conditions of approval) would ensure that construction-related erosion hazard impacts would be less than significant.

Loss of Topsoil. The site is not currently developed and there is likely a topsoil horizon on the existing slopes. This topsoil could be excavated for construction of the new infrastructure and residences, and loss of this topsoil during construction would be a significant impact. However, this impact would be reduced to less than significant with implementation of Mitigation Measure 4.4-3, Top Soil Salvage, requiring that the project applicant and developers of individual lots identify and preserve topsoil for reuse on graded slopes.

Mitigation Measure 4.4-3, Topsoil Salvage: *The Town shall require the project applicant and future lot owners to ensure that topsoil, if present, is salvaged during grading. The topsoil shall be stockpiled separately from subsoils, and the stockpiles shall be protected from erosion (e.g., by covering or watering). Once construction is completed, the stockpiled topsoil shall be reused for site restoration in open or garden areas. Excess soil may be used in approved open space or landscape areas, if approved by the landscape architect.*

Impact Significance After Mitigation: Less than significant because topsoil, if present, will be required to be salvaged during grading.

GEOTECHNICAL HAZARDS

Impact 4.4-4: The proposed project could cause a geologic unit to become unstable as a result of project construction. (Less than Significant with Mitigation)

Debris Flow Hazard. As discussed in the Setting, the head of the drainage swale, located off-site to the southeast of the project site in more steeply inclined terrain, could be the source of shallow soil slips and could potentially produce debris flow landslides. Although the potential for this has not been fully defined, impacts related to construction near the head of the drainage swale are considered potentially significant because debris flows from the head of the swale could extend onto the project site, potentially causing property damage on Lots 8 and 9. This impact would be reduced to a less-than-significant level by implementation of Mitigation Measure 4.4-4a, Debris Flow Protection, requiring implementation of the geotechnical report recommendations such as construction of a catchment basin across the swale or provision of deflection berms or walls to protect residences.

Stability of Stormwater Detention Basin Embankments. As described in the Project Description, the project would include the construction of two water quality control/ flow control basins located in the northwest corner and western margin of the project site. These basins would be constructed within earthen berms approximately five to eight feet high. An evaluation of the stability of the northern water quality control/ flow control basin was performed in 2014, and it found that there would be a low potential for the berms to fail because they would be constructed in accordance with engineering standards using compacted native soil materials and the finished slopes would be planted to limit erosion (Balance Hydrologics, 2014). Therefore, the potential for failure of the basin walls would be low and this potential impact would be less than significant.

Other Geotechnical Issues. Site slopes could become unstable if proposed grading and construction activities result in inadequate drainage. Without proper shoring, excavations could become unstable. Placement of fill in the drainage swale to accommodate proposed Street B, in other areas to accommodate other road and drainage improvements as well as at future residences (including patios, driveways, and landscaping) could affect slope stability. These fills could become unstable if improperly placed, compacted, or drained. Without adequate foundations, new residences could be adversely affected by

slope creep. In addition, changes in surface water runoff could cause settlement of new buildings, or saturated materials that could become unstable.

Without conformance to appropriate procedures, such activities could result in unstable slopes, a potentially significant impact. However, this impact would be reduced to a less-than-significant level with implementation of Mitigation Measure 4.4-4b, Geotechnical Report Recommendations, which requires the project applicant and future lot owners to implement geotechnical report recommendations related to site preparation and grading, foundation design, retaining walls, and drainage improvements to reduce the potential for unstable conditions.

Mitigation Measure 4.4-4a, Debris Flow Protection: *The project applicant shall require construction of improvements to protect Lots 8 and 9 from damage due to a debris flow from the head of the drainage swale located to the southeast portion of the project site in accordance with the recommendations of the geotechnical report, and any associated updates or revisions. Such improvements may include a catchment basin constructed across the swale or construction of deflection walls or berms to protect Lots 8 and 9 from debris flows. When Lots 8 and 9 are proposed for development, the geotechnical engineer shall review future home designs on these lots to select the appropriate method of protection.*

Mitigation Measure 4.4-4b, Geotechnical Report Recommendations: *The project applicant and future lot owners shall implement all of the recommendations of the project geotechnical report, and any associated updates or revisions, related to site preparation and grading, foundation design, retaining walls, and drainage improvements. To ensure correct implementation, the geotechnical engineer shall review project plans and observe geotechnically relevant aspects of proposed initial construction of roads and infrastructure. When future homes are proposed on project lots by future project applicants, they will be required to submit site-specific geotechnical/geological reports for review and approval and project geotechnical engineers and the recommendations of those reports shall be implemented.*

Impact Significance After Mitigation: Less than significant with construction of improvements to protect Lots 8 and 9 from debris flows and implementation of recommendations of the project geotechnical investigation in accordance with Mitigation Measures 4.4-4a and 4.4-4b.

SOILS CONSTRAINTS

Impact 4.4-5: The proposed residences and utilities could be affected by expansive soils. (Less than Significant with Mitigation)

As discussed in the Setting, expansive soils can damage buried utilities and building foundations and increase maintenance requirements. Because the geotechnical investigation determined that the soils at the project site have a low to moderate potential for expansion, impacts related to expansive soil are considered significant. However, this impact would be reduced to a less-than-significant level with implementation of Mitigation Measure 4.4-4b (above), which requires the project sponsor to implement the recommendations of the site geotechnical report related to foundation design and drainage

improvements. Proper design of the building foundations would protect the new residences from damage resulting from expansive soils, and inclusion of adequate drainage would reduce the shrinking and swelling of the existing expansive soils.

Mitigation Measure 4.4-5: *The above Mitigation Measure 4.4-4b, Geotechnical Report Recommendations, shall be implemented to ensure that lot-specific geotechnical studies consider expansive soils in the design recommendations for each home's foundation and drainage improvements.*

Impact Significance After Mitigation: Less than significant with implementation of recommendations from the project geotechnical investigation or lot-specific geotechnical studies, if required, in accordance with Mitigation Measure 4.4-4b.

REFERENCES – GEOLOGY, SOILS, AND SEISMICITY

AMEC Geomatrix, Inc. (AMEC), 2011a. *Peer Review – Geotechnical Investigation Report and Plans, Surrey Farms Estates, Twin Oaks Drive, Los Gatos, California*. June 3. (Included in Appendix D of this EIR)

AMEC Geomatrix, Inc. (AMEC), 2011b. *Peer Review – Geotechnical Investigation Report and Plans, Surrey Farms Estates, Twin Oaks Drive, Los Gatos, California*. October 24. (Included in Appendix D of this EIR)

Association of Bay Area Governments (ABAG), 2003. *Modified Mercalli Intensity Scale (MMI).* Available online at: http://quake.abag.ca.gov/shaking/mmi/.

Balance Hydrologics, Inc., 2014. *Stormwater Basin Stability, Surrey Farm Project, City of Los Gatos*. July 29. (Included in Appendix D of this EIR)

California Department of Conservation, 1991. *State of California Special Studies Zones Delineated in Compliance with Chapter 7.5, Division 2 of the California Public Resources Code (Alquist-Priolo Special Studies Zones Act), Los Gatos Quadrangle, Revised Official Map*. Effective November 1, 1991.

California Department of Conservation, 2002. *State of California Seismic Hazard Zones, Los Gatos Quadrangle*. *Official Map*. February 23. Available online at http://gmw.consrv.ca.gov/shmp/download/pdf/ozn_lgat.pdf.

California Geological Survey (CGS), 2008. *Guidelines for Evaluation and Mitigating Seismic Hazards in California, Special Publication 117A*. September 11. Available online at http://www.conservation.ca.gov/cgs/shzp/webdocs/sp117.pdf.

Fenton, C.H. and C.S. Hitchcock, 2001. *Recent Geomorphic and Paleoseismic Investigations of Thrust Faults in Santa Clara Valley, California*. In H. Ferriz and R. Anderson (eds.).

GeoForensics, Inc., 2010. *Geotechnical Investigation for Proposed New Subdivision at the Dodge Family Subdivision, Twin Oaks Drive, APN 532-16-006, Los Gatos, California*. December 10. (Included in Appendix D of this EIR)

GeoForensics, Inc., 2011. *Response to Peer Review Comments*. June 15. (Included in Appendix D of this EIR)

Norris, R.M. and R.W. Webb, 1976. *Geology of California, 1st Edition, John Wiley & Sons, Inc*.

Santa Clara County, 2012. Geohazards Maps Atlas 2. October 26. Available online at https://www.sccgov.org/sites/dpd/PlansOrdinances/GeoHazards/Pages/GeoMaps.aspx.

U.S. Geologic Survey (USGS), 2008. *The Uniform California Earthquake Rupture Forecast, Version 2 (UCERF 2)*. By the Working Group on California Earthquake Probabilities, Open File Report 2007-1437.

Youd, T.L. and D.M. Perkins, 1978. *Mapping Liquefaction Induced Ground Failure Potential*. Proceedings of the American Society of Civil Engineers, Journal of the Geotechnical Engineering Division, 1978.

4.5 HYDROLOGY AND WATER QUALITY

This section evaluates the project's effects related to water quality degradation, alteration of drainage patterns, and stormwater drainage during construction and post-construction. Potential effects on groundwater depletion and interference with groundwater recharge are also addressed.

4.5.1 ENVIRONMENTAL SETTING

SURFACE WATER FEATURES

The project site is located in the Ross Creek watershed, a sub-watershed area of the 170-square mile Guadalupe River watershed. The headwaters of Ross Creek originate on the north-facing slopes of Sierra Azul Open Space Preserve above Kennedy Road, approximately three-fourths mile southeast of the subject property. Draining an area of approximately ten square miles, Ross Creek flows northward through Los Gatos, then east through urbanized portions of San Jose to the Guadalupe River. Drainage from the Guadalupe River and its tributaries flows through downtown San Jose and ultimately discharges to South San Francisco Bay via Alviso Slough (SCVWD, 2014).

Ross Creek is an intermittent stream course that has been realigned, with sections of the creek downstream from the project site carrying runoff through buried culverts and open concrete flood channels. Ross Creek receives drainage flows from the East Ross Creek tributary that flows into Ross Creek approximately ¾-mile downstream of the project site. East Ross Creek extends beneath the southwest corner of the project site in a 36-inch reinforced concrete underground pipe. The Santa Clara Valley Water District (SCVWD) has a 110-foot wide flood control easement at the creek location (Figure 3-2).

A second, minor drainage crosses the middle of the subject property from the southeast to northwest. Draining a watershed of approximately ten acres, this swale was not shown to have a centerline in topographic maps from the 1950s. However, the swale is intermittently incised in its upper reaches on site. Surface flows from the swale and surrounding watershed are picked up at a culvert inlet located near the property's northwestern corner and conveyed via a buried pipe approximately 200 feet to the west, where it empties into the buried culvert conveying Ross Creek. As discussed in Section 4.3, Biological Resources, this swale supports mixed oak woodland that is riparian in nature.

EXISTING DRAINAGE

The subject property is a gently to steeply sloping area that extends from lower-density hillside residential neighborhoods on the east to more densely populated area on the west. Overall, the site slopes downward to the west and the slopes range from 5 to 50% (GeoForensics, 2010), with a calculated average slope of 23.92%. A drainage swale bisects the site and extends across the center of the property toward the northwestern corner of the site. Site elevations on the project site range from approximately 645 feet (msl)

at the highest point in the southeast corner of the site to about 410 feet (msl) in the northwest corner of the site.

The entire site is undeveloped and comprised of pervious grassland and oak woodland, with no impervious surfaces on the project site. Storm flows generated on the property occur in two distinct drainage areas separated by the drainage swale; runoff from the project site flows overland to East Ross Creek without treatment.

FLOOD HAZARDS

According to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMS) for the project area, the entire project site is located within Zone X, described as "Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood" (FEMA, 2009). The 1% annual chance flood is also referred to as the 100-year flood and the 0.2% annual chance flood is also referred to as the 500-year flood. The 100-year flood (i.e. the flood with a 1 percent annual chance) has been adopted by FEMA as the base flood for floodplain management purposes. The Zone X designation has been applied to other parts of Los Gatos with drainage characteristics similar to those of the project site. Downstream of the project site, the areas immediately adjacent to Ross Creek are located within Zone A, which is defined as areas subject to the 100-year flood where no base flood elevation has been determined.

The project site is not located within a dam failure inundation area for the Elsman, Lexington, or Vasona Reservoirs as identified on dam inundation maps provided by the Association of Bay Area Governments (ABAG, 1995).

WATER QUALITY

Runoff from the site discharges to East Ross Creek, flowing into the Guadalupe River and ultimately draining to South San Francisco Bay. Guadalupe River is listed as an "impaired" water body on the Section 303(d) list for diazinon, mercury, and trash (SWRCB, 2010). South San Francisco Bay is on the 303(d) list due to the presence of chlordane, dichlorodiphenyltrichloroethane (DDT), dieldrin, dioxin compounds, furan compounds, mercury, selenium, polychlorinated bipenyls (PCBs), and invasive species. (See Section 4.5.2, Regulatory and Planning Framework, below for a description of Clean Water Act Section 303(d) Listings of Impaired Water Bodies.)

GROUNDWATER

The Town is located within the Santa Clara sub-basin of the Santa Clara Valley Groundwater Basin, which is managed by the SCVWD (SCVWD, 2012). Due to different land use and management characteristics, the SCVWD further delineates the Santa Clara sub-basin into the Santa Clara Plain and the Coyote Valley groundwater management areas, and the project site is located in the Santa Clara Plain

management area. The Santa Clara Plain is the northern portion of the Santa Clara sub-basin and extends from southern San Francisco Bay to the Coyote Narrows, near Metcalf Road. The Santa Clara Plain is divided into confined and recharge areas. The confined area is located in the northern and central portion. The recharge area occurs along the edges of the sub-basin adjacent to the foothills, and includes the project site.

As discussed in Section 4.4, Geology, Soils, and Seismicity, the stabilized groundwater level was recorded at a depth of 16 feet below ground surface in Boring B-6, completed as part of the geotechnical investigation for the proposed project and located near the drainage swale. Although groundwater was not encountered in the other borings, the geotechnical investigation concluded that groundwater seepage could occur during periods of heavy rain or due to heavy irrigation practices. If this occurred, the groundwater would occur at relatively shallow depths, perched about the bedrock or other clay-rich layers.

4.5.2 REGULATORY AND PLANNING FRAMEWORK

CLEAN WATER ACT

The federal Clean Water Act (CWA) and subsequent amendments, under the enforcement authority of the U.S. Environmental Protection Agency (USEPA), was established "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The act established the basic structure for regulating discharges of pollutants into the waters of the United States. It gave the USEPA the authority to implement pollution control programs such as setting wastewater standards for industry. The CWA also set water quality standards for all contaminants in surface waters and made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions. In most states, including California, primary responsibility for enforcing the CWA has been delegated to state governments. In California, such responsibilities lie with the nine Regional Water Quality Control Boards (including that for the San Francisco Bay Region) and the State Water Resources Control Board. Principal portions of the CWA that affect development projects in the San Francisco Bay Area include: Section 303, impaired water requirements; Section 402, National Pollutant Discharge Elimination System (NPDES) construction and post-construction standards; Section 404 Permits; and Section 401 Certifications or Waivers. Each of these is discussed below.

Section 303(d) List of Impaired Water Bodies and Total Maximum Daily Loads. In accordance with Section 303(d) of the CWA, states must present the USEPA with a list of "impaired water bodies," defined as those water bodies that do not meet water quality standards. The CWA also requires the development of actions, known as total maximum daily loads (TMDLs), to improve water quality of impaired water bodies. The first step of the TMDL process is development of a TMDL report describing the water quality problem, detailing the pollutant sources, and outlining the solutions. An implementation plan, included in the TMDL report, describes how and when pollution prevention, control, or restoration activities will be accomplished, and who will be responsible for these actions. The final step of the TMDL process is adopting and amending the relevant Water Quality Control Plan ("Basin Plan") to legally

establish the TMDL and to specify regulatory requirements for compliance. As part of the Basin Plan Amendment, waste load allocations are specified for entities that have permitted discharges. The State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCBs) post and periodically update this list (typically every two years). Amendments to the Basin Plan have been adopted to address mercury in the Guadalupe River Watershed and pesticides in San Francisco Bay Region urban creeks (RWQCB, 2014).

NPDES Waste Discharge Regulations. The federal CWA established the National Pollutant Discharge Elimination System (NPDES) program to protect water quality of receiving waters. Under the CWA, Section 402, discharge of pollutants to receiving waters is prohibited unless the discharge is in compliance with an NPDES permit. In California, the USEPA has determined that the State's water pollution control program has sufficient authority to manage the NPDES program under California law in a manner consistent with the CWA. Therefore, implementation and enforcement of the NPDES program is conducted through the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs), as discussed further below.

PORTER-COLOGNE WATER QUALITY CONTROL ACT

The Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code) is a state statute that complements the federal CWA. Porter-Cologne regulates water quality within California and established the authority of the SWRCB and the nine regional water boards. The quality of San Francisco Bay area water resources is regulated under the jurisdiction of the San Francisco Bay Region RWQCB.

Water Quality Control Plans and Beneficial Uses. The RWQCB established regulatory standards and objectives for water quality in the San Francisco Bay Region in the Water Quality Control Plan for the San Francisco Region (Region 2) (Basin Plan), which was most recently updated in 2013. The Basin Plan identifies existing, limited, and potential beneficial uses for surface water and groundwater, and provides numerical and narrative water quality objectives designed to protect those uses. Applicable water quality criteria for a specific water body, specified by the National Toxics Rule or the California Toxics Rule, are determined on the basis of the beneficial use(s) of the water. The Basin Plan also specifies that beneficial use designations for any given water body do not rule out the possibility that other beneficial uses exist or have the potential to exist. Existing beneficial uses that have not been formally designated in this Basin Plan are protected whether or not they are identified. Existing beneficial uses for Ross Creek identified in the Basin Plan include groundwater recharge, warm freshwater habitat, wildlife habitat, and water contact and noncontact water recreation.

Section 401 Certification. The State's authority to regulate activities in water at the project site resides primarily with the RWQCB, which regulates construction in waters of the United States and waters of the State under both the CWA and the State of California's Porter-Cologne Water Quality Control Act (California Water Code, Division 7). Under the CWA, the RWQCB has regulatory authority over actions in waters of the United States, through the issuance of water quality certifications, as required by Section 401 of the CWA, which are issued in conjunction with permits issued by the USACE under Section 404

of the CWA. The RWQCB must certify that a USACE permit action meets State water quality objectives (Section 401, CWA, and Title 23 CCR 3830, et seq.). When the RWQCB issues a Section 401 certification, the project is also regulated under SWRCB Order No. 2003-0017-DWQ, "General Waste Discharge Requirements for Dredge and Fill Discharges That Have Received State Water Quality Certification," which requires compliance with all conditions of said water quality certification. Activities in areas that are outside of the jurisdiction of the USACE (e.g., isolated wetlands, vernal pool, or stream banks above the ordinary high-water mark) are regulated by the RWQCB, under the authority of the Porter-Cologne Act. Activities that lie outside of USACE jurisdiction may require the issuance of either individual or general waste discharge requirements.

Municipal Regional Stormwater Permit. Stormwater in Santa Clara County is managed in accordance with the Municipal Regional Stormwater NPDES permit (MRP) from the San Francisco Bay Region RWQCB (Permit No. R2-2009-0074, adopted on October 14, 2009, and revised on November 28, 2011). The MRP permit regulates discharges from all municipal separate storm sewer systems in Santa Clara County, including those in the Town of Los Gatos. This MRP requires that discharges not cause exceedances of water quality objectives and prohibits them from causing conditions to occur that create a nuisance condition or water quality impairment in receiving waters. Accordingly, the RWQCB is requiring "technically and economically feasible" control measures to reduce pollutants in stormwater discharges to the maximum extent practicable as provided in Provisions C.1 through C.15 of the permit.

Provision C.3 of the MRP requires applicable new developments and redevelopments to implement the following:

- design the site to minimize imperviousness, detain runoff, and infiltrate, reuse, or evapotranspirate runoff where feasible;
- cover or control sources of stormwater pollutants;
- treat runoff prior to discharge from the site; and
- ensure runoff does not exceed pre-project peaks and durations.

Provision C.3.c of the MRP requires new development and redevelopment projects that create or replace 5,000 square feet or more of impervious surfaces to incorporate Low Impact Design (LID) including site design features, source control measures, and treatment measures to reduce the pollutant load in stormwater discharges and to manage run-off flows.

Provision C.3.d of the MRP requires that stormwater treatment systems meet specific numeric sizing criteria.

Provision C.3.g of the MRP requires that new development projects that create or replace more than one acre of impervious surfaces implement hydromodification measures to manage increases in stormwater runoff flow and volume so that the post-project runoff does not exceed the estimated pre-project runoff rates and durations.

Provision C.6 of the MRP requires the municipal permittees to adopt a construction site inspection and control program at all construction sites. Permittees (Town of Los Gatos for this project) must review construction-site erosion control plans for applicable development sites for consistency with local requirements, including the appropriateness and adequacy of proposed best management practices (BMPs) as well as verification that site operators/ developers have complied with the Construction General Stormwater Permit before issuing the grading permit for a project. The municipal permittees (Town) must conduct inspections to determine compliance with local grading and stormwater requirements.

Provision C.10 of the MRP also includes a Trash Load Reduction provision that requires annual clean up of Trash Hot Spots and establishes phased goals to reduce trash loads from storm water system.

Provision C.14 of the MRP details a control program for polybrominated diphenyl ethers (PBDE), legacy pesticides, and selenium to help determine whether urban runoff is a conveyance mechanism associated with impairment of San Francisco Bay by these pollutants. To comply with this program, the municipal permittees are required to characterize the representative distribution of these pollutants to determine whether they are present in urban runoff, whether they are distributed uniformly in urban areas, whether storm drains are sources of these pollutants in themselves, and whether there are specific locations within urban watersheds where prior or current land uses contribute to discharges of these pollutants.

The Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) is the local entity within Santa Clara County responsible for implementing compliance with the Municipal Regional Stormwater NPDES permit. SCVURPPP is an association of 13 cities and towns in Santa Clara Valley, the County of Santa Clara, and the Santa Clara Valley Water District.

Construction General Stormwater Permit. For stormwater discharges associated with construction activity in the state of California, the SWRCB has adopted the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ (Construction General Stormwater Permit), in order to avoid and minimize water quality impacts attributable to such activities. The Construction General Stormwater Permit became effective on July 1, 2010, and expired on September 2, 2014, but in accordance with Special Provision T, the permit will remain in effect until a new general permit is issued. Projects that would disturb one or more acres of land are required to submit a Notice of Intent and a Storm Water Pollution Prevention Plan (SWPPP) to the SWRCB. Construction activities subject to this permit include clearing, grading, and any activities that cause ground disturbances such as stockpiling or excavation. The SWPPP includes and specifies BMPs designed to control erosion and prevent sediment/ pollutants from contacting stormwater during construction phases as well as during the post-construction period.

The permit includes a risk-based permitting approach, dependent upon the level of sediment risk imparted by a project and the sensitivity of the receiving water. Receiving waters are considered to have a high risk if they constitute a 303(d)-listed impaired water body for sediment or have beneficial uses for fish spawning, cold freshwater habitat, and fish migration. The sediment risk of the site is determined by the

expected intensity of rainfall during the construction period, soil erodibility, and slope of the construction site.

LOS GATOS GRADING, EROSION, AND SEDIMENT CONTROL REQUIREMENTS

The Town of Los Gatos requirements related to grading, erosion, and sediment control are specified in Chapter 12 of the Town of Los Gatos Municipal Code. This chapter specifies that the Town requires a grading permit for any grading that could result in a discharge into or connection to a watercourse. The application for a permit must include a site map and a grading/drainage plan, as well as an erosion and sediment control plan. An interim erosion and sediment control plan is required if construction is started before October 1st, and the final erosion and sediment controls are not in place. Interim erosion control measures can include methods such as silt fences, fiber rolls, erosion control blankets, seeding, filter berms, check dams, and retention basins. Further, excavation, grading, and drainage activities must meet the design standards specified in Chapter 12. The grading permit will not be issued until the site map, grading and drainage plan, and interim and final erosion and sediment control plans are approved.

LOS GATOS ARCHITECTURE AND SITE REVIEW

Section 29.20.150 describe the purpose and intent of the Architecture and Site (A&S) approval process, when A&S approval is required, and considerations in review of A&S applications. A&S approval is required for new construction of any principal building. Town Code Section 29.20.150 requires consideration of the following matter related to drainage during A&S review: "(5) The effect of the site development plan on the adequacy of storm and surface water drainage."

LOS GATOS GENERAL PLAN

The goals, policies, and implementation measures in the General Plan for hydrology and water quality applicable to the proposed project are provided below. In general, the proposed project would be consistent with these goals and policies, or specified mitigation measures would avoid potentially significant environmental impacts associated with conflicts with policies designed to protect the environment. Project consistency with those guidelines is discussed in the following project consistency analysis table.

General Plan Policy	Project Consistency Analysis
Environment and Sustainability Element *ENV-5.1: Applicants shall demonstrate that new development will not contaminate surface water and/or groundwater.*	Potential sources of groundwater and surface water contamination include stormwater runoff during grading and other activities conducted as part of future construction as well as post-development runoff. Methods to address stormwater runoff during these activities include implementation of an erosion control plan in accordance with Town requirements/conditions of approval and a SWPPP in accordance with the Construction General Stormwater Permit, as discussed in Impact 4.5-1. The project would be required to comply with C.3 requirements for post-development stormwater controls, as also discussed in Impact 4.5-1.

General Plan Policy	Project Consistency Analysis
ENV-5.3: Cooperate with the Santa Clara Valley Water District and other agencies to protect watersheds and riparian habitats from degradation.	The project would not affect any riparian habitat of Los Gatos Creek or other watersheds. The Ross Creek watershed would be protected from indirect water quality impacts as described above under the project analysis for Policy ENV-5.1.
ENV-5.4: Preserve existing creeks and avoid disturbances to these areas.	The project would not disturb or affect the preservation of Ross Creek.
ENV-5.6: Encourage alternative materials and designs to limit driveways, parking areas and parking lots in all zones except the C-2 zone. Examples include, but are not limited to, pervious paving material, and "ribbon strip" driveways, which have pavement in tire areas and grass or gravel in the middle. *ENV-5.7: Parking lots should be designed to drain into landscaped areas.*	As discussed in Impact 4.5-1, the project would include the construction of approximately 125,972 s.f. of new impervious surfaces. These surfaces would not be constructed of pervious materials, but the roof downspouts on individual lots would be disconnected from the storm sewer system; this rainwater and other stormwater on individual lots would infiltrate on-site. The bioretention areas would also provide limited infiltration. There are no new parking lots planned as part of the proposed project.
ENV-9.1: As part of CEQA review for development projects, require analysis of the single and cumulative impacts on water drainage (runoff) and contamination (water quality) in all areas but particularly in or adjacent to hillsides, riparian corridors, and important undeveloped watersheds.	Individual impacts related to water quality and hydrology are analyzed in Impacts 4.5-1 through 4.5-7. Cumulative impacts are analyzed in Chapter 5.
ENV-9.2 Promote non-point source pollution control programs to reduce and control the discharge of pollutants into the storm drain system.	As discussed in Impact 4.5-1, the project includes bioretention areas to treat stormwater runoff from the project site.

HILLSIDE DEVELOPMENT STANDARDS AND GUIDELINES (HDSG)

With respect to projects involving land subdivisions, the HDSG contains the following development standard and guideline related to lot configuration and building locations:

Hillside Development Standards and Guidelines	Project Consistency Analysis
VIII. Subdivision and Planned Development Projects *E. Development Standards and Guidelines* *2. Drainage – Standards:* *a. Upslope development shall not negatively impact downslope drainage.*	As discussed in Impact 4.5-1, stormwater on individual lots would be directed to open areas and swales to allow runoff to infiltrate into the ground, similar to what occurs under existing conditions.
III. Site Planning *B. Drainage – Standards:* *1. Runoff shall be dispersed within the subject property to the greatest extent feasible. Runoff concentration that requires larger drainage facilities shall be avoided.* *2. Upslope drainage shall not negatively impact downslope development.*	While some runoff from future homes would likely be dispersed as sheet flow onto undeveloped portions of lots, most surface runoff from impervious surfaces would be directed into the two proposed detention basins. These basins would be designed to detain surface runoff so as to reduce peak flows downstream of the site. These basins in addition to a diversion channel along the

Hillside Development Standards and Guidelines	Project Consistency Analysis
3. Natural drainage courses shall be preserved with any native vegetation intact and shall be enhanced to the extent possible, and shall be incorporated as an integral part of the site design in order to preserve the natural character of the area.	northwest property boundary, would ensure that the existing residences located downslope of the site would not be adversely affected by project development. As part of the Architecture and Site review process for future development of the individual lots, each lot owner will be required to provide appropriate drainage improvements to ensure there would be no impact on adjacent properties, as required by Chapter 12 of the Town Code. Project development could encroach upon or directly impact a swale that drains into Ross Creek, and any work within the swale would be subject to applicable state and federal permit requirements. In addition, development setbacks would be required by the Town's adopted Guidelines and Standards for Land Use Near Streams, as specified in Mitigation Measure 4.3-8, Creek and Swale Protection.

4.5.3 POTENTIAL IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

Based on criteria derived from Appendix G of the *CEQA Guidelines*, a project would normally have a significant effect on hydrological conditions and/or water quality if the proposed project would:

- Violate any water quality standards or waste discharge requirements;
- 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 planned uses for which permits have been granted);
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off-site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality;
- 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;

- Place within a 100-year flood hazard area structures which would impede or redirect flood flows;
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- Be subject to inundation by seiche, tsunami, or mudflow.

METHODOLOGY

The analysis below evaluates the project's potential changes in drainage based on the proposed Preliminary Stormwater Control and Hydromodification Management Plan (presented as Sheet C6 of project plans), C.3 Data Form, Infiltration/Harvesting and Use Feasibility Screening Worksheet, and Infiltration Feasibility Worksheet, which together provide information on the proposed post-construction stormwater controls to be implemented as part of the project plans and evaluate the feasibility of alternative approaches. These documents are included in **Appendix E**. The conclusions in this evaluation are based, in part, on a peer review of the proposed Preliminary Stormwater Control and Hydromodification Management Plan and supporting documentation that was completed by the Town's environmental engineering consultant, EOA, Inc., to determine compliance with the stormwater requirements of the Town's NPDES Permit (also included in Appendix E).

SURFACE WATER QUALITY

Impact 4.5-1: The proposed project could violate water quality standards or waste discharge requirements, or otherwise substantially degrade water quality. (Less than Significant with Mitigation)

Construction. The proposed project would disturb approximately three acres of the 17.55-acre project site for construction of the new homes and associated infrastructure. Excavation and stockpiling of soil during construction would be required as well as placement of imported fills. Without proper controls, these construction activities could induce erosion and related sedimentation, resulting in degradation of water quality in the existing storm drain system and ultimately Ross Creek.

The project applicant would be required to obtain a grading permit from the Town of Los Gatos, and, because more than one acre of land would be disturbed, would also have to comply with the Construction General Permit (CGP) described above in Section 4.5.2, Regulatory and Planning Framework. In accordance with the Town's grading permit requirements, the project sponsor would need to prepare a site map and grading plan as well as an erosion and sediment control plan. An interim erosion and sediment control plan would be required if construction is started before October 1st, and the final erosion and sediment controls are not in place. Interim erosion control measures could include methods such as silt fences, fiber rolls, erosion control blankets, seeding, filter berms, check dams, and retention basins. Further, excavation, grading, and drainage activities must meet the design standards specified in Chapter 12 of the Town of Los Gatos Municipal Code. Grading permit would not be issued until the site map, grading plan, and interim and final erosion and sediment control plans are approved by the Town.

The CGP establishes three levels of risk possible for a construction site. These levels are identified as Risk Level 1, Risk Level 2, and Risk Level 3, and they are calculated based on project sediment risk and receiving water risk. The Site Specific Risk Assessment is typically prepared during the grading permit application process. In accordance with the CGP, Ross Creek would have a low receiving water risk because the creek does not have any of the three existing beneficial uses that determine receiving water sensitivity (fish spawning, cold freshwater habitat, and fish migration). Accordingly:

- The provisions of the State General Construction Activity Permit require the preparation and filing of a Notice of Intent (NOI) and other Permit Registration Documents (PRDs) with the SWRCB. Proof of this filing must be provided to the Town of Los Gatos prior to issuance of grading permit.
- A SWPPP must be implemented and must include at least minimum BMPs related to: housekeeping (storage of construction materials, waste management, vehicle storage and maintenance, landscape materials, pollutant control); non-stormwater management; erosion control; sediment control; run-on/run-off control; and inspection, maintenance, and repair.
- A Rain Event Action Plan (REAP) is required for a Risk Level 2 or 3 site to protect all exposed portions of the site within 48 hours prior to any likely precipitation event.
- The CGP now includes numeric action levels (NALs) for pH and turbidity. The permit also previously contained daily average Numeric Effluent Levels (NELs) for pH and turbidity for Risk Level 3 construction sites. However, the NELs were suspended by a Superior Court order on December 27, 2011. In the event NALs are not met on-site, the project may use an Active Treatment System (ATS) as a BMP to reduce sediment and/or turbidity from the site. An ATS is not proposed for this project.
- The CGP requires that key personnel (e.g., SWPPP preparers, inspectors, etc.) have specific training and/or certificates to ensure their level of knowledge and skills are adequate to enable them to design and evaluate project specifications that will comply with the General Permit requirements.

The Construction General Permit is implemented and enforced by the San Francisco Bay RWQCB, which administers the stormwater permitting program for the program area. The project applicant shall electronically file the Permit Registration Documents (PRDs), which include the Notice of Intent (NOI), risk assessment, site map, signed certification, Storm Water Pollution Prevention Plan (SWPPP), and other site-specific PRDs that may be required.

Compliance with the Town grading permit and Construction General Stormwater Permit would: (1) restrict non-stormwater discharges from the construction site; (2) require use of BMPs to restrict soil erosion and sedimentation as well as releases of hazardous materials; and (3) require implementation of a construction site monitoring program to demonstrate compliance with permit requirements. Compliance with these requirements would ensure that proposed construction activities do not result in a violation of water quality standards or of waste discharge requirements, or otherwise result in water quality degradation.

Construction of proposed Streets A and B would include excavation activities and filling within a drainage swale (unnamed tributary to Ross Creek), and subsequent development on Lots 3 and 9 could also be conducted within or near this swale. These activities could adversely affect water quality within the swale during construction, a potentially significant impact. However, as discussed in Section 4.3, Biological Resources (Impact 4.3-7), these construction activities could require authorization under the Lake and Streambed Alteration Program (CFGC Section 1600, et seq) and could require an agreement under this program as specified in Mitigation Measure 4.3-7, Conformance with Applicable Federal and State Regulations. This agreement would specify measures to minimize impacts to water quality during construction such as avoiding construction during the rainy season, diverting water through a pipe during construction, and restricting the placement of unnecessary fill or debris in the swale. Therefore, implementation of Mitigation Measure 4.5-1 (which includes requirement of Mitigation Measures 4.3-7, Conformance with Applicable Federal and State Regulations, and 4.3-8, Creek and Swale Protection) would reduce water quality impacts related to construction within the swale to a less-than-significant level.

Operation. Because the project includes the creation of 125,972 s.f. of new impervious surfaces, the project would be required to comply with provision C.3 of the MRP described in the above Regulatory and Planning Framework section. Accordingly, the project would be required to incorporate Low Impact Design (LID) features, including the following: (1) specifying site design features, source control measures, and treatment measures to reduce the pollutant load in stormwater discharges and to manage run-off flows in accordance with Provision C.3.c; (2) sizing of the stormwater control measures to treat the appropriate amount of stormwater calculated using existing rainfall data in accordance with Provision C.3.d; and (3) managing increases in stormwater runoff rates and volumes so that the post-development runoff does not exceed the estimated pre-development runoff rates and durations in accordance with Provision C.3.g.

The project application for the proposed residential development includes the proposed Preliminary Stormwater Control and Hydromodification Management Plan, C.3 Data Form, Infiltration/Harvesting and Use Feasibility Screening Worksheet, and Infiltration Feasibility Worksheet (forms and worksheets are included in Appendix E), which provide information on how the proposed post-construction stormwater controls meet the MRP requirements and evaluate the feasibility of alternative approaches. The C.3 Data Form indicates specific Stormwater Control Measures to be included in the project:

A. Source Control Measures:
    1. Sanitary sewer connection or accessible cleanout for swimming pool/spa/fountain
    2. Beneficial landscaping (minimize irrigation, runoff, pesticides and fertilizers; promotes treatment)
    3. Maintenance (pavement sweeping, catch basin cleaning, good housekeeping)
    4. Storm drain labeling

B. Flow Duration Controls for Hydromodification Management (HM):
   1. Detention Basin
   2. Bioretention with outlet control

C. Site Design Measures:
   1. Minimize land disturbed
   2. Minimize impervious surfaces
   3. Minimize-impact street or parking lot design
   4. Direct runoff to vegetated areas
   5. Disconnected downspouts/direct roof runoff to vegetated areas
   6. Preserved open space: 4.93 acres

D. Treatment Systems:
   1. Bioretention area

Under the proposed project, the project site would be divided into two drainage areas. Drainage Area A would collect drainage from Lots 1 and 2, as well as a portion of Lot 8, while Drainage Area B would collect drainage from the remainder of the project site. Drainage for individual lots would be discharged into drainage swales and infiltrate into the ground, subject to the recommendations of the site geotechnical report (see Section 4.4, Geology, Soils, and Seismicity). Percolation systems in the swale area may also tend to encounter seasonal ground water levels and therefore, it is expected that most of the site drainage flows would be accommodated in proposed detention basins.

The proposed water quality control/ flow control basins would collect stormwater in each drainage area and detain and regulate stormwater flows such that they would not exceed the estimated pre-project runoff rates and durations, in accordance with Provision C.3.g of the MRP. Each basin would discharge to a bioretention area used to treat the stormwater prior to discharge to East Ross Creek. The bioretention areas would meet the requirements of Provision C.3.c of the MRP for treatment measures, and would be designed to treat 80 percent of the annual stormwater runoff from the site in accordance with Provision C.3.d of the MRP. The bioretention areas are sized to receive the water quality design storm over a period of 48 hours (drawdown time for the detention basins). With incorporation of the proposed bioretention basins, the project would not exceed the downstream stormwater drainage capacity and therefore, would comply with the MRP flow-control requirements.

While project implementation could significantly degrade water quality, the Town would require compliance with all of the proposed measures for compliance with the C.3 requirements. Therefore, with implementation of Mitigation Measure 4.5-1, which outlines measures for C.3 compliance, the project would not violate any water quality standards or otherwise result in water quality degradation during operation of future residences because stormwater runoff from the project site would be managed consistently with the provisions of the MRP as described above. Consequently, the project's operational impact on water quality would be reduced to less than significant with implementation of Mitigation Measure 4.5-1.

Mitigation Measure 4.5-1a: *Mitigation Measures 4.3-7, Conformance with Applicable Federal and State Regulations, and 4.3-8, Creek and Swale Protection.*

Mitigation Measure 4.5-1b: C.3 Compliance. *The following measures shall be implemented to ensure compliance with the C.3 requirements and reduce project-related water quality impacts to less than significant:*

a. The project applicant shall obtain coverage under the Municipal Regional Stormwater Permit pursuant to Regional Water Quality Control Board (RWQCB) Order No, R2-2009-0074. As part of the grading and improvement application for the project, the project applicant shall submit the following documents to the Engineering Division of the Town of Los Gatos Parks and Public Works Department:

i. A site plan showing the locations of stormwater treatment and flow control measures. All stormwater treatment and flow control measures shall be designed to allow appropriate equipment access for maintenance.

ii. A detailed maintenance plan for stormwater treatment and flow-control measures, including inspection checklists as appropriate.

iii. An Operations and Maintenance report form shall be attached to maintenance agreements that are transferred to future owners or operators of the project site or portions thereof.

The project applicant shall also provide a signed statement accepting responsibility for maintenance of stormwater control facilities until this responsibility is legally transferred. This statement shall also ensure site access by Town of Los Gatos, Water Quality Control Board, West Valley Clean Water Program for inspection purposes.

b. Proper operation and maintenance of stormwater management facilities shall be the responsibility of the Homeowners' Association (HOA) in perpetuity. The applicant shall prepare and submit, for the Town's review, an acceptable Stormwater Control Operations and Maintenance Plan prior to the issuance of any occupancy permits and shall execute a Stormwater Management Operations and Maintenance Agreement with the Town before sale, transfer, or permanent occupancy of the site. The applicant shall accept the responsibility for maintenance of stormwater management facilities until such responsibility is transferred to another entity. The Stormwater Management Operations and Maintenance Plan shall include treatment Best Management Practices (BMPs).

Impact Significance After Mitigation: Less than significant since impacts would be reduced with implementation of the agency-required mitigation measures.

GROUNDWATER SUPPLY

Impact 4.5-2: The proposed project would not 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. (Less than Significant)

The proposed project does not propose to use groundwater for any component of the development. All water used on the project site would be from the local public water supply provided by the San Jose Water Company, which consists of both surface water and groundwater. There are no existing groundwater wells on the property and none are proposed. Therefore, the project would have a less-than-significant impact on groundwater depletion beyond any impacts associated with the provision of water by the San Jose Water Company and the agencies from which it directly or indirectly receives water, including the Santa Clara Valley Water District, the U.S. Bureau of Reclamation, and the California Department of Water Resources (see Chapter 4.12, Public Services and Utilities, Impact 4.12-4, for a discussion of impacts associated with the provision of public water to the project site).

As discussed in Section 4.5.1, Environmental Setting (Groundwater), the project site is located within the recharge area of the Santa Clara Plain groundwater management area of the Santa Clara sub-basin. The project would result in an increase of 125,972 square feet of new impervious surfaces as discussed above in Impact 4.5-1, and could potentially reduce infiltration to the groundwater basin. However the amount of stormwater infiltrated would not change substantially because, as described in Impact 4.5-1, Provision C.3.g of the MRP would require the project applicant to regulate stormwater flows such that they would not exceed the estimated pre-project runoff rates and durations in accordance with Provision C.3.g of the MRP. Similar to existing conditions, the remaining stormwater would be infiltrated by disconnecting downspouts from the homes and directing this and other stormwater runoff to vegetated areas. Therefore, the potential reduction in groundwater recharge, if any, would be minimal; and impacts related to interference with groundwater recharge would be less than significant.

Mitigation Measure 4.5-2: *None required.*

STORMWATER DRAINAGE

Impact 4.5-3: Project implementation could substantially alter the existing drainage pattern of the site or area by altering the course of a stream or incrementally increasing surface runoff from impervious surfaces in such a manner that could result in substantial erosion, siltation, or flooding on- or off-site. (Less than Significant with Mitigation)

Construction of proposed Streets A and B would include excavation activities and filling within the on-site swale, which could affect drainage patterns at the site. Construction on proposed Lots 3 and 9 could also encroach on the drainage swale. The proposed project includes construction of a culvert beneath Street B. No culvert is planned beneath Street A or either of the lots. Potential changes in drainage patterns would be a significant impact. However, this impact would be reduced to a less-than-significant level with

implementation of Mitigation Measures 4.3-7, Conformance with Applicable Federal and State Regulations, 4.3-8, Creek and Swale Protection, and 4.3-9, Riparian Encroachment Offsets, in Section 4.3, Biological Resources, which require: (1) determination of federal and state jurisdiction and agency requirements to protect the waters of the U.S. and State; (2) protection of the riparian zone by maintaining a 25-foot riparian setback and 10-foot setback from the top of bank; and (3) maintenance of the hydrologic connection between the swale and upstream watershed and Ross Creek with the installation of appropriately sized culverts beneath Street A and Street B as well as Lot 3.

As described above in Section 4.5.1, Environmental Setting (Flood Hazards), downstream of the project site there are areas immediately adjacent to Ross Creek that are subject to the 100-year flood. However, as described in Impact 4.5-1, the project site would be re-graded to divide the site into two drainage areas. A water quality control/ flow control basin would collect stormwater in each drainage area and regulate stormwater flows such that they would not exceed the estimated pre-project runoff rates and durations in accordance with Provision C.3.g of the MRP; and the resulting flows would be treated in two bioretention areas that discharge to East Ross Creek. Therefore, project implementation would not exacerbate downstream flooding issues because the project would not alter the rate or duration of stormwater flows from the project site, and impacts related to flooding as a result of alteration of drainage patterns would be less than significant.

Mitigation Measure 4.5-3: *Mitigation Measures 4.3-7, Conformance with Applicable Federal and State Regulations, 4.3-8, Creek and Swale Protection, and 4.3-9, Riparian Encroachment Offsets.*

Impact Significance After Mitigation: Less than significant since impacts would either be avoided or impacts would be offset with implementation of the agency-required mitigation measures.

Impact 4.5-4: Project implementation would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or introduce new sources of polluted runoff. (Less than Significant)

The existing storm drain system has the capacity to convey existing stormwater flows from the site. As described in Impact 4.5-1, the project site would be re-graded to divide the site into two drainage areas. A water quality control/ flow control basin would collect stormwater in each drainage area and detain and regulate stormwater flows such that they would not exceed the estimated pre-project runoff rates and durations in accordance with Provision C.3.g of the MRP. The resulting flows would be treated in two bioretention areas that discharge to East Ross Creek. Therefore, project implementation would not change the rate or duration of stormwater flows from the project site and would not create runoff water that would exceed the capacity of the existing storm drain system. While the project would include the construction of new paved roadways and residences that could introduce new sources of stormwater pollutants such as nitrogen and phosphorous, pathogens, petroleum hydrocarbons, metals, and organic chemicals, stormwater runoff associated with the individual lots would infiltrate on-site. Stormwater runoff from the new roadways would be conveyed to the Water Quality Control/Flow Control Basins and bioretention areas that would be sized to treat 80 percent or more of that the annual stormwater flows in

accordance with Provision C.3.d of the MRP. Therefore, impacts related to exceeding the capacity of an existing or planned storm drain system and providing additional sources of stormwater pollutants would be less than significant.

Mitigation Measure 4.5-4: *None required.*

Impact 4.5-5: Project implementation would not cause significant risks associated with the placement of housing within a 100-year flood hazard area or placement of structures that could impede or redirect flood flows within a 100-year flood hazard area. (Less than Significant)

As discussed in Section 4.5.1, Environmental Setting (Flood Hazards), the project site is located within a flood zone designated as Zone X. This Zone designates: (1) areas that could be inundated by a 500-year flood; (2) the 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and (3) areas protected by levees from the 100-year flood. While the project would include the construction of housing in this zone, the anticipated depth of flooding would be minimal and the proposed water quality control/ flow control basins would be sized to contain the 100-year flood (Balance Hydrologics, 2014), directing flood flows to East Ross Creek in a manner that the flows would not exceed the estimated pre-project runoff rates and durations as required by Provision C.3.g of the MRP as discussed in Impact 4.5-1. Therefore, impacts related to placement of housing with a 100-year flood hazard area and impedance or redirection of flood flows would be less than significant.

Mitigation Measure 4.5-5: *None required.*

Impact 4.5-6: Project implementation would not cause significant risk of loss, injury or death involving flooding, including flooding from the failure of a levee or dam. (Less than Significant)

The detention basins are proposed to be equipped with low-level outlets for regulation of outflow to the bioretention areas and higher outlets for regulating outflow from larger storm events. Additionally, a concrete swale is proposed to accommodate high flow releases and the swale would be directly connected to the existing storm drain piping system to provide an additional factor of safety. The proposed basin routing design would account for at least one foot of freeboard to the lowest point on the surrounding berms.

The northern water quality control/ flow control basin would be located in the corner of the project site on a northwest-facing slope near adjacent neighbors. The potential for the northern stormwater basin to fail during a major earthquake would be very low, however, because the low-lying berm used to contain the stormwater would be constructed in accordance with engineering standards using compacted native soil materials, and the finished slopes would be planted to limit erosion (Balance Hydrologics, 2014). The southern detention basin would be constructed similarly, and would have a smaller capacity. It, too, would have a very low potential for failure during a major earthquake. Therefore, the proposed water quality control/ flow control basins would not pose a substantial flooding risk to downslope properties or adjacent residents as a result of failure.

The project site is not located within a dam failure inundation area for the Elsman, Lexington, and Vasona Reservoirs as identified on dam inundation maps provided by the Association of Bay Area Governments (ABAG).

Based on the above analysis, potential risks associated with flooding in the event of failure of a dam or levee would be less than significant.

Mitigation Measure 4.5-6: *None required.*

Impact 4.5-7: The proposed project could be subject to inundation by seiche, tsunami, or mudflow. (Less than Significant)

Seiches are standing waves caused by large-scale, short-duration phenomena (e.g., wind or atmospheric variations or seismic activity) that result from the oscillation of confined bodies of water (such as reservoirs and lakes). They may damage low-lying adjacent areas as a result of changes in the surface water elevation.

An analysis of the northern water quality control/ flow control basin stability performed in 2014 found that there is a very low potential that a large earthquake would occur when there would be sufficient water in the basin to produce a seiche (Balance Hydrologics, 2014). The stability analysis stated that the basin would be designed to have one foot of free board and would also be designed to attain a 48-hour drawdown time, which would allow the pond to completely drain within 48 hours after a storm, limiting the amount of time in which there would be water in the basin. This basin would have a storage capacity of 0.57 acre feet[1] if entirely filled from the floor elevation of 409 feet msl to the top of bank elevation of 414 feet msl. Therefore, in the event of a 100-year storm, the pond could be filled to an elevation of 413 feet msl, within one foot of the top of bank elevation. However, the duration of the maximum water elevation would be only 10 minutes and the water level would only stay at 412 feet msl for approximately 1.25 hours. Therefore, there is a low potential for a substantial seismic event to occur when the pond is near design capacity.

The average ponding depth in the pond resulting from a 100-year flood event is 411 feet msl and at this elevation there would be only 2 feet, or 0.12 acre feet, of water in the basin. At this depth, it would take an earthquake capable of producing a three-foot seiche to overtop the basin walls and the amount of water that would be released would be miniscule.

However, the basin stability analysis (Balance Hydrologics, 2014) noted that in the unlikely event that the northern basin is at design capacity during a major earthquake, it would be possible that the basin could be overtopped by a seiche wave. The nature of the flows downslope would be controlled by the topography of the ground, the quantity of water flow, and the location of flow impediments such as

[1] An acre-foot is the volume of water that would cover one acre of land with one foot of water. Therefore, 0.57 acre-feet of water would cover an acre of land with just over ½ foot of water.

vegetation and fences. Because the flow path from both basins is uncertain and there are adjacent residences downslope of the northern basin that could be inundated in this unlikely event, impacts related to inundation by seiche would be potentially significant for the northern basin. However, this impact would be less than significant because a swale is proposed downslope of the northerly basin, which would divert any water released from this basin to East Ross Creek via a connection to the existing 27-inch storm drain. The existing wall located west and north of the southern basin would impede any overtopping flows from this basin.

The project site would not be subject to a seiche from regional water bodies because the nearest existing large water body is Vasona Reservoir located downstream (i.e., lower in elevation) and more than one mile to the northwest. The project is located away from the edge of the reservoir and therefore, would not be adversely affected by a change in the surface water elevation.

The project site is located at a minimum elevation of approximately 415 feet (msl), more than 13 miles south of the San Francisco Bay shoreline and 19 miles east of the Pacific Ocean coast; therefore, there would be no risk associated with tsunamis, which are large sea waves.

In summary, impacts related to exposure of people or structures to significant risk of loss, injury, or death involving seiche would be less than significant because a concrete-lined drainage swale is proposed along the northwest project boundary, which would intercept any overflow of a release from the northern proposed stormwater water control/ flow control basin; such an event is very unlikely to occur, in any event, since a major seismic event would have to coincide with a peak flow event. In addition, there are sufficient building setbacks and more gentle sloping topography below the proposed southern stormwater water control/ flow control basin, such that a remotely possible overflow event at this basin would not adversely affect existing adjacent development to the west. Therefore, impacts related to inundation by a seiche from a regional water body or tsunami would be less than significant. Risks associated with landslide-induced mudflows (debris flows) are discussed in Section 4.4, Geology and Soils, Impact 4.4-4.

Mitigation Measure 4.5-7: *None required.*

REFERENCES – HYDROLOGY AND WATER QUALITY

Association of Bay Area Governments (ABAG), 1995. *Earthquake and Hazards Information, Dam Failure Inundation*. Available online at http://www.abag.ca.gov/bayarea/eqmaps/dfpickc.html.

Balance Hydrologics, 2014. *Stormwater Basin Stability, Surrey Farm Project, City of Los Gatos*. July 29. (Included in Appendix D of this EIR)

Federal Emergency Management Agency (FEMA), 2009. *Flood Insurance Rate Map, Santa Clara County, California, and Incorporated Areas*. Map Number 06085C0377H. May 18. Available online at https://msc.fema.gov/portal/advanceSearch.

GeoForensics, 2010. *Geotechnical Investigation for New Subdivision*. December 17. (Included in Appendix D of this EIR)

Regional Water Quality Control Board (RWQCB), 2014. *Total Maximum Daily Loads (TMDLs) and the 303(d) List of Impaired Water Bodies*. Available online at http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/.

Santa Clara Valley Water District (SCVWD), 2012. *2012 Groundwater Management Plan*. Available online at http://www.valleywater.org/Services/Groundwater.aspx.

Santa Cara Valley Water District (SCVWD), 2014. *Guadalupe Watershed*. Available online at http://www.valleywater.org/services/guadalupe.aspx

State Water Resources Control Board (SWRCB), 2010. *2010 Integrated Report (Clean Water Act Section 303(d) List/305(b) Report*. Available online at http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml.

4.6 TRANSPORTATION AND TRAFFIC

The Town's Traffic Impact Policy (Resolution 2014-017 and 059) specifies that a project with a traffic impact of 19 or fewer additional AM or PM peak hour trips could be approved without a comprehensive traffic report if it is determined that the benefits of the project to the Town would outweigh the impact of increased traffic. This policy reflects the fact that projects generating so little traffic only rarely cause significant project-specific effects on the flow of traffic or on transportation infrastructure, or contribute considerably to significant cumulative effects on traffic or the transportation system. The proposed project would result in a net increase of 96 trips over the course of an entire day, with only 8 trips during the AM peak hour and only 10 trips during the PM peak hour. Therefore, no additional traffic studies were required by the Town. Nevertheless, for the sake of full disclosure, the project applicant retained Hexagon Transportation Consultants, Inc., (Hexagon) to complete a traffic impact study. Hexagon completed this study in February 2015 and it is included in **Appendix F** of this EIR. This EIR section (4.6) summarizes the findings of Hexagon's traffic study.

4.6.1 ENVIRONMENTAL SETTING

EXISTING ROADWAY NETWORK

Figure 4.2-1 presents a map of the roadway system in the vicinity of the site. Regional access to the project site is provided by State Route (SR) 17. Local access to the site is provided by Los Gatos Boulevard, Kennedy Road, Longmeadow Drive, and Twin Oaks Drive. Twin Oaks Drive adjoins the western project boundary. A discussion of access roadways is provided below:

SR 17 is a four-lane north-south freeway in the site vicinity and is located approximately 1.1 miles west of the project site. SR 17 extends northward through San Jose and southward through Los Gatos. Interchanges at Lark Avenue and Highway 9/Los Gatos-Saratoga Road provide access to the project area.

Los Gatos Boulevard is one of the two main north-south arterials in town, extending from SR 85 south to Loma Alta Avenue and varying from one to three lanes in each direction. North of SR 85, Los Gatos Boulevard changes designation to Bascom Avenue, while south of Loma Alta Avenue, it changes to East Main Street. Los Gatos Boulevard is four lanes between SR 85 and Lark Avenue, then widens to six lanes between Lark Avenue and Blossom Hill Road. South of Nino Avenue, the roadway narrows to two lanes..

Kennedy Road is a two-lane east-west collector that extends from Los Gatos Boulevard on the west to Shannon Road on the east. The posted speed limit is 30 mph in the project vicinity and 20 mph along its east end.

Longmeadow Drive and *Twin Oaks Drive* are two-lane residential streets that provide access to the project site from Kennedy Road. *Olde Drive* and *Clover Way* also provide access to Longmeadow Drive and Twin Oaks Drive, but this route is more circuitous. All have a posted speed limit of 25 mph.

PEDESTRIAN, BICYCLE, AND TRANSIT ACCESSIBILITY

Currently, there are sidewalks along both sides of most sections of Los Gatos Boulevard. East of Los Gatos Boulevard, there are discontinuous sidewalk segments on either side of Kennedy Road, but most of this road does not have sidewalks. There are no sidewalks along Longmeadow Drive, Twin Oaks Drive, or any other streets in the project vicinity.

There are also no existing trails in the immediate project vicinity. However, proposed trails on the project site would connect Twin Oaks Drive with Brooke Acres Drive and Cerro Vista Court. These connections provide pedestrians and bicyclists with access between the Shannon Road area to the north and the Kennedy Road area to the south. In addition, the town has several multi-use trails and bikeways that provide transportation and recreational connections for residents. The Los Gatos Creek Trail (LGCT) extends along the creek, but it is located about one mile to the west of the project site. There is an unpaved multi-use trail located in the vicinity of South Kennedy Road/Kennedy Court/Kennedy Road, approximately 0.25 mile south of the site. There are other multi-use trails located in the following open space areas: (1) Heintz and Santa Rosa Open Space areas and Bel Gatos Park, all located about 1.6 miles east of the site off Shannon Road at Santa Rosa Drive; and (2) Sierra Azul Open Space area, located approximately 1.6 miles southeast of the site, off Kennedy Road at Top of the Hill Road.

There are no designated bikeways in the immediate project vicinity. However, the Los Gatos 2020 General Plan's Transportation Element delineates a proposed Class I bikeway along Shannon Road, approximately 850 feet north of the site. This bikeway would extend eastward and connect with multi-use trails in the Heintz and Santa Rosa Open Space areas. The Transportation Element also delineates an existing Class II bikeway along Los Gatos Boulevard in the project area and an existing Class III bikeway along a 1,000-foot segment of Kennedy Road (between Los Gatos Boulevard and Englewood Avenue).

Existing transit service to the project area is provided by the Santa Clara Valley Transportation Authority (VTA). The VTA provides bus service to the project area via Bus Route 49, which runs along Los Gatos Boulevard in the vicinity of the project site. Bus Route 49 operates between the Winchester Transit Center and the Los Gatos Civic Center. The nearest bus stop for Bus Route 49 is located approximately one mile west of the site, just south of the Los Gatos Boulevard/Kennedy Road intersection.

EXISTING TRAFFIC CONDITIONS

Hexagon conducted 24-hour tube counts on Longmeadow Drive and Olde Drive for a one-week period in May, 2012. AM and PM peak hour turning-movement counts at the Kennedy/Longmeadow and Longmeadow/Clover intersections also were conducted. Existing traffic conditions were observed in the field during the AM and PM peak hours. Based on the count data and field observations, the traffic volume on the study roadway segments is very low, and no traffic issues were observed.

Existing Traffic Volumes. Existing average daily and peak hour traffic volumes on streets in the project vicinity are listed in **Table 4.6-1** and daily volumes in the project neighborhood ranged from

approximately 100 vehicles per day (Olde Drive) to 1,000 vehicles per day (Longmeadow Drive). The existing traffic volumes on these neighborhood streets are within the typical range (albeit the lower end of the range) for residential streets in Los Gatos.

TABLE 4.6-1

TRAFFIC VOLUMES ON STUDY ROADWAY SEGMENTS

	Existing Conditions			Project Trips			Project Conditions		
Roadway Segment	**AM Vol**	**PM Vol**	**Daily Vol**	**AM Vol**	**PM Vol**	**Daily Vol**	**AM Vol**	**PM Vol**	**Daily Vol**
Kennedy Rd. (west of Longmeadow Dr.)	267	194	2,639[a]	8	10	96	275	204	2,735
Kennedy Rd. (east of Longmeadow Dr.)	149	137	1,637[a]	0	0	0	149	137	1,637
Longmeadow Dr. (north of Kennedy Rd.)	118	57	1,002[a]	8	10	96	126	67	1,098
Longmeadow Dr, (Clover to Twin Oaks)	35	31	374	8	10	96	43	41	470
Clover Way (south of Longmeadow Dr.)	6	7	74[a]	0	0	0	6	7	74
Twin Oaks Dr. (south of Longmeadow Dr.)	26	23	281	8	10	96	34	33	377
Olde Drive (Kennedy Rd. to Clover Wy.)	14	13	108	0	0	0	14	13	108

Notes:

[a] Daily volume estimated based on AM and PM peak hour volumes.

SOURCE: Hexagon Transportation Consultants, Inc. (2015)

Existing Intersection Levels of Service. The intersections of Longmeadow Drive/Kennedy Road and Longmeadow Drive/Clover Way were evaluated using level of service (LOS). Level of service is a qualitative measure of traffic operations, ranging from LOS A (free-flow conditions) to LOS F (congested conditions). Based on existing counts and field observations, both intersections are operating well at LOS A. Sight distance at these intersections is adequate, and no operational issues were observed.

4.6.2 REGULATORY AND PLANNING FRAMEWORK

LOS GATOS TRAFFIC IMPACT FEE PROGRAM

Projects generating additional traffic in Town are required to construct improvements to mitigate direct project impacts, and to pay in-lieu fees to mitigate cumulative impacts. Traffic impact fees in the Town of Los Gatos are governed by Article VII of Chapter 15, Motor Vehicles and Traffic, of the Town Code, by Town Traffic Impact Policy (Resolution 2014-017 and 059). Article VII creates the framework for a traffic impact fee, while Resolution 2014-017 and 059 define specific fee amounts and procedures for calculating the fees. Furthermore, Resolution 2014-059 eliminated the requirement of Community Benefit offerings for projects generating more than five new peak hour trips.

Article VII, known as the Traffic Impact Mitigation Fee Ordinance, establishes cumulative traffic impact mitigation fees through assessments on new developments and expansions of uses, provides for the establishment of a trust fund to receive revenues collected by the Town, and authorizes Council to establish the inventory of capital improvement facilities for which funds may be expended and the amount of fees to be assessed. In adopting this section of code, the Town Council found that all new

development and expansion of uses contribute to cumulative traffic impacts. These impacts are difficult to measure and mitigate on a project-by-project basis, yet are cumulatively measureable and mitigable. The purpose of the traffic impact mitigation fee is to ensure that each new development or expansion of use pays its fair share of the transportation improvements needed to accommodate the cumulative traffic impacts. This code section established a special trust fund into which all traffic impact mitigation fees and interest thereon collected is deposited. The trust fund is a separate account that is not comingled with other fees and revenue streams or funds with the Town. Money in the trust fund can only be used for construction of identified traffic and transportation improvement projects. The monies in the fund are eligible for expenditure only on projects related to mitigation of impacts of new development.

Resolution 2014-017 and 059 set specific traffic impact fees for residential, medical office and all other uses. It also requires the Town to identify how much money to allocate in the Capital Improvement Program for traffic improvement projects each year.

The Town's Traffic Impact Policy outlines the methodology to be used in reviewing a project for traffic impacts, defines minor and major traffic impacts, lists the findings the approving body must make in order to approve a project with major impacts, and states that fees shall be paid to mitigate traffic impacts. The mitigation for projects with major traffic impacts are required to pay a traffic impact mitigation fee pursuant to the TIF Ordinance.

TRAFFIC CONTROL PLANS

The Town requires a comprehensive Traffic Control Plan on all construction projects as a condition of approval to ensure that the project is constructed according to approved plans and requirements. The Traffic Control Plan for each project controls construction traffic, including limiting haul and delivery truck traffic during the AM and PM peak hours to facilitate the flow of commuter traffic and reduce the impact during school session. In addition, the Traffic Control Plan sets the routes allowed for construction traffic to facilitate traffic flow and minimize travel delay in the event of overlapping construction traffic from other projects occurring in the vicinity, including from adjacent jurisdictions.

ARCHITECTURE AND SITE REVIEW

Town Code Sections 29.20.140 through 29.20.150 describe the purpose and intent of the Architecture and Site (A&S) approval process,. A&S approval is required for new construction of any principal building. Town Code Section 29.20.150 requires consideration of the following issues related to traffic:

"(1) *Considerations relating to traffic safety and traffic congestion.* The effect of the site development plan on traffic conditions on abutting streets; the layout of the site with respect to locations and dimensions of vehicular and pedestrian entrances, exits, drives, and walkways; the adequacy of off-street parking facilities to prevent traffic congestion; the location, arrangement, and dimension of truck loading and unloading facilities; the circulation pattern

within the boundaries of the development, and the surfacing, lighting and handicapped accessibility of off-street parking facilities.

a. Any project or development that will add traffic to roadways and critical intersections shall be analyzed, and a determination made on the following matters:

   1. The ability of critical roadways and major intersections to accommodate existing traffic;

   2. Increased traffic estimated for approved developments not yet occupied; and

   3. Regional traffic growth and traffic anticipated for the proposed project one (1) year after occupancy.

b. The deciding body shall review the application for traffic roadway/intersection capacity and make one (1) of the following determinations:

   1. The project will not impact any roadways and/or intersections causing the roadways and/or intersections to exceed their available capacities.

   2. The project will impact a roadway(s) and/or intersection(s) causing the roadway(s) and/or intersection(s) to exceed their available capacities.

   Any project receiving Town determination subsection (1)b.1. may proceed. Any project receiving Town determination subsection (1)b.2. must be modified or denied if the deciding body determines that the impact is unacceptable. In determining the acceptability of a traffic impact, the deciding body shall consider if the project's benefits to the community override the traffic impacts as determined by specific sections from the general plan and any applicable specific plan."

LOS GATOS GENERAL PLAN

Access to the project site is provided by Los Gatos Boulevard, Kennedy Road, Longmeadow Drive, and Twin Oaks Drive. Los Gatos Boulevard is classified in the Los Gatos 2020 General Plan's Transportation Element as an "arterial" street from Highway 9/Los Gatos Saratoga Road to the northern town limit at State Route 85. South of this street, Los Gatos Boulevard is classified as a Collector street. The Transportation Element defines an Arterial street as serving a large volume of vehicular traffic with intersections at grade and generally having direct access to abutting properties, with geometric design and traffic control measures used to expedite the safe movement of through traffic. A "collector" street is defined by the Transportation Element as providing circulation within and between neighborhoods. Collectors usually serve short trips and are intended for collecting trips from local streets and distributing them to the arterial network. Collectors serve abutting properties and carry traffic to the other collectors and arterials.

The Transportation Element of the 2020 General Plan identifies Kennedy Road as a "neighborhood collector" street to the west of the site and "hillside collector" to the east of the site. A "neighborhood

collector" street is described as a street that carries traffic that is predominantly generated within that neighborhood, while a "hillside collector" street carries traffic to arterial streets or other collectors. Longmeadow Drive and Twin Oaks Drive are also "hillside collector" streets.

The Transportation Element identifies a Class II bikeway along Los Gatos Boulevard in the project area. There is also a Class III bikeway delineated along a 1,000-foot segment of Kennedy Road that extends eastward from Los Gatos Boulevard to Englewood Avenue. A Class I bikeway is proposed along Shannon Road from Los Gatos Boulevard to Santa Rosa Drive; this lane would extend farther westward to Blossom Hill Road as a Class II bikeway. Proposed extension of a pedestrian/equestrian trail across the project site would complete a trail connection between Shannon Road and Kennedy Road via Brooke Acres Drive and Cerro Vista Court.

The General Plan also contains policies that pertain to traffic and circulation. Project consistency with policies pertaining to circulation is discussed below.

General Plan Policies	Project Consistency Analysis
Transportation Element	
TRA-1.1 Development shall not exceed transportation capacity.	As indicated in Impact 4.6-1, the project would have a less-than-significant impact on service level operation of nearby intersections because project-related traffic increases would be so low. In addition, the transportation capacity of roads in the area would not be exceeded with project-related traffic increases.
TRA-1.3 Evaluate the effects of all circulation and other transportation improvements on air pollution, noise, and use of energy prior to issuing any zoning approval.	Air quality, noise, and energy impacts associated with operation of the proposed project's transportation improvements are evaluated in Sections 4.7, Noise, 4.8, Air Quality, and 4.14, Energy, of this EIR. Project-related operational noise, air quality, and energy impacts were determined to be less than significant.
TRA-3.1 All development proposals shall be reviewed to identify and mitigate project traffic impacts pursuant to the Town's traffic impact policy.	The project was reviewed to identify and mitigate traffic impacts pursuant to the Town's Traffic Impact Policy. Review showed that project-related traffic increases would be less than thresholds established by this Policy. Therefore, in accordance with the Town of Los Gatos Traffic Policy, a Traffic Impact Analysis for the proposed project was not required (though a traffic study has been prepared anyway).
TRA-3.2 Review development proposals to ensure that the circulation system and on-site or public parking can accommodate any increase in traffic or parking demand generated by the proposed development, subject to the considerations and findings required by the Town's Traffic Impact Policy. *TRA-13.2 Provide an adequate number of parking spaces in all new development.*	The proposed project would result in a net increase of 96 trips per day, with 8 trips during the AM peak hour and 10 trips during the PM peak hour. Such a small increase in traffic is also considered less than significant when compared to the Town's Traffic Impact Policy (Resolution 2014-017 and 059), which specifies that a threshold of 19 additional AM or PM peak hour trips for requiring a detailed traffic study. Based on these low numbers, the project would not adversely affect the performance of the circulation system, including intersections, streets, and

General Plan Policies	Project Consistency Analysis
	highways/freeways. Though not required, a traffic study has been prepared for the project at the applicant's request, and the study verified that the project would not cause any significant project-specific traffic-related impacts or contribute considerably to any significant cumulative traffic-related impacts. Project lot sizes and potential building envelopes are sufficiently sized to accommodate provision of off-street covered and uncovered parking on each lot. The proposed site plan (Figure 3-2) indicates that on-street parking turnouts would be provided along proposed streets. Proposed Street "A" shows turnouts that designate 11 parking spaces, while Street "B" delineates a turnout with two spaces. Given the long distance between these on-street spaces and driveways for each home, provision of guest parking spaces on project lots may be preferred. Lot sizes are sufficient to accommodate guest parking on project lots. In any case, the Town will review the adequacy of off-street parking on each lot during the Architecture and Site (A&S) review process for compliance with the Town's parking standards.
TRA-3.3 All new developments shall be evaluated to determine compliance with the Town's level of service policy for intersections. *TRA-3.4 New projects shall not cause the level of service for intersections to drop more than one level if it is a Level A, B, or C and not drop at all if it is at D or below.* *TRA-3.5 If project traffic will cause any intersection to drop more than one level if the intersection is at LOS A, B, or C, or to drop at all if the intersection is at LOS D or below, the project shall mitigate the traffic so that the level of service will remain at an acceptable level.*	Hexagon (2015) determined that the Longmeadow Drive/Kennedy Road and Longmeadow Drive/Clover Way intersections would continue to operate at an acceptable Level of Service (LOS) A with the project (see Impact 4.6-1), a less-than-significant impact on service level operation of local intersections.
TRA-3.6 Pedestrian and bicycle safety shall not be compromised to improve or maintain the level of service of an intersection.	As indicated in Impact 4.6-1, the project would have a less-than-significant impact on service level operation of local intersections and no intersection improvements would be required. Therefore, pedestrian or bicycle safety would not be compromised by project implementation.
TRA-3.8 New development shall be required to upgrade public improvements on project frontages to meet current Town standards.	The only project street frontage is on Twin Oaks Drive and it is 80 feet long (Lot A). Frontage improvements would include intersection improvements, since this is where the proposed access road (Street "A") would connect with Twin Oaks Drive. Other road improvements that would be completed to Town standards include extension of two new cul-de-sacs on the site, curbs and gutters along the proposed Streets "A" and "B", a turnaround bulb at the north end of Street "A", and a hammerhead turnaround at the end of Street "B".

General Plan Policies	Project Consistency Analysis
TRA-3.9 Developers shall contribute to the cost of the future installation of traffic signals or future traffic signal modifications as a condition of approval.	Although the project's traffic increase would not meet the Town's Traffic Impact Policy thresholds, the project would still be subject to the Traffic Impact Fee Ordinance. Therefore, the project would contribute to the cost of future installation of traffic signals or future traffic signal modifications in the vicinity of the project.

HILLSIDE SPECIFIC PLAN

The Hillside Specific Plan (HSP) contains policies that address land use, facilities and services, circulation, open space, and safety issues that are unique to the Town's hillside areas. The purpose of these policies is to help guide future development within this area. Policies of the HSP that pertain to traffic and circulation are listed below, along with a discussion of the project's consistency:

Hillside Specific Plan Policies	Project Consistency Analysis
Land Use *1.4.2.a: The proposed use shall not significantly increase traffic in the area, present traffic hazards, or require exceptional provisions for traffic flow.*	As indicated under Impact 4.6-1, the project would not significantly increase traffic at local intersections or on local roadways.
3.0 Circulation *1. Design of Hillside Roads and Driveways:* *a. Hillside roadways and driveways shall be designed and located so as to:* *(1) Require a minimum amount of earth movement.* *(2) Be consistent with the specified standards for curves, gradients, widths, and other controlling factors.* *(3) Be in harmony with the surrounding landscape by utilizing aesthetic design concepts, including landscaping with native plants and materials.* *(4) Allow for special designs where natural features such as rocks, slopes and trees require special treatment.*	Except for ±300-feet of proposed Street B, all proposed development (including the trail) would be located within the Least Restrictive Development Area (LRDA) where slopes would not exceed 30%. It is not possible to extend the roadway to the upper portion of the site without traversing a small area where slopes exceed 30%. Grading for the proposed access road would be minimized by utilizing the existing roadway alignment and restricting development to areas with slopes of 30% or less. Roads and driveways conform to Town standards as indicated below under 3.4, Implementation (cul-de-sac length and road widths). Landscape trees, shrubs, and groundcovers (including native species) would be planted along proposed Streets A and B. See Section 5.5, Alternatives, for more discussion of alternative road designs.
3.0 Circulation *6. Two Means of Access:* *a. As a guide to developing a circulation plan, two means of access shall be provided to all areas. If dual access is NOT available, the land use intensity shall be limited in accordance with the access provided.* *b. Secondary access shall be sought for existing dead end streets.* *c. The second means of access shall not encourage through traffic to nonresidents and could be limited to emergency access only.*	The project would provide a gated emergency vehicle access (EVA) connection to Brooke Acres Drive. This connection would provide secondary emergency access connections to existing residences on Twin Oaks Drive and Brooke Acres Drive, which do not currently have secondary emergency access. These connections also would provide secondary emergency access for project residences. Although a connection to Cerro Vista Drive is not designated in the HSP (hence, there is no CEQA-related impact related to conflicts with plans or policies), such a connection is considered in Section 5.5.6 under the Two Access + Two EVA Alternative.

Hillside Specific Plan Policies	Project Consistency Analysis
d. Where single access roads exist, acceptable provisions shall be made for emergency access. Emergency access roads shall be designed to assure passability, however, the design shall prevent unauthorized non-emergency through access.	
3.4 Implementation *1. Cul-de-sacs:* *Cul-de-sacs should not exceed 800 feet in length, although the length may be increased by the deciding body if it finds that alternative solutions to emergency access, utility services and circulation problems are satisfactory.*	The proposed Street "A" and Street "B" are two cul-de-sacs, and each are approximately 800 feet (or slightly less) in length, consistent with this policy. In addition, an EVA connection to Brooke Acres Drive is proposed and it would connect with proposed Street "A".
2. Road Widths: *Recommended standards for study area roads:* *Flatland standards:* *Right-of-way width* — *60 feet* *Cul-de-sac right-of-way width* — *56 feet* *Paved width* — *40 feet* *Cul-de-sac paved width* — *36 feet* *Hillside standards:* *Right-of-way width* — *40-60 feet* *One-way* — *14 feet* *Paved width – Cul-de-sac (≤6 Lots)* — *20 feet* *Paved width – Cul-de-sac* — *24 feet* *Paved width - Local* — *24 feet* *Paved width - Collector* — *28-30 feet*	Road widths proposed in connection with the project are consistent with Town standards. Proposed Street "A" would have a 24-foot paved width with 46-foot right-of-way width. Proposed Street "B", (providing access for up to six lots) would have a 22-foot paved width with 44-foot right-of-way width. Proposed pavement and right-of-way widths would meet Hillside standards for cul-de-sacs.

Figure 4.6-1 HSP – Circulation Map

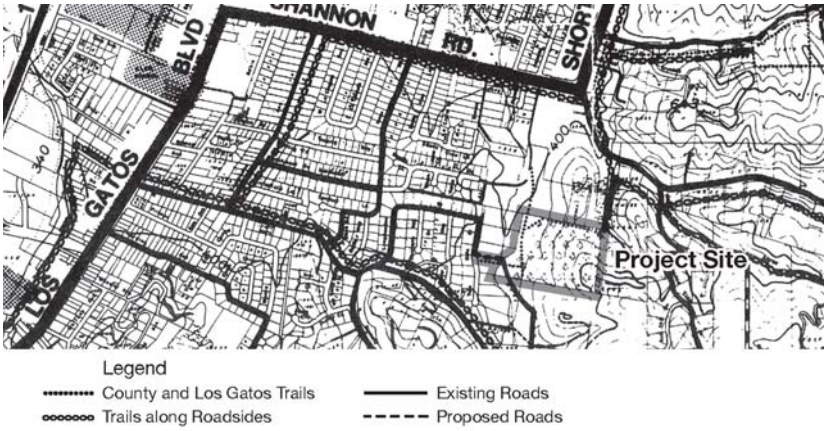


Figure 3 of the Hillside Specific Plan (HSP, revised 1990) delineates existing and proposed roads, emergency access locations, existing and planned trails, areas in agricultural or open space use, schools, and Mid-Peninsula Regional Open Space District lands. HSP designations for the project site and its vicinity are presented in **Figure 4.6-1**. As shown in this figure, the HSP erroneously indicates there is an existing road that traverses the site and connects Twin Oaks Drive with Brooke Acres Drive. Although there is no such existing road, it is noted that the proposed access road would provide a similar connection, connecting with Twin Oaks

Drive on the west and Brooke Acres Drive on the south (connection to Brooke Acres Drive would be restricted to emergency vehicles only (EVA), as requested by neighbors).

As shown in Figure 4.6-1, the HSP also shows trail alignments across the project site. The HSP designates trails connecting with Twin Oaks Drive on the west, Hillbrook School on the north, and Cerro Vista Drive on the north (with the trail extending along most of the site's northern boundary). A trail easement currently exists along Cerro Vista Court, which connects to Shannon Road by way of Cerro Vista Drive. As shown in Figure 3-2, the proposed private street would provide the designated trail connection to Twin Oaks Drive, while a proposed pedestrian/equestrian trail through the site would connect Brooke Acres Drive to the existing trail connection on Cerro Vista Court. Although the HSP denotes a desired connection through the Hillbrook property, site constraints (topography and existing home location) would make this connection infeasible. The proposed project provides the connections through the site as shown on Figure 4.6-1. Therefore, project roadways and trails would be consistent with the Hillside Specific Plan's designated trails and roadways.

4.6.3 POTENTIAL IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

Based on criteria derived from Appendix G of the *CEQA Guidelines*, an impact is considered significant if the proposed project would:

- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;
- Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;
- 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;
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Result in inadequate emergency access; or
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

As referenced in the first above significance criterion (i.e., conflicting with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system), impacts

on local intersections are based on the Town's significance criteria and thresholds. Project impacts on other transportation facilities, such as bicycle facilities and transit, were determined on the basis of generally accepted standards and methods employed by the traffic engineering community. The project is said to create a significant adverse impact on traffic conditions at an intersection in the Town of Los Gatos if for either peak hour:

1. The addition of project traffic causes an intersection operating at LOS A, B, or C under Background conditions to degrade more than one letter grade under Project conditions, or

2. The level of service at an intersection is LOS D or worse under Background conditions and the addition of project trips causes a degradation of level of service to LOS E or F.

The project shall mitigate any intersection project impact so that the level of service will remain at an acceptable level.

Based on the project's location, as well as its construction and operational characteristics, no impact is anticipated with respect to one of the above significance criteria:

- *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*. This criterion would not apply to the proposed project since the project site is not located in the vicinity of an airport. The project would not affect air traffic levels or cause any safety risks associated with air traffic patterns, and therefore would have no impact.

METHODOLOGY

This section is based on a traffic study by Hexagon Transportation Consultants, Inc. (2015). This study describes the traffic conditions that currently exist and the traffic conditions that would exist with the addition of project traffic. The following roadways were studied:

- Twin Oaks Drive
- Clover Way
- Longmeadow Drive
- Kennedy Road
- Olde Drive

Traffic conditions were analyzed throughout the day and with a special focus on the weekday AM and PM peak hours of traffic. The AM peak hour of traffic is generally between 7:00 and 9:00 a.m., and the PM peak hour is typically between 4:00 and 6:00 p.m. It is during these periods that traffic volumes are highest on an average weekday and represent worst-case conditions. The cumulative analysis included the intersections of Los Gatos Boulevard/Kennedy Road and Edgewood Avenue/Kennedy Road.

PROJECT TRIP GENERATION AND DISTRIBUTION

The magnitude of traffic produced by a new development and the locations where that traffic would appear are estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In determining project trip generation, the magnitude of traffic generated by the project is estimated. As part of the project trip distribution, an estimate is made of the directions to and from which the project trips would travel. In the project trip assignment, the project trips are assigned to specific streets and intersections. These procedures are described below.

Through empirical research, data have been collected that quantify the amount of traffic produced by common land uses. Thus, for the most common land uses there are standard trip generation rates that can be applied to help predict the future traffic increases that would result from a new development. The magnitude of traffic added to the roadway system by a particular development is estimated by multiplying the applicable trip generation rates by the size of the development. The trip generation rates published in the Institute of Transportation Engineers' (ITE) manual entitled Trip Generation, 9th Edition (2012) for Single-Family Detached Housing (Land Use 210) were used for this study.

The project proposes to construct 10 new single-family homes on a vacant site. As shown in **Table 4.6-2**, the project is estimated to generate 95 daily vehicle trips, with 8 trips occurring during the AM peak hour and 10 trips occurring during the PM peak hour.

TABLE 4.6-2

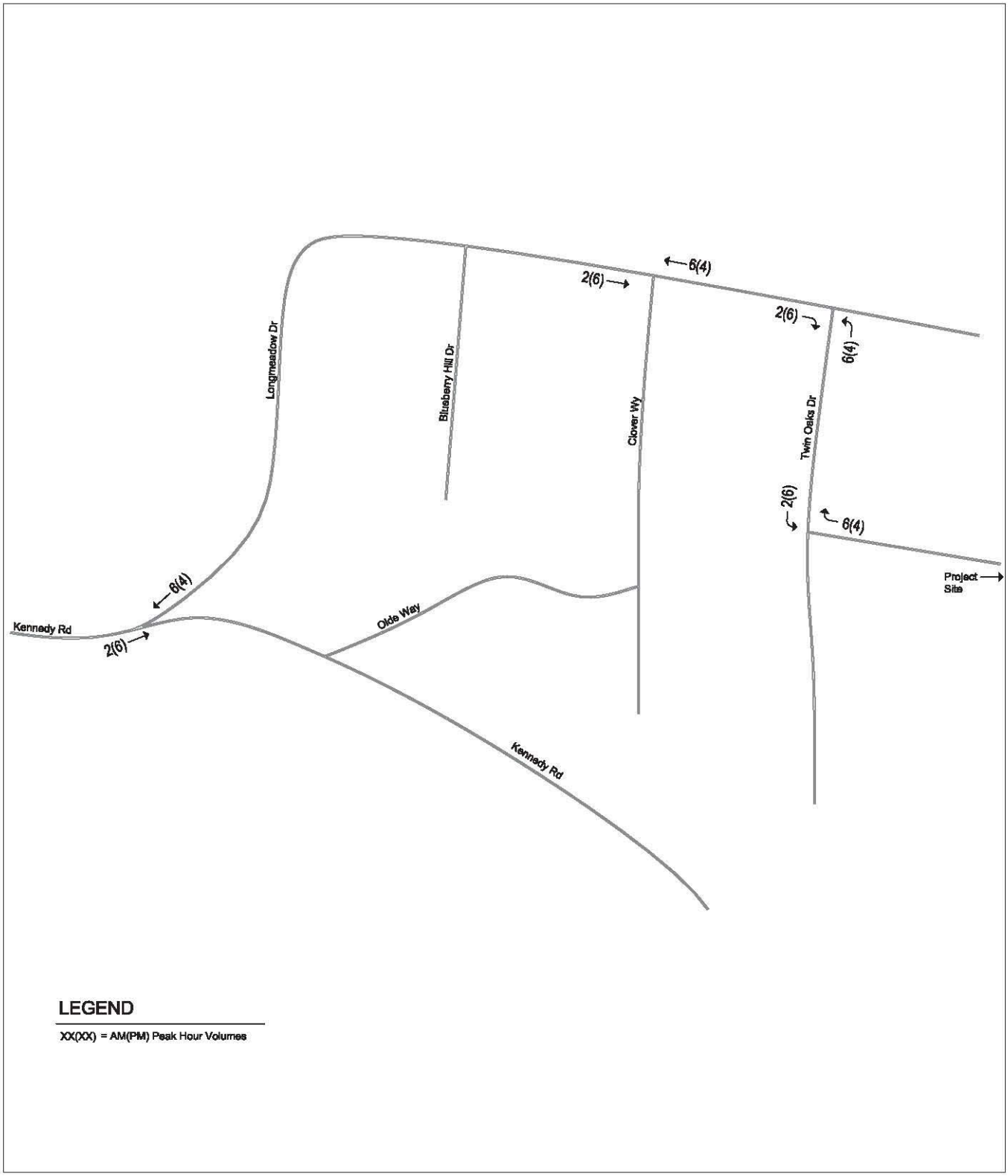
PROJECT TRIP GENERATION ESTIMATES

		Daily	Daily	AM Peak Hour				PM Peak Hour			
Land Use	**Size**	**Rate[a]**	**Trips**	**Rate[a]**	**In**	**Out**	**Total**	**Rate[a]**	**In**	**Out**	**Total**
Single-Family Detached Housing	10 units	9.52	95	0.75	2	6	8	1.00	6	4	10

Notes:

[a] The ITE *Trip Generation Manual,* 9th Edition (2012) rate for single-family detached housing (Land Use 210) has been applied in this study.
SOURCE: Hexagon Transportation Consultants, Inc. (2015)

The estimated project trips were assigned to the roadway network based on existing travel patterns within the neighborhood. Based on the layout of the neighborhood roadway network and field observations, Clover Way and Olde Drive most likely would not be used by project-generated traffic. Olde Drive is narrow, has speed bumps, and does not provide any time savings as a cut-through street. Thus, it is reasonable to assume that all project traffic would use Longmeadow Drive to access the project site to and from Kennedy Road. **Figure 4.6-2** shows the AM and PM peak hour project trips that would be added to the roadway network. Future residential development would not result in either a substantial increase in traffic congestion or a worsening of the LOS. Future project-related residential development would result in limited additional traffic and would not cause a deterioration of area roadways or create a safety hazard.



Source: Hexagon Transportation Consultants, Inc. (2014)

PROJECT TRAFFIC IMPACTS

Impact 4.6-1: The project would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. (Less than Significant)

Construction Impacts. During proposed construction of roads and infrastructure, as well as eventual construction of 10 single-family homes, there would be short-term increases in construction-related trucks and vehicles on Twin Oaks Drive and Longmeadow Drive. Construction-related truck traffic would be generated from hauling of excess excavated soil, materials deliveries to the site, and workers arriving and leaving the project site during road and infrastructure construction as well as eventual construction of 10 single-family homes. During the initial phase of road and infrastructure construction, approximately 247 truckloads (494 one-way truck trips or trip ends) of excess excavated material would be hauled off-site. Most of these truck trips would occur during the grading phase (duration estimated at approximately 15 days), generating 33 truck trips per day or approximately 6 truck trips (3 truckloads) per hour. This construction phase would generate the highest truck volumes; lower volumes would be generated during other phases of construction and associated primarily with materials deliveries and worker trips. Even lower truck volumes would be generated in the future during eventual construction of project homes, since they would be constructed on an individual basis.

To ensure that construction-related traffic would not increase traffic congestion problems during all phases of project-related construction, including the grading phase, the Town will require, as a condition of project approval, that a Traffic and Safety Control Plan be prepared by the project applicant to address truck operations on local streets during the construction phase. The condition of approval will require that this Plan be subject to review and approval by the Town's Engineering Department and Police Department as well as the Santa Clara County Fire Department prior to issuance of the grading permit.

With required implementation of an approved Traffic and Safety Control Plan during all phases of project-related construction (including future home construction), potential temporary, construction-related traffic impacts would be less than significant. As a condition of project approval, the Town will require the following elements, at a minimum, in the Traffic and Safety Control Plan:

- Haul trucks would be required to use on-/off-ramps on State Route (SR) 9 (Los Gatos Saratoga Road) to access the SR 17 freeway, but could use the freeway ramps on Lark Avenue if necessary. Haul trucks, however, would be prohibited at all times from using SR 17 freeway ramps on Santa Cruz Avenue.
- The truck access route to/from SR 17 would be SR 9/Los Gatos-Saratoga Road, Los Gatos Boulevard, and Kennedy Road. From Kennedy Road, trucks would use Longmeadow and Twin Oaks Drives to access the project access road.

- Haul trucks would be allowed to operate between 9:00 a.m. and 4:00 p.m., Monday through Friday. However, to avoid conflicts with school-related traffic (Louise Van Meter Elementary School and Fisher Middle School), trucks will be prohibited from operating on Los Gatos Boulevard during the school PM peak period: 2:25 to 3:05 p.m. if trucks use Lark Avenue to access the SR 17 freeway.
- Flagpersons would be employed at intersections and road sections with limited sight lines for traffic control/safety.
- Prior to the start of construction, the applicant would hold pre-construction meetings with affected neighbors to review the dates and hours of operation.

Operational Impacts. As noted above, the project is estimated to generate 96 daily vehicle trips with 8 trips occurring during the AM peak hour and 10 trips occurring during the PM peak hour. Project-related traffic increases on local roadways were estimated by Hexagon (2015) and they are listed in Table 4.6-1. As shown in this table, the project would not add a considerable amount of traffic to local roadways. However, because existing traffic volumes within the local neighborhood are low, project-related traffic increases would be noticeable. Once the 10 additional peak hour trips disperse, the number of added trips on any one street or intersection would become so small that the traffic increase would not be noticeable outside of the immediate project neighborhood.

Such a small increase in traffic is also considered less than significant when compared to the Town's Traffic Impact Policy (Resolution 2014-017 and 059), which specifies that a threshold of 19 additional AM or PM peak hour trips for requiring a detailed traffic study. Therefore, the project would not adversely affect the performance of the circulation system, including intersections, streets, and highways/freeways. Hexagon (2015) also determined that the Longmeadow Drive/Kennedy Road and Longmeadow Drive/Clover Way intersections would continue to operate at an acceptable Level of Service (LOS) A with the project, a less-than-significant impact.[1] Nevertheless, the Town will require the project applicant to pay a traffic impact fee per the Town's Traffic Impact Mitigation Fee Ordinance to ensure that the project pays it fair share of future traffic improvements in town.

Based on the previous field studies by TJKM and ridership data from VTA, it appears that VTA Bus Route 49 is currently underutilized. Based on these data, Town staff determined that the current utilization rates for these routes are estimated to be less than 15 percent (Town of Los Gatos, 2009). Therefore, increased demand associated with the proposed project is expected to have a less than significant impact on existing transit services.

There are currently no sidewalks along Longmeadow Drive and Twin Oaks Drive, and discontinuous sidewalks along Kennedy Road. Project streets also would not have sidewalks, consistent with

[1] Level of service ratings are qualitative descriptions of intersection operations and reported using an A through F letter rating system to describe travel delay and congestion. Level of Service A indicates free flow conditions with little or no delay and LOS F indicates jammed conditions with excessive delays and long back-ups.

surrounding streets. However, the project would provide a separate pedestrian/equestrian trail across the site. The project site is located about one mile from the closest bus stop and there is a lack of sidewalks along all streets providing access to the closest bus stop. Due to the distance and/or lack of continuous sidewalks, the project is not expected to generate a significant volume of pedestrian traffic to Los Gatos Boulevard. Pedestrian access to nearby recreational trails is discussed in more detail below under Impact 4.6-5.

There are no designated bikeways in the project vicinity. The closest bike lanes are the Class II bikeway (striped) along Los Gatos Boulevard and Class III bikeway along the westernmost 1,000 feet of Kennedy Road, about one mile from the site. Beyond the Class II bikeways, bike traffic would have to share the streets with vehicles in the project vicinity. The project is not expected to generate a significant volume of bicycle traffic given the lack of bikeways in the project vicinity.

Given the low volume of pedestrians and bicyclists that would be generated by the proposed 10 single-family homes, project implementation would not significantly affect the operation of neighborhood streets providing access to/from Kennedy Road and Los Gatos Boulevard, a less-than-significant impact.

Mitigation Measure 4.6-1: *None required.*

Impact 4.6-2: The project would not conflict with the Santa Clara County Congestion Management Program. (Less than Significant)

As noted above, the proposed project would result in a net increase of 96 trips per day, with 8 trips during the AM peak hour and 10 trips during the PM peak hour. Such a small increase in traffic would not measurably change level of service operation of any CMP-designated intersections or CMP freeway segments, a less-than-significant impact.

Mitigation Measure 4.6-2: *None required.*

Impact 4.6-3: The project would not substantially increase hazards due to a design feature or incompatible uses. (Less than Significant)

There is currently no direct roadway access to the project site. With project implementation, a new intersection would be created on Twin Oaks Drive. Hexagon (2015) determined that sight distance at this new intersection would be adequate and there would be no traffic conflicts with driveways of adjacent homes and homes across from the proposed access road. Caltrans' required stopping distance on a roadway with a 25 mph speed limit is 200 feet. With the assumed project improvements,[2] sight distance on Twin Oaks Drive at its connection with the new project street would be more than 400 feet in each direction, which would be adequate.

[2] It is assumed that a new radius would be constructed at the southwest corner of this intersection as part of proposed project improvements.

Hexagon also reviewed the proposed site plan and found that site access and circulation would be adequate and the proposed street network would be built to meet current design safety standards and to be consistent with the existing neighborhood street system. Therefore, potential traffic safety impacts would be less than significant.

Mitigation Measure 4.6-3: *None required.*

Impact 4.6-4: The project would not result in inadequate emergency access. (Less than Significant)

There is currently no direct roadway access to the project site, although emergency vehicles could access the site from Cerro Vista Court, which is located just north of the project site. With project implementation, a new private road would extend eastward from Twin Oaks Drive and provide access to project lots. An emergency vehicle access would connect the project's private streets to Brooke Acres Drive, which terminates at the southern project boundary. These two connections would provide both primary and secondary emergency vehicle access to project homes. Therefore, proposed roadways would have a less-than-significant impact on emergency access.

Project implementation would create two cul-de-sacs that are approximately 800 feet in length, which is consistent with the HSP policy that specifies a maximum length of 800 feet for cul-de-sacs. Since the HSP does not indicate a road connection to Cerro Vista Drive or Cerro Vista Court (this street was also not indicated on the HSP Circulation Map) and the project is consistent with the HSP (hence, there is no CEQA-related impact related to conflicts with plans or policies),

The project's connection to Twin Oaks Drive and Brooke Acres Drive would also provide secondary emergency access to both of these streets, which currently only have one access. Therefore, project implementation would improve emergency access for the neighborhoods to the west and south.

Mitigation Measure 4.6-4: *None required.*

Impact 4.6-5: The project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. (Less than Significant)

As discussed in Section 4.6.2 above, the proposed project would not conflict with any of the applicable General Plan or HSP goals or policies related to transportation or decrease the performance or safety of such facilities. Since the project is not expected to result in a substantial increase transit riders, pedestrians, or bicyclists (see Impact 4.6-1), project implementation would not conflict with public transit, bicycle, or pedestrian policies, plans, programs, or safety, and this impact would be less than significant.

As discussed in Section 4.6.2 above, the HSP, although conceptual, designates trails connecting with Twin Oaks Drive on the west, Brooke Acres Drive on the south, Hillbrook School on the north, and Cerro Vista Drive on the north. The proposed project would include provision of a trail with connections to

adjacent streets as designated in the HSP with one exception. The HSP'S desired connection through the Hillbrook property was determined to be infeasible because of site constraints (i.e., topography and existing home location). Therefore, the project is considered to be consistent with General Plan and HSP policies related to trails/pedestrian facilities.

As indicated above, a proposed Class I bikeway is designated in the Transportation Element along Shannon Road from Los Gatos Boulevard to Santa Rosa Drive. A Class I bikeway is a separated right-of-way that is used exclusively by bicycles and pedestrians. Project implementation would include development of a pedestrian/equestrian trail across the project site, which would complete a trail connection between Shannon Road and Kennedy Road via Brooke Acres Drive and Cerro Vista Court. This trail would provide pedestrians and bicyclists from the project site and vicinity with access to the future Class I bikeway along Shannon Road. Since this future Class I bikeway would be separated from vehicular traffic on Shannon Road, project implementation would not adversely affect the safety of bicyclists or pedestrians using this bikeway. In addition, project-related vehicular traffic would use Kennedy Road, not Shannon Road, to access the project site.

Mitigation Measure 4.6-5: *None required.*

REFERENCES – TRANSPORTATION AND TRAFFIC

Hexagon Transportation Consultants, Inc., 2015. *Traffic Study for the Surrey Farm Estates Development in Los Gatos, California*. February 3, 2015. (Included as Appendix F of this EIR)

4.7 NOISE

A detailed noise assessment study was prepared for this project by Jeffrey K. Pack of Edward L. Pack Associates, Inc. in September 2014. This assessment is included in **Appendix G** of this EIR.

4.7.1 ENVIRONMENTAL SETTING

NOISE DESCRIPTORS

Sound is described in terms of loudness (amplitude) and frequency (pitch). The standard unit of measurement of the loudness of sound is the decibel (dB). Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by differentiating among frequencies in a manner approximating the sensitivity of the human ear.

Decibels are based on a logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquakes. In terms of human response to noise, a 3-dBA noise level increase is barely perceived by most people, while a 5-dBA increase is readily noticeable and a 10-dBA increase is perceived twice as loud. Everyday sounds normally range from 30 dBA (very quiet) to 100 dBA (very loud). Noise descriptors are defined in more detail in Appendix G and examples of various sound levels in different environments are illustrated as follows:

Noise Level, dBA	Human Response	Noise Source
120-150+	Painfully Loud	Sonic Boom (140 dBA)
100-120	Physical Discomfort	Motorcycle at 20 feet (110 dBA)
		Nightclub Music (105 dBA)
70-100	Annoying	Diesel Pump at 100 feet (95 dBA)
		Freight Train at 50 feet (90 dBA)
		Food Blender (90 dBA)
		Jet Plane at 1000 feet (85 dBA)
		Freeway at 50 feet (80 dBA)
		Alarm Clock (80 dBA)
50-70	Intrusive	Average Traffic at 100 feet (70 dBA)
		Pass. Car, 30 mph @ 25 feet (65 dBA)
		Vacuum Cleaner (60 dBA)
		Suburban Background (55 dBA)
0-50	Quiet	Normal Conversation (50 dBA)
		Light Traffic at 100 feet (45 dBA)
		Refrigerator (45 dBA)
		Desktop Computer (40 dBA)
		Whispering (35 dBA)
		Leaves Rustling (20 dBA)
		Threshold of Hearing (0 dBA)

To account for human sensitivity to nighttime noise levels, the Day-Night Level (DNL) noise descriptor was developed. The DNL is also called the L_{dn}. Either DNL or L_{dn} is acceptable; however, DNL is more popular worldwide, and both are expressed in "dB" because DNL is based on A-weighted decibel scale. The DNL and L_{dn} divide the 24-hour day into the daytime period of 7:00 a.m. to 10:00 p.m. and the nighttime period of 10:00 p.m. to 7:00 a.m. The nighttime noise levels are penalized by 10 dB to account for the greater sensitivity to noise at night.

EXISTING NOISE ENVIRONMENT

To determine the existing noise environment at the residential receptor locations closest to the two proposed project access drives (most noise impacted locations), continuous recordings of the sound levels were made at two locations.[1] The measurement locations are indicated on **Figure 4.7-1**. Measurement Location 1 was on Twin Oaks Drive at the project's access road (54 feet from the roadway centerline). Measurement Location 2 was located on Cerro Vista Court at the site property line (40 feet from the roadway centerline), as indicated in Figure 4.7-1. These locations represent the existing noise environment at the residences nearest the project access roads. In addition to the measurements on Twin Oaks Drive and Cerro Vista Court, noise level measurements of activities at Hillbrook School were made for the separate Hillbrook School Expansion Project (Edward L. Pack Associates, Inc., 2010). The noise measurements for the Hillbrook School Expansion Project included a noise measurement location at the property line of the home at 189 Longmeadow Drive, which is immediately adjacent to the northwestern corner of the project site and adequately represents the potential noise impacts from this school on the project site (see Figure 4.7-1 for location of this measurement).

Noise measurements indicate that existing noise levels along Twin Oaks Drive in the vicinity of the proposed access road range from 40.3 to 55.9 dBA during the daytime and from 32.7 to 53.5 dBA during the night. Based on these measurements, the calculated DNL at this location is 53 dB and it is attributable to neighborhood noise.

Noise measurements indicate that noise levels along Cerro Vista Court in the vicinity of the proposed access road range from 38.1 to 55.5 dBA during the daytime and from 29.3 to 51.8 dBA during the night. Based on these measurements, the calculated DNL at this location is 52 dB; 38 dB is attributable to traffic and 52 dB is attributable to typical rural residential neighborhood background noise.

[1] The measurements at Twin Oaks Drive and at Cerro Vista Court were made on August 11-12, 2014. The noise measurements of Hillbrook School activities were made September 10-12, 2012. All noise measurements included representative daytime and nighttime hours of the DNL index. The sound levels were recorded and processed using Larson-Davis Model 812 Precision Integrating Sound Level Meters. The meters yield, by direct readout, a series of descriptors of the sound levels versus time, which include the L1, L10, L50, and L90 (i.e., those levels that are exceeded 1%, 10%, 50%, and 90% of the time). The meters also yield the maximum and minimum levels, and the continuous equivalent-energy levels (Leq), which are used to calculate the DNL. The measured Leq's are shown in the data tables in Appendix G.

FIGURE 4.7-1: NOISE MEASUREMENT LOCATIONS

A two-day measurement at the Hillbrook School property line ranged from 37.5 to 59.6 dBA during the daytime and from 32.4 to 49.0 dBA during the night on Day 1. Measurements on Day 2 ranged from 38.4 to 54.9 dBA during the daytime and from 32.5 to 46.8 dB at night. The existing noise exposure along the north property line closest to Hillbrook School ranges from 51 to 52 dB DNL. Of the 52 dB DNL on the first day of measurements, 48 dB DNL was due to school activity. Of the 51 dB DNL on the second day of measurements, 46 dB DNL was due to school activity.

The highest noise levels occurred during the evening hours of 8:00 p.m. to 10:00 p.m., with the noise levels ranging from 53 to 55 dBA. This is indicative of cricket noise. Other daytime noise in the Twin Oaks Drive neighborhood was produced by landscaping activities. The higher noise levels along the Hillbrook School property line occurred during the hours of 9:00 to 11:00 a.m. and 12:00 p.m. to 3:00 p.m., which is consistent with the student outdoor play periods.

SENSITIVE RECEPTORS

Human response to sound is highly individualized. Annoyance is the most common issue regarding community noise. The percentage of people claiming to be annoyed by noise generally increases with the environmental sound level. However, many factors also influence people's response to noise. The factors can include the character of the noise, the variability of the sound level, the presence of tones or impulses, and the time of day of the occurrence. People's responses are also influenced by non-acoustical factors, such as the person's opinion of the noise source, the ability to adapt to the noise, the attitude towards the source and those associated with it, and the predictability of the noise. As such, response to noise varies

widely from one person to another; and with any particular noise, individual responses could range from "not annoyed" to "highly annoyed."

Certain land uses are particularly sensitive to noise, including schools, hospitals, rest homes, long-term medical and mental care facilities, and parks and recreation areas. Residential areas are also considered noise sensitive, especially during the nighttime hours. Existing sensitive receptors located in the project vicinity are limited to residential uses that surround the site and Hillbrook School, a private K-8 school that adjoins the northwestern project boundary.

4.7.2 REGULATORY AND PLANNING FRAMEWORK

Local noise issues are addressed through implementation of general plan policies, including noise and land use compatibility guidelines, and through enforcement of noise ordinance standards. Noise ordinances regulate such sources as mechanical equipment and amplified sounds as well as prescribe hours of construction-related equipment operation. There are no federal noise guidelines or regulations that pertain to the proposed residential use. State and local noise guidelines and ordinances that are relevant to the proposed project are summarized below.

STATE

The *State of California Office of Planning and Research Noise Element Guidelines* (Guidelines) include recommended interior and exterior noise level standards for local jurisdictions to identify and prevent the creation of incompatible land uses due to noise. These Guidelines describe the compatibility of various land uses with a range of environmental noise levels in Community Noise Level Equivalents (CNEL) and Day-Night Noise Levels (DNL), and they are summarized in **Table 4.7-1**. As indicated in this table, outdoor noise levels of up to 60 dB DNL are considered to be "normally acceptable" for single-family residential uses. When compared to these recommended standards, existing noise levels on the site (52 to 53 dB DNL) are considered to be "normally acceptable" for the proposed single-family residential use.

LOCAL

Los Gatos General Plan. The Noise Element of the Los Gatos 2020 General Plan establishes goals and policies for reducing noise levels in the Town. Policies aimed at reducing noise levels must address specific sources of unwanted noise, as well as noise-sensitive receptors. The Noise Element contains guidelines for use in land use planning to reduce future noise and land use incompatibilities (Figure NOI-1 of the Noise Element). These guidelines are based on the above state guidelines (see Table 4.7-1) and define acceptability by land use. The following guidelines from Figure NOI-1 of the Noise Element would pertain to the project:

Residential: $\leq$60 dB (DNL or CNEL), Normally Acceptable
55 to 70 dB (DNL or CNEL), Conditionally Acceptable
70 to 75 dB (DNL or CNEL), Normally Unacceptable
$\geq$75 dB (DNL or CNEL), Clearly Unacceptable

TABLE 4.7-1

LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENTS

Land Use Category	Community Noise Exposure (DNL or CNEL, dB)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential-Low Density, Single-Family, Duplex, Mobile Homes	50 - 60	55 - 70	70 – 75	75 – 85
Residential – Multiple Family	50 – 65	60 – 70	70 – 75	70 – 85
Transient Lodging – Motel, Hotels	50 – 65	60 – 70	70 – 80	80 – 85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 – 70	60 – 70	70 – 80	80 – 85
Auditoriums, Concert Halls, Amphitheaters	NA	50 – 70	NA	65 – 85
Sports Arenas, Outdoor Spectator Sports	NA	50 – 75	NA	70 – 85
Playgrounds, Neighborhood Parks	50 – 70	NA	67.5 – 77.5	72.5 – 85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 – 70	NA	70 – 80	80 – 85
Office Buildings, Business Commercial and Professional	50 – 70	67.5 – 77.5	75 – 85	NA
Industrial, Manufacturing, Utilities, Agriculture	50 – 75	70 – 80	75 – 85	NA

CNEL = community noise equivalent level; NA = not applicable

NORMALLY ACCEPTABLE: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

CONDITIONALLY ACCEPTABLE: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features have been included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

NORMALLY UNACCEPTABLE: New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise-insulation features must be included in the design.

CLEARLY UNACCEPTABLE: New construction or development should generally not be undertaken.

SOURCE: California Governor's Office of Planning and Research, 2003.

Los Gatos also established outdoor noise limits in the Noise Element of the 2020 General Plan, which represent long-range community goals for different land use designations within the town. **Table 4.7-2** presents the Outdoor Noise Limits that are listed in Table NOI-2 of the Noise Element. They indicate that noise levels of 55 dB DNL are the desired noise level for residential uses.[2] However, the Town's Noise Element (Policy NOI-1.3) states that these noise limits represent the "long range community aspirations" and acknowledges that such goals may not be attainable at this time.

[2] The DNL is a time-weighted noise level where a 10-dB penalty is added to nighttime L_{eq} noise levels.

TABLE 4.7-2

TOWN OUTDOOR NOISE LIMITS

Land Use	Max DNL Value	Max $L_{eq(24)}$ Value	Comparable Noise Source	Response
Residential	55 dB	--	Light auto traffic (100 feet)	Quiet
Commercial	--	70 dB	Freeway traffic (50 feet)	Telephone use difficult
Industrial	--	70 dB	Freeway traffic (50 feet)	Telephone use difficult
Intensive Open Space (Developed Park)	--	55 dB	Light auto traffic (100 feet)	Quiet
Passive Open Space (Nature Park)	--	50 dB	Light auto traffic (100 feet)	Quiet
Hospital	--	55 dB	Light auto traffic (100 feet)	Quiet
Education	--	55 dB	Light auto traffic (100 feet)	Quiet

SOURCE: Town of Los Gatos, 2011.

The Noise Element of the General Plan contains policies that pertain to noise. In general, the proposed project would be consistent with these goals and policies or specified mitigation measures would avoid potential noise impacts related to potential conflicts with policies designed to prevent environmental impacts. Project consistency with those guidelines is discussed in the following policy-project consistency discussion:

General Plan Policies	Project Consistency Discussion
Noise Element *NOI-1.1: The Town, as part of the Environmental Review process, shall require applicants to submit an acoustical analysis of projects. All input related to noise levels shall use the adopted standard of measurement shown in Table NOI-2. Noise impacts of new development shall be evaluated in terms of any increase of the existing ambient noise levels and the potential for adverse noise and groundborne vibrations impacts on nearby or adjacent properties. The evaluation shall consider short-term construction noise and on-going operational noise.* *NOI-1.2: The Town shall maintain the noise ordinance standards.* *NOI-1.3: Employ the L_{dn} scale for the evaluation of outdoor noise for residential land uses… as shown in Table NOI-2. Pursue the outdoor noise limits shown in Table NOI-2 as representing the long range community aspirations and work toward their accomplishment, even though some may be presently unattainable.*	Table NOI-2 of the Noise Element specifies a maximum outdoor noise limit of 55 dB (Ldn or DNL) for residential use. A detailed environmental noise assessment was prepared for the project by Edward L. Pack Associates, Inc. (2014; see Appendix G of this EIR). The detailed acoustical assessment determined that the project's construction-related noise and vibration impacts (see Impacts 4.7-1 and 4.7-2 for more discussion) would be less than significant with implementation of Mitigation Measure 4.7-1, administrative and source controls, while operational noise impacts (see Impacts 4.7-3 and 4.7-4 for more discussion) would be less than significant when compared to this 55-dB limit (no mitigation required).
NOI-2.1: Evaluate the potential for existing ambient and/or intrusive noise to adversely affect new development. *NOI-2.2: Require all noise-sensitive developments adjacent to or within an area where noise levels exceed*	The detailed noise assessment (included as Appendix G of this EIR) indicated that future noise levels at project residences would be consistent with the Town's 55-dB DNL (or L_{dn}) noise goal (see Impact 4.7-4 for more discussion).

General Plan Policies	Project Consistency Discussion
community aspirations to include a noise study and recommendations for reducing noise impact to an acceptable level. *NOI-5.1 Protect residential areas from noise by requiring appropriate site and building design, sound walls, and landscaping and by the use of noise attenuating construction techniques and materials.* *NOI-7.1: Enforce noise limits and monitor compliance with noise standards.*	
NOI-6.1: The Town shall not approve land use patterns and traffic patterns that expose sensitive land uses or sensitive noise receptors to unacceptable noise levels. *NOI-6.2 Review transportation improvement plans to ensure that noise-sensitive areas are not exposed to unacceptable noise levels.*	Project implementation would increase traffic noise levels by 1 dB or less on local roadways and noise levels at the closest residences adjacent to Twin Oaks Drive and Longmeadow Drive would be maintained at 55 dB DNL or less. Such noise increases and noise levels were determined to be less than significant and consistent with the Town's 55 dB DNL noise limit for residential uses (see Impact 4.7-3 for more discussion).

Los Gatos Noise Ordinance. The Town Noise Ordinance (Chapter 16 of the Town Municipal Code) specifies noise limits for construction activities (Section 16.20.035). The ordinance restricts construction activities to the hours of 8:00 a.m. to 8:00 p.m. on weekdays and 9:00 a.m. to 7:00 p.m. on weekends and holidays. This ordinance limits construction noise generation by requiring construction to meet either of the following: (1) no individual piece of equipment shall produce a noise level exceeding eighty-five (85) dBA at twenty-five (25) feet from the piece of equipment; or (2) the noise level at any point outside of the property plane (line) cannot exceed eighty-five (85) dBA. These restrictions are not applied in this analysis since no new facilities would be constructed under the proposed project.

4.7.3 POTENTIAL IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA AND THRESHOLDS

Based on criteria derived from Appendix G of the *CEQA Guidelines*, an impact is considered significant if the proposed project would:

- Expose people to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Expose people to or generate excessive groundborne vibration or groundborne noise levels;
- Cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- Cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels permissible under the Town's Noise Ordinance;

- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels; or

- For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

The Town of Los Gatos Noise Ordinance provides thresholds for stationary noise impacts, but does not have thresholds that evaluate noise increases in traffic and transportation-related noise. The following criteria are used in the General Plan EIR (Town of Los Gatos, 2010) for determining if traffic noise is significant:[3]

- An increase of the existing ambient noise levels by 5 dBA or more, and remains below 55 dB DNL;
- An increase of the existing ambient noise level by 3 dBA or more, and causes the ambient level to equal or exceed 55 dBA DNL; or
- An increase of the existing ambient noise level by 1 dBA or more, where the ambient level is greater than 55 dBA DNL.

With respect to vibration, the American Association of State Highway and Transportation Officials (AASHTO) Standard R 8-96 (AASHTO, 2004) describes three general categories of damage to buildings from vibration: 1) Threshold cracking; 2) Architectural or Minor Damage; and 3) Major Damage. Both Threshold and Minor damage include cracks in room interior surfaces that do not affect the strength or structural integrity of the structure. The term "threshold cracking" is defined as the highest vibration amplitude at which no cosmetic, minor, or major damage occurs. This may include "threshold cracks" such as hairline cracks in room walls that occur at the lowest vibration amplitudes. Based on the AASHTO guidelines, a threshold damage criterion of 0.5 inches/second, peak particle velocity (in/sec, PPV) is appropriate to evaluate vibration impacts by transient and irregular sources. The California Department of Transportation also uses a vibration limit of 0.5 in/sec, PPV for buildings structurally sound and designed to modern engineering standards (Caltrans, 2004). Since existing structures located adjacent to or near the project site are built to modern engineering standards (i.e., not unreinforced masonry structures), this threshold is applied in this analysis for transient vibration.

Based on the project's location as well as its construction and operational characteristics, no impacts are anticipated with respect to the above criteria:

- *Expose people to or generate excessive groundborne vibration and noise levels*. Groundborne noise refers to a condition where noise is experienced inside a building or structure as a result of

[3] These thresholds are derived from the Caltrans Technical Noise Supplement (November 2009) and the Federal Interagency Committee on Noise, *Federal Agency Review of Selected Airport Noise Analysis Issues* (August 1992) to specifically address noise generated from transportation related sources. They were also applied in the Los Gatos 2020 General Plan EIR.

vibrations produced outside of the building and transmitted as ground vibration between the source and receiver. Groundborne noise can be problematic in situations where the primary airborne noise path is blocked, such as in the case of a subway tunnel passing in close proximity to homes or other noise-sensitive structures. Since there would be no such underground construction, no construction-related groundborne vibration or noise would occur.

- *For a project located within an airport land use plan area, or, where such a plan has not been adopted, in an area within 2 miles of a public airport or public use airport, expose people residing or working in the area to excessive noise levels*. This criterion would not apply to the proposed project since the project site is not located within an airport land use plan area or within two miles of a public airport or public use airport. The closest public airport or public use airport is the Norman Y. Mineta San Jose International Airport, located at 1701 Airport Boulevard, San Jose, which is nine miles away from the project site. Therefore, the project would not result in any long-term exposure of construction workers or project employees to excessive airport-related noise levels.
- *For a project located in the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels*. This criterion would not apply to the proposed project since the project site is not located in the vicinity of a private airstrip. Therefore, the project would not result in any long-term exposure of construction workers to excessive airport-related noise levels.

METHODOLOGY

The noise impact assessment evaluates short-term (temporary) impacts associated with project construction as well as long-term (permanent) impacts resulting from project operation. For construction noise, the potential for impacts is assessed by considering several factors, including the proximity of construction-related noise sources to sensitive receptors, typical noise levels associated with construction equipment (including construction-related vehicles), the potential for construction noise levels to interfere with adjacent residential activities, the duration that sensitive receptors would be affected, and whether proposed activities would occur outside the construction time limits specified in the Los Gatos Noise Ordinance. For operational noise, this impact evaluation determines the potential for impact by assessing long-term noise increases from project-related traffic increases on local roadways.

To address the CEQA significance criterion regarding “substantial temporary or periodic noise increases in ambient noise levels” for construction noise, a “substantial” noise increase is defined as an increase in noise to a level that causes interference with land use activities at nearby sensitive receptors. One indicator that construction noise could interfere with daytime activities would be speech interference, and an indicator that construction noise could interfere with nighttime activities would be sleep interference. Since the Town’s Noise Ordinance requires that project construction be limited to daytime hours (i.e., between 8:00 a.m. and 8:00 p.m. on weekdays and between 9:00 a.m. and 7:00 p.m. on weekends and holidays), only the speech interference threshold is applied in this analysis to define potential “substantial” noise impacts. Speech interference is an indicator of impact on typical daytime and evening activities. A speech interference threshold, in the context of impact duration and time of day, is used to

identify substantial increases in noise resulting from temporary construction activities. Noise peaks generated by construction equipment could result in speech interference at nearby residences if the noise level in the interior of the building exceeds 45 to 60 dBA. A typical building can reduce noise levels by 25 dBA with the windows closed (U.S. Environmental Protection Agency (EPA), 1974).

Since construction would occur only during the day and windows could be opened during the evenings and night, an exterior noise level of 85 dBA L_{eq} at receptors, consistent with the Town's Noise Ordinance, would maintain an interior noise environment of 60 dBA with windows closed during the day, which is considered acceptable on a short-term basis. It should be noted that such noise levels would be sporadic rather than continuous in nature, because different types of construction equipment would be used throughout the construction process. This noise impact assessment estimates noise levels associated with proposed project construction and compares daytime construction noise levels at sensitive receptors against the speech interference threshold.

To address the CEQA significance criterion regarding "noise levels in excess of standards established in the local general plan or noise ordinance," this EIR applies the construction noise limits specified in the Los Gatos Noise Ordinance because the Town's General Plan Noise Element does not specify construction noise limits. For this analysis, a noise impact is considered significant if project construction activities extended beyond ordinance time limits for construction or construction-related noise levels exceed the ordinance noise level standards, specifically: (1) construction activity is limited to 8:00 a.m. to 8:00 p.m. on weekdays and 9:00 a.m. to 7:00 p.m. on weekends and holidays; and (2) each individual piece of equipment cannot produce a noise level exceeding 85 dBA at 25 feet from the piece of equipment or noise from all construction activity cannot exceed 85 dBA at the property line. For purposes of determining the project's compatibility with the existing and future noise environment, this EIR applies the Town's Outdoor Noise Limits, as presented in Table NOI-2 of the Town's Noise Element.

Project-related excavation and construction activities could result in vibration that could disturb nearby residents and cause cosmetic damage to existing adjacent buildings or structures. The assessment of vibration impacts evaluates whether construction would result in "excessive groundborne vibration." In general, cosmetic or threshold damage to residential buildings can occur at vibrations over 0.5 in/sec PPV (Caltrans, 2004). The impact analysis presented below uses standard analytical methodologies such as (i) estimating vibration levels at sensitive receptors for a given vibration source and setback distance; (ii) comparing the estimated vibration level to the 0.5 in/sec PPV threshold for cosmetic damage to structures; and (iii) providing mitigation where applicable.

CONSTRUCTION NOISE AND VIBRATION

Impact 4.7-1: Project construction could cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project due to operation of heavy equipment during construction. (Less than Significant with Mitigation)

Short-term construction impacts could be created during construction of the proposed development. Construction equipment typically generates noise levels in the range of 70 to 90 dBA at 50 feet from the source, and has a potential to disturb residences to the north, south, east, and west. The highest noise levels at the residential property boundaries are estimated at up to approximately 76 to 96 dBA at the residences closest to the project site when heavy equipment operates near the property lines. Hourly average noise levels would range from 74 to 89 dBA L_{eq} with the highest noise levels occurring during grading of the site near adjacent residences. The noise exposures are likely to be up to 80 dB DNL on the noisiest days. Typical noise exposures from construction would range from 54 to 74 dB DNL.

The Town Noise Ordinance (Chapter 16, Section 16.20.035) restricts construction activities to the hours of 8:00 a.m. to 8:00 p.m. on weekdays and 9:00 a.m. to 7:00 p.m. on weekends and holidays. The Noise Ordinance recognizes that construction activities undertaken during daytime hours are a typical part of living in an urban environment and do not cause a substantial increase or undue disruption. Even gasoline-powered lawn mowers and other power equipment used by homeowners to keep up their homes and yards generate noise levels that would be unacceptable during nighttime hours. According to this ordinance (Section 16.20.035), noise from construction must meet one of the following noise limitations: (1) either no individual piece of equipment shall produce a noise level exceeding eighty-five (85) dBA at twenty-five (25) feet from the piece of equipment; or (2) the noise level at any point outside of the property boundary cannot exceed eighty-five (85) dBA.

The closest noise-sensitive receptors are residences located along the northwestern and northern site boundaries. There are two residences at the east end of Longmeadow Drive, and they are located approximately 60 feet or more from the western site boundary and 130 feet from the closest conceptual building footprint on Lot 3. There are three residences on Twin Oaks that also adjoin the western project boundary: one house (applicant's family home) is located approximately 15 feet south of the proposed access road, while the residence to the north is located about 100 feet away from this road. The two residences north of the access road are located about 300 feet from the closest proposed conceptual building footprints on Lots 2 and 3, while the residence to the south of the access road is located about 200 feet from the conceptual building footprint on Lot 1. There is one residence on Cerro Vista Court and it is located approximately 20 feet from the northern site boundary and about 100 feet from closest proposed conceptual building footprint on Lot 5. There are two residences at the north end of Brooke Acres Drive and they are located as close as 25 and 70 feet from the southern project boundary and as close as approximately 90 feet from the conceptual building footprint on Lot 1 and 150 feet from conceptual footprint on Lot 8.

During road construction and installation of utilities infrastructure, the existing residence on Cerro Vista Court would be subject to the highest noise levels because it is located as close as 80 feet from the proposed access road turnaround. The existing residences at the east end of Longmeadow Drive would be the closest residences to the proposed drainage basins (as close as 60 feet) and western cul-de-sac (as close as 225 feet). At distances of 60 to 80 feet, operation of heavy equipment would likely exceed the ordinance limit of 85 dBA, a significant impact. Required compliance with the ordinance noise limit (85

dBA at 25 feet or at the property boundary) would ensure that an acceptable interior noise level of 60 dBA L_{eq} could be maintained at these residences, reducing this impact to less than significant.

In general, during times when heavy construction equipment operates closer than 100 feet from the closest residential receptors, equipment noise would have the potential to occasionally exceed the 85-dBA ordinance limit and 60-dBA interior threshold. These exceedances would be sporadic (not continuous) in nature, limited in duration, and would occur primarily when certain types of heavy equipment are near a given receptor (i.e., drainage improvements along the northwestern site boundary, road construction near the northern project boundary). Despite the limited duration of such construction operations and associated noise exceedances at any given receptor, adjacent residents could be subject to occasional noise disturbances over the four to six-month construction period and subsequent construction of individual homes (depending on proximity of the home to adjacent receptors), a significant impact. However, compliance with ordinance time limits and the 85-dBA noise limit at 25 feet or at the property boundary, as well as implementation of Mitigation Measure 4.7-1, which requires implementation of administrative and source controls (i.e., using properly operating and maintained mufflers and other state-required noise attenuation devices) and designation of a Noise Disturbance Coordinator, the effects of short-term noise increases associated with project demolition/construction activities would be reduced to less than significant.

Mitigation Measure 4.7-1, Administrative and Source Controls: *Prior to Grading Permit issuance, the project applicant shall demonstrate to the satisfaction of the Town of Los Gatos Public Works Department that the project complies with the following:*

a. *Pursuant to the Town of Los Gatos Municipal Code Section 16.20.035, construction activities (including operation of haul and delivery trucks) shall occur between the hours of 8:00 a.m. and 8:00 p.m. on weekdays and 9:00 a.m. and 7:00 p.m. on weekends and holidays.*

b. *Pursuant to Municipal Code Section 16.20.035(2) the Contractor shall demonstrate, to the satisfaction of the Town of Los Gatos Public Works Department, that construction noise shall not exceed 85 dBA outside of the property line. This shall be accomplished by using the type of muffler recommended by the vehicle manufacturer. In addition, all equipment (including mufflers) should be in good mechanical condition and properly maintained so as to minimize noise created by faulty or poorly maintained engine, drive-train, and other components. If necessary to achieve compliance with the Town's Noise Ordinance, one or more of the additional noise control measures below shall also be used:*

    - *Temporary berms or noise barriers, such as lumber or other material stockpiles and construction trailers, shall be utilized where necessary to meet the Ordinance noise limit.*

    - *Stationary equipment, such as compressor and generators shall be housed in acoustical enclosures and placed as far from sensitive receptors as feasible. "Quiet" or "sound suppressed" equipment shall be utilized where the technology exists.*

- *Use wheeled earth moving equipment rather than track equipment.*
- *Provide a "Noise Disturbance Coordinator" with a phone number and email address so that the nearby residents have a contact person is case of a noise problem.*
- *Keep vehicles routes clean and smooth both on-site and off-site to minimize noise and vibration from vehicles rolling over rough surfaces.*
- *Nail guns should be used where possible as they are less noisy than manual hammering.*

Level of Significance After Mitigation: Less than significant since compliance with noise and time limits specified in the Town Noise Ordinance and implementation of the above administrative and source control measures would reduce the potential for construction-related noise disturbances.

Impact 4.7-2: Project construction could expose people to or generate excessive groundborne vibration at adjacent residences during construction. (Less than Significant)

Project construction can generate varying degrees of groundborne vibration, depending on the construction procedure and the construction equipment used. Operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of the construction site often varies depending on soil type, ground strata, and construction characteristics of the receiver building(s). The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, to slight damage at the highest levels. Groundborne vibrations from construction activities rarely reach levels that damage structures.

Operation of impact or vibratory pile drivers can generate vibration levels that would disturb adjacent receptors and result in cosmetic damage to adjacent structures at distances of less than 50 feet. However, such equipment is not expected to be required for project construction. The threshold distance can vary substantially depending on the soil composition and underground geological layer between vibration source and receiver. In addition, not all buildings respond similarly to vibration generated by construction equipment. With regard to the proposed project, groundborne vibration would be generated by operation of heavy equipment and loaded trucks, primarily during demolition and grading activities. The closest residences to the project site are located approximately 20 feet from the northern project boundary and 25 feet from the southern project boundary. However, the closest construction is proposed to be approximately 50 feet away from these residences. Typical maximum vibration levels at 25 feet (which could be generated by construction equipment operating at the project boundary) are presented in **Table 4.7-3**.

As indicated in Table 4.7-3, based on the Federal Transit Administration (FTA) data, vibration velocities from typical heavy construction equipment operation that would be used during project construction would range from 0.003 to 0.202 inches per second (in/sec) peak particle velocity (PPV) at 25 feet from

TABLE 4.7-3

TYPICAL VIBRATION LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment	Reference Vibration Level at 25 feet, in/sec PPV[a]	Exceeds 0.5 in/sec PPV Cosmetic Damage Threshold?
Clam shovel drop	0.202	No
Vibratory roller	0.210	No
Hoe ram, large bulldozer, caisson drilling	0.089	No
Loaded trucks	0.076	No
Jackhammer	0.035	No
Small bulldozer	0.003	No

SOURCE: FTA (2006)

the source of activity. Therefore, vibration levels associated with operation of heavy construction equipment at the project boundaries (25 feet) and at the closest project improvements (50 feet away) is not expected to exceed the 0.5 in/sec PPV threshold for cosmetic damage from transient vibration, a less-than-significant impact. Although vibration would not be expected to cause cosmetic or structural damage, it should be noted that future demolition/construction activities on-site could, at times, generate perceptible vibration at existing or proposed residences within approximately 150 feet of the construction site when heavy equipment, vibratory equipment, or impact tools (e.g. jackhammers or rock drills) are used. In general, vibration levels as low as 0.008 to 0.012 in/sec PPV can be perceptible. However, perceptible vibration levels would be limited to the less sensitive, daytime working hours and they would be limited in duration to construction activities within 150 feet of a residential receptor. Therefore, construction-related vibration would have a less-than-significant impact on adjacent residences.

Mitigation Measure 4.7-2: *None required.*

OPERATIONAL NOISE

Impact 4.7-3: Occupation of proposed residences would not result in a substantial permanent increase in ambient noise levels in the project site vicinity or along local roadways. (Less than Significant)

Project implementation would result in the introduction of residential activities associated with 10 single-family homes. It is expected that noise generated by residential activities (i.e., operation of air conditions, swimming pool equipment, barking dogs, and maintenance equipment such as lawnmowers, blowers, etc.) would be similar to noise generated by adjacent residences, and would not conflict with the existing residential noise environment in the neighborhood. Equipment noise also would be subject to noise limits stipulated in the Town's Noise Ordinance.

Existing noise levels along Twin Oaks Drive were measured to be 53 dB DNL at 54 feet from the road centerline and due primarily to normal neighborhood noise and wildlife. As indicated in Section 4.6, the

average daily traffic volume on Twin Oaks Drive is 281vehicles per day, which contributes 44 dB DNL on Twin Oaks Drive at 54 feet from the centerline. The project is estimated to add 96 vehicles per day on these streets, which would increase traffic noise levels by 1 decibel. With project implementation, traffic noise levels would increase from 44 to 45 dB DNL at the closest existing homes on Twin Oaks Drive (approximately 55 feet from the road centerline). When background neighborhood noise (52 dB DNL, which includes wildlife/crickets) are added to traffic noise levels on Twin Oaks Drive (45 dB DNL), the combined noise level of neighborhood and wildlife, existing traffic, and project traffic would be 53 dB DNL at the closest homes along Twin Oaks Drive. Based on the significance thresholds outlined above, a 1 dB increase would be less than significant and the resulting noise level of 53 dB DNL at homes on Twin Oaks Drive would also remain below the Town's 55-dB DNL noise goal.

Project implementation would similarly increase traffic noise levels on Longmeadow Drive (between Kennedy Road and Twin Oaks Drive) by less than 1 decibel. Based on the significance thresholds outlined above, an increase of less than 1 decibel regardless of the background noise level would be less than significant.

There are two existing homes on Twin Oaks Drive that are located adjacent to the proposed access road: one house (applicant's family home) is located approximately 30 feet south of the centerline of the proposed access road, while the residence to the north is located about 145 feet away from this road's centerline. Project-related traffic noise increases along the proposed access road would increase noise levels by 1 decibel at the residence to the south, but the residence to the north is setback sufficiently such that there would be no traffic noise increase from the proposed access road. Based on the significance thresholds outlined above, a 1 dB increase would be less than significant and future noise levels at this residences would also be maintained at or below the Town's 55-dB DNL noise goal.

The potential building envelope on proposed Lot 1 would be the closest project residence to Twin Oaks Drive. At this distance, noise from Twin Oaks Drive would be 32 dB DNL. Project-related traffic on this access road would result in traffic noise levels of 33 dB DNL. Assuming background neighborhood noise (including wildlife/crickets) is similar to existing conditions, the combined noise level at this project residence would be 52 dB DNL, which would be consistent with (less than) the Town's 55-dB DNL noise goal. Therefore, project-related traffic noise also would not significantly affect project residences.

Mitigation Measure 4.7-3: *None required.*

NOISE COMPATIBILITY OF PROPOSED RESIDENTIAL USE

Impact 4.7-4: The project would not expose people to or generate noise levels in excess of standards established in the local general plan, noise ordinance, or applicable standards of other agencies. (Less than Significant)

Noise levels at the project site boundaries were measured at 52 to 53 dB DNL, and due primarily to wildlife (crickets) and existing traffic on nearby roadways to a less extent. The existing noise exposure

along the north property line closest to Hillbrook School ranges from 51 to 52 dB DNL. Of the 52 dB DNL measured on the first day of measurements, 48 dB DNL was due to school activity. Of the 51 dB DNL measured on the second day of measurements, 46 dB DNL was due to school activity.

Policy NOI-1.3 directs the Town to "Pursue the outdoor noise limits shown in Table NOI-2 as representing the long range community aspirations and work toward their accomplishment, even though some may be presently unattainable." The goal for maximum outdoor noise levels in residential areas listed in this table is 55 dB DNL. As indicated above, noise levels at the project site (including noise from Hillbrook School) would be less than 55 dB DNL and consistent with this noise goal. Therefore, the project would not expose future residents to excessive noise levels, a less-than-significant noise impact.

Mitigation Measure 4.7-4: *None required.*

REFERENCES - NOISE

American Association of State Highway and Transportation Officials (AASHTO), 2004. *Standard Recommended Practice for Evaluation of Transportation-Related Earthborne Vibrations*.

California Department of Transportation (Caltrans), 2009. *Technical Noise Supplement*. California Department of Transportation, Division of Environmental Analysis. November. Available online at http://www.dot.ca.gov/hq/env/noise/pub/tens_complete.pdf.

California Department of Transportation (Caltrans), 2004. *Transportation- and Construction-Induced Vibration Guidance Manual*. California Department of Transportation, Environmental Program, Environmental Engineering, Noise, Vibration, and Hazardous Waste Management Office, Sacramento, CA. June. Available online at http://www.dot.ca.gov/hq/env/noise/pub/vibrationmanFINAL.pdf.

California Governor's Office of Planning and Research, 2003. *General Plan Guidelines*. October. Available online at http://opr.ca.gov/docs/General_Plan_Guidelines_2003.pdf.

Edward L. Pack Associates, Inc., 2014. *Noise Assessment Study for the Planned Surrey Farm Estates, Single-Family Subdivision, Twin Oaks Drive, Los Gatos*. Project No. 46-037. September 29. (Included as Appendix G of this EIR)

Federal Interagency Committee on Noise, 1992. *Federal Agency Review of Selected Airport Noise Analysis Issues*. August. Available online at http://www.fican.org/pdf/nai-8-92.pdf.

Town of Los Gatos, 2011. *Town of Los Gatos 2020 General Plan*. January 7. Available online at http://www.losgatosca.gov/index.aspx?NID=27.

Town of Los Gatos, 2010. 2*020 General Plan Final Environmental Impact Report*. June.

U.S. Environmental Protection Agency (EPA), *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (Condensed Version),* Washington D.C. (EPA/ONAC 550/9-74-004). Available online at http://www.nonoise.org/library/levels74/levels74.htm. 1974.

4.8 AIR QUALITY

This section provides a discussion of existing air quality, evaluates potential air quality impacts associated with the proposed project, and identifies mitigation measures recommended for potentially significant adverse impacts.

4.8.1 ENVIRONMENTAL SETTING

METEOROLOGY

The project site is located within the nine-county San Francisco Bay Area Air Basin (SFBAAB). Temperatures at nearby San Jose Airport average 59 degrees Fahrenheit annually, ranging from the low-40's on winter mornings to near 80 degrees Fahrenheit on summer afternoons.

The climate is dominated by the strength and location of a semi-permanent, subtropical high-pressure cell. During the summer, the Pacific high pressure cell is centered over the northeastern Pacific Ocean resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below to the surface because of the northwesterly flow produces a band of cold water off the California coast. The cool and moisture-laden air approaching the coast from the Pacific Ocean is further cooled by the presence of the cold water band resulting in condensation and the presence of fog and stratus clouds along the Northern California coast. In the winter, the Pacific high-pressure cell weakens and shifts southward resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms. Weak inversions coupled with moderate winds result in a low air pollution potential.

AIR QUALITY MONITORING

The California Air Resources Board (CARB) operates a regional monitoring network that measures the ambient concentrations of six criteria air pollutants: ozone (O_3), carbon monoxide (CO), particulate matter (PM_{10} and $PM_{2.5}$), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2). Existing and probable future air quality in the project area can best be inferred from examining ambient air quality measurements taken at the closest monitoring stations to the project area. The closest air monitoring station to the project site is the Los Gatos monitoring station, which monitors eight-hour and one-hour ozone only. Therefore, the remaining data was collected from the San Jose-Jackson Street monitoring station (next closest station to the project site). Local air quality data from 2010 to 2012 is provided in **Table 4.8-1**. This table lists the monitored maximum concentrations and number of exceedances of federal/State air quality standards for each year.

These annual data summaries indicate that the project area is currently subject to particulate levels (PM_{10} and $PM_{2.5}$) that occasionally exceed the State PM_{10} annual standard of 50 micrograms per cubic meter ($\mu g/m^3$), and also infrequently exceed the federal $PM_{2.5}$ standard of 35 $\mu g/m^3$. The annual average $PM_{2.5}$

TABLE 4.8-1

LOCAL AIR QUALITY LEVELS

Pollutant	California Standard	Federal Standard	Year	Maximum[a] Concentration	Days (Samples) State/Federal Std. Exceeded
Ozone (O_3) (1-Hour)[b]	0.09 ppm (1-Hour)	NA	2011	0.091 ppm	0/NA
			2012	0.085	0/NA
			2013	0.087	0/NA
			2014	0.090	0/NA
Ozone (O_3) (8-Hour)[b]	0.07 ppm (8-Hour)	0.075 ppm (8-Hour)	2011	0.075 ppm	1/0
			2012	0.072	1/0
			2013	0.075	1/0
			2014	0.077	1/3
Carbon Monoxide (CO) (1-Hour)[c]	20 ppm (1-Hour)	35 ppm (1-Hour)	2011	2.46 ppm	0/0
			2012	2.50	0/0
			2013	--	0/0
			2014	--	0/0
Carbon Monoxide (CO) (8-Hour)[c]	9.0 ppm (8-Hour)	9.0 ppm (8-Hour)	2011	2.18 ppm	0/0
			2012	1.86	0/0
			2013	--	0/0
			2014	--	0/0
Nitrogen Dioxide (NO_2)[c,d]	0.18 ppm (1-Hour)	0.100 ppm (1-Hour)	2011	0.061 ppm	0/0
			2012	0. 067	0/0
			2013	0.058	0/0
			2014	0.058	0/0
Particulate Matter (PM_{10})[c,e,f]	50 $\mu g/m^3$ (24-Hour)	150 $\mu g/m^3$ (24-Hour)	2011	44.3 $\mu g/m^3$	0/0
			2012	56.5	3/0
			2013	58.1	5/0
			2014	56.4	3/0
Fine Particulate Matter ($PM_{2.5}$)[c,e,f]	No Separate State Standard (24-Hour)[g]	35 $\mu g/m^3$ (24-Hour)	2011	50.5 $\mu g/m^3$	NA/3
			2012	38.4	NA/2
			2013	57.7	NA/4
			2014	60.4	NA/2

NOTES: **Bold** values are in excess of applicable standard; ppm = parts per million; PM10 = particulate matter 10 microns in diameter or less; NM = not measured; μg/m3 = micrograms per cubic meter; $PM_{2.5}$ = particulate matter 2.5 microns in diameter or less; NA = not applicable.

a Maximum concentration is measured over the same period as the California standards.

b The Los Gatos monitoring station is located at 306 University Avenue, Los Gatos, CA.

c The San Jose-Jackson Street Monitoring Station is located at 158 East Jackson Street, San Jose, CA. The 1-hour concentration is no longer reported by CARB, and there was insufficient data in 2013 for the 8-hour concentration.

d The U.S. Environmental Protection Agency revoked the federal 1-hour standard in June of 2005.

e PM_{10} exceedances are based on State thresholds established prior to amendments adopted on June 20, 2002.

f PM_{10} and $PM_{2.5}$ exceedances are derived from the percentage of samples exceeded, not days monitored.

SOURCE: CARB, 2011, 2012, 2013, 2014.

levels did not exceed the State $PM_{2.5}$ annual standard of 12 $\mu g/m^3$ over the 3-year period. As indicated in Table 4.8-2 (see below), the SFBAAB is designated as "nonattainment" for State ozone, PM_{10}, and $PM_{2.5}$ standards, while it is designated as "attainment" for all other criteria pollutants. With respect to federal standards, the Bay Area's attainment status for 8-hour ozone is classified as "marginal nonattainment" in Alameda and Contra Costa counties, and "nonattainment" for $PM_{2.5}$.

Ozone (O_3). Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and nitrogen oxide (NO_X). The main sources of NO_X and ROG, often referred to as ozone precursors, are combustion processes (including motor vehicle engines) and the evaporation of solvents, paints, and fuels. Automobiles are the single largest source of ozone precursors in the Bay Area. Automobiles are the single largest source of ozone precursors in the Bay Area. O_3 is a regional air pollutant because its precursors are transported and diffused by wind concurrently with ozone production through the photochemical reaction process. Ozone causes eye irritation, airway constriction, and shortness of breath and can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema (BAAQMD, 2012a). Table 4.8-1 shows that exceedance of the State 1-hour standard occurred on 2 days in 2010, but none from 2011 to 2013. The State 8-hour standard of 0.07 ppm was also exceeded six times during this four-year period from 2010 to 2013.

Carbon Monoxide (CO). CO is an odorless, colorless gas usually formed as the result of the incomplete combustion of fuels. The single largest source of CO is motor vehicles; the highest emissions occur during low travel speeds, stop-and-go driving, cold starts, and hard acceleration. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, dizziness, fatigue, unconsciousness, and even death (BAAQMD, 2012a). Table 4.8-1 shows that no exceedances of State CO standards were recorded between 2010 and 2013. Maximum 8-hour CO levels average less than 25 percent of the allowable 8-hour standard.

Suspended and Inhalable Particulate Matter (PM_{10} and $PM_{2.5}$). Particulate matter is a class of air pollutant that consists of solid and liquid airborne particles in an extremely small size range. Particulate matter is measured in two size ranges: PM_{10} for particles less than 10 microns in diameter, and $PM_{2.5}$ for particles less than 2.5 microns in diameter. Motor vehicles generate about half of all Bay Area particulates, through tailpipe emissions as well as brake pad and tire wear. Another large source of fine particulates is wood burning in fireplaces and stoves. Fine particulates small enough to be inhaled into the deepest parts of the human lung can cause adverse health effects. 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 (BAAQMD, 2012a).

Diesel exhaust is an important concern in the Bay Area and throughout California. The California Air Resources Board (CARB) identified diesel engine particulate matter (DPM) as a toxic air contaminant (TAC), and DPM has also been identified as a human carcinogen. The exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Many of

these toxic compounds adhere to the diesel soot particles, which are very small and can penetrate deeply into the lungs. Several medical research studies have linked near-road pollution exposure to a variety of adverse health outcomes impacting children and adults, including significant allergic response and elevated production of specific antibodies (BAAQMD, 2012a).

Table 4.8-1 shows that the State PM_{10} standard was exceeded an estimated three times during the last four years and that occurred in 2012 and 2013 for all sampled data. The federal PM_{10} standard of 150 $\mu g/m^3$ was not exceeded at the San Jose monitoring station.

In 2006, the U.S. Environmental Protection Agency (USEPA) reduced the standard for $PM_{2.5}$, which represents the fine fraction of particulate from 65 to 35 $\mu g/m^3$. Table 4.8-1 presents the $PM_{2.5}$ data from the San Jose monitoring stations for 2010 through 2013. The federal $PM_{2.5}$ standard of 35 $\mu g/m^3$ has been exceeded on 12 measurement days during the last four years. The State annual average $PM_{2.5}$ standard of 12 $\mu g/m^3$ was not exceeded during this four-year period.

Other Criteria Air Pollutants. The standards for NO_2, SO_2, and lead are being met in the SFBAAB, and pollutant trends suggest that the air basin will continue to meet these standards for the foreseeable future.

TOXIC AIR CONTAMINANTS

Toxic air contaminants (TACs) are a defined set of airborne pollutants that may pose a present or potential hazard to human health. A wide range of sources, from industrial plants to motor vehicles, emit TACs. The health effects associated with TACs are quite diverse and generally are assessed locally, rather than regionally. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis or genetic damage; or short-term acute effects such as eye watering, respiratory irritation (a cough), runny nose, throat pain, and headaches (BAAQMD, 2012a).

TACs can be emitted directly and can also be formed in the atmosphere through reactions among different pollutants. The methods presented in the BAAQMD's CEQA Guidelines (2012a) for assessing local community risk and hazard impacts only include direct TAC emissions, not those formed in the atmosphere. TACs do not have ambient air quality standards, but are regulated by the BAAQMD using a risk-based approach. For evaluation purposes, TACs are separated into carcinogens and non-carcinogens based on the nature of the physiological effects associated with exposure to the pollutant. Carcinogens are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals, typically over a lifetime of exposure. Non-carcinogenic substances differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis. Acute and chronic exposure to non-carcinogens is expressed as a hazard index (HI), which is the ratio of expected exposure levels to an acceptable reference exposure levels (BAAQMD, 2012a).

SENSITIVE RECEPTORS

Sensitive populations are more susceptible to the effects of air pollution than is the general population. Sensitive populations (sensitive receptors) that are in proximity to localized sources of toxics and CO are of particular concern. Land uses considered sensitive receptors include residences, schools, playgrounds, childcare centers, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. Residential uses surround the project site, and the closest school is Hillbrook School, which adjoins the project's northern boundary.

4.8.2 REGULATORY AND PLANNING FRAMEWORK

AMBIENT AIR QUALITY STANDARDS

The federal Clean Air Act Amendments of 1970 established national ambient air quality standards, and individual states retained the option to adopt more stringent standards and to include other pollution sources. California had already established its own air quality standards when Federal standards were established, and because of the unique meteorological problems in the State, there is considerable diversity between State (SAAQS) and federal or national (NAAQS) standards currently in effect in California. These standards and current attainment status of the San Francisco Bay Area Air Basin (SFBAAB) is shown in **Table 4.8-2.**

The ambient air quality standards are intended to protect the public health and welfare, and they incorporate an adequate margin of safety. They are designed to protect those segments of the public most susceptible to respiratory distress, known as sensitive receptors, including asthmatics, the very young, the elderly, people weak from other illness or disease, or persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollution levels somewhat above the ambient air quality standards before adverse health effects are observed.

Federal Standards

The 1977 Clean Air Act (CAA) required that regional planning and air pollution control agencies prepare a regional Air Quality Plan to outline the measures by which both stationary and mobile sources of pollutants can be controlled in order to achieve all standards within the deadlines specified in the Clean Air Act. For the San Francisco Bay Area Air Basin (SFBAAB), the Association of Bay Area Governments (ABAG), the Metropolitan Transportation Commission (MTC), and the Bay Area Air Quality Management District (BAAQMD) jointly prepared a Bay Area Air Quality Plan in 1982, which predicted attainment of all federal Clean Air standards within the air basin by 1987. This forecast was somewhat optimistic in that attainment of federal Clean Air standards did not occur throughout the entire air basin until 1991. Air basins that are not in attainment must prepare air quality plans, and they must contain control strategies that demonstrate attainment with national ambient air quality standards by deadlines established in the federal CAA. The current SFBAAB attainment status with respect to federal standards is summarized in Table 4.8-2.

TABLE 4.8-2

STATE AND FEDERAL AMBIENT AIR QUALITY STANDARDS AND SFBAAB ATTAINMENT STATUS

Pollutant	Averaging Time	State Standards[a]		Federal Standards[b]	
		Concentration	Attainment Status	Concentration[c]	Attainment Status
Ozone	1 hour	0.09 ppm (180 μg/m^3)	N	N/A	–
	8 hour	0.07 ppm (137 μg/m^3)	N	0.075 ppm	N[d]
Carbon Monoxide	1 hour	20 ppm (23 mg/m^3)	A	35 ppm (40 mg/m^3)	A
	8 hour	9 ppm (10 mg/m^3)	A	9 ppm (10 mg/m^3)	A
Nitrogen Dioxide	1 hour	0.18 ppm (339 μg/m^3)	A	0.10 ppm[e]	A
	Annual arithmetic mean	0.030 ppm (57 μg/m^3)	A	0.053 ppm (100 μg/m^3)	A
Sulfur Dioxide[f]	1 hour	0.25 ppm (655 μg/m^3)	A	0.075 ppm (196 μg/m^3)	A
	24 hour	0.04 ppm (105 μg/m^3)	A	0.14 ppm (365 μg/m^3)	A
	Annual arithmetic mean	N/A	–	0.03 ppm (80 μg/m^3)	A
Particulate Matter (PM_{10})	24 hour	50 μg/m^3	N	150 μg/m^3	U
	Annual arithmetic mean	20 μg/m^3	N	N/A	–
Fine Particulate Matter ($PM_{2.5}$)	24 hour	N/A	–	35 μg/m^3 [g]	N
	Annual arithmetic mean	12 μg/m^3	N[g]	12 μg/m^3	N
Sulfates	24 hour	25 μg/m^3	A	N/A	–
Lead	30 day average	1.5 μg/m^3	A	N/A	–
	Calendar quarter	N/A	–	1.5 μg/m^3	A
	Rolling 3-month Average	N/A	–	0.15 μg/m^3	U/A
Hydrogen Sulfide	1 hour	0.03 ppm (0.15 μg/m^3)	U	N/A	–
Vinyl Chloride[h]	24 hour	0.01 ppm (26 μg/m^3)	–	N/A	–

TABLE 4.8-2 (CONTINUED)

STATE AND FEDERAL AMBIENT AIR QUALITY STANDARDS AND SFBAAB ATTAINMENT STATUS

NOTES: A = attainment; N = nonattainment; U = unclassified; N/A = not applicable or no applicable standard; ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter; – = not indicated or no information available.

[a] State ambient air quality standards (California). The State standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, and suspended particulate matter (PM_{10}) are values that are not to be exceeded. All other State standards shown are values not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e., all standards except for lead and the PM10 annual standard), then some measurements may be excluded. In particular, measurements are excluded that the CARB determines would occur less than once per year on the average.

[b] National ambient air quality standards. National standards shown are the "primary standards" designed to protect public health. National standards, other than for ozone and particulates, and those based on annual averages or annual arithmetic means, are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the three-year average of the fourth highest daily concentration is 0.075 ppm (775 ppb) or less. The 24-hour PM_{10} standard is attained when the three-year average of the 99th percentile of monitored concentrations is less than 150 $\mu g/m^3$. The 24-hour $PM_{2.5}$ standard is attained when the three-year average of 98th percentile is less than 35 $\mu g/m^3$.

[c] National air quality standards are set by USEPA at levels determined to be protective of public health with an adequate margin of safety.

[d] Final designations effective July 20, 2012.

[e] To attain this standard, the three-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010). The USEPA has recently published attainment designations for this standard and the SFBAAB is classified as being in "Attainment."

[f] On June 2, 2010, the USEPA established a new one-hour SO_2 standard, effective August 23, 2010, which is based on the three-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The existing 0.030 ppm annual and 0.14 ppm 24-hour SO_2 NAAQS however must continue to be used until one year following USEPA initial designations of the new one-hour SO_2 NAAQS.

[g] In December 2012, USEPA strengthened the annual $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS) from 15.0 to 12.0 $\mu g/m^3$. In December 2014, USEPA issued final area designations for the 2012 primary annual $PM_{2.5}$ NAAQS. Areas designated "unclassifiable/attainment" must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015.

[h] The CARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure below which there are no adverse health effects determined.

SOURCE: BAAQMD, 2015.

In general, the Bay Area experiences low concentrations of most pollutants when compared to federal standards, except for O_3 and particulate matter, for which standards are exceeded periodically. With respect to federal standards, the Bay Area's attainment status for 8-hour ozone is classified as "marginal nonattainment" and "nonattainment" for $PM_{2.5}$. In response to the EPA's designation of the basin for the 8-hour federal ozone standard, the BAAQMD, ABAG, and MTC were required to develop an ozone attainment plan to meet this standard. The *1999 Ozone Attainment Plan* was prepared and adopted by these agencies in June 1999 and this plan was updated in 2001. The most recent State ozone plan is the Bay Area *2010 Clean Air Plan*. The *2010 Clean Air Plan* was developed as a multi-pollutant plan that provides an integrated control strategy to reduce ozone, particulate matter (PM), toxic air contaminants, and greenhouse gases. In 1998, after many years without violations of any carbon monoxide (CO) standards, the attainment status for CO was upgraded to "attainment."

State Standards

In 1988, California passed the California Clean Air Act (AB2595) which, like its federal counterpart, called for designations of areas as attainment or non-attainment, based on State Ambient Air Quality Standards rather than federal or national standards. The Bay Area Air Basin attainment status with respect

to State standards is summarized in Table 4.8-2. In general, this table indicates the Bay Area experiences low concentrations of most pollutants when compared to State standards, except for ozone and particulate matter, for which standards are exceeded periodically.

The California Air Resources Board (CARB) is the State agency responsible for regulating air quality. The CARB responsibilities include establishing State Ambient Air Quality Standards, emissions standards and regulations for mobile emissions sources (e.g., autos, trucks, etc.), and overseeing the efforts of county-wide and multi-county air pollution control districts, which have primary responsibility over stationary sources. The emission standards most relevant to the proposed project are those related to automobiles, light- and medium-duty trucks, and California heavy-duty truck engines.

The California Air Resources Board (CARB) regulates vehicle fuels with the intent to reduce emissions. Diesel exhaust is a serious concern throughout California. The CARB identified diesel engine particulate matter as a toxic air contaminant. The exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Many of these toxic compounds adhere to the diesel particles, which are very small and can penetrate deeply into the lungs. Diesel engine particulate matter has been identified as a human carcinogen. Mobile sources such as trucks, buses, and automobiles are some of the primary sources of diesel emissions. Studies show that diesel particulate matter concentrations are much higher near heavily traveled highways and intersections. The cancer risk from exposure to diesel exhaust is much higher than the risk associated with any other toxic air pollutant routinely measured in the region. Diesel exhaust contains both pulmonary irritants and hazardous compounds that can affect sensitive receptors such as young children, senior citizens, or those susceptible to chronic respiratory disease such as asthma, bronchitis, and emphysema.

In 2005, the CARB approved a regulatory measure to reduce emissions of toxic and criteria pollutants by limiting the idling of new heavy-duty diesel vehicles, which altered five sections of Title 13 of the California Code of Regulations. The changes relevant to the proposed project are in Section 2485, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling, which limit idling of a vehicle's primary diesel engine for greater than five minutes in any location (with some exceptions) or operation of a diesel-fueled auxiliary power system within 100 feet of residential areas.

Regional and Local Guidelines

Bay Area Air Quality Management District. The Bay Area Air Quality Management District (BAAQMD) is the regional agency responsible for air quality regulation within the SFBAAB. The BAAQMD regulates air quality through its planning and review activities. The BAAQMD has permit authority over most types of stationary emission sources and can require stationary sources to obtain permits, and can impose emission limits, set fuel or material specifications, or establish operational limits to reduce air emissions. The BAAQMD regulates new or expanding stationary sources of toxic air contaminants.

In March 2010, the BAAQMD, in cooperation with the MTC and ABAG, published the draft *Bay Area 2010 Clean Air Plan*, and in September 2010, the BAAQMD adopted the *Bay Area 2010 Clean Air Plan*

(CAP). The CAP updates the *2005 Ozone Strategy* in accordance with the requirements of the CCAA to achieve the following:

- Implement all feasible measures to reduce ozone;
- Provide a control strategy to reduce ozone, particulate matter, toxic air contaminants, and GHGs in a single, integrated plan;
- Review progress in improving air quality in recent years; and
- Establish emission control measures to be adopted or implemented in the 2010 to 2012 time frame.

The control strategy includes stationary source control measures to be implemented through BAAQMD regulations; mobile source control measures to be implemented through incentive programs and other activities; and transportation control measures to be implemented through transportation programs in cooperation with the MTC, local governments, transit agencies, and others. The CAP also represents the Bay Area's most recent triennial assessment of the region's strategy to attain the State one-hour ozone standard.

Under CEQA, the BAAQMD is a commenting responsible agency on air quality within its jurisdiction or impacting its jurisdiction. The BAAQMD reviews projects to ensure that they would: (1) support the primary goals of the latest Air Quality Plan; (2) include applicable control measures from the Air Quality Plan; and (3) not disrupt or hinder implementation of any Air Quality Plan control measures.

The BAAQMD adopted its updated *CEQA Air Quality Guidelines* to assist lead agencies in evaluating air quality impacts of projects and plans proposed in the SFBAAB. These guidelines provide BAAQMD-recommended procedures for evaluating potential air quality and GHG impacts during the environmental review process consistent with CEQA requirements. In addition to providing new thresholds for GHG emissions, the 2010/2011 BAAQMD *CEQA Guidelines* provided updated significance thresholds for criteria pollutants and superseded the BAAQMD's previous CEQA guidance titled, *BAAQMD CEQA Guidelines: Assessing the Air Quality Impacts of Projects and Plans* (1999).

On March 5, 2012, the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the Thresholds. The court issued a writ of mandate ordering the BAAQMD to set aside the Thresholds and cease dissemination of them until the BAAQMD had complied with CEQA. On August 13, 2013, the California Court of Appeal reversed the Alameda County Superior Court judgment that invalidated the BAAQMD's CEQA thresholds of significance. The Court directed that the Superior Court vacate the writ of mandate issued in March 2012, ordering the BAAQMD to set aside its June 2010 resolution (Res. #2010-06) "Adopting Thresholds for Use in Determining the Significance of Projects' Environmental Effects Under the California Environmental Quality Act." Although the California Supreme Court has granted review in the litigation to hear one particular issue of law, the granting of review does not alter the result in the Court of Appeal, though the latter court's decision is no longer a published, citable precedent. And the legal cloud created by the trial

court decision no longer exists. Local agencies such as the Town of Los Gatos may rely on the BAAQMD thresholds.

Los Gatos General Plan. The Environment and Sustainability Element of the Los Gatos 2020 General Plan (Town of Los Gatos, 2010) establishes goals and policies for maintaining and improving acceptable air quality in Los Gatos. In general, the proposed project would be consistent with Goal ENV-12 and associated policies or specified mitigation measures would avoid potential environmental impacts associated with potential conflicts with policies designed to avoid such environmental impacts. Project consistency with these policies is discussed in the following project consistency analysis table.

General Plan Policies	Project Consistency Analysis
Environment and Sustainability Element *Goal ENV-12: To conserve the air resources of the Town and maintain and improve acceptable air quality in Los Gatos.* *ENV-12.1: Local land use decisions shall consider air quality goals as part of the environmental review process.*	The Town's goal to maintain and improve acceptable air quality does not apply on a project-by-project basis, but rather reflects a vision of air quality improvement throughout the Town. An air quality assessment was completed for this project and findings of the assessment are presented below under Impacts 4.8-2 and 4.8-3. The air quality assessment determined that the project's construction-related and operational air quality impacts would be less than significant.
ENV-12.2: Require consideration of alternatives to individual auto use whenever the environmental review document concludes that the traffic generated by a development project would result in adverse impacts from air and noise pollution. *ENV-12.3: Require design criteria for site plans to reduce the effects of high air pollution concentrations associated with roadways by appropriate placement of structures, use of landscaping, and parking arrangements.* *ENV-12.5: Site plans shall be reviewed to include an assessment of the potential adverse impact from air pollution and recommend alternatives to reduce such impacts.*	The project would provide a public trail across the project site with connections to Brooke Acres Drive at the project's southern boundary and Cerro Vista Court and the project's northern boundary. This trail would connect the Shannon Road area to the north with Kennedy Road area to the south for pedestrians and bicyclists. A detailed air quality assessment was completed for the project and the project's operational air quality emissions were determined to be less than significant. A screening-level health risk analysis was completed for the project, and health risks from exposure to stationary source and mobile source emissions (sources within 1,000 feet of the site) were determined to be less than significant. Because the project will not generate high air pollution concentrations, there is no need for design criteria to reduce the effects of such concentrations. See Impacts 4.8-3 and 4.8-4 below for more discussion.
ENV-12.4: Support Bay Area Air Quality Management District (BAAQMD), Metropolitan Transportation Commission (MTC), state, and federal planning efforts and programs aimed at reducing air pollution within the airshed.	As indicated in Impact 4.8-1, the project would not conflict with or obstruct regional air quality planning efforts. This policy is aimed at the Town itself, and not individual projects. The Town does support the efforts of BAAQMD, MTC, and other entities to reduce air pollution within the airshed.
ENV-12.7: During construction, ensure all applicable best management practices are used in accordance with Bay Area Air Quality Management District (BAAQMD) standards to reduce emissions of criteria pollutants.	As indicated in Table 4.8-3 below, the project's construction-related emissions would not exceed the EIR significance thresholds for criteria pollutants. The BAAQMD CEQA Air Quality Guidelines consider

General Plan Policies	Project Consistency Analysis
ENV-12.8: Best Available Control Measures including compliance with California vehicle emissions standards shall be incorporated to reduce construction emissions. *ENV-12.9: For significant projects, require project proponents to prepare and implement a Construction Management Plan, which will include Best Available Control Measures, among other measures. Appropriate control measures will be determined on a project-by-project basis, and should be specific to the pollutant for which the daily threshold is exceeded. Such control measures may include, but not be limited to:* *a. Minimizing simultaneous operation of multiple construction equipment units.* *b. Watering the construction area to minimize fugitive dust.* *c. Requiring off-road diesel powered vehicles used for construction to comply with California vehicle emissions standards.* *d. Minimizing idling time by construction vehicles.*	fugitive dust and exhaust emissions to be less than significant if Best Management Practices (BMPs) are employed to reduce these emissions. Therefore, with implementation of Mitigation Measure 4.8-2, BAAQMD Basic Construction Measures, this impact would be less than significant. See Impact 4.8-2 below for more discussion.

4.8.3 POTENTIAL IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA AND THRESHOLDS

Based upon the criteria derived from Appendix G of the *CEQA Guidelines*, a project normally would have a significant effect on the environment if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Expose sensitive receptors to substantial pollutant concentrations;
- Create objectionable odors affecting a substantial number of people; or
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).

Many air pollution impacts occur from the chemical transformation of relatively benign pollutants to more pernicious forms. This process requires an extended period of reaction time. Individual project-related emissions will have been diluted to undetectable levels far from the source and hours later once the process is substantially completed. The impact is therefore cumulative from thousands of individual sources. The common approach is to designate a source-based emission level as having a potentially significant impact even if the project-specific ambient air quality increment cannot be explicitly

calculated. Such source-based emission levels are represented in the significance thresholds for this EIR (below), which add specificity to the general thresholds derived from Appendix G, as set forth above.

Significance Thresholds. Exercising its own discretion as lead agency and similarly to multiple other San Francisco Bay Area jurisdictions, the Town of Los Gatos has decided for this EIR to rely on the thresholds within the *Options and Justification Report* (dated October 2009) prepared by the BAAQMD. The BAAQMD *Options and Justification Report* establishes thresholds based on substantial evidence and the thresholds are consistent with the thresholds outlined within the 2010/2011 BAAQMD *CEQA Air Quality Guidelines*. The thresholds have been developed by the BAAQMD in order to attain State and national ambient air quality standards. Therefore, projects below these thresholds would not violate an air quality standard and would not contribute substantially to an existing or projected air quality violation. The BAAQMD *Options and Justification Report* establishes the following thresholds based on substantial evidence and are consistent with the thresholds outlined within the 2010/2011 BAAQMD CEQA Air Quality Guidelines:

- NO_X and ROG: 54 pounds/day or 10 tons/year
- PM_{10}: 82 pounds/day or 15 tons/year
- $PM_{2.5}$: 54 pounds/day or 10 tons/year
- CO: A quantitative CO impact analysis is required (comparing project emissions to the CAAQS), if vehicle emissions would exceed 550 pounds per day.

In addition to establishing the above significance thresholds for criteria pollutant emissions, the BAAQMD also recommended (BAAQMD, 2009) the following quantitative thresholds to determine the significance of construction-related and operational emissions of toxic air contaminants from individual project and cumulative sources on cancer and non-cancer health risks:

- Increased cancer risk of >10.0 in a million for individual projects and >100 in a million (from all local sources) for cumulative sources;
- Increased non-cancer risk of >1.0 Hazard Index (Chronic or Acute) for individual projects and >10.0 Hazard Index (from all local sources) for cumulative sources; and
- Ambient $PM_{2.5}$ increase: >0.3 $\mu g/m^3$ annual average for individual projects and >0.8 $\mu g/m^3$ annual average (from all local sources) for cumulative sources.

METHODOLOGY

This air quality impact analysis considers construction and operational impacts associated with the proposed project. Construction equipment, trucks, worker vehicles, and ground-disturbing activities associated with project construction would generate emissions of criteria air pollutants and precursors. The BAAQMD supports the use of the California Emissions Estimator Model (CalEEMod) to calculate both construction emissions and operational emissions from the proposed project. This model calculates both the daily maximum and annual average emissions for criteria pollutants as well as total or annual greenhouse gas (GHG) emissions. CalEEMod (Version 2011.1.1) was used to calculate emissions that

would be generated by the proposed subdivision of the 17.55-acre site into 10 residential lots. Modeling results for both construction and operational emissions are summarized in the impact discussion below, while model output is included in **Appendix H** of this EIR. Estimated emissions are compared to the above daily criteria pollutant emissions significance thresholds in order to determine the significance of a project's impact on regional air quality.

Consistent with the BAAQMD *CEQA Guidelines*, this analysis assumes potential health risk and hazard impacts could occur at sensitive receptors located within 1,000 feet from emission sources. Thus, human health risks and hazards associated with project construction are calculated at the Maximally-Exposed Individual (MEI) within the 1,000-foot zone of influence of the project site. This analysis evaluates risk and hazard impacts on MEI due to the proposed project's construction-related TAC emissions, primarily as diesel exhaust (diesel particulate matter, DPM) in combination with other existing major sources of DPM such as freeways. Cumulative risk and hazard impacts associated with the proposed project's construction-related emissions in combination with emissions from other cumulative projects in the project vicinity are also evaluated consistent with BAAQMD *CEQA Guidelines* for evaluating cumulative risk and hazard impacts.

AIR QUALITY PLAN CONSISTENCY

Impact 4.8-1: Project-related criteria pollutant emissions would not conflict with or obstruct implementation of the applicable Air Quality Plan. (Less than Significant)

The most recently adopted air quality plan in the SFBAAB is the *Bay Area 2010 Clean Air Plan* (CAP). The CAP outlines how the San Francisco Bay Area will attain or maintain air quality standards, reduce population exposure and protect public health, and reduce GHG emissions. The consistency of the proposed project with the most recently adopted regional air quality plan, the *CAP,* is determined by comparing the project's consistency with the Los Gatos 2020 General Plan, which was also adopted in September 2010. Since the *CAP* is based on the Town's General Plan in effect at the time the *CAP* was approved, consistency of the project with the 2020 General Plan would indicate consistency with the *CAP*. Although the current General Plan designation of Agriculture reflects the project site's Williamson Act contract, the project's estimated population increase of 24 persons was determined to be within the 2020 General Plan's growth rate of 316 persons per year, particularly since the population growth rate between 2008 and 2014 has been less than the assumed rate (see Chapter 5, Section 5.1, Effects Not Found to be Significant, Population and Housing). Since the project would not conflict with ABAG's 2009 population projections, the project is considered to be consistent with the *CAP*, a less-than-significant impact.

The 2010 CAP includes about 55 control measures that are intended to reduce air pollutant emissions in the Bay Area either directly or indirectly. The control measures are divided in to five categories that include:

- Stationary and Area Source Control Measures. The *CAP* includes Stationary Source Control measures that BAAQMD adopts as rules or regulations through their authority to control

emissions from stationary and area sources. The BAAQMD is the implementing agency, since these control measures are applicable to sources of air pollution that must obtain BAAQMD permits. Any new stationary sources would be required to obtain proper permits through BAAQMD. In addition, the Town uses BAAQMD's CEQA Air Quality Guidelines to evaluate air pollutant emissions from new sources. The project does not propose any new stationary sources of pollutant emissions (e.g., emergency back-up generators), and therefore, these measures would not apply to the proposed project.

- Mobile Source Measures. The CAP includes Mobile Source Measures that would reduce emissions by accelerating the replacement of older, dirtier vehicles and equipment through programs such as the BAAQMD's Vehicle Buy-Back and Smoking Vehicle Programs, and promoting advanced technology vehicles that reduce emissions. The implementation of these measures rely heavily upon incentive programs, such as the Carl Moyer Program and the Transportation Fund for Clean Air, to achieve voluntary emission reductions in advance of, or in addition to, CARB requirements. CARB has new regulations that require the replacement or retrofit of on-road trucks, construction equipment and other specific equipment that is diesel powered. Construction equipment operated by project-related contractors (including those constructing on individual home sites) would be subject to these CARB emission control regulations.

- Transportation Control Measures. The CAP includes transportation control measures (TCMs) that are strategies meant to reduce vehicle trips, vehicle use, vehicle miles traveled, vehicle idling, or traffic congestion for the purpose of reducing motor vehicle emissions. While most of the TCMs are implemented at the regional level (e.g., by MTC or Caltrans), there are measures that the CAP relies upon local communities to assist with implementation. In addition, the CAP includes land use measures and energy and climate measures where implementation is aided by proper land use planning decisions. The Los Gatos 2020 General Plan update includes measures to reduce vehicle travel that are consistent with the CAP TCMs. In addition, the General Plan committed the Town to developing and adopting a Climate Action Plan that would require additional TCMs consistent with CAP measures intended to reduce automobile use and to facilitate non-auto linkages through a network. In October 2012, the Town adopted the Los Gatos Sustainability Plan, which is the Town's Climate Action Plan. The project would be too small to incorporate a Transportation Demand Management (TDM) plan, and development of a TDM plan would not be required.

- TAC Exposure. The CAP includes measures to reduce TAC exposure to sensitive receptors. Because there are no permitted stationary sources or major roadways (ADT >10,000) located within 1,000 feet of the project site, there would not be any exposure of new sensitive receptors to TACs. Impacts associated with TAC emissions are discussed under Impact 4.8-4 below.

- Sustainability Plan. By adopting the Los Gatos Sustainability Plan, the Town has committed to numerous actions in reducing GHG emissions to address climate change. These actions and policies support many of the CAP measures aimed at reducing air pollutant and GHG emissions

associated with land use planning. See Section 4.9.2, Regulatory and Planning Framework for more discussion of the project's consistency with the Sustainability Plan.

Mitigation Measure 4.8-1: *None required.*

CONSTRUCTION IMPACTS

Impact 4.8-2: Project construction would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. (Less than Significant with Mitigation)

Short-term air quality impacts would occur during grading and construction activities associated with project implementation. During grading and construction activities, dust and exhaust emissions would be generated. Most of the dust emissions would result during grading activities. The amount of dust generated on a daily basis would be highly variable and would depend on the size of the area disturbed at any given time, amount of activity, soil conditions and meteorological conditions. Nearby receptors could be adversely affected by dust generated during construction activities.

Construction of roads and infrastructure is proposed to occur in one phase over a period of four to six months. In addition, during the grading phase, approximately 3,950 cubic yards of soil would be hauled off-site in 247 truckloads (494 one-way trips) using 16 cubic yard trucks over about 15 work days (assuming three trucks would be filled per hour and haul trucks would operate only six hours per day to avoid peak periods). Maximum truck haul distance was estimated to be 20 miles each way, or 40 miles round trip. Estimated annual and average daily emissions generated by construction equipment and haul trucks are presented in **Table 4.8-3**. As indicated in this table, construction exhaust emission estimates would not exceed the above-listed significance thresholds.

TABLE 4.8-3

PROJECT CONSTRUCTION CRITERIA POLLUTANT EMISSIONS

	Average Daily Emissions (pounds/day)					
Project Activity	**ROG**	**NO_X**	**CO**	**SO_2**	**PM10 (Total)**	**PM2.5 (Total)**
Project Construction[a]						
– 2015 Off-Road Equipment Emissions – Unmitigated	12.6	43.2	29.0	0.0	8.9	5.3
– 2015 Off-Road Equipment Emissions – Mitigated	12.6	43.2	29.0	0.0	5.5	3.5
Significance Thresholds	54	54	-	-	82	54
Exceeds Significance Thresholds?	No	No	-	-	No	No

NOTES: ROG = reactive organic gases; NO_X = nitrogen oxides; CO = carbon monoxide; SO_2 = sulfur dioxide; exhaust PM_{10} = particulate matter less than 10 microns; exhaust $PM_{2.5}$ = particulate matter less than 2.5 microns.

[a] Construction assumptions: grading over 15 days using 1 dozer, 1 grader, 2 backhoes; construction over 220 days using 1 crane, 2 forklifts, 1 generator set, 1 loader/backhoe/tractor, and 3 welders; and paving over 10 days: 1 cement mixer, 1 paver, 1 paving equipment, 2 rollers, and 1 loader/backhoe/tractor. The above estimates are conservatively high because they assume approximately 7.5% more off-haul (4,250 cubic yards) than is currently proposed.

SOURCE: CalEEMod Output (see **Appendix H**)

The BAAQMD CEQA Air Quality Guidelines consider fugitive dust and exhaust emissions to be less than significant if Best Management Practices (BMPs) are employed to reduce these emissions.

Therefore, even though the project's construction-related daily criteria pollutant emissions would not exceed specified BAAQMD significance thresholds set forth above, this impact is conservatively considered to be temporary significant impact in the absence of mitigation, based on BAAQMD direction. However, implementation of Mitigation Measure 4.8-2, BAAQMD Basic Construction Measures, would reduce this temporary impact to less than significant.

Mitigation Measure 4.8-2, BAAQMD Basic Construction Measures: *Prior to issuance of any Grading or Demolition Permit, the Town Engineer and the Chief Building Official shall confirm that the Grading Plan, Building Plans, and specifications stipulate that the following basic construction measures be implemented as specified in the BAAQMD Guidelines during all project construction (including individual lot development):*

a. *All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. Recycled water should be used wherever feasible.*[1]

b. *All haul trucks transporting soil, sand, or other loose material off-site shall be covered.*

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. *All vehicle speeds on unpaved roads shall be limited to 15 mph.*

e. *All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.*

f. *Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to two minutes. Clear signage shall be provided for construction workers at all access points.*

g. *All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.*

h. *Post a publicly visible sign with the telephone number and person to contact at the Town regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.*

[1] As of February 2015, recycled water was made available by the San Jose Environmental Services Department for construction spray trucks for dust control on construction projects, misting street sweepers, and sewer cleanout trucks. There are seven recycled water filling stations in San Jose, five in Milpitas, and another is planned in the City of Santa Clara. (City of San Jose Environmental Services Department, *News Release, Recycled Water Filling Stations Now Available in San Jose and Milpitas for Commercial Trucks,* January 26, 2015. Available online at http://www.piersystem.com/go/doc/1914/2452346/Recycled-Water-Filling-Stations-Now-Available-in-San-Jos-and-Milpitas-for-Commercial-Trucks.

Level of Significance After Mitigation: The BAAQMD considers construction emissions to be less than significant with implementation of the above dust and exhaust control measures, even though, as demonstrated in Table 4.8-3, the project's construction-related daily criteria pollutant emissions would not exceed specified significance thresholds.

OPERATIONAL IMPACTS

Impact 4.8-3: Project operation would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. (Less than Significant)

When all project lots are eventually developed and homes are occupied, project residents would generate operational criteria pollutant emissions from both area and mobile sources associated with normal daily residential activities. Area source emissions would be associated with increased demand for electrical energy and natural gas by project residents. Mobile emissions would be generated by the use of motor vehicles by project residents.

Project-generated stationary area source and mobile source emissions were calculated using CalEEMod and results are presented in **Table 4.8-4**. As indicated in Table 4.8-4, area source emissions from the proposed project would not exceed EIR significance thresholds for ROG, NO_X, PM10 and PM2.5. Therefore, operational impacts from area and mobile source emissions would be less than significant.

TABLE 4.8-4

PROJECT OPERATIONAL CRITERIA POLLUTANT EMISSIONS

	Average Daily Emissions (pounds/day)					
Emission Source	**ROG**	**NO_X**	**CO**	**SO_2**	**PM10 (Total)**	**PM2.5 (Total)**
– Area Source Emissions	2.0	0.0	0.9	0.0	0.0	0.0
– Energy Emissions	0.0	0.1	0.1	0.0	0.0	0.0
– Mobile Source Emissions	0.4	0.8	3.5	0.0	0.5	0.1
Total Unmitigated Operational Emissions	2.4	0.9	4.4	0.0	0.5	0.2
EIR Significance Thresholds	54	54	-	-	82	54
Unmitigated Emissions Exceed This Threshold?	No	No	-[a]	-[b]	No	No
	Average Annual Emissions (tons/year)					
Emission Source	**ROG**	**NO_X**	**CO**	**SO_2**	**PM10 (Total)**	**PM2.5 (Total)**
Project Operation						
– Area Source Emissions	0.4	0.0	0.2	0.0	0.0	0.0
– Energy Emissions	0.0	0.0	0.1	0.0	0.0	0.0
– Mobile Source Emissions	0.1	0.1	0.6	0.0	0.1	0.0
Total Unmitigated Operational Emissions	0.5	0.2	0.8	0.0	0.1	0.0
EIR Significance Thresholds	10	10	-	-	15	10
Unmitigated Emissions Exceed This Threshold?	No	No	-	-	No	No

NOTES: ROG = reactive organic gases; NO_X = nitrogen oxides; CO = carbon monoxide; SO_2 = sulfur dioxide; exhaust PM10 = particulate matter less than 10 microns; exhaust PM2.5 = particulate matter less than 2.5 microns. Assumes use of natural gas hearths (no wood burning fireplaces).

[a] CO: If localized carbon monoxide estimated emissions exceed 550 pounds/day, more detailed analysis is required. Therefore, emissions below this threshold indicate that CO emissions would be less than significant.

[b] SO_2: The SO_2 State and federal standards are currently being met throughout the Bay Area and have been met in recent decades. Therefore, the project's estimated emissions would be less than significant.

SOURCE: CalEEMod Output (see Appendix H)

Mitigation Measure 4.8-3: *None required.*

EXPOSURE OF SENSITIVE RECEPTORS

Impact 4.8-4: Project implementation could expose sensitive receptors to substantial pollutant concentrations. (Less than Significant)

Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. Sensitive receptors within the immediate vicinity of the project site are the existing residences to the north, east, south, and west. Localized impacts from project construction and operations are analyzed below.

Project-related Health Risks. Proposed residential uses would not generate toxic air contaminants (TAC) that would pose a possible risk to off-site uses. Potential TAC exposure would be limited to construction. Combustion emissions from construction equipment would be generated during project construction and could expose sensitive receptors to DPM and other TACs. The only activity adjacent to sensitive, residential uses for any length of time would be the activities associated with construction of roads, infrastructure, and homes.

A screening-level health risk analysis was conducted to assess potential health effects at these nearby sensitive receptors from project-related construction emissions of DPM. A dispersion model was used to predict the off-site concentrations resulting from project construction so that lifetime cancer risks could be predicted. Excess cancer and non-cancer health risks were estimated using CalEEMod (Version 2011.1.1) and USEPA's ISCST dispersion model. As indicated in **Table 4.8-5**, for purposes of analysis, construction of the project is assumed to occur over approximately 12 months (the shortest possible time construction of roads, infrastructure, and homes could occur). If construction occurs over a longer period, it is expected that potential impacts would be the same or slightly decreased. A longer construction period would increase the amount of time over which the same overall amount of pollution would occur, thereby decreasing pollutant concentrations that would arise during a shorter time period.

Results of this screening-level health risk analysis indicate that the maximum construction-related residential infant cancer risk is 7.8 excess cancer cases in one million, residential child cancer risk is 2.3 in one million, and the residential adult cancer risk is 0.5 in one million. The predicted excess cancer risk assumes that an infant, child, or adult would be present outdoors at the location of the modeled maximum concentration almost continuously throughout the entire construction period. Given that this is very unlikely, this analysis of health risks is considered to be very conservative (i.e., impacts are overestimated). If construction of individual homes were occur sporadically over many years, estimated health risks would be lower as CARB's increasingly stricter emissions rates are implemented in the

future. Therefore, increased health risks during project demolition and construction would be less than significant.

TABLE 4.8-5

CANCER RISK AND CHRONIC NON-CANCER HEALTH RISKS AT THE CLOSEST SENSITIVE RECEPTORS DUE TO DPM EXPOSURE DURING PROJECT CONSTRUCTION

	$PM_{2.5}$ Exposure,[a] Excess Cancer Risk,[b] and Non-Cancer Chronic Hazard Index from Project Construction Activities at Closest Receptors
Maximum One-Hour $PM_{2.5}$	1.819 μg/m^3
Annual Average $PM_{2.5}$ (one-hour x 0.1)	0.1819 μg/m^3
Annual Average $PM_{2.5}$ Significance Threshold	0.3 μg/m^3
Exceeds Significance Threshold?	No
Age-Weighted Excess Risk for Infants	7.78 in a million
Children	2.33 in a million
Adults	0.78 in a million
Cancer Risk Significance Threshold	Excess Cancer Risk >10 x 10^{-6}
Exceeds Threshold?	No
Chronic Non-Cancer Hazard Index	0.036
Acute Hazard	0.212
Chronic Non-Cancer Significance Threshold	Hazard Index >1.0
Exceeds Significance Threshold?	No

NOTES:

[a] The predicted maximum one-hour DPM concentration is 1.819 μg/m^3 resulting from on-site total project DPM emissions of 0.2197 tons. The hourly to annual scaling factor is 0.1. AERSCREEN output thus indicates that project construction would produce a maximum annual DPM concentration of 0.182 μg/m^3.

[b] The excess individual cancer risk factor for DPM exposure is approximately 300 in a million per 1 μg/m^3 of lifetime exposure (DPM (μg/m^3) x ASF x 300 x 10^{-6}) / 70 years. More recent research has determined that young children are substantially more sensitive to DPM exposure risk. If exposure occurs in the first several years of life, an age sensitivity factor (ASF) of 10 should be applied. For toddlers though mid-teens, the ASF is 3.

SOURCES: A screening-level individual cancer analysis was conducted to determine the maximum $PM_{2.5}$ concentration from diesel exhaust. This concentration was combined with the DPM exposure unit risk factor to calculate the inhalation cancer risk from project-related construction activities at the closest sensitive receptor. The USEPA AERSCREEN air dispersion model was used to evaluate concentrations of DPM and $PM_{2.5}$ from diesel exhaust.

The maximum annual $PM_{2.5}$ concentrations would be 0.18 μg/m^3, which would not exceed the BAAQMD significance threshold of 0.3 μg/m^3. The chronic and acute non-cancer hazard indices (HI) for the project would be 0.036 and 0.212, respectively, well below the above-listed significance threshold of greater than 1.0 HI.

Cumulative Health Risks. The 2010/2011 BAAQMD *CEQA Guidelines* recommend that existing stationary and mobile emissions sources within 1,000 feet of the project area also be considered in addition to the project's sources. Any potential combined or cumulative health risk would, therefore, derive from project activities plus any existing identified risk sources within the project vicinity. The BAAQMD has developed a Google Earth application that maps the locations of all stationary sources in the region that the District permits. For this project, there are no permitted stationary sources or major

roadways (ADT >10,000) within 1,000 feet of the site substantial risk. Therefore, the potential cumulative health risks to future project residents from surrounding stationary sources would be less than significant. In addition, since there are no permitted stationary sources or major roadways (ADT >10,000) within 1,000 feet of the site, there would be no combined or cumulative health risks. Therefore, the project's contribution to cumulative health risks to nearby residential receptors would not be cumulatively considerable.

Localized Carbon Monoxide Hotspots. The SFBAAB is designated as attainment for carbon monoxide (CO). Emissions and ambient concentrations of CO have decreased dramatically in the SFBAAB with the introduction of the catalytic converter in 1975. No exceedances of the CAAQS or NAAQS for CO have been recorded at nearby monitoring stations since 1991 (BAAQMD, 2010; p. 6-1). As a result, the BAAQMD screening criteria notes that CO impacts may be determined to be less than significant if a project is consistent with the applicable congestion management plan (CMP) and would not increase traffic volumes at local intersections to more than 24,000 vehicles per hour for locations in heavily urban areas, where "urban canyons" formed by buildings tend to reduce air circulation. Project-related traffic increases would not reach such levels (see Section 4.6, Traffic and Circulation). Therefore, the project's CO emissions would be less than significant.

Mitigation Measure 4.8-4: *None required.*

ODORS

Impact 4.8-5: Project implementation would not create objectionable odors affecting a substantial number of people. (Less than Significant)

According to the BAAQMD, land uses associated with odor complaints typically include wastewater treatment plants, landfills, confined animal facilities, composting stations, food manufacturing plants, refineries, and chemical plants. The project does not include any uses identified by the BAAQMD as being associated with odors.

Construction activity associated with the project could generate detectable odors from the operation of diesel construction equipment on-site, as well as from architectural coatings and asphalt off-gassing. Odors generated during construction activities would be short-term in nature and would cease soon after project completion. Any impacts to existing adjacent land uses would be short-term and are considered less than significant because they would be temporary and would not affect a substantial number of people.

Mitigation Measure 4.8-5: *None required.*

REFERENCES - AIR QUALITY

Bay Area Air Quality Management District (BAAQMD), *Ambient Air Quality Standards & Attainment Status*. June, 2015. Available online at http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status.

Bay Area Air Quality Management District, 2012a. *California Environmental Quality Act Air Quality Guidelines*. Updated May 2012. Available online at http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines.

Bay Area Air Quality Management District, 2012b. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. May 31. Available online at http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines.

Bay Area Air Quality Management District (BAAQMD), *Stationary Source Screening Analysis Tool for Santa Clara County,* May 30, 2012c. Available online at http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines.

Bay Area Air Quality Management District (BAAQMD), *Bay Area 2010 Clean Air Plan*. Adopted September 15, 2010. Available online at: http://www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plans.

Bay Area Air Quality Management District (BAAQMD), *Revised Draft Options and Justification Report*. October, 2009. Available online at: http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines.

California Air Resources Board (CARB), 2011, 2012, 2013, 2014. Aerometric Data Analysis and Measurement System (ADAM) Summaries. Available online at http://www.arb.ca.gov/adam/.

California Air Resources Board (CARB), 2010, 2011, 2012, 2013, 2014. Quality Assurance Air Monitoring Site Information Summaries. Available online at http://www.arb.ca.gov/qaweb/siteinfo.php.

4.9 GREENHOUSE GASES

This section evaluates greenhouse gas (GHG) emissions associated with the proposed project and analyzes project compliance with applicable regulations. Consideration of the project's consistency with applicable plans, policies, and regulations, as well as the introduction of new sources of GHGs, is included in this section.

4.9.1 ENVIRONMENTAL SETTING

GREENHOUSE GASES

The natural process through which heat is retained in the troposphere is called the "greenhouse effect."[1] The greenhouse effect traps heat in the troposphere through a three-fold process, summarized as follows: short wave radiation emitted by the Sun is absorbed by the Earth; the Earth emits a portion of this energy in the form of long wave radiation; and GHGs in the upper atmosphere absorb this long wave radiation and emit this long wave radiation into space and toward the Earth. This "trapping" of the long wave (thermal) radiation emitted back toward the Earth is the underlying process of the greenhouse effect.

The most abundant GHGs are water vapor and carbon dioxide. Many other trace gases have greater ability to absorb and re-radiate long wave radiation; however, these gases are not as plentiful. For this reason, and to gauge the potency of GHGs, scientists have established a Global Warming Potential (GWP) for each GHG based on its ability to absorb and re-radiate long wave radiation.

GHGs normally associated with the proposed project include the following:[2]

- *Water Vapor (H_2O).* Although water vapor has not received the scrutiny of other GHGs, it is the primary contributor to the greenhouse effect. Natural processes, such as evaporation from oceans and rivers, and transpiration from plants, contribute 90% and 10% of the water vapor in our atmosphere, respectively. The primary human-related source of water vapor comes from fuel combustion in motor vehicles; however, this is not believed to contribute a significant amount (less than one percent) to atmospheric concentrations of water vapor. The Intergovernmental Panel on Climate Change (IPCC) has not determined a GWP for water vapor.

- *Carbon Dioxide (CO_2).* CO_2 is primarily generated by fossil fuel combustion in stationary and mobile sources. Due to the emergence of industrial facilities and mobile sources in the past 250 years, the concentration of CO_2 in the atmosphere has increased 36% (USEPA, 2010). CO_2 is the

[1] The troposphere is the bottom layer of the atmosphere, which varies in height from the Earth's surface to 10 to 12 kilometers.

[2] All Global Warming Potentials are given as 100 year GWP. Unless noted otherwise, all Global Warming Potentials were obtained from the Intergovernmental Panel on Climate Change.

most widely emitted GHG and is the reference gas (GWP of 1) for determining GWPs for other GHGs.

- *Methane (CH_4).* CH_4 is emitted from biogenic sources, incomplete combustion in forest fires, landfills, manure management, and leaks in natural gas pipelines. In the United States, the top three sources of CH_4 are landfills, natural gas systems, and enteric fermentation. CH_4 is the primary component of natural gas, which is used for space and water heating, steam production, and power generation. The GWP of CH_4 is 21.

- *Nitrous Oxide (N_2O).* N_2O is produced by both natural and human related sources. Primary human related sources include agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. The GWP of N_2O is 310.

- *Hydrofluorocarbons (HFCs).* HFCs are typically used as refrigerants for both stationary refrigeration and mobile air conditioning. The use of HFCs for cooling and foam blowing is growing, as the continued phase out of chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) gains momentum. The GWP of HFCs range from 140 for HFC-152a to 11,700 for HFC-23 (USEPA, 2012).

- *Perfluorocarbons (PFCs).* PFCs are compounds consisting of carbon and fluorine. They are primarily created as a byproduct of aluminum production and semi conductor manufacturing. PFCs are potent GHGs with a GWP several thousand times that of CO_2, depending on the specific PFC. Another area of concern regarding PFCs is their long atmospheric lifetime (up to 50,000 years; USEPA, 2012). The GWP of PFCs range from 6,500 to 9,200.

- *Sulfur hexafluoride (SF_6).* SF_6 is a colorless, odorless, nontoxic, nonflammable gas. It is most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity. SF_6 is the most potent GHG that has been evaluated by the Intergovernmental Panel on Climate Change with a GWP of 23,900. However, its global warming contribution is not as high as the GWP would indicate due to its low mixing ratio compared to carbon dioxide (4 parts per trillion [ppt] in 1990 versus 365 parts per million [ppm], respectively; USEPA, 2012).

In addition to the six major GHGs discussed above (excluding water vapor), many other compounds have the potential to contribute to the greenhouse effect. Some of these substances were previously identified as stratospheric ozone (O_3) depletors; therefore, their gradual phase out is currently in effect. The following is a listing of these compounds:

- *Hydrochlorofluorocarbons (HCFCs).* HCFCs are solvents, similar in use and chemical composition to CFCs. The main uses of HCFCs are for refrigerant products and air conditioning systems. As part of the Montreal Protocol, all developed countries that adhere to the Montreal Protocol are subject to a consumption cap and gradual phase out of HCFCs. The United States is

scheduled to achieve a 100% reduction to the cap by 2030. The GWPs of HCFCs range from 93 for HCFC-123 to 2,000 for HCFC-142b (USEPA, 2006a).

- *1,1,1 trichloroethane*. 1,1,1 trichloroethane or methyl chloroform is a solvent and degreasing agent commonly used by manufacturers. The GWP of methyl chloroform is 110 times that of CO_2 (USEPA, 2006a).

- *Chlorofluorocarbons (CFCs)*. CFCs are used as refrigerants, cleaning solvents, and aerosols spray propellants. CFCs were also part of the U.S. Environmental Protection Agency's (USEPA) Final Rule (57 FR 3374) for the phase out of O_3 depleting substances. Currently, CFCs have been replaced by HFCs in cooling systems and a variety of alternatives for cleaning solvents. Nevertheless, CFCs remain suspended in the atmosphere, contributing to the greenhouse effect. CFCs are potent GHGs with GWPs ranging from 4,600 for CFC 11 to 14,000 for CFC 13 (USEPA, 2006a; 2006b).

4.9.2 REGULATORY AND PLANNING FRAMEWORK

FEDERAL

The Federal Clean Air Act (FCAA) requires the United States Environmental Protection Agency (EPA) to define national ambient air quality standards (national standards) to protect public health and welfare in the United States. The FCAA does not specifically regulate GHG emissions; however, on April 2, 2007 the U.S. Supreme Court in *Massachusetts v. U.S. Environmental Protection Agency*, determined that GHGs are pollutants that can be regulated under the FCAA. The EPA adopted an endangerment finding and cause or contribute finding for GHGs on December 7, 2009. Under the endangerment finding, the EPA Administrator found that the current and projected atmospheric concentrations of the six key, well-mixed GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) threaten the public health and welfare of current and future generations. Under the cause or contribute finding, the Administrator found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution, which threatens public health and welfare.

Based on these findings, on April 1, 2010, the EPA finalized the light-duty vehicle rule controlling GHG emissions. This rule confirmed January 2, 2011 as the earliest date that a 2012 model year vehicle meeting these rule requirements may be sold in the United States. On May 13, 2010, the EPA issued the final GHG Tailoring Rule. This rule set thresholds for GHG emissions that define when permits under the Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. Implementation of the federal rules is expected to reduce the level of GHG emissions from new motor vehicles and large stationary sources.

STATE

Various statewide and local initiatives to reduce California's contribution to GHG emissions have raised awareness that the various contributors to and consequences of global climate change are not yet fully understood. Every nation emits GHGs and as a result makes an incremental cumulative contribution to global climate change; therefore, global cooperation will be required to reduce the rate of GHG emissions enough to slow or stop the human-caused increase in average global temperatures and associated changes in climatic conditions.

Executive Order S-1-07. Executive Order S-1-07 proclaims that the transportation sector is the main source of GHG emissions in California, generating more than 40% of statewide emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in California by at least 10% by 2020. This order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

Executive Order S-3-05. Executive Order S-3-05 sets forth a series of target dates by which statewide emissions of GHGs would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80% below 1990 levels.

The Executive Order directed the secretary of the California Environmental Protection Agency (Cal/EPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The Secretary of Cal/EPA will also submit biannual reports to the Governor and California Legislature describing the progress made toward the emissions targets, the impacts of global climate change on California's resources, and mitigation and adaptation plans to combat these impacts. To comply with the Executive Order, the Secretary of Cal/EPA created the California Climate Action Team (CAT), made up of members from various State agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of California businesses, local governments, and communities and through State incentive and regulatory programs.

Executive Order S-13-08. Executive Order S-13-08 seeks to enhance the State's management of climate impacts, including sea level rise, increased temperatures, shifting precipitation, and extreme weather events by facilitating the development of State's first climate adaptation strategy. This will result in consistent guidance from experts on how to address climate change impacts in the State of California.

Executive Order S-14-08. Executive Order S-14-08 expands the State's Renewable Energy Standard to 33% renewable power by 2020. Additionally, Executive Order S-21-09 (signed on September 15, 2009) directs CARB to adopt regulations requiring 33% of electricity sold in the State come from

renewable energy by 2020. CARB adopted the "Renewable Electricity Standard" on September 23, 2010, which requires 33% renewable energy by 2020 for most publicly owned electricity retailers.

Executive Order S-20-04. Executive Order S-20-04, the California Green Building Initiative (signed on December 14, 2004), establishes a goal of reducing energy use in State-owned buildings by 20% from a 2003 baseline by 2015. It also encourages the private commercial sector to set the same goal. The initiative places the California Energy Commission (CEC) in charge of developing a building efficiency benchmarking system, commissioning and retro-commissioning (commissioning for existing commercial buildings) guidelines, and developing and refining building energy efficiency standards under Title 24 to meet this goal.

Executive Order S-21-09. Executive Order S-21-09, 33% Renewable Energy for California, directs CARB to adopt regulations to increase California's Renewable Portfolio Standard (RPS) to 33% by 2020. This builds upon SB 1078 (2002), which established the California RPS program, requiring 20% renewable energy by 2017, and SB 107 (2006), which advanced the 20% deadline to 2010, a goal which was expanded to 33% by 2020 in the 2005 Energy Action Plan II.

Assembly Bill 32 (California Global Warming Solutions Act of 2006). California passed the California Global Warming Solutions Act of 2006 (AB 32; *California Health and Safety Code* Division 25.5, Sections 38500 - 38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles.

Assembly Bill 1493. AB 1493 (also known as the Pavley Bill) requires that CARB develop and adopt, by January 1, 2005, regulations that achieve "the maximum feasible reduction of GHG emitted by passenger vehicles and light-duty trucks and other vehicles determined by CARB to be vehicles whose primary use is non-commercial personal transportation in the State."

To meet the requirements of AB 1493, CARB approved amendments to the California Code of Regulations (CCR) in 2004 by adding GHG emissions standards to California's existing standards for motor vehicle emissions. Amendments to CCR Title 13, Sections 1900 and 1961 and adoption of 13 CCR Section 1961.1 require automobile manufacturers to meet fleet-average GHG emissions limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty weight classes for passenger vehicles (i.e., any medium-duty vehicle with a gross vehicle weight rating less than 10,000 pounds that is designed primarily to transport people), beginning with the 2009 model year. Emissions limits are reduced further in each model year through 2016. When fully phased in, the near-term standards will result in a reduction of about 22% in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term standards will result in a reduction of about 30%.

Senate Bill 97. SB 97, signed in August 2007 (Chapter 185, Statutes of 2007; PRC Sections 21083.05 and 21097), acknowledges that climate change is a prominent environmental issue that requires analysis

under CEQA. This bill directs the Governor's Office of Planning and Research (OPR) and the State Natural Resources Agency to prepare, develop, and transmit to CARB guidelines for the feasible mitigation of GHG emissions (or the effects of GHG emissions), as required by CEQA.

The Natural Resources Agency adopted the *CEQA Guidelines Amendments* prepared by OPR, as directed by SB 97. On February 16, 2010, the Office of Administration Law approved the *CEQA Guidelines Amendments*, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The *CEQA Guidelines Amendments* became effective on March 18, 2010. In response to these amendments, the Bay Area Air Quality Management District (BAAQMD) established significance thresholds for the Bay Area (discussed below under BAAQMD) to determine the significance of a project's GHG emissions and level of GHG reduction needed to mitigate a project's impact to less than significant. One of these thresholds is "compliance with a Qualified Climate Action Plan." The Town of Los Gatos adopted such a plan (Los Gatos Sustainability Plan) on October 15, 2012 and GHG reduction measures are presented below and the project's consistency with these measures is discussed below under Impact 4.9-2. At present, compliance with the current requirements of the Sustainability Plan is not sufficient by itself to support a determination that a project's greenhouse gas emissions are less than significant by definition, because the Plan will not be fully implemented until the Town Council takes a number of future steps, such as adopting a Green Building Ordinance and developing GreenPoint Rated Building Guidelines.

Senate Bill 375. SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will prescribe land use allocation in that MPOs regional transportation plan. CARB, in consultation with MPOs, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects may not be eligible for funding programmed after January 1, 2012. On July 18, 2013, the Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments jointly approved "Plan Bay Area," which includes the Bay Area region's Sustainable Communities Strategy and the 2040 Regional Transportation Plan.

Senate Bills 1078 and 107. SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20% of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010.

Senate Bill 1368. SB 1368 (Chapter 598, Statutes of 2006) is the companion bill of AB 32 and was signed into law in September 2006. SB 1368 required the California Public Utilities Commission (CPUC) to establish a performance standard for baseload generation of GHG emissions by investor-

owned utilities by February 1, 2007. SB 1368 also required the CEC to establish a similar standard for local publicly owned utilities by June 30, 2007. These standards could not exceed the GHG emissions rate from a baseload combined-cycle, natural gas–fired plant. Furthermore, the legislation states that all electricity provided to California, including imported electricity, must be generated by plants that meet the standards set by CPUC and CEC.

Senate Bill X1 2. SB X1 (Chapter 1, Statutes of 2011, 1st Ex. Sess., ch. 1) codified in statute the State's obligation to produce at least 33% of electricity from renewable sources by the year 2020. (See Pub. Resources Code, § 25740.)

CARB Scoping Plan. On December 11, 2008, CARB adopted its Scoping Plan, which functions as a roadmap to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. CARB's Scoping Plan contains the main strategies California will implement to reduce CO_2e emissions by 174 million metric tons (MT), or approximately 30%, from the State's projected 2020 emissions level of 596 million MT CO_2e[3] under a business as usual (BAU)[4] scenario. This is a reduction of 42 million MT CO_2e, or almost 10%, from 2002 to 2004 average emissions, but requires the reductions in the face of population and economic growth through 2020.

CARB's Scoping Plan calculates 2020 BAU emissions as the emissions that would be expected to occur in the absence of any GHG reduction measures. The 2020 BAU emissions estimate was derived by projecting emissions from a past baseline year using growth factors specific to each of the different economic sectors (e.g., transportation, electrical power, commercial and residential, industrial, etc.). CARB used three-year average emissions, by sector, for 2002 to 2004 to forecast emissions to 2020. At the time CARB's Scoping Plan process was initiated, 2004 was the most recent year for which actual data was available. The measures described in CARB's Scoping Plan are intended to reduce the projected 2020 BAU to 1990 levels, as required by AB 32.

CARB began the cap-and-trade portion of the Scoping Plan on January 1, 2012 and the enforceable compliance obligation began on January 1, 2013. The program is a central element of AB 32 and covers major sources of GHG emissions in the State such as refineries, power plants, industrial facilities, and transportation fuels. The regulation includes an enforceable GHG cap that will decline over time. CARB will distribute allowances, which are tradable permits, equal to the emission allowed under the cap. In addition, CARB is implementing carbon offsets to reduce GHG emissions in sectors such as agriculture and forestry that are not included directly under the cap-and-trade regulation. For example, forests can be managed to ensure that they increase the total amount of carbon stored in the trees, thus removing

[3] Carbon Dioxide Equivalent (CO_2e): A metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential.

[4] "Business as Usual" refers to emissions that would be expected to occur in the absence of GHG reductions. See http://www.arb.ca.gov/cc/inventory/data/forecast.htm. Note that there is significant controversy as to what BAU means. In determining the GHG 2020 limit, CARB used the above as the "definition." It is broad enough to allow for design features to be counted as reductions.

additional carbon dioxide from the atmosphere. Each offset credit equals one metric ton of carbon dioxide (CARB, 2012). The proposed project would not be required to comply with the CARB's Cap-and-Trade Program.

REGIONAL

Bay Area Air Quality Management District (BAAQMD). Under *CEQA*, the BAAQMD comments on air quality and GHG issues raised in environmental documents for proposed projects within the geographic area subject to its jurisdiction. Where it has a permit to issue for a proposed project, the BAAQMD can also function as a responsible agency. The BAAQMD's approach to developing a threshold of significance for GHG emissions is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation (AB 32) adopted to reduce statewide GHG emissions needed to move us towards climate stabilization. If a project would generate GHG emissions above the threshold level, it would be considered to contribute considerably to a significant cumulative impact.

In 2010, the BAAQMD adopted new CEQA significance thresholds for criteria pollutants and GHGs to assist lead agencies in evaluating air quality impacts of projects and plans proposed in the SFBAAB. The 2010 BAAQMD *CEQA Guidelines* provided BAAQMD-recommended procedures for evaluating potential air quality and GHG impacts during the environmental review process.

Exercising its own discretion as lead agency and similar to multiple other San Francisco Bay Area jurisdictions, the Town of Los Gatos has decided to rely on the thresholds within the *Options and Justification Report* (dated October 2009) prepared by the BAAQMD. The BAAQMD *Options and Justification Report* establishes thresholds based on substantial evidence and are consistent with the thresholds outlined in the 2010 CEQA Air Quality Guidelines.

LOCAL

In April 2008, the Town adopted the following near-term policy recommendations from the Santa Clara County Cities Association Green Building Collaborative:

- Formally recognize and adopt the U.S. Green Building Council's LEED Rating system and Build It Green's GreenPoint Rated System (residential) as the official green building standards.
- Require the submittal of a completed LEED or GreenPoint Rated checklist as part of a planning application.
- Adopt a policy for achieving LEED Silver certification or better for all new public construction and renovation projects over 5,000 square feet.

In 2008, the Town also passed a resolution adopting the Cities for Climate Protection Campaign (CCP) led by the International Council for Local Environmental Initiatives (ICLEI) Local Governments for Sustainability. Jurisdictions that join the CCP commit to a five-step process:

1. Measure emissions of GHG's;
2. Commit to an emissions reduction target associated with a specific target year;
3. Adopt specific measures or take specific actions, described in a local plan, to reach the reduction target;
4. Implement the local plan; and
5. Monitor emissions reductions achieved by implementing the plan

This five-step process was consolidated into the Los Gatos Sustainability Plan, which was adopted by the Town Council on October 15, 2012. The Sustainability Plan is a key tool in implementing the 2020 General Plan update that has promoting sustainability as a strong objective. The plan contains a comprehensive long-range strategy to achieve sustainability in transportation, land use, energy conservation, water use, solid waste reduction and open space preservation. To fully implement the Sustainability Plan, though, the Town Council must take a number of future steps, such as adopting a Green Building Ordinance and developing GreenPoint Rated Building Guidelines. Consistency of any proposed project or program with the Sustainability Plan is one of the criteria used to determine the significance of a project's GHG emissions under CEQA. Because many of the Plan's most stringent aspects will only become fully operational when such future measures are in place, however, compliance with existing Sustainability Plan requirements, by itself, is not sufficient at this time to support a determination that a project's greenhouse gas emissions are less than significant by definition. Once these remaining aspects are fully operational, the Sustainability Plan will qualify as a "Plan for the Reduction of Greenhouse Gas Emissions" within the meaning of CEQA Guidelines section 15183.5. Once this occurs, the Town will be able to determine that projects that are consistent with the Sustainability Plan will have less than significant effects with respect to the emissions of greenhouse gases. (CEQA Guidelines Section 15183.5, subd. (b).)

The Sustainability Plan documents that there are a variety of mandatory GHG reduction programs that are in various stages of implementation. These programs would substantially reduce project-related GHG emissions below their BAU assumption. Major programs include:

- Corporate Average Fuel Efficiency
- Low Carbon Fuel Standard
- Renewable Portfolio Standard
- Smart Grid Deployment Plan
- CALGreen Building Code
- Solid Waste Reduction

The Sustainability Plan documents that, by 2020, GHG emissions will be reduced by approximately 30% from the business-as-usual (BAU) assumption. The emissions reduction varies by sector generally within a range of 20% to 40%. The Sustainability Plan contains GHG reduction measures and implements goals and policies of the Environment and Sustainability Element of the General Plan. Project consistency with traffic-related measures in Sustainability Plan are addressed as follows:

Sustainability Plan GHG Reduction Measures	Project Consistency Analysis
GB-1: Green Building Ordinance. Develop a Green Building Ordinance that requires energy-efficient design, in excess of Title 24 standards, for all new residential and non-residential buildings. When developing the Ordinance, consider development-level thresholds for when certain requirements are triggered. ▪ *Require 30 percent above the 2008 Building and Energy Efficiency standards in Title 24 to coincide with the Voluntary Tier 2 standards of the California Green Building Code (CALGreen).* ▪ *Encourage the use of cement substitutes and recycled building materials for new construction.* *EC-1: Energy-Efficient Appliances and Lighting. Require new development to use energy-efficient appliances that meet ENERGY STAR standards and energy-efficient lighting technologies that exceed Title 24 standards by 30%.*	Although the Town has not yet adopted a Green Building Ordinance that would require projects to achieve energy efficiency 30% greater than required by the 2008 version of Title 24, the timing of project homes is currently unknown and therefore, this ordinance may be in effect at the time of home construction. If in effect at the time of future home construction on project lots, home designs would have to comply with this ordinance Prior to issuance of building permits, proposed home designs and appliance/lighting specifications will be evaluated for consistency with Policy EC-1.
GB-2 GreenPoint Rated Building Guidelines. Require all new and significantly remodeled homes to follow the Town's adopted GreenPoint Rated Building Guidelines. Significantly remodeled homes include remodels of 50 percent or more of the square footage or wall area of the home, and addition as of 50 percent or more of the square footage or wall area of the home.	Project homes will be subject to A&S review, and each applicant will be required to complete a GreenPoint Rated checklist for the proposed home design. Depending on the size of the house and time of construction, green certification may be required when the building permit is issued. Currently, houses larger than 3,500 square feet are encouraged to incorporate green measures, but green certification is not required.
GB-3 Incentives for Green Building Certification. Allow greater flexibility and other incentives (e.g., permitting-related) for LEED Silver certification or equivalent GreenPoint rating, for example, by giving green projects priority in plan review and processing.	The Town has not yet developed incentives for Green Building Certification, but since the timing of project homes is currently unknown, priority plan review and processing incentives may be in place at the time homes are proposed for construction and would be followed by the Town.
GB-4: Solar Orientation. Require measures that reduce energy use through solar orientation by taking advantage of shade, prevailing winds, landscaping, and sun screens.	Project homes will be subject to A&S review, and each applicant will be required to demonstrate that appropriate solar orientation has been incorporated into the proposed home design in order to maximize shade and prevailing winds.
RE-2 New Solar Homes Partnership. Require that residential projects of six units or more participate in the California Energy Commission's New Solar Homes Partnership, which provides rebates to developers of six or more units who offer solar power in 50 percent of new units and is a component of the California Solar Initiative, or a similar program with solar power requirements equal to or greater than those of the California Energy Commission's New Solar Homes Partnership.	Future project homes will be subject to A&S review, and each applicant will be required to participate in this program, if space is still available in this program at the time when future homes are constructed.
RE-5 Solar Ready Features. Where feasible, require that all new buildings be constructed to allow for the easy, cost effective installation of future solar energy systems. "Solar Ready" features should include: proper	Future project homes will be subject to A&S review, and each applicant will need to incorporate solar ready features into the home design, where feasible.

Sustainability Plan GHG Reduction Measures	Project Consistency Analysis
solar orientation (i.e., south facing roof area sloped at 20° to 55° from the horizontal); clear access on the south sloped roof (i.e., no chimneys, heating vents, or plumbing vents); electrical conduit installed for solar electric system wiring; plumbing installed for hot water system; and space provided for a solar hot water storage tank.	
EC-2: Promotion of Energy Conservation. Partner with Pacific Gas & Electric and other appropriate energy providers to promote energy conservation, including the following, which would be primarily funded by the energy providers: ▪ *Promote the purchase of ENERGY STAR appliances.* ▪ *Promote individualized energy management planning and related services for large energy users.* ▪ *Fund and schedule energy efficiency retrofits or "tune-ups" of existing buildings.* ▪ *Pursue incentives and grants for energy conservation.*	Project homes will be subject to A&S review, and each applicant will be required to complete a GreenPoint Rated checklist for the proposed home design, which includes consideration of energy conservation measures. The Town has not yet coordinated with PG&E to promote energy conservation as contemplated by Policy EC-2. Although the timing of project homes is currently unknown, future homes may be subject to additional energy conservation requirements that may come out of this partnership.
EC-3: Energy-Efficient Outdoor Lighting. Require outdoor lighting fixtures to be energy-efficient. Require parking lot light fixtures and light fixtures on buildings to be on full cut-off fixtures, except emergency exit or safety lighting, and all permanently installed exterior lighting shall be controlled by either a photocell or an astronomical time switch. Prohibit continuous all night outdoor lighting in construction sites unless required for security reasons.	Project homes will be subject to A&S review, and each applicant will need to incorporate energy-efficient outdoor lighting. The Town will prohibit continuous all night outdoor lighting during construction.
WW-1: Water Use and Efficiency Requirements. For new development, require all water use and efficiency measures identified as voluntary in the California Green Building Standards Code, and consider more stringent targets. California Green Building Standards Code requirements include: 1) reduce indoor potable water use by 20 percent after meeting the Energy Policy Act of 1992 fixture performance requirements, and 2) reduce outdoor potable water use by 50 percent from a calibrated mid-summer baseline case, for example, through irrigation efficiency, plant species, recycled wastewater, and captured rainwater. Establish Town requirements for discretionary projects regarding watering timing, water-efficient irrigation equipment, water-efficient fixtures, and offsetting demand so that there is no net increase in imported water use. Include clear parameters for integrating water conservation infrastructure and technologies, including low-flush toilets and low-flow showerheads. As appropriate, partner with local water conservation companies on the development and implementation of this measure.	Prior to issuance of building permits, project homes will be reviewed for compliance with all applicable CALGreen water use and efficiency measures, including voluntary measures. The Town has not yet established additional new requirements in excess of CALGreen requirements regarding watering timing, water-efficient irrigation equipment, water-efficient fixtures, and offsetting demand so that there is no net increase in imported water use. If the Town establishes these requirements prior to an applicant applying to construct a residence, then the applicant would be required to comply.
WW-3: Bay Friendly Landscaping. Require new development to use native plants or other appropriate	Project implementation would include landscape plantings along project roads as well as the

Sustainability Plan GHG Reduction Measures	Project Consistency Analysis
non-invasive plants that are drought-tolerant, as described in the Bay Friendly Landscaping Guidelines, available at StopWaste.org and BayFriendlyCoalition.org.	northwestern and northern project boundaries. Project homes will be subject to A&S review, and each landscaping plan will need to use native plants or other appropriate non-invasive, drought-tolerant plants.
SW-1: Construction Waste Diversion. Revise the existing construction and demolition ordinance to require at least 50 percent diversion (i.e. reuse or recycling) of non-hazardous construction waste from disposal.	The project applicant will be required to divert 50 percent of construction waste for reuse or recycling, as required in the Town Building Code.
SW-3: Salvaged, Recycled-Content, and Local Construction Materials. Encourage the use of salvaged and recycle-content materials and other materials that have low production energy costs for building materials, hard surfaces, and non-plant landscaping. Require sourcing of construction materials locally, as feasible.	

4.9.3 POTENTIAL IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA AND THRESHOLDS

Based upon the criteria derived from Appendix G of the *CEQA Guidelines*, a project normally would have a significant effect on the environment if it would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance; or
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

Exercising its own discretion as lead agency and similar to multiple other San Francisco Bay Area jurisdictions, the Town of Los Gatos has decided to rely on the thresholds within the *Options and Justification Report* (dated October 2009) prepared by the BAAQMD. The BAAQMD *Options and Justification Report* establishes thresholds that the Town finds are based on substantial evidence and are consistent with the thresholds outlined within the BAAQMD's 2010/2011 CEQA Air Quality Guidelines. BAAQMD's recommended thresholds are as follows:

- Compliance with a Qualified Climate Action Plan or
- Meet one of the following thresholds:
  - 1,100 MT CO_2e/year; or
  - 6.7 MT CO_2e per capita per year (residential)

For purposes of this EIR, project compliance with the 1,100 MT CO_2e/year threshold is used as the primary basis to determine significance. The project's consistency with operative goals and policies of the Sustainability Plan that are designed to avoid environmental impacts also is analyzed as a secondary basis for assessing significance. As explained earlier in this chapter, compliance with the current requirements of the Sustainability Plan is not sufficient by itself at this time to support a determination that a project's

greenhouse gas emissions are less than significant by definition. Although the Plan contains a comprehensive long-range strategy to achieve sustainability in transportation, land use, energy conservation, water use, solid waste reduction and open space preservation, the Plan will not be fully implemented until the Town Council takes a number of future steps, such as adopting a Green Building Ordinance and developing GreenPoint Rated Building Guidelines. As noted earlier, when these steps have been taken, the Town intends that compliance with the Plan and its implementing actions (e.g., the Green Building Ordinance) should be sufficient by itself to reduce projects' greenhouse gas emissions to less than significant levels. (See CEQA Section 15183.5 [compliance with the requirements of a plan to reduce greenhouse gas emissions may be sufficient to mitigate greenhouse gas emissions from individual projects to less than significant levels].)

METHODOLOGY

The analysis of GHG emissions considers construction-related and operational impacts associated with the proposed project. As allowed by Section 15064.4 of the *CEQA Guidelines*, the significance of the project's GHG emissions has been determined based on the above applicable thresholds of significance. The Town has adopted a Sustainability Plan to address GHG reductions within the Town limits. Therefore, the analysis considers whether the project will meet or exceed BAAQMD's applicable recommended quantitative threshold and whether the project will be consistent with the operative sections of the Town's Sustainability Plan. For CEQA purposes, however, impacts are less than significant only if the applicable BAAQMD-recommended quantitative criterion is also satisfied, given that the Town has not yet taken all steps required to implement the Sustainability Plan, as explained above.

The BAAQMD's 2010 recommended thresholds of significance include a threshold for operational GHG emissions but none for construction-related GHG emissions (BAAQMD, 2009). The BAAQMD recommends the significance of GHG construction-related emission impacts be determined in relation to meeting AB 32 GHG reduction targets. The BAAQMD further recommends, and encourages lead agencies to incorporate, best management practices (BMPs) to reduce GHG emissions during construction, as feasible and applicable (BAAQMD, 2012). Examples of BMPs could include, but are not limited to: ensuring that at least 15% of the construction fleet is comprised of alternatively-fueled (e.g., biodiesel, electric) vehicles/equipment; using at least 10% local building materials; and recycling or reusing at least 50% of construction waste or demolition materials.

The impact analysis in this section estimates the annual GHGs that would be emitted during project construction. In addition, this analysis estimates total annual GHGs that would be emitted from project operation for space heating/cooling, water/wastewater use, solid waste generation/disposal, and mobile source emissions from project-generated traffic. Total operational GHGs are then compared to the BAAQMD's operational GHG threshold of significance that applies to the project, which is 1,100 MT CO_2e/year.

CONSISTENCY WITH NUMERIC THRESHOLDS

Impact 4.9-1: The project would generate greenhouse gas emissions, either directly or indirectly, but would not have a significant impact on the environment. (Less than Significant)

Construction-related "Business as Usual" Greenhouse Gas Emissions. There would be direct project-related GHG emissions associated with construction activities. GHG emissions from construction of the proposed project (including construction of roads, infrastructure, and homes) would total about 358 MT CO_2e. Since project-related construction would likely occur over a period longer than one year, annual CO_2e emissions would be even lower. The BAAQMD has not adopted thresholds for GHGs associated with construction activities. However, for comparison purposes, the project's estimated total GHG emissions would be well below the above-listed operational GHG significance threshold of 1,100 MT CO_2e/year. Although this threshold would not apply to construction-related emissions, it is an indicator that the project's construction-related emissions would be less than significant. In addition to quantifying a project's construction-related emissions, the BAAQMD recommends that best management practices (i.e., ensuring that at least 15% of the construction fleet is comprised of alternatively fueled (e.g., biodiesel, electric) vehicles/equipment; using at least 10% local building materials; and recycling or reusing at least 50% of construction waste or demolition materials) be implemented. While these are recommendations, only the recycling/reuse practice will be required by the Town. The Town Building Code requires that at least 50% of construction waste or demolition materials be recycled or reused. None of the other practices are proposed or required by the Town. However, it should be noted that construction-related GHG emissions would also be reduced by implementation of Mitigation Measures 4.8-2, which would reduce equipment idling time and ensure equipment is operating properly.

Operational "Business as Usual" Greenhouse Gas Emissions. Direct project-related GHG emissions would include emissions from construction activities, area sources, and mobile sources. CalEEMod (Version 2011.1.1) was used to calculate GHG emissions generated by operation of the proposed homes (see Appendix H for model assumptions and output). **Table 4.9-1** presents the estimated CO_2e "Business As Usual" (BAU) project-related emissions. BAU emissions represent the unmitigated project-related operational GHG emissions (i.e., emissions without the incorporation of additional GHG reduction features). Estimated emissions would not exceed the above-listed significance threshold of 1,100 metric tons (MT) of CO_2e per year. When estimated project-related GHG emission increases are compared to this criterion, the project's operational GHG emissions would be less than significant.

Mitigation Measure 4.9-1: *None required.*

TABLE 4.9-1

PROJECT CONSTRUCTION-RELATED AND OPERATIONAL (BUSINESS AS USUAL) GHG EMISSIONS

Consumption Source	Project MT CO_2e/year
Construction	
Construction of Roads, Infrastructure, Homes	358
Operational	
Energy	39.6
Area Sources	0.9
Mobile	92.7
Waste	5.5
Total	140.9
Significance Threshold	1,100 MT CO_2e

SOURCE: CalEEMod Output (see Appendix H)

PLAN CONSISTENCY

Impact 4.9-2: The project would not conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing greenhouse gas emissions. (Less than Significant)

The Town of Los Gatos has adopted a Sustainability Plan, which outlines communitywide GHG emission reduction measures necessary to achieve the goals of AB 32 for the entire community. The Sustainability Plan is a key tool in implementing the 2020 General Plan and promotes sustainability as a strong objective. The plan contains a comprehensive long-range strategy to achieve sustainability in transportation, land use, energy conservation, water use, solid waste reduction and open space preservation. Consistency of any proposed project or program with the Sustainability Plan is one of the criteria used to determine the significance of a project's GHG emissions under CEQA. For reasons explained earlier in this section, however, compliance with the current requirements of the Sustainability Plan is not sufficient by itself at this time to support a determination that a project's greenhouse gas emissions are less than significant by definition, because the Plan will not be fully implemented until the Town Council takes a number of future steps, such as adopting a Green Building Ordinance and developing GreenPoint Rated Building Guidelines. When these steps have been taken, compliance with the Plan and its implementing actions is expected by the Town to be sufficient by itself to reduce projects' greenhouse gas emissions to less-than-significant levels, consistent with CEQA Section 15183.5.

Even without these future actions, the Sustainability Plan already contains a number of binding GHG reduction measures. Thus, project consistency with pertinent GHG reduction measures are evaluated in the project consistency analysis table above (see Section 4.9.2). As indicated in this table, most of the Sustainability Plan's GHG reduction measures would apply to future home designs and each home's consistency with these measures would be evaluated during A&S and building permit review to ensure

compliance. However, the initial phases of road and infrastructure construction would not conflict with the Town's Sustainability Plan assuming compliance with Town Code requirements. As indicated above, the project would generate construction waste (excavated materials, building materials, etc.) and Town Code requires that at least 50 percent of construction waste be reused or recycled.

Mitigation Measure 4.9-2: *None required.*

REFERENCES – GREENHOUSE GASES

Bay Area Air Quality Management District, 2010. *CEQA Air Quality Guidelines*. Updated May 2011 and May 2012. Available online at http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines.

Bay Area Air Quality Management District, 2009. *Revised Draft Options and Justification Report*. October. Available online at: http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines.

Town of Los Gatos, 2012. *Los Gatos Sustainability Plan*. October 15. Available online at: http://www.town.los-gatos.ca.us/index.aspx?NID=1860.

4.10 HAZARDS AND HAZARDOUS MATERIALS

The existing setting and potential hazards and hazardous materials impacts related to the project are described in this section based on: the review of historic land uses at the proposed project site (EDR, 2012c,d); an environmental database review to identify permitted uses of hazardous materials and environmental cases at and near the project site (EDR, 2012a); and a shallow soil investigation conducted to evaluate the potential presence of pesticides and associated metals in the soil as a result of historic use of the property as orchards (AEI, 2012).[1] The Setting includes an overview of general environmental conditions in the project area with respect to the presence of hazardous materials and wastes, a discussion of household hazardous wastes, and a discussion of wildland fire hazards. All of these elements support the analysis of impacts that could occur as a result of project-related changes in land use.

4.10.1 ENVIRONMENTAL SETTING

Hazardous materials, defined in Section 25260(b) of the California Health and Safety Code, are materials that, because of their "quantity, concentration, or physical or chemical characteristics, pose a significant present or potential hazard to human health and safety or to the environment if released to the workplace or environment." Hazardous materials have been and are commonly used in commercial, agricultural, and industrial applications as well as in residential areas to a limited extent.

A waste is any material that is relinquished, recycled, or inherently waste-like. Title 22 of the California Code of Regulations (CCR), Division 4.5, Chapter 11 (Identification and Listing of Hazardous Waste) contains regulations for the classification of hazardous wastes (22 CCR 66261.1, et seq.). A waste is considered a hazardous waste if it is toxic (causes human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), or reactive (causes explosions or generates toxic gases) in accordance with the criteria established in Article 3 of Chapter 11. Articles 4 and 4.1 also list specific hazardous wastes and Article 5 identifies specific waste categories, including federal Resource Conservation and Recovery Act (RCRA) hazardous wastes, non-RCRA hazardous wastes, extremely hazardous wastes, hazardous wastes of concern, and special wastes. If improperly handled and if released to the soil, groundwater, or air (in the form of vapors, fumes, or dust), hazardous materials and wastes can result in public health hazards.

HISTORIC LAND USES

Historic land uses at and near the project site were determined through the review of historical topographic maps dated 1919, 1947, 1953, 1968, 1973, and 1980 (EDR, 2012c) and historical aerial photographs dated 1939, 1948, 1956, 1965, 1976, 1982, 1993, 1998, 2005, and 2006 (EDR, 2012d). Sanborn fire insurance maps have been prepared for many United States towns and cities for the periods

[1] EDR and AEI studies are on file at the Los Gatos Community Development Department located at 110 East Main Street and available for review during counter hours from 8:00 a.m. to 1:00 p.m., Monday through Friday.

1867 through 2007, and these maps are a useful tool for identifying specific historic land uses at a specific property. However, a search of the complete holdings of the Sanborn Library LLC collection found no fire insurance maps covering the project site (EDR, 2012b).

Based on the historical aerial photograph and topographic map review, the Town has concluded that the proposed project site was used for orchards in 1939. The orchards were not evident on the property in the 1948 aerial photograph, but there were orchards present on adjacent or nearby properties through 1965. The proposed project site has not been developed since the orchards were removed.

ENVIRONMENTAL DATABASE REVIEW

A search of relevant regulatory agency databases, including federal, state and local records, conducted by Environmental Data Resources, Inc. (EDR) did not identify any permitted hazardous materials uses[2] or environmental cases[3] within or adjacent to the project area (EDR, 2012a). All of the environmental cases identified by the database review are located a minimum of 1/3 mile from the project site to the northwest, and are at elevations at least 35 feet lower than the proposed project site. Therefore, these sites would have a low potential to affect soil or groundwater quality at the project site.

SITE-SPECIFIC SOIL INVESTIGATION

A site-specific soil investigation was conducted in December, 2012 to evaluate the potential presence of pesticides, herbicides, and associated metals in the soil as a result of historic use of the proposed project site as orchards (AEI, 2012). The investigation included the analysis of 11 shallow soil samples composited from a depth of 0 to 6 inches at 33 locations throughout the project site for chlorinated pesticides and herbicides, dioxins, furans, [4] and Title 22 metals. Chlorinated pesticides, chlorinated herbicides, and furans were not detected in any of the soil samples analyzed.

Table 4.10-1 summarizes the maximum concentration of each metal detected, along with the California Human Health Screening Levels (CHHSLs) and Environmental Screening Levels (ESLs) for residential land uses and California hazardous waste classification criteria. These screening levels and hazardous waste classification criteria are described below in Section 4.10.2, Regulatory Framework. As indicated in Table 4.10-1, none of the metals concentrations exceeded the hazardous waste classification criteria. Only the concentrations of arsenic, cobalt, and nickel exceeded the ESL or CHHSL for residential land uses.

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[2] Permitted hazardous materials uses include facilities that use hazardous materials or handle hazardous wastes that operate under appropriate permits and should be in compliance with current hazardous materials and hazardous waste regulations. Because the use and handling of hazardous materials at these permitted sites are subject to strict regulation, the potential for a release of hazardous materials from these sites is considered low.

[3] Environmental cases are those sites that are suspected of releasing hazardous substances or have had cause for hazardous substances investigations and are identified on regulatory agency lists. The presence of hazardous substances at these sites is generally a result of previous site disturbance activities such as the removal or repair of an underground storage tank (UST), release of hazardous substances, or excavation for construction.

[4] Dioxins and furans are byproducts of pesticide and herbicide production and can be very toxic and persistent in the environment.

TABLE 4.10-1

METALS ANALYTICAL RESULTS FOR SHALLOW SOIL SAMPLES

	Concentration					
		Screening Level		Hazardous Waste Classification Criteria		
Parameter	**Maximum Sample Concentration, mg/kg**	**ESL, mg/kg**	**CCHSL, mg/kg**	**TCLP, mg/L**	**TTLC, mg/kg**	**STLC, mg/L**
Antimony	0.57	20	30	-	500	15
Arsenic	***7.0***	0.39	0.07	5.0	500	5.0
Barium	310	750	5,200	100.0	10000	100
Beryllium	0.56	4.0	16	-	75	0.75
Cadmium	1.4	12	1.7	1.0	100	1.0
Chromium, total	240	1,000	100,000	5.0	2500	5
Chromium, hexavalent	<4.0	8.0	17	-	-	-
Cobalt	***40***	23	660	-	8000	80
Copper	28	230	3,000	-	2500	25
Lead	26	80	80	5.0	1000	5
Mercury	1.4	6.7	18	0.2	20	0.2
Molybdenum	2.5	40	380	-	3500	350
Nickel	***330***	150	1,600	-	2000	20
Selenium	<0.5	10	380	1.0	100	1.0
Silver	<0.5	20	380	5.0	500	5
Thallium	<0.5	0.78	5.0	-	700	7.0
Vanadium	82	200	530	-	2400	24
Zinc	60	600	23,000	-	5000	250

Notes:

a. mg/kg = milligrams per kilogram

b. mg/L = milligrams per liter

c. "<" indicates that the compound was not detected in the analyzed sample at the concentration indicated.

d. ESL = environmental screening levels for the protection of human health and groundwater quality developed by the San Francisco Bay Regional Water Quality Control Board. See Section 4.10.2, Regulatory and Planning Framework, for a description of these screening levels.

e. CHHSL = California human health screening levels developed by the California Environmental Protection Agency. See Section 4.10.2, Regulatory and Planning Framework, for a description of these screening levels.

f. TCLP = toxicity characteristic leaching procedure. Because the TCLP involves a 20-to-1 dilution of the sample, the total concentration of a substance in the soil would need to exceed 20 times the regulatory level for the soluble concentration to exceed the regulatory level in the extract. See Section 4.10.2, Regulatory and Planning Framework, for a description of this waste classification criteria.

g. TTLC = total threshold limit concentration. See Section 4.10.2, Regulatory and Planning Framework, for a description of this waste classification criteria

h. STLC = soluble threshold limit concentration. The STLC is determined by a waste extraction test which involves a 10-to-1 dilution of the sample. Because of this dilution, the total concentration of a substance would need to exceed 10 times the STLC for the soluble concentration to possibly exceed the STLC in the extract. See Section 4.10.2, Regulatory and Planning Framework, for a description of this waste classification criteria.

Source: AEI, 2012; RWQCB, 2008; CalEPA, 2005.

With a maximum concentration of 7.0 milligrams per kilogram (mg/kg), the concentration of arsenic exceeded both the ESL of 0.39 mg/kg and the CHHSL of 0.07 mg/kg in each sample analyzed. However, background concentrations of arsenic in California soils can typically range from 0.6 to 11.0 mg/kg, which is also higher than the screening levels (Kearney Foundation of Soil Science, 1996). Similarly, the concentration of cobalt exceeded the ESL of 23 mg/kg in three of the soil samples, with a maximum concentration of 40 mg/kg. However, the range of background concentrations is 2.7 to 46.9 mg/kg (Kearney Foundation of Soil Science, 1996). At a maximum concentration of 330 mg/kg, the concentration of nickel exceeded the ESL of 150 mg/kg in six samples, but the range of background concentrations is 9 to 509 mg/kg (Kearney Foundation of Soil Science, 1996). The arsenic, cobalt, and nickel concentrations detected in the site soil samples are all within the range of natural background concentrations.

The only dioxin detected in any of the soil samples was octachlorodibenzodioxin (OCDD). This dioxin was detected in all but one of the soil samples, and the concentration ranged from 10.2 to 43.4 nanograms per kilogram (ng/kg). There are no ESLs or CHHSLs established specifically for OCDD. However, OCDD is the least toxic of the dioxins. Based on comparison to the toxicity of the most toxic of the dioxins (2,3,7,8-tetrachlorodibenzodioxin, or TCDD) using a toxic equivalency factor, the equivalent ESL and CHHSL for OCDD is approximately 15,000 ng/kg, which is three orders of magnitude higher than any of the concentrations detected in the soil samples (AEI, 2012).

HOUSEHOLD HAZARDOUS WASTE MANAGEMENT

Household hazardous waste is a hazardous waste that is generated incidental to owning or maintaining a place of residence. Examples of common household hazardous wastes include antifreeze, household batteries, compressed gas cylinders, television/computer monitors, consumer electronic devices, home-generated sharps, oil-based paints, latex paints, motor oil, used oil filters, rodent poison, gasoline, fluorescent lamps containing mercury, partially used aerosol containers, and weed killers. In Los Gatos, household hazardous wastes are managed under the County of Santa Clara Household Hazardous Waste program, and these materials may be disposed of at one of the Santa Clara County household hazardous waste facilities by making an appointment. The County of Santa Clara Household Hazardous Waste program also encourages residents to use safer and less toxic alternatives to common hazardous products, and to purchase lesser volumes of hazardous products.

WILDLAND FIRE HAZARDS

According to the Los Gatos General Plan, the project site is located in a Very High Wildland Fire Severity Zone, as is much of the southern portion of the Town of Los Gatos. The Town's Emergency Operations Plan identifies wildfire risk as a seasonal risk and notes that because of the types of vegetation present in Los Gatos and typically high moisture content, the wildfire risk is usually small. However, during drought years there are occasions when the winds blowing from the east dry out the hillsides and increase the wildfire potential.

4.10.2 REGULATORY FRAMEWORK

ENVIRONMENTAL SCREENING LEVELS

The California Office of Environmental Health Hazard Assessment (OEHHA) and the San Francisco Bay Regional Water Quality Control Board (RWQCB) have published guidelines for the evaluation of chemicals commonly found in soil or groundwater where a release of hazardous materials has occurred. These guidelines include the CHHSLs published by the OEHHA (OEHHA, 2010) and ESLs published by the RWQCB (RWQCB, 2013). These screening levels are conservative estimates of safe levels of a chemical that a person could be exposed to in soil and groundwater. If the concentration of a chemical in the soil or groundwater is below the CHHSL or ESL, then it can be assumed that the chemical would not pose a health risk to a person. However, these screening levels are based on conservative exposure assumptions, and it is possible that a more detailed risk assessment using project-specific exposure assumptions would identify a higher concentration that would be safe for the specific site based on site-specific conditions and use.

WASTE CLASSIFICATION CRITERIA

In accordance with 22 CCR Section 66261.20 et seq., excavated soil would be classified as a hazardous waste if it exhibits the characteristics of ignitability, corrosivity, reactivity, or toxicity. A waste is considered toxic in accordance with 22 CCR Section 66261.24 if it contains certain substances at concentrations greater than the thresholds identified below:

- Total concentrations of certain substances at concentrations greater than the State total threshold limit concentration (TTLC);
- Soluble concentrations greater than the State soluble threshold limit concentration (STLC);
- Soluble concentrations of certain substances greater than federal toxicity regulatory levels using a test method called the toxicity characteristic leaching procedure (TCLP); or
- Specified carcinogenic substances at a single or combined concentration of 0.001%.

A waste would be considered hazardous by State and federal regulations if the soluble concentration exceeds the TCLP level as determined by the TCLP method. Because the TCLP involves a 20-to-1 dilution of the sample, the total concentration of a substance in the soil would need to exceed 20 times the regulatory level for the soluble concentration to exceed the regulatory level in the extract. A waste would also be considered hazardous under State regulations if the soluble concentration of a substance exceeds the STLC determined by a waste extraction test, which involves a 10-to-1 dilution of the sample. Because of this dilution, the total concentration of a substance would need to exceed 10 times the STLC for the soluble concentration to possibly exceed the STLC in the extract. A waste may also be classified as toxic if testing indicates toxicity greater than specified criteria.

NATURALLY OCCURRING ASBESTOS

Asbestos-containing material is defined as any material that has an asbestos content of 0.25% or greater (Title 17 CCR Section 93105(i)(9)). In 2001, the California Air Resources Board (CARB) adopted the Asbestos Airborne Toxic Control Measure (Asbestos ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations in areas of serpentine and other ultramafic rocks (Title 17 CCR Section 93105), which became effective in July 2002. The ATCM protects public health and the environment by requiring the use of best available dust mitigation measures to prevent the offsite migration of asbestos-containing dust from road construction and maintenance activities, construction and grading operations, and quarrying and surface mining operations in areas of ultramafic rock, serpentine, or asbestos. The BAAQMD implements the regulation. The Asbestos ATCM does not apply to the proposed project because no serpentine or other ultramafic rocks are present at the site.

4.10.3 CONFORMANCE WITH LOCAL PLANS AND POLICIES

LOS GATOS GENERAL PLAN

Project consistency with General Plan policies relating to hazards and hazardous materials would be as follows:

General Plan Policies	Project Analysis
Safety Element *SAF-2.1: New development located in or adjacent to fire hazard areas shall be designed and sited to minimize hazards to life and property. Utilize fire preventive site design, access, fire-safe landscaping, and building materials, and incorporate fire suppression techniques.*	As discussed in Impact 4.10-3, the proposed plans for development of each lot would be subject to review and approval by the Town during the Architecture and Site (A&S) review process, and an evaluation of the lot development proposal will be completed by Town staff to ensure that the future home designs are consistent with the Hillside Development Standards and Guidelines (HDSG) and elements of Policy SAF-2.1. This objective is feasible because the potential building envelopes indicated on Figure 3-23 demonstrate there would be sufficient buildable area on each lot. During the Architecture and Site review process for each lot, the proposed landscaping plan would also be reviewed by the Town for consistency with HDSG measures related to use of appropriate plants and maintenance of an adequate defensible space.
SAF-2.3: During the development review process, carefully consider the adequacy of water storage for fire protection.	As discussed in Impact 4.10-3 and Section 4.12, Public Services, Utilities, and Service Systems, Impact 4.12-1, public fire hydrants would be provided and automatic fire sprinklers would be installed in all new structures in accordance with requirements of the Santa Clara County Fire Department to ensure an adequate water supply for firefighting. No water storage tanks would be required on-site.

SAF-2.4: Provide secondary emergency access that will not increase traffic for homes in areas identified as Very High Fire Hazard Areas on the Town's Wildland Fire Severity Zone Map.	As discussed in Impact 4.10-3, as a condition of project approval, the Fire Department would require that project roadways and the proposed emergency vehicle access (EVA) connection to Brooke Acres Drive be provided prior to lot construction. This EVA would provide secondary emergency access to both Twin Oaks Drive and Brooke Acres Drive (both currently have only one access). The project would enhance, not impair, existing emergency evacuation and response options. This would ensure that there would be adequate emergency access for firefighting during construction. Because the emergency access would only be available to emergency vehicles during emergencies, the creation of emergency access will not lead to any general increase in traffic for homes in the Wildland Fire Severity Zone.
SAF-3.1: Minimize exposure to wildland and urban fire hazards through rapid emergency response; proactive code enforcement; public education programs; use of modern fire prevention measures; quick, safe access for emergency equipment and evacuation; and emergency management preparation.	The project is surrounded by existing development and the fire protection services are already provided to the project area. Emergency access is currently available from Twin Oaks Drive. Once the project's proposed EVA connection is made to Brooke Acres Drive, secondary emergency access would be available to project residents.
SAF-3.2: Encourage neighborhood fire emergency planning for isolated areas.	This site is completely surrounded by existing residential uses and is not considered an isolated area. Therefore, this policy does not apply to this project.
SAF-3.3: Ensure emergency fire and medical services are available and ensure adequate water supply for fire emergencies.	For firefighting and emergency medical services, the development would be served by the Santa Clara County Fire Department. As discussed in Impact 4.10-3 and Section 4.12, Public Services, Utilities, and Service Systems, Impact 4.12-1, public fire hydrants would be provided and automatic fire sprinklers would be installed in all new structures in accordance with requirements of the Santa Clara County Fire Department to ensure an adequate water supply for fire emergencies.
SAF-3.4: Restrict development in areas with inadequate water flow.	As discussed in Impact 4.10-3 and Section 4.12, Public Services, Utilities, and Service Systems, Impact 4.12-1, public fire hydrants would be provided and automatic fire sprinklers would be installed in all new structures in accordance with requirements of the Santa Clara County Fire Department to ensure an adequate water flow for firefighting and other uses.
SAF-3.5: Control excessive buildup of flammable vegetative material.	As discussed in Impact 4.10-3, during Architecture and Site review for each lot, the proposed landscaping plan would be reviewed by the Town for consistency with HDSG measures related to use of appropriate plants and maintenance of an adequate defensible space. Compliance with the HDSG measures will ensure satisfaction of General Plan Policy SAF-3.5.
SAF-5.1: Work with public agencies and private organizations to prevent the introduction of hazardous materials into the water and air supply.	The only hazardous materials used under the proposed project would be for household purposes, and residential land uses could result in the generation of household hazardous wastes. Mitigation Measure 4.10-1 requires a Buyer Education Program

	for Household Hazardous Waste to encourage proper disposal of these wastes so that they are not introduced into the water supply or atmosphere.
SAF 5.2: Phase I site assessments shall be required for all sites where property is suspected of containing any toxins.	The review of historical site uses and environmental database review discussed in Section 4.10.1, Environmental Setting, meet the substantive requirements of a Phase I site assessment. As also discussed in Section 4.10.1, a site-specific soil investigation was conducted to evaluate the potential presence of pesticides and herbicides as a result of previous site use as an orchard. No contaminants were detected at concentrations exceeding health-based screening levels and naturally-occurring background concentrations.
SAF 5.3: Support Santa Clara County Fire Department in monitoring the storage of hazardous materials.	The project would not include any land uses that would involve the storage of hazardous materials subject to regulation by the Santa Clara County Fire Department. This policy therefore does not apply to the project.

HILLSIDE DEVELOPMENT STANDARDS AND GUIDELINES (HDSG)

The Town's Hillside Development Standards and Guidelines contain the following site planning standards and guidelines addressing fire hazards:

Hillside Development Standards and Guidelines	Project Consistency Analysis
III. Site Planning *D. Safety* *Fire Hazards – Standard:* *1. Building locations shall be selected and structured designed to minimize exposure to wildfires.* *Fire Hazards – Guideline:* *1. Development should avoid areas subject to severe fire danger. In order to achieve this, development should be set back from the crest of a hill not be located on or adjacent to slopes greater than 30%, and not be located within densely wooded areas. If this is not possible, measures designed to assure the highest degree of fire prevention and fast effective means of evacuation and fire suppression shall be provided.*	As discussed in Impact 4.10-3, the proposed plans for development of each lot would be reviewed by the Town during the Architecture and Site review process to ensure that the homes are constructed within the Least Restrictive Development Areas (LRDA), which include slopes of less than 30% and areas that are not densely wooded.
Fire Hazards – Standard: *2. A landscape plan shall be provided and will be reviewed by the Town's Landscape Consultant with input from the Fire Department. The landscape plan shall create defensible space around the home, and if there is a fire ladder on the property, it shall be eliminated in an environmentally sensitive manner.*	As each lot is proposed for development and subject to Architecture and Site review, the proposed landscaping plan would be reviewed by the Santa Clara County Fire Department and Town staff for consistency with HDSG related to use of appropriate plants, maintenance of an adequate defensible space, and guidelines to prevent fire hazards.

Hillside Development Standards and Guidelines	Project Consistency Analysis
Fire Hazards – Guidelines: 2. *The fuel load within a defensible space should be minimized by use of selective pruning, thinning and clearing as follows: removal of flammable species and debris, removal of dead, dying or hazardous trees, mow dead grasses, removal of dead wood from trees and shrubs, and thin tree crowns (maximum of 25%).* 3. *Discontinuous fuel sources should be created and maintained within a defensible space through use of the following techniques: thin vegetation to form discontinuous groupings of trees or shrubs, limb trees up from the ground, and establish a separation between the lowest branches of a tree and any understory shrubs.* 4. *Landscaping within a defensible space should be designed with fire safety in mind. Landscaping in defensible space should be: fire resistant and drought tolerant, predominantly low-growing shrubs and groundcovers (limit shrubs to 30% coverage), limited near foundations (height and density).*	
Fire Hazards – Standards: 3. *Development shall have adequate fire access.* 4. *A dependable and adequate water supply for fire protection and suppression purposes, as required by the Santa Clara County Fire Department, shall be provided for all properties.* 5. *Water for fire suppression shall be available and labeled before any framing may begin.* 6. *Above ground water tanks shall not be located in required setback areas.*	As a condition of project approval, the Santa Clara County Fire Department would require that adequate access and water supply for fire protection be installed and serviceable prior to any construction. The project proposal would be consistent with this requirement since roads and infrastructure would be constructed prior to development of proposed residences on project lots. As indicated above, no water storage tanks would be required on-site.
Fire Hazards – Guideline: 5. *Above ground tanks should not be located in areas of high visibility unless it can be demonstrated to the satisfaction of the decision making body that no other feasible locations are available.*	As indicated above, no water storage tanks would be required on-site.

4.10.4 POTENTIAL IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

The following thresholds of significance are derived from Appendix G to the 2014 *California Environmental Quality Act* (CEQA) Guidelines. For purposes of this EIR, implementation of the proposed project may have a significant adverse impact if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- 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;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area;
- For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- 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.

Based on project characteristics, no impacts are anticipated with respect to the following topics:

- *Hazardous Emissions and use of Hazardous Substances within ¼-mile of a School*. Hazardous air emissions are toxic air contaminants identified by the California Air Resources Board and the Bay Area Air Quality Management District. Extremely hazardous materials are defined by the State of California in Section 25532 (2)(g) of the Health and Safety Code. During project construction, only common hazardous materials such as paints, solvents, cements, adhesives, and petroleum products (such as asphalt, oil, and fuel) would be used, none of which are considered extremely hazardous materials. All of these materials are commonly used in creating residential streets and constructing homes. The only toxic air contaminant that would be emitted during construction is diesel particulate matter (DPM) and health risks associated with short-term operation of construction equipment is discussed in Section 4.8, Air Quality. There would be no use of extremely hazardous materials or emissions of toxic air contaminants once the project is constructed.
- *Location on a Listed Site*. The project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and therefore, there would be no impact related to this topic.

- *Location in the Vicinity of a Public Airport or Private Air Strip*. The airport or air strip located nearest to the project site is the Norman Y. Mineta San Jose International Airport, located more than 8 miles to the north. Therefore, there is no impact associated with safety hazards due to location of the project within 2 miles of a public airport or in the vicinity of a private airstrip.
- *Impairment of the implementation of or physically interference with an adopted emergency response plan or emergency evacuation plan*. As discussed in Section 4.6, Traffic and Circulation, Impact 4.6-1, during project construction, the Town will require, as a condition of project approval, that a Traffic and Safety Control Plan be prepared by the project applicant. This Plan would include a number of measures such as restricting trucks to specific routes and only during certain hours as well as provision of flagpersons for traffic control/safety. After proposed roads are completed, each lot would have immediate access to a public street, and therefore, would have access for emergency services. The proposed emergency vehicle access (EVA) connection to Brooke Acres Drive would also provide secondary emergency access to both Twin Oaks Drive and Brooke Acres Drive (both currently have only one access point). The project would enhance, not impair, existing emergency evacuation and response options. Therefore, the project would have no adverse impacts related to impairment or physical interference with an emergency response plan or emergency evacuation plan.

Impact 4.10-1: The proposed project could result in a significant hazard to the public or the environment through the routine use and disposal of household hazardous wastes. (Less than Significant with Mitigation)

Development of a new residential subdivision would result in an increase in the generation of household hazardous wastes that are typical of any residential area. Common household hazardous wastes such as paint, pesticides, used oil and antifreeze, could result in direct or indirect effects on human health and the environment if not appropriately handled and disposed of. In addition to water quality impacts from stormwater runoff, other potential impacts such as direct human contact with hazardous materials could result from improper handling or disposal of hazardous household chemicals. As described in the Setting section, the household hazardous wastes may be disposed of by making an appointment with the County of Santa Clara Household Hazardous Waste program.

Although Los Gatos residents can legally dispose of household hazardous wastes under the County of Santa Clara Household Hazardous Waste program, the project's impacts related to the generation and disposal of hazardous waste would be potentially significant because not all residents are knowledgeable in the identification of hazardous wastes and appropriate disposal requirements. This impact would be reduced to less than significant with implementation of Mitigation Measure 4.10-1, Implement Buyer Education Program for Household Hazardous Waste, which requires implementation of a buyer education program to educate residents about the identification of household hazardous wastes, environmental hazards associated with mishandling of the wastes, appropriate disposal methods, and how to make an appointment for disposal. Impacts related to the routine transport of household hazardous materials would

be less than significant because the materials are commercially packaged for retail sale, and transport of these materials is well regulated by state and federal regulations.

Mitigation Measure 4.10-1, Implement Buyer Education Program for Household Hazardous Waste: *The project applicant, working with the Town of Los Gatos and County of Santa Clara Household Hazardous Waste program, shall implement a Buyer Education Program for Household Hazardous Waste, developing materials to educate buyers about the identification of household hazardous wastes, environmental hazards associated with mishandling of the wastes, appropriate disposal methods, and how to make an appointment for disposal. Such materials shall explain that improper disposal of such materials is against the law. At a minimum, the materials shall provide a list of example household hazardous wastes, discuss the environmental impacts of improper disposal, explain how to make an appointment for disposal, and list safer and less toxic alternatives to hazardous products commonly used. The educational materials shall be provided to the buyer at the time of purchase.*

Impact Significance After Mitigation. Less than significant because education of home buyers would help reduce the use of hazardous materials in the home, and would promote legal and environmentally friendly disposal of household hazardous wastes.

Impact 4.10-2: The proposed project would not create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials to the environment during soil excavation and subsequent site use. (Less than Significant)

Although the project site was used as orchards prior to 1948, the site-specific soil investigation conducted in support of the proposed project did not identify chlorinated pesticides, chlorinated herbicides, or furans in any of the soil samples. One dioxin was detected. However, it was the least toxic of the dioxins and the detected concentrations were approximately three orders of magnitude less than the equivalent screening levels for residential land uses. Naturally occurring metals were also detected in the soil samples, but with the exception of mercury, all detected concentrations were below the residential ESL and CHHSL, or were within the range of background concentrations in California. Arsenic, cobalt, and nickel were each detected at a maximum concentration that exceeds the residential ESL or CHHSL. However, the detected concentrations are within naturally-occurring background levels. Therefore, there is a low potential for workers to encounter hazardous materials in the soil during construction, and impacts related to a release of hazardous materials to the environment would be less than significant. As discussed above for Impact 4.10-1, the routine use and disposal by future homeowners of common household products containing hazardous elements would not lead to significant hazards to the public or the environment. The same is true with respect to the transport of such materials from the points of purchase to the points of use (at homes). Any risk of upset or accident through such transportation of materials would not lead to a significant hazard to the public or the environment.

Mitigation Measure 4.10-2: *None required.*

Impact 4.10-3: The project would not to 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. (Less than Significant)

According to the Los Gatos 2020 General Plan's mapping of Wildland Fire Severity Zones, the project site is located in an area designated as Very High Fire Hazard as discussed in the above Setting (Section 4.10.1, Wildland Fire Hazards). As described above in Section 4.10.3, Conformance with Local Plans and Policies, General Plan Policy SAF-2.1 encourages design and siting of new development in fire hazard areas to minimize hazards to life and property by measures such as utilizing fire preventive site design, providing access, using fire-safe landscaping and building materials, and incorporating fire suppression techniques. Compliance with this policy would be achieved primarily through compliance with the standards contained in the Town's Hillside Development Standards and Guidelines (HDSG; January 2004) that would minimize fire hazards. These standards are also described above in Section 4.10.3, Conformance with Local Plans and Policies.

In accordance with the requirements of the HDSG and General Plan Policies SAF 2.3, 2.4, and 3.3, the project applicant would be required to provide adequate emergency access and a dependable and adequate water supply for fire protection and suppression purposes, as required by the Santa Clara County Fire Department. The developers of individual lots would also be required to minimize exposure to wildfires by constructing future homes in areas with slopes of less than 30% and outside of densely wooded areas, and implementing a landscape plan to demonstrate use of appropriate plants and maintenance of a defensible space as specified in the HDSG and General Plan Policy SAF-5. Water for fire suppression would need to be available and labeled before any framing could begin.

In accordance with the HDSG, the landscaping plan for each lot would be required to accomplish the following:

- Minimize the fuel load within a defensible space by use of selective pruning, thinning and clearing. Appropriate methods to achieve this outcome include removing flammable species and debris; removing dead, dying or hazardous trees; mowing dead grasses; removing dead wood from trees and shrubs; and thinning tree crowns (maximum of 25%).

- Use achievable methods to ensure that the defensible space includes only discontinuous fuel sources. Appropriate methods to achieve this outcome include thinning vegetation to form discontinuous groupings of trees or shrubs; limbing trees up from the ground; and establishing a separation between the lowest branches of a tree and any understory shrubs.

- Design the landscaping within the defensible space with fire safety in mind. Appropriate methods to achieve this design include using fire-resistant and drought-tolerant, predominantly low-growing shrubs and groundcovers (limit shrubs to 30%) and limiting the use of vegetation near building foundations (height and density).

Adequate access roads and water supply for fire protection would be constructed, installed, and serviceable prior to any combustible construction in compliance with the HDSG, although an alternative supply may be necessary during demolition and construction of roads and infrastructure, subject to approval by the Fire Department. As indicated in Section 4.12, Public Services, Utilities, and Service Systems, Impact 4.12-1, the Fire Department would require provision of water supply installations prior to the start of combustible construction to ensure that there would be adequate emergency water supply.

In addition, required implementation of a Traffic and Safety Control Plan, which would include maintaining adequate emergency access during all phases of project construction, would ensure adequate emergency access for firefighting (see Section 4.6, Transportation and Traffic, Impact 4.6-4 for more discussion). With proposed completion of project roads prior to development of individual lots (including the EVA to Brooke Acres Drive), adequate emergency access for firefighting would be provided during and after individual lots are developed.

Although the specific home designs have not been prepared for each lot, the proposed plans for development of each lot would be reviewed by the Town as part of the Architecture and Site review process to ensure that the homes are constructed in compliance with the General Plan policies and HDSG described above. Therefore, impacts related to wildland fires would be less than significant.

Mitigation Measure 4.10-3: *None required.*

REFERENCES – HAZARDS AND HAZARDOUS MATERIALS

AEI Consultants, 2012. Pesticide, Herbicide, and Metal Shallow Soil Sampling, Surrey Farm Estates, APN 532-16-006, Twin Oaks Street, Los Gatos, California, 95032. December 12.

California Office of Environmental Health Hazard Assessment, 2010. Risk Assessment – Soil and Soil Gas, Soil Screening Numbers – updated table.. September 23. Available online at http://oehha.ca.gov/risk/chhsltable.html

California Regional Water Quality Control Board (RWQCB), San Francisco Bay Region, 2013. Environmental Screening Levels, Interim Final. December.. Available online at http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/esl.shtml

Environmental Data Resources, 2012a. The EDR Radius Map Report with GeoCheck. Surrey Farms Estates, Twin Oaks Drive, Los Gatos, CA, 95032. Inquiry Number: 3397047.2s. August 23.

Environmental Data Resources, 2012b. Certified Sanborn Map Report. Surrey Farms Estates, Twin Oaks Drive, Los Gatos, CA, 95032. Inquiry Number: 3397047.3. August 23.

Environmental Data Resources, 2012c. EDR Historical Topographic Map Report. Surrey Farms Estates, Twin Oaks Drive, Los Gatos, CA, 95032. Inquiry Number: 3397047.4. August 24.

Environmental Data Resources, 2012d. The EDR Aerial Photo Decade Package. Surrey Farms Estates, Twin Oaks Drive, Los Gatos, CA, 95032. Inquiry Number: 3397047.5. August 28.

Kearney Foundation of Soil Science, Division of Agriculture and Natural Resources, University of California. 1996. Background Concentrations of Trace and Major Elements in California Soils. March.

4.11 CULTURAL RESOURCES

This section evaluates the proposed project's potential impacts on cultural and paleontological resources. The information and analysis presented in this section are based on the findings of the cultural resources study completed by Holman & Associates in January 2013, which is included in **Appendix I** of this EIR. Cultural resources considered for evaluation include both potential historical resources as well as prehistoric archaeological resources that could be affected by the proposed project.

4.11.1 ENVIRONMENTAL SETTING

Cultural resources include places, objects, and settlements that reflect group or individual religious, archaeological, architectural, or paleontological activities. Such resources provide information on scientific progress, environmental adaptations, group ideology, or other human advancements. By statute, CEQA is concerned primarily with two classes of cultural resources: "historical resources," which are defined in Public Resources Code Section 21084.1 and *CEQA Guidelines* Section 15064.5, and "unique archaeological resources," which are defined in Public Resources Code Section 21083.2.

HISTORICAL RESOURCES

The project site is undeveloped and there are no historical resources on the property.

ARCHAEOLOGICAL RESOURCES

An archaeological literature review for the project site was conducted at the Northwest Information Center (NWIC) of the California Historical Resources Information System at Sonoma State University on July 13, 2012. The review indicated that there are no recorded historic and/or prehistoric archaeological sites on the site, nor within a quarter mile of it. There have not been any previous archaeological field inspections of the project area, and only two within 1,000 feet of the project site.

Holman & Associates also conducted a visual inspection of the project site on July 19, 2012 by walking 30-foot transects over the open hillsides and closer transects of the entire lower western edge of the property, including the equestrian ring and proposed access road alignment. At the time of the field visit (July 2012), the hillside was covered by dry grasses, small oaks, and what appears to be remnants of an orchard. Based on historic photographs, the property has been open grassland with little historic land alteration. Soils throughout the hillside area are comprised of hard-packed clay with large basalt and quartzite cobbles. The western edge of the property is comprised of a silty gray clay loam containing fine gravels; it is apparent that this edge of the property contained a seasonal drainage, collecting waters from the hillsides to the east and south.

No evidence of significant historical archaeological materials and no evidence of prehistoric use and/or habitation of the area was seen during the field inspection. Therefore, Holman & Associates concluded that the subject property has a low potential for containing buried prehistoric resources. Most of the property is comprised of hillsides that have slopes that are too steep to have supported Native American

camps or villages. There was also no such evidence found along the western margin of the property where such camps or villages might have been located in prehistoric times.

PALEONTOLOGICAL RESOURCES

Paleontological resources are the fossilized remains of plants and animals, including vertebrates (animals with backbones), invertebrates (e.g., starfish, clams, ammonites, and marine coral), and fossils of microscopic plants and animals (microfossils). The age and abundance of fossils depend on the location, topographic setting, and particular geologic formation in which they are found. Fossil discoveries not only provide an historic record of past plant and animal life, but may assist geologists in dating rock formations. A review of records maintained by the University of California Museum of Paleontology (UCMP) in Berkeley indicates that the closest paleontological resources recorded in Santa Clara County occur approximately 15.5 miles west of Los Gatos. These resources were discovered in geologic strata dating from the Late Pliocene and Miocene epochs of the Tertiary Period (65 to 1.8 million years ago). The project site is underlain mostly by the Santa Clara formation, Temblor Sandstone, and Older Alluvial Fan Deposits. There is a small area underlain by Monterey Shale near the eastern project boundary.

As part of the environmental assessment for the 2020 General Plan, fossil locality search requests were sent to the UCMP. The purpose of this search was to identify recorded paleontological resources in and near the Town, and identify the geologic formations and types of fossils that might be expected in and adjacent to Los Gatos based on the existing geological and paleontological data. According to the UCMP, there are no fossil localities recorded in or adjacent to Los Gatos.

4.11.2 REGULATORY AND PLANNING FRAMEWORK

FEDERAL AND STATE

There are no pertinent federal or state laws specifically addressing paleontological resources that would apply to the project. There are a number of federal and state regulations used to assess the historic significance and eligibility of a building, structure, object, site or district for listing in the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR) as well as to protect these resources. However, since there are no historic resources on the project site, these guidelines and regulations would not pertain to the project. There is, however, at least a theoretical potential that subsurface archaeological resources could be encountered during construction activities. Certain provisions of CEQA and the CEQA Guidelines would be relevant if any such underground resources were encountered.

According to subdivision (c) of CEQA Guidelines section 15064.5, “CEQA applies to effects on archaeological sites.” Sometimes archaeological resources can qualify as “historical resources,” and other times they can qualify as “unique archaeological resources.” Both of these terms are legal terms of art defined in CEQA and the CEQA Guidelines. (See CEQA Guidelines Section 15064.5[a] [defines “historical resources”]; and Public Resources Code section 21083.2[g] [defines “unique archaeological resources”].) “When a project will impact an archaeological site, a lead agency shall first determine

whether the site is an historical resource." (CEQA Guidelines Section 15064.5(c)(1).) If the answer to this initial inquiry is in the affirmative, then certain requirements come into play. These are generally set forth in subdivision (b) of CEQA Guidelines section 15064.5. (*Id.*, § 15064.5(c)(2).) If an archaeological resource does not qualify as an "historical resource" but does qualify as a "unique archaeological resource," then a different set of requirements and limitations come into play, as set forth in Public Resources Code section 21083.2. (CEQA Guidelines Section 15064.5(c)(3).) "If an archaeological resource is neither a unique archaeological nor an historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study or EIR, if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process." (*Id.*, § 15064.5(c)(4).)

Subdivision (f) of section 15064.5 provides that "a lead agency should make provisions for historical or unique archaeological resources accidentally discovered during construction. These provisions should include an immediate evaluation of the find by a qualified archaeologist. If the find is determined to be an historical or unique archaeological resource, contingency funding and a time allotment sufficient to allow for implementation of avoidance measures or appropriate mitigation should be available. Work could continue on other parts of the building site while historical or unique archaeological resource mitigation takes place."

CEQA Guidelines section 15126.4, subdivision (b)(3), provides additional guidance: "[p]ublic agencies should, whenever feasible, seek to avoid damaging effects on any historical resource of an archaeological nature." Although much of this provision applies to archaeological resources already known at the time of EIR preparation, the provision lays out general principles regarding favored means of mitigating impacts to historical resources of an archaeological nature; these would seem to apply even where subsurface historical resources are discovered for the first time during construction activities:

> (A) Preservation in place is the preferred manner of mitigating impacts to archaeological sites. Preservation in place maintains the relationship between artifacts and the archaeological context. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.
>
> (B) Preservation in place may be accomplished by, but is not limited to, the following:
>
> 1. Planning construction to avoid archaeological sites;
>
> 2. Incorporation of sites within parks, greenspace, or other open space;
>
> 3. Covering the archaeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site.
>
> 4. Deeding the site into a permanent conservation easement.
>
> (C) When data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provisions for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared and

adopted prior to any excavation being undertaken. Such studies shall be deposited with the California Historical Resources Regional Information Center. Archeological sites known to contain human remains shall be treated in accordance with the provisions of Section 7050.5 Health and Safety Code. If an artifact must be removed during project excavation or testing, curation may be an appropriate mitigation.

(D) Data recovery shall not be required for an historical resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historical resource, provided that the determination is documented in the EIR and that the studies are deposited with the California Historical Resources Regional Information Center.

The mitigation preferences set forth above in paragraphs (A) and (B) also apply to unique archaeological resources. (Pub. Resources Code Section 21083.2[b].)

LOCAL

Los Gatos General Plan. The Los Gatos 2020 General Plan (adopted September 20, 2010) identifies goals and policies pertaining to future growth within the Town of Los Gatos and protection of archaeological and cultural resources. Project consistency with relevant policies is discussed in the following table.

General Plan Policies	Project Consistency Analysis
Open Space, Parks, and Recreation Element	
Goal OSP-9: To protect Los Gatos's archaeological and cultural resources to maintain and enhance a unique sense of place. *OSP-9.1: Evaluate archaeological and/or cultural resources early in the development review process through consultation with interested parties and the use of contemporary professional techniques in archaeology, ethnography, and architectural history.* *OSP-9.3 Treat with respect and dignity any human remains discovered during implementation of public and private projects within the Town and fully comply with California laws that address the identification and treatment of human remains.* *OSP-9.4 Require that if cultural resources, including archaeological or paleontological resources, are uncovered during grading or other on-site excavation activities, construction shall stop until appropriate mitigation is implemented.*	Although there are no recorded or observed archaeological resources on the project site, Mitigation Measures 4.11-1 and 4.11-2 will be required and they will protect any unknown buried archaeological and paleontological resources, if they are encountered during project construction.

4.11.3 POTENTIAL IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

Based upon the criteria derived from Appendix G of the *CEQA Guidelines*, the proposed project would have a significant effect on cultural resources if it would:

- Cause a substantial adverse change in the significance of an historical resource as defined in *CEQA Guidelines* Section 15064.5;
- Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to *CEQA Guidelines* Section 15064.5;
- Directly or indirectly destroy a unique paleontological resource or site or unique geological feature; or
- Disturb any human remains, including those interred outside of formal cemeteries.

Based on project characteristics and the characteristics of cultural resources in the project area, no impacts are anticipated under one of the above significance criteria for the following reasons:

- *Cause a substantial adverse change in the significance of an historical resource as defined in CEQA Guidelines Section 15064.5.* The project site is currently undeveloped and there are no structures on the property. Consequently, the project would have no impact on historical resources, with the possible exception of undiscovered qualifying archaeological resources that might be encountered during construction (addressed below).

METHODOLOGY

This section evaluates the proposed project's potential impacts on archaeological resources based on the cultural resources study that was completed for the proposed project by Holman & Associates in January 2013. This study included an archaeological literature review conducted at the Northwest Information Center (NWIC). The potential for impacts on paleontological resources is determined based on a review of records maintained by the University of California Museum of Paleontology in Berkeley. The potential to encounter paleontological resources at the site was determined by comparing the geologic strata where the closest recorded paleontological resources were found to underlying geologic units at the project site.

ARCHAEOLOGICAL RESOURCES

Impact 4.11-1: Construction activities on the project site could adversely affect unknown subsurface archaeological resources, if encountered, including the disturbance of human remains. (Less than Significant with Mitigation)

No evidence of significant historical archaeological materials, prehistoric use, and/or prehistoric habitation of the area was found on the project site, either during the archival research or the field

inspection. Holman & Associates concluded that there is a very low potential that any future development of the property would uncover buried prehistoric materials. The site's hillsides, which comprise most of the site, are too steep to have supported Native American camps or villages. No evidence of such was observed on the small portion of the property along its western edge where they might have been located in prehistoric times. While Holman & Associates does not recommend mechanical subsurface presence/absence testing for prehistoric resources and does not recommend archaeological monitoring of future construction-related earthmoving activities, there remains a small possibility that buried prehistoric resources could be found along the western edge of the property or along the proposed roadways, a potentially significant impact. Implementation of Mitigation Measure 4.11-2, Observation by Construction Personnel, would reduce potential impacts on any uncovered resources to less than significant.

Mitigation Measure 4.11-1, Observation by Construction Personnel: *The project shall include the following conditions:*

a. *Construction personnel involved with earthmoving shall be alerted to the potential for the discovery of prehistoric materials. Prehistoric archaeological resources could include but not be limited to the following: darker than surrounding soils of a friable nature, concentrations of rock, bone or fresh water shellfish, artifacts of these materials, and evidence of fire (ash, charcoal, fire altered earth or rock) and burials, both human and animal.*

b. *In the event that archaeological traces are encountered, all construction within a 30-foot radius of the find shall be halted, the Community Development Director shall be notified, and a qualified archaeologist shall be retained to examine the find and determine whether the archaeological traces qualify as either "historical resources" or "unique archaeological resources."*

c. *If the archaeologist determines that the archaeological find is neither an historical resource nor a unique archaeological resource, work may resume unless the find consists of human remains, in which case the requirements of subdivision (e) below shall be triggered.*

d. *If the archaeologist determines, and the Community Development Director agrees, that the find is either an historical resource or a unique archaeological resource, the archaeologist shall prepare a proposed mitigation program that he or she believes could be feasible and appropriate under the circumstances, and shall submit it to the Community Development Director for his or her consideration and approval. Where the find qualifies as a unique archaeological resource but not an historical resource, the mitigation shall be in conformance with the protocol and limitations set forth in Public Resources Code Section 21083.2. Where the find qualifies as an historical resource, such limitations shall not apply. To the extent feasible in light of project design, logistics, and costs, proposed mitigation for either an historical resource or a unique archaeological resource shall reflect the policy preference for preserving the resources in place. Data recovery may be acceptable, however, where such preservation in place is not feasible under the circumstances and where the data to be recovered would be scientifically consequential. Mitigation may also take the form of additional hand excavation to retrieve and analyze significant archaeological materials, coupled with additional monitoring of earthmoving inside the zone of archaeological sensitivity.*

   After the mitigation approved by the Community Development Director has been completed, the project archaeologist shall prepare a final report that includes background information on the

completed work, a description and list of identified resources, the disposition and curation of these resources, any testing, other recovered information, and conclusions.

e. If human remains are discovered, the Santa Clara County Coroner shall be notified. The Coroner will determine whether or not the remains are Native American. If the Coroner determines that the remains are not subject to his or her authority, he or she will notify the Native American Heritage Commission, who shall attempt to identify descendants of the deceased Native Americans. Provisions for identifying descendants of a deceased Native American and for reburial will follow the protocol set forth in CEQA Guidelines Section 15064.5(e).

Impact Significance After Mitigation: Less than significant because it is very unlikely that the project site contains subsurface historical resources or unique archaeological resources and because this measure would ensure that appropriate protection measures would be taken in the event that any such resources are encountered during project construction.

PALEONTOLOGICAL RESOURCES

Impact 4.11-2: Construction activities on the project site could adversely affect unknown subsurface paleontological resources, but would not affect any unique geological features. (Less than Significant with Mitigation)

The Miocene Monterey Shale and Miocene-Oligocene Temblor Sandstone are of similar age to those containing the recorded paleontological resources. Consequently, the potential for encountering paleontological resources cannot be completely eliminated. Since there remains the potential for impacts on any undiscovered resources to occur, implementation of Mitigation Measure 4.11-2 would be required to reduce this impact to a less-than-significant level.

Additionally, no unique geological features are present on the site. Therefore, development of the site would not result in significant impacts on unique geological features.

Mitigation Measure 4.11-2, Halt Construction and Evaluate Resource: *Prior to the commencement of construction activities, the project applicant or its successor(s) in interest shall provide for a qualified paleontologist to provide construction personnel with training on procedures to be followed in the event that a fossil site or fossil occurrence is encountered during construction. The training shall include instructions on identification techniques and how to further avoid disturbing the fossils until a paleontological specialist can assess the site. An informational package shall be provided for construction personnel not present at the meeting.*

In the event that a paleontological resource (fossilized invertebrate, vertebrate, plant or micro-fossil) is found during construction, excavation within 50 feet of the find shall be temporarily halted or diverted until the discovery is evaluated. Upon discovery, the Community Development Director shall be notified immediately and a qualified paleontologist shall be retained to document and assess the discovery in accordance with Society of Vertebrate Paleontology's 2010 Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources, and recommend procedures to be followed before construction is allowed to resume at the location of the find. If the Community Development

Director determines that avoidance is not feasible in light of project design, logistics, and costs, the paleontologist will prepare a recommended excavation plan, subject to review and approval by the Community Development Director, for mitigating the project's impact on this resource, including preparation, identification, cataloging, and curation of any salvaged specimens.

Impact Significance After Mitigation: Less than significant because: (1) it is very unlikely that the project site contains paleontological resources; (2) construction personnel shall receive training on identification techniques and procedures to follow if a fossil resource is encountered; and (3) a qualified paleontologist shall assess the resource and develop procedures to ensure that appropriate protection or mitigation measures would be taken in the event buried paleontological resources are encountered during project construction.

REFERENCES – CULTURAL RESOURCES

Holman & Associates, 2013. *Cultural Resource Study of the Proposed Surrey Farm Estates Project, 170 Twin Oaks Drive, Los Gatos, Santa Clara County, California*. January 25. (Included as Appendix I of this EIR)

University of California Museum of Paleontology in Berkeley. *UC Museum of Paleontology Localities, Santa Clara County*. Available online at: http://ucmpdb.berkeley.edu/cgi/ucmp_query2?stat=BROWSE&query_src=ucmp_BrowseUSstates&table=ucmp_loc2&where-state_prov_std=California&where-county_std=Santa+Clara+County&orderby=county_std

4.12 PUBLIC SERVICES, UTILITIES, AND SERVICE SYSTEMS

Public services include fire protection, law enforcement, water services, wastewater services, emergency services, schools, libraries, medical facilities, and other utilities (including electricity, gas, telephone, and cable television). In municipal areas such as the Town of Los Gatos, individual departments within the government provide law enforcement, fire protection, and emergency services to their communities.

It is not anticipated that the proposed project would affect telephone facilities; therefore, no or minimal discussion on such facilities are included in this section. Potential impacts to parks are discussed in Section 4.13, Recreation. Public providers associated with public transportation are discussed in Section 4.3, Transportation and Traffic.

4.12.1 ENVIRONMENTAL SETTING

FIRE PROTECTION SERVICES

The Santa Clara County Fire Department provides fire protection services to the project area. Daily emergency response staffing consists of 68 career fire personnel on a 24-hour shift assignment plus one 40-hour Battalion Chief in Battalion 12, operating 20 pieces of first-line apparatus, plus four Battalion Chief command vehicles, operating from 17 fire stations. Department staffing also includes 29 trained volunteer firefighters. The Department employs a form of "peak load staffing" by staffing patrols and other apparatus during high fire danger periods, during storms and anticipated flooding, and for special events (Santa Clara County Fire Department, 2013).

First-call equipment is deployed to deliver initial fire attack and EMS services within seven minutes at least 90% of the time. Ladder trucks are located to respond on all first and second alarms in designated urban areas. A standard first-alarm assignment for structure fires consists of two engine companies, a ladder truck company, a rescue or hazardous materials company and a Battalion Chief totaling fifteen persons. On working fires, the response may be duplicated with Department resources as a second alarm. Total staffing for two alarms is 30 persons. A rescue or hazmat unit fills out an alarm.

Department facilities supporting fire protection services to the area include the Shannon Fire Station (16565 Shannon Road) and the Los Gatos Fire Station. Personnel and equipment from the Shannon Road Station would provide the first response to emergency calls to the site. Additionally, the Los Gatos Fire Station at 306 University Avenue could provide back-up response to this area.

A standard first-alarm assignment for structure fires consists of two engine companies, a ladder truck company, a rescue or hazardous materials company and a Battalion Chief totaling fifteen (15) persons. A second-alarm would add another two engine companies, one truck company, one rescue company, and an additional Chief Officer; total staffing for two alarms is then forty (40) persons. Wildland-urban interface companies are trained and equipped to provide structure protection and limited initial attack on wildland incidents. A brush alarm for vegetation fires in wildland-urban interface areas consists of two engine companies, a Type 3 engine and a Battalion Chief, totaling nine (9) persons.

LAW ENFORCEMENT SERVICES

Public safety services for the project site include police protection by the Los Gatos/Monte Sereno Police Department (Los Gatos/Monte Sereno Police Department, 2014). The police department serves a combined population of approximately 34,000 residents.

The police department consists of the following individual departments: administration, records and communications, patrol, investigations, traffic program, personnel and community services and parking management. The department is comprised of 61 sworn and civilian personnel, and approximately 150 community volunteers. Staffing levels entail one chief, two captains, nine sergeants, and 30 officers.

The Los Gatos/Monte Sereno Police Department station is approximately 5,500 square feet located within the Town's Civic Center complex. The Town relocated certain police operations to another facility at 15900 Los Gatos Boulevard. The police substation on Los Gatos Boulevard houses police operations that include: patrol operations, the investigations unit, and evidence storage. Other personnel located at the site include the operations captain, a patrol and administrative sergeant, and an evidence technician. Police administration, records, and dispatch remain in headquarters at the Town Civic Center complex. In total, the existing Police Department offices at the Civic Center in combination with the Los Gatos Boulevard facility occupy a 12,260 square foot area.

The patrols for beats within the Los Gatos and Monte Sereno communities consist of three shifts, with three to four officers and one sergeant on duty per shift. Patrols originate from the operations center on Los Gatos Boulevard.

SCHOOL SERVICES

The project area is located within the district boundaries of the Los Gatos Union School District (LGUSD) and the Los Gatos-Saratoga Union High School District (LGSUHSD). The Los Gatos Union School District has four elementary schools and one middle school providing educational services to the children of Los Gatos:

- Blossom Hill Elementary School (16400 Blossom Hill Road)
- Daves Avenue Elementary School (17770 Daves Avenue)
- Lexington Elementary School (19700 Old Santa Cruz Highway)
- Van Meter Elementary School (16445 Los Gatos Boulevard)
- Raymond J. Fisher Middle School (19195 Fisher Avenue)

All of the elementary schools serve kindergarten through grade five. Raymond J. Fisher Middle School serves Los Gatos students in grades six through eight.

The District has grown annually from 2,587 students in the 2006/07 school year to 3,162 students in the 2013-14 school year. The seven years of growth have resulted in a 575-student increase for an average of approximately 82 students per year. During this timeframe, only a minimal number of new housing units

were built within the District boundaries, suggesting growth was caused by other factors rather than new development. The most likely cause of growth was from a positive net migration of families with school-age children moving into the District.

For schools serving the project area, the 2013-14 enrollment at Blossom Hill Elementary School was 674 students; the total capacity of Blossom Hill Elementary School is 693 students. The enrollment of Fisher Middle School was 1,196 students; Fisher Middle School has a total capacity of 1,334 students. The 2014 utilization rates for the two schools are 97% and 90%, respectively.

The LGUSD anticipates increased enrollment over the next ten years. Beyond the 2013-2014 school year, the LGUSD expects enrollment to exceed the current total capacity of 3,490 students. An evaluation of the community's demographics prepared for the District provides enrollment forecasts for four scenarios, ranging from enrollment projections without future residential growth to projections including moderate to maximum allowable residential densities.[1] Under the latter two scenarios, 2021-2022 District enrollment would rise to 3,744 and 3,830 students, representing a 20 to 23% increase, respectively, over current enrollment. Also, the District has prepared "Imagine LGUSD 2022," a master planning study that will guide the use and development of facilities over the next ten years. The study was presented to the District Board and public in December 2012.

The LGSUHSD has two high schools, Los Gatos High and Saratoga High, which serve over 3,100 students from unincorporated Santa Clara County as well as the communities of Los Gatos, Monte Sereno and Saratoga. Los Gatos High School enrollment increased from 1,754 in the 2010-2011 school year to 1,828 enrolled students in 2013-2014; its total capacity is 1,825. Enrollment in LGSUHSD over the next five years could increase by an average of 2.5% per year; however, rather than a steady increase in enrollment, it should be noted that the enrollment for the high school has varied from year to year and ranged from 1,733 to 1,828 students from 2005-2006 to 2013-2014 school years.

Improvements planned for Los Gatos High School do not include the addition of any classrooms; however, the District anticipates the construction of facilities for athletics and/or physical education classes, expansion of the theater building, construction of a new digital media building, and infrastructure and parking improvements. Planned improvements for Los Gatos High School are described in detail in the District's 2009 Master Plan.

WATER SERVICE

Water service to the project area is provided by the San Jose Water Company (SJWC). The SJWC supplies domestic water to unincorporated County, Los Gatos, Monte Sereno, San Jose, Campbell, Saratoga, and Cupertino. Water supply sources include ground water, mountain surface water, imported surface water, and the Cupertino Water System. Groundwater is pumped from over 100 wells that draw

[1] Moderate Residential Growth includes all approved and known future development at half of maximum unit numbers; Maximum Residential Growth assumes full build-out of allowable unit numbers.

water from the Santa Clara Groundwater Basin. During 2000, groundwater pumped from deep wells was approximately 40 percent of SJWC's supply.

Imported surface water is provided by Santa Clara Valley Water District (SCVWD), a wholesale supplier. Surface water imported from the Sacramento-San Joaquin Delta and purchased from the SCVWD comprises 51 percent of SJWC's supply. A majority of this water originates as Sierra snowmelt, and travels through the State and Federal water projects before treatment at the District's three treatment plants. A smaller portion is impounded in local reservoirs in Santa Clara County.

Local mountain surface water is collected from the local watershed in the Santa Cruz Mountains, and treated at two treatment plants. Local surface water from the watershed in the Santa Cruz Mountains is 10 percent of SJWC's supply.

WASTEWATER SERVICES

The West Valley Sanitation District (WVSD) provides wastewater collection and disposal services for the cities of Campbell, Los Gatos, Monte Sereno, much of Saratoga and some unincorporated areas of the county within the district boundary. WVSD serves approximately 112,000 persons, including almost all of the population of the Town of Los Gatos.

The WVSD's system within the Town of Los Gatos consists of gravity mains ranging from 6 inches to 27 inches in diameter. The collection system flows north, exiting the Town limits through multiple trunk sewers. These systems continue to the north through the City of San Jose trunk sewers and ultimately to the San Jose/Santa Clara Water Pollution Control Plant in Alviso.

The San Jose/Santa Clara Water Pollution Control Plant cleans and treats the wastewater of approximately 1,500,000 people who live and work in the 300-square-mile area encompassing the cities of San Jose, Santa Clara, Milpitas, Campbell, Cupertino, Los Gatos, Saratoga and Monte Sereno. The plant has the capacity to treat 167 million gallons of wastewater per day (mgd) utilizing an advanced, tertiary wastewater system. Most of the final treated water from the Plant is discharged as fresh water through Artesian Slough and into South San Francisco Bay. About 10% is recycled through South Bay Water Recycling pipelines for landscaping, agricultural irrigation, and industrial needs around the South Bay. The WVSD has a contract with the City of San Jose for a percentage of the capacity of WVSD's sewage treatment facilities. In return, the contract requires the WVSD to pay its share of debt service, operation, maintenance and improvement costs.

There are approximately 8,419 connections for single-family residential uses, 3,188 connections for multi-family uses, 756 connections for commercial/industrial uses for a total of 12,363 connections in the Town of Los Gatos. The WVSD has a fixed allocation of the San Jose/Santa Clara Water Pollution Control Plant, which was 13.052 mgd in fiscal year (FY) 2004–2005. In FY 2004–2005, the WVSD collected and conveyed 10.675 mgd of wastewater to the treatment plant, which was far less than its allocated capacity. Because of the excess capacity, the WVSD sold 1.0 mgd of treatment plant capacity

to the City of Milpitas in 2006 and now has the capacity for 12.052 mgd. In FY 2009-2010, the WVSD collected and conveyed 10.417 mgd, a decrease from the 2004-2005 wastewater flow levels, and below the contracted capacity of 12.052 mgd.

A 10-foot wide sanitary sewer easement extends along the western perimeter of the project site. An 8-inch sewer line in this easement conveys wastewater flows northward from residential development south of the project site; this sewer line then extends westward off of the site at a point approximately 425 feet south of the site's northwest corner, connecting with sewer facilities in Longmeadow Drive.

SOLID WASTE SERVICE

The West Valley Collection & Recycling, LLC (WVCR) is the exclusive recycling, green waste, and garbage hauler for the Town of Los Gatos, the cities of Campbell, Monte Sereno, and Saratoga and unincorporated Santa Clara County. All recycling, green waste, and garbage are picked up by WVCR and transported directly to the Guadalupe Landfill, located in the City of San Jose.

The Guadalupe Landfill is a Class III solid waste landfill. The total permitted capacity of the landfill is 16.5 million cubic yards. As of January 2011, the landfill has used approximately 5.4 million cubic yards or approximately 33% of its capacity. The projected capacity remaining as of early 2011 is 11.1 million cubic yards. Currently, the landfill is expected to reach its capacity in 2048.

WVCR provides single stream recycling to single-family and multi-family residents as well as commercial customers. Single stream recycling means all recyclables are placed in a single bin and do not need to be sorted based on the material type (i.e., paper, plastic, metal, etc.). All recyclable materials are sorted at WVCR's Materials Recovery Facility (MRF) in the City of San Jose. WVCR also collects green waste, or yard trimmings, from residential customers. The green waste is taken to the Guadalupe Landfill.

OTHER UTILITIES

The project area contains a number of utility lines that serve the existing uses on site. These utilities include electric and gas lines, telephone service lines, and cable television lines.

4.12.2 REGULATORY AND PLANNING FRAMEWORK

2010 CALIFORNIA FIRE CODE

The *California Fire Code* (2010) contains regulations relating to construction and maintenance of buildings and the use of premises, among other issues. The CFC also references Chapter 7A of the 2010 California Building Code and Section 313.3 of the 2010 California Residential Code, which contain specific requirements for fire-safe construction.

SB 50

Senate Bill 50 (SB 50), adopted in 1998, defined the school impact fee "Needs Analysis" process in Government Code Sections 65995.5-65998. Pursuant to its provisions, school districts may collect fees to offset the costs associated with increasing school capacity as a result of development. By statute, however, payment of a statutory fee by developers serves as the total mitigation of the potential impact of a development on school facilities pursuant to CEQA.

CALIFORNIA CODE OF REGULATIONS TITLE 24

New buildings in California are required to conform to energy conservation standards specified in Title 24 of the California Code of Regulations (CCR). The building efficiency standards are enforced through the local building code or individual agency permitting process. The Town of Los Gatos requires all new buildings to meet Title 24 standards. The purpose of the CALGreen Code is to enhance the design and construction of buildings through the use of building design and construction standards that either reduce negative environmental impacts, or have positive environmental impacts and by encouraging sustainable construction practices. The Green Code provides standards for the following: planning and design; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental quality. The Code became effective on January 1, 2011.

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) PERMITS

The NPDES permit system was established as part of the *Clean Water Act* (CWA) to regulate discharges from all point sources. Section 402(d) of the CWA establishes a framework for regulating nonpoint source (NPS) storm water discharges under the NPDES permit program. For point source discharges, such as sewer outfalls, each NPDES permit contains limits on allowable concentrations and mass emissions of pollutants contained in the discharge. A detailed discussion of project compliance with NPDES Permit requirements is presented in Section 4.9, Hydrology and Water Quality.

STATE OF CALIFORNIA WATER RECYCLING ACT

Enacted in 1991, the *Water Recycling Act* established water recycling as a priority in the State. The Act encourages municipal wastewater treatment districts to implement recycling programs to reduce local water demands.

AB 939 – CALIFORNIA INTEGRATED WASTE MANAGEMENT ACT OF 1989

The *California Integrated Waste Management Act of 1989 (*AB 939) requires all California cities and counties to have achieved a 50% diversion rate by 2000. The *Santa Clara County Integrated Waste Management Plan* (CIWMP) outlines the goals, policies, and programs the County and its cities will implement to create an integrated and cost effective waste management system that complies with the provisions of AB 939 and its diversion mandates. Additional statutes pertaining to solid waste are found in *California's Public Resources Code, Government Code,* and *Health and Safety Code,* among others.

URBAN WATER MANAGEMENT PLANNING ACT

The Urban Water Management Planning Act (California Water Code Section 10631) requires every urban water supplier that provides water to 3,000 or more customers or provides over 3,000 acre-feet of water annually to prepare and adopt an urban water management plan (UWMP). In preparing the UWMP, the urban water supplier is required to coordinate with other appropriate agencies, including other water suppliers that share a common source, water management agencies, and relevant public agencies. The Urban Water Management Planning Act also requires urban water suppliers, as part of their long-range planning activities, to make every effort to ensure the appropriate level of reliability in their water service sufficient to meet the needs of their various categories of customers during normal, dry, and multiple dry water years.

SCVWD – WATER SUPPLY AND INFRASTRUCTURE MASTER PLAN

The Santa Clara Valley Water District's (District) Water Supply and Infrastructure Master Plan (Water Master Plan) is the District's strategy for providing a reliable supply of water for Santa Clara County. The Water Master Plan specifies:

- The preferred combination of water supply sources and conservation programs to meet the county's future water demands to 2035;
- New infrastructure and infrastructure capacity increases needed to treat, store, and convey future water supply sources; and
- Operational approaches to manage water supplies and infrastructure.

The Water Master Plan will update the District's strategy for ensuring future water supply reliability in light of future uncertainty and increasing demands for water by providing up-to-date analyses in key areas of water use and supply planning. The District is in the process of developing a plan for implementation of the recommended water supply strategy based on finances, risk, and water supply needs. The District accepted a Water Supply Strategy on May 15, 2012 and adopted the Water Supply and Infrastructure Master Plan in October 2012.

LOS GATOS GENERAL PLAN

The General Plan is a policy document to assist and guide local decision makers. The General Plan also contains policies that pertain to public services, utilities, and service systems. Project consistency with policies pertaining to public services, utilities, and service systems are discussed below. In general, the proposed project would be consistent with these goals and policies or specified mitigation measures would avoid potential environmental impacts associated with potential conflicts with policies designed to avoid such impacts. Project consistency with those guidelines is discussed in the following project consistency analysis table.

General Plan Policies	Project Consistency Analysis
Land Use Element	
LU-4.2: Allow development only with adequate physical infrastructure (e.g. transportation, sewers, utilities, etc.) and social services (e.g. education, public safety, etc.). *LU-4.4: Project applicants shall evaluate and provide appropriate mitigation measures to reduce impacts on urban services including schools, utilities, police and fire.*	Public services are already provided to the project site and public utilities are available for connection. The project would result in an increase in population on the project site and a corresponding increase in demand for public safety services, water and wastewater services, and energy requirements. The existing infrastructure serving the project site would be adequate to serve the residential use proposed for the project site. The applicant's planning team has obtained will-serve responses from the various service agencies that would provide their respective services to the new residential development. As a matter of state law, the payment of school impact fees is sufficient mitigation for any school-related impacts.
Environment and Sustainability Element	
ENV-6.3: Require new construction to incorporate water-efficient landscaping following the Town's Water Efficiency Landscaping Ordinance. *ENV-6.5: Require the use of water-saving devices in new developments and plumbing-related remodels, and develop incentives to encourage their installation in existing development.* *ENV-6.6: Promote the installation of water-efficient irrigation management systems and devices, such as evapotransportation or soil moisture-based irrigation controls.* *ENV-10.2: Encourage recycling and reuse of building materials from remodeled and demolished buildings.* *ENV-15.3: Encourage the use of recycled-content construction materials in new construction.* *ENV-15.4: Reuse and rehabilitate existing buildings when appropriate and feasible in order to reduce waste, conserve resources and energy, and reduce construction costs.* *ENV-17.1: Require new construction and remodels to use energy- and resource-efficient and ecologically sound designs, technologies and building materials, as well as recycled materials to promote sustainability.*	The proposed project entails creation of 10 residential lots. The residences on these lots would be designed and developed in the future by one or more builders. The proposed residential designs, including landscaping plans and water-saving devices, would be subject to Town A&S review for compliance with Town objectives and policies, including those relating to environmental sustainability. The Town will use its design review, oversight, and approval processes to ensure the implementation of policies promoting the use of recycled-content for construction. Through the Town's A&S review process, the project design will include applicable energy- and resource-efficient designs and technologies that are required at the time the building permit is issued; these measures are specified in the Sustainability Plan's GHG Reduction Measure GB-3 (see Section 4.9, Greenhouse Gases, Subsection 4.9.2, Regulatory and Planning Framework for more discussion). The Town Building Code requires the diversion or salvage of 50 percent of non-hazardous construction and demolition debris, with the exception of excavated soils and land-clearing debris, for re-use or recycling.
Safety Element	
SAF-2.1: New development located in or adjacent to fire hazard areas shall be designed and sited to minimize hazards to life and property. Utilize fire preventive site design, access, fire-safe landscaping and building materials, and incorporate fire suppression techniques. *SAF-3.3: Ensure emergency fire and medical services are available and ensure adequate water supply for fire emergencies.*	The Santa Clara County Fire Department has conducted a preliminary review of the conceptual site plan and determined that fire protection access to project units and the site would be adequate. In addition, the Fire Department's review identifies specific design requirements that are a condition of the Fire Department approval of the project. The project design shall include fire sprinklers, protection of potable water supplies, public fire hydrants, appropriate access for fire

General Plan Policies	Project Consistency Analysis
SAF-7.1: Work with the Santa Clara County Fire Department to ensure that first response travel time is maintained and enhanced where possible. *SAF-7.3: New development shall be required to incorporate adequate emergency water flow, fire resistant design and materials and evacuation routes.* *SAF-7.4: New development shall be accessible to emergency vehicles and shall not impede the ability of service providers to provide adequate emergency response.* *SAF-8.1: Build and require roadways that are adequate in terms of width, radius and grade to accommodate Santa Clara County Fire Department fire-fighting apparatus, while maintaining Los Gatos's neighborhoods and small-town character.* *SAF-8.2: Identify and mitigate fire hazards during the project review and approval process.* *SAF-8.3: New development shall satisfy fire flow and hydrant requirements and other fire-related design requirements as established by the Town and recommended by the Santa Clara County Fire Department.* *SAF-8.4: Encourage the installation of interior emergency sprinkler systems, fire-safe building materials, early warning systems and sufficient water supply systems for fire suppression in new development of remodels.* *SAF-9.2: Pursue community policing and other crime prevention measures for increased public safety.* *SAF-10.1: Emphasize the use of physical site planning as an effective means of preventing crime. Open spaces, landscaping, parking lots, parks, play areas and other public spaces shall be designed with maximum possible visual and aural exposure to community residents.*	apparatus, protected access to emergency escape windows, and suitable identification of premises. The Fire Department will perform further design review for fire code compliance after residential plans are submitted to the Town. The Town's A&S review process will ensure that project design elements are consistent with applicable codes, ordinances (e.g. Water Efficiency Landscaping Ordinance) and the intent of the Human Services policies of the 2020 General Plan. The project, as proposed, complies with road width, turning radii, and grade requirements of the Santa Clara County Fire Department. The Fire Department and San Jose Water Company have completed preliminary review of project plans and the project complies with fire flow and hydrant requirements. The Fire Department and Town Code would require sprinklers, fire safe building materials, and sufficient water systems as conditions of approval for new homes.

HILLSIDE SPECIFIC PLAN

Policies of the Hillside Specific Plan that relate to public services, utilities, and service systems along with a discussion of the project's consistency with these policies are presented below.

Hillside Specific Plan Land Use Policies	Project Consistency
2.0 Facilities Services	
2.3.1: Availability of Services for Development. Development proposals shall be approved only if the necessary road, water, sanitation and other services required for the proposed use are provided to the property.	Fire and police protection services are already provided to the site and would be provided to future residents on the site; no new facilities would be required to provide these services. Water and sewer lines would be extended onto the site from adjacent streets (paid by the

Hillside Specific Plan Land Use Policies	Project Consistency
2.3.3: Services Costs. The developer shall pay all costs for providing services.	developer) and no new or expanded facilities off-site would be required to provide water and wastewater services. There is adequate capacity in the receiving Guadalupe Landfill to accommodate solid waste generated by project residents. Project development, like all other development in the project area, would be required by law to pay development impact fees to each affected school district at the time of the building permit issuance. These fees are used by the school districts to mitigate impacts associated with long-term operation and maintenance of school facilities with new development pursuant to Section 65996(3)(h) of the California Government Code (see Impact 4.12-3).

4.12.3 POTENTIAL IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

Based upon the criteria derived from Appendix G of the *CEQA Guidelines*, a project would normally have a significant impact on public services, utilities, or service systems if the proposed project would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services: fire protection, police protection, schools, parks, other public facilities;
- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Have insufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed;
- 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;

- Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs;
- Not comply with federal, state, and local statutes and regulations related to solid waste.

A review of the project's potential effects on park facilities is addressed in Section 4.13, Recreation.

EMERGENCY AND PUBLIC SERVICES

Impact 4.12-1: Development of the project site with new single-family residential uses would require continued fire protection services for future residents, visitors, and property improvements, as has been required for the site; new or physically altered governmental facilities would not be required to provide adequate fire and emergency medical protection services for the proposed project. (Less than Significant)

The proposed project would construct 10 new single-family residences. Presently, the project site receives fire protection from the Santa Clara County Fire Department. The Fire Department would continue to provide these services to the site during project development and occupancy.

The planning and design efforts for the project have been coordinated with the Fire Department throughout the design process to ensure compliance with fire safety guidelines and standards. The Department reviewed preliminary project plans for site access and water supply, and specified requirements for roadway access and turnarounds, road widths, emergency access gates, fire hydrant location and spacing, fire lanes, building access, water supply, and sprinkler systems (Santa Clara County Fire Department, 2010). The project's lot design reflects these requirements; specific fire safety requirements for residential structures will be incorporated into project design as the plans for individual residences are formulated and submitted to the Town and Fire Department for review and approval.

Building Materials. The project site and adjacent residential areas are located in the Wildland Urban Interface Fire Area (WUIFA) as defined by the Town of Los Gatos, State officials, and Chapter 7A of the 2007 CBC. Requirements for the construction of the single-family buildings in a WUIFA include:

- Windows with a minimum of one tempered pane to meet code requirements;
- Exterior walls that consist of approved, non-combustible or ignition resistive materials in accordance with Chapter 7A of the California Building Code; and
- Proposed materials reviewed and approved by Town and County officials for use within the WUIFA.

The project will be required to comply with all other applicable codes for fire safety prior to permitting.

Temporary and Long-Term Fire Hazards. A detailed discussion of potential hazards, including wildland fire hazards, affecting the project site is presented in Section 4.10 of this EIR. Generally, fire hazards would be increased temporarily at the site during project construction. The Fire Department will

review the construction management plans to ensure that hazardous materials are stored appropriately. The Town's Building Division will be responsible for periodic inspections to verify implementation of materials storage requirements. The Fire Department will require, as conditions of approval, that (1) water supply installations and adequate emergency vehicle access be provided to the site prior to the start of combustible construction; (2) the provision of public fire hydrants to be determined jointly by the Fire Department and the San Jose Water Company; and (3) the installation of automatic fire sprinklers in all new structures. Compliance with Fire Department requirements to ensure adequate access, fire hydrants, fire flows, and sprinkler systems in buildings would ensure that the project's increased fire hazards and impact on fire protection services would be less than significant.

Mitigation Measure 4.12-1: *None required.*

Impact 4.12-2: The proposed residential use would require police protection services for future residents, visitors, and property improvements, as has been required for the site; the project would not result in substantial adverse physical impacts associated with the provision of new or physically altered police facilities. (Less than Significant)

As with fire protection services, the Los Gatos/Monte Sereno Police Department currently patrols the project area and would be able to provide its high level of police protection service for the new residential development. The Department has also indicated that its response times would generally remain unaffected by the need to serve the proposed residential development from the substation on Los Gatos Boulevard. Therefore, the project's impact on police services would be less than significant.

Mitigation Measure 4.12-2: *None required.*

SCHOOLS

Impact 4.12-3: Future residents of the proposed project would include new students, but they would not contribute substantially to the increase in demand for educational services within the service area of the Los Gatos Union School District and the Los Gatos-Saratoga Union High School District, and would not result in substantial adverse impacts associated with the provision of new or physically altered facilities. (Less than Significant)

An extensive evaluation of educational services and facilities available to the community was conducted as part of the environmental review for the Los Gatos 2020 General Plan. The Town of Los Gatos 2020 General Plan EIR analyzed the potential effects of community growth on the demand for educational services through the year 2020. That analysis is incorporated herein by reference.

Based upon population growth estimates identified by the 2020 General Plan, the project would add approximately three new students to the Los Gatos Union School District and two new students to the Los Gatos-Saratoga High School District. Students associated with the proposed project would contribute to the cumulative demand for educational services and result in enrollments that exceed current district capacities. As part of this assessment of impacts on the community's educational services, the analysis of

new development identified specific properties and projects that would contribute to increased student enrollment in local school districts. The General Plan and its EIR assumed a population growth rate of 316 persons per year in town through 2020, and the project's 24 persons could be accommodated within this assumed growth rate, particularly since the population growth rate between 2008 and 2014 has been less than the assumed rate (89%).

In addition to the goals, policies and actions in the Draft 2020 General Plan, future development within the planning area would be required by law to pay development impact fees to each school district at the time of the building permit issuance. These fees are used by the school districts to mitigate impacts associated with long-term operation and maintenance of school facilities with new development in accordance with State law. Pursuant to Section 65996(3)(h) of the California Government Code, payment of these fees "is deemed to be full and complete mitigation of impacts of any legislative or adjudicative act, or both, involving but not limited to, the planning, use, or development of real property, or any change in government organization or reorganization." Any secondary environmental impacts resulting from the construction of new schools would be analyzed by each School District prior to construction of any new schools. But the handful of new students associated with the project will not drive the need for any such new construction. Therefore, with payment of development impact fees to each school district as required by law, the project's impact on the schools attended by project students would be less than significant.

Mitigation Measure 4.12-3: *None required.*

WATER SERVICE

Impact 4.12-4: The proposed project would incrementally increase water demand within the service area of the San Jose Water Company, but would not require or result in the construction of new water facilities or expansion of existing facilities located off-site; sufficient water supplies are available to serve the project from existing entitlements and resources. (Less than Significant)

The 10 new residential units would receive domestic and fire protection water service from existing water service lines in the project area. Based upon domestic water usage estimates from the Los Gatos 2020 General Plan (2010), the application of the single-family residential water consumption standard of 400 gallons per day (gpd) per unit would generate a water demand of 4,000 gpd.

Domestic water service is available to the project site from surrounding residential neighborhoods. Two existing 8-inch water lines in Twin Oaks Drive and Cerro Vista Court provide domestic water for residential uses in the project area. As part of project implementation, new 8-inch water lines would be extended along the proposed cul-de-sac from Twin Oaks Drive and from Cerro Vista Court. The water line extension from Twin Oaks Drive would serve the lots proposed for the lower elevations of the project site, while the Cerro Vista Drive water line would provide water service for the upper lots.

The San Jose Water Company has reviewed the preliminary plans for the proposed project and has issued a Will-Serve letter indicating that the Company can and will provide water service to the proposed residential development (San Jose Water Company, 2014). The Company has indicated that it has sufficient water supplies to serve the proposed project.[2] No new or expanded entitlements would be needed. Therefore, the project's impact on water service would be less than significant.

Mitigation Measure 4.12-4: *None required.*

WASTEWATER SERVICE

Impact 4.12-5: Development of the proposed residential uses would result in wastewater flows requiring collection and treatment by West Valley Sanitary District Facilities. District facilities have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments. (Less than Significant)

The new residential development would be served by two new 6-inch sewer lines that would extend along the private streets serving the project site. Lots 2 – 5 and 8 – 10 would be served by one of the 6-inch sewer lines in Private Street A, while Lots 6 and 7 would be served by the second 6-inch sewer extending northward and connecting to an 8-inch sewer line in Cerro Vista Court. Lot 1 would connect directly to the existing 8-inch sewer line within the 10-foot sanitary sewer easement along the western site boundary.

The Los Gatos 2020 General Plan provides a daily wastewater generation rate estimate of 121 gallons per unit for residential development. Using the Town's estimate, the proposed project's 10 dwelling units would be expected to generate wastewater flows of approximately 1,210 gpd. Based upon wastewater treatment plant allocations for the West Valley Sanitation District (WVSD) as described above, the District has adequate collection facilities and treatment capacity to accommodate wastewater flows from the proposed residential development, and no new or expanded facilities would be required (West Valley Valley Sanitation District, 2011). Therefore, the project's impact on wastewater service would be less than significant.

The principal impacts of sewer pipe installation would result from excavation and trenching for pipe installation. Potential impacts from grading, excavation, and trenching associated with construction of proposed facilities are discussed in Sections 4.4 and 4.5, Geology and Soils and Hydrology and Water Quality, respectively. Sewer lines would be located within existing and proposed streets, minimizing impacts related to pipe installation.

Mitigation Measure 4.12-5: *None required.*

[2] Telephone Communication with Jim Bariteau, Director of Engineering, Water Services and Planning Division, San Jose Water Company on October 20, 2014.

SOLID WASTE SERVICE

Impact 4.12-6: Development of proposed residential uses would result in the generation of solid wastes requiring recycling and/or disposal at local landfill sites, in compliance with federal, state, and local statutes and regulations related to solid waste. (Less than Significant)

The construction of 10 single-family residences on the project site would also generate construction waste requiring disposal. The 2020 General Plan EIR provides estimates of solid waste generation for new development within Los Gatos over the next 10 years. Using the estimated generation rate of 12.23 pounds per unit per day for residential land uses, the proposed 10 residential units would generate approximately 122 pounds of solid waste per day. The implementation of the General Plan policies for solid waste handling would promote waste reduction and compliance with recycling regulations. As with construction waste materials, the receiving Guadalupe Landfill site would have adequate capacity to accommodate solid waste generated by residential uses proposed for the project site. Consequently, the project's impact on solid waste services would be less than significant.

Mitigation Measure 4.12-6: *None required.*

REFERENCES - PUBLIC SERVICES, UTILITIES, AND SERVICE SYSTEMS

San Jose Water Company, 2011. *San Jose Water Company 2010 Urban Water Management Plan*. April. Available online at http://www.water.ca.gov/urbanwatermanagement/2010uwmps/San%20Jose%20Water%20Company/SJWC'S%202010%20UWMP%20with%20Appendicies.pdf.

Santa Clara County Fire Department, 2010. *Development Review Comments, Residential Development, SFR Surrey Farm Estates Sub Only, Twin Oaks Drive, Los Gatos*. Plan Review 10 3233. December 22.

San Jose Water Company, 2014. *Letter from James R. Bariteau, Senior Water Services Representative, the San Jose Water Company to Town of Los Gatos Engineering Department Regarding Water Service to the Proposed 10-lot Subdivision, Twin Oaks Way, Los Gatos*. April 16.

Santa Clara Valley Water District, 2012. *Water Supply and Infrastructure Master Plan*. Available online at http://www.valleywater.org/Services/WaterSupplyPlanning.aspx.

Santa Clara Valley Water District, 2003. *Integrated Water Resources Planning Study 2003*. December 2005. Available online at http://www.valleywater.org/Services/WaterSupplyPlanning.aspx.

West Valley Sanitation District, 2011. *Letter from Jonathan K. Lee, Senior Civil Engineer, West Valley Sanitation District to Rodger W. Griffin, Paragon Design Group, Inc., Regarding Proposed 10-lot Subdivision, Surrey Farm Estate, APN 532-16-006, Twin Oaks Drive, Los Gatos*. January 10.

4.13 RECREATION

This chapter addresses potential impacts of the project on parks and recreational amenities within the project vicinity. This section also describes the environmental and regulatory settings and discusses potential mitigation measures to reduce project impacts, where applicable.

4.13.1 ENVIRONMENTAL SETTING

The Town of Los Gatos contains a variety of public parks and recreational facilities, including 16 publicly-owned and operated facilities. Fourteen of these parks are located on Town-owned land and are operated and maintained by the Department of Parks and Public Works. The remaining two parks are owned and maintained by the Santa Clara County Parks and Recreation Department. The park facilities inventory in the Town's General Plan Open Space, Parks, and Recreation Element indicates that there are approximately 240 acres of parkland in Los Gatos. In addition to the public parks in town, the community is served by: 1) nine local public school district facilities; 2) one community-based facility; 3) five faith-based facilities; 4) one private school facility; and 5) four private athletic club facilities (Town of Los Gatos, 2010). Recreational trails and bike lanes are identified in the General Plan's Transportation Element, and they are discussed in Section 4.6, Transportation and Traffic.

Recreational facilities close to the project site include: 1) Blossom Hill Park (0.4 mile to the northwest); 2) Blossom Hill Elementary School (0.5 mile northwest); 3) Raymond J. Fisher Middle School (0.9 mile west); 4) Vasona Park (approximately 1.1 miles to the west); 5) Heintz Open Space Preserve (1.1 miles to the northeast); and 6) Belgatos Park (1.5 miles east). The Open Space, Parks, and Recreation Element also identifies Hillbrook School, which abuts the northern project boundary, as a private facility with extensive recreational facilities for its students and staff; its facilities include a gymnasium, swimming pool, athletic field, ball courts, playground facilities, and various open space areas throughout the 14-acre site.

4.13.2 REGULATORY AND PLANNING FRAMEWORK

STATE

Quimby Act. The Quimby Act of 1975 (California Government Code Section 66477, adopted 1975 and amended 1982), part of the Subdivision Map Act, was intended to require developers seeking subdivision approvals to assist in mitigating the potential impacts resulting from improvements that may directly or indirectly increase the need for recreational facilities or park lands within a given city or county. The Act authorized cities to pass ordinances that require developers to set aside a portion of their land, donate conservation easements, or pay fees for park improvements. Such fees are required to be paid and land conveyed directly to the local public agencies that are responsible for the provision of park and recreational services and amenities within the affected community.

In 1987, the Legislature passed the Mitigation Fee Act (Gov. Code, §§ 66000-66025), which generally requires that development impact fees must relate to the impacts created by proposed development and the amounts collected must not exceed the reasonable cost of providing the public service at issue. As

applied to park fees under the Quimby Act, cities and counties were required to show a strong direct relationship (or nexus) between park fees imposed and a proposed development. As a result, local ordinances are required to include specific standards for identifying the percentage of a subdivision to be dedicated and/or the relative fee that is required.

Within the State of California, the Quimby Act establishes standards for park lands for local jurisdictions. The Act establishes a maximum of three acres of park land dedication/fee per 1,000 residents unless the amount of existing neighborhood and community park land exceeds that limit (at the time of adoption). If the three acre per 1,000 residents standard is exceeded, a greater standard of five acres per 1,000 residents may be adopted by the jurisdiction in order to meet anticipated park land needs.

REGIONAL

Santa Clara County Countywide Trails Master Plan. The County of Santa Clara adopted its Countywide Trails Master Plan on November 14, 1995 as part the Parks and Recreation Element of the County General Plan. The Master Plan identifies the specific functions and benefits of a countywide trail system: outdoor recreation, transportation, education, public health, and social well-being. The Countywide Trail System as envisioned by the Master Plan provides for regional, sub-regional, and connector trails throughout the county. In the project vicinity, the Juan Bautista de Anza National Historic Trail, Northern Recreation Retracement Route, is designated in the Master Plan along Shannon Road, which is 850 feet north of the site.

LOCAL

Los Gatos General Plan. The Los Gatos 2020 General Plan identifies goals and policies pertaining to future growth within the Town of Los Gatos and the continued provision of adequate parks and recreational facilities for the general public. The Open Space, Parks, and Recreation Element guides the long-range preservation and conservation of open space, as well as parks and recreational facilities. Policies in this Element pertain to the provision of adequate recreational facilities, parks, and open space throughout the community for the benefit of its residents as Town development occurs according to the policies and guidelines of the General Plan. The evaluation of a project's compliance with the goals and policies of the General Plan hinges on a project design's effectiveness in implementing the objectives of the General Plan. Here, the proposed project would retain approximately 19 percent of the site (3.32 acres) as hillside open space on the site, consistent with the guidance provided in the 2020 General Plan. Project consistency with relevant policies related to open space and recreation is discussed in the following table.[1]

[1] The project's consistency with policies related to recreational trails is discussed in Section 4.6, Transportation and Traffic.

General Plan Policies	Project Consistency Analysis
Open Space, Parks, and Recreation Element	
Goal OSP-2 To preserve open space in hillside areas as natural open space. *OSP-2.1 Preserve the natural open space character of hillside lands, including natural topography, natural vegetation, wildlife habitats and migration corridors, and viewsheds.*	The project would retain 3.32 acres of hillsides as open space (approximately 19 percent of the site). The open space on the project site would comprise the southeast corner of the site. Since this hillside is visible from areas to the south and southwest, preservation of this hillside as open space would help to preserve the open space character of the project area.
Goal OSP-4 To provide recreational facilities that address the needs of the community.	Approximately 3.3 acres in the southeast corner of the site would be designated as open space, and a pedestrian/ equestrian trail would extend from the southern to the northern project boundaries; both would be publicly accessible.
Goal OSP-5 To create and maintain open space areas and parks that enhance and blend into existing natural habitats, residential neighborhoods, and other Town features.	As discussed above, the project would maintain private open space on the southeastern part of the site, retaining hillsides for habitat and open space purposes.
Policy OSP-5.1 Promote a system of Town parks and trails.	The project includes development of a five-foot wide pedestrian/equestrian trail that would extend from the Brooke Acres Drive at the southern boundary to Cerro Vista Court at the northern boundary.
Policy OSP-5.4 Maintain the Town's high standards for landscaping and tree preservation, helping to maintain cohesiveness between existing neighborhoods and surrounding open space areas and reducing disturbances to adjacent natural habitats.	The project would result in the removal of up to approximately 70 protected trees, and replacement planting of approximately 178 24-inch box-size, 93 36-inch box-size, and 8 48-inch box-size trees (or equivalent). Existing trees along the perimeter of the property would remain (although those in poor health could be removed). Retention of these trees, combined with planting of trees along sections of the project boundaries, would help provide visual screening from adjacent properties.
Goal OSP-6 To consider the provision of open space within all development decisions within the Town. *Policy OSP-6.1 Promote private open space in all planning decisions for new development.* *Policy OSP-6.2 New development projects shall include conditions to preserve open space.*	Private open space associated with the 10 single-family residences would be provided as yards and hillside on the 10 project lots. In addition, approximately 3.3 acres in the southeast corner of the site would be designated as open space, and a pedestrian/equestrian trail would extend from the southern to the northern project boundaries; both would be publicly accessible.

Los Gatos Town Code. The Town's Subdivision Regulations, Section 24.50.050 of the Town Code, and Zoning Regulations, Section 29.10.06709 of the Town Code, provide for the Quimby Act and the dedication of open space. These sections both indicate that "Where consistent with the goals and policies of the General Plan, the advisory body shall require dedication of open space to the Town, either in fee or as an easement, whichever will best implement the applicable policy. Fee dedication will ordinarily be required where public involvement is sufficiently active to warrant Town control and maintenance. Where public involvement is more passive, the owner will be asked to dedicate easements, and will retain ownership and responsibility for maintenance."

4.13.3 POTENTIAL IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

Based upon the criteria derived from Appendix G of the *CEQA Guidelines*, a project would normally have a significant impact on recreational facilities if the proposed project would:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or
- Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

RECREATIONAL SERVICES/FACILITIES

Impact 4.13-1: Development of the proposed project would not increase the use of neighborhood and regional parks or other recreational facilities such that substantial physical deterioration would occur or be accelerated. (Less than Significant)

The proposed addition of 10 single-family residences would increase the local population, and thereby incrementally increase demand for recreational facilities. Private open space associated with the 10 single-family residences would be provided as yards and hillside on the 10 project lots. In addition, the project would include designation of 3.32 acres in the southeast corner of the site as open space and development of a pedestrian/equestrian trail that would extend from the southern to the northern project boundaries; both the open space and trail would be publicly accessible. Town Code requires dedication of open space on hillside residential projects. Since the Town's existing open space exceeds the minimum requirements for application of Quimby Act fees, none would be required for the project. Dedication of this open space and provision of this trail would meet code requirements per the Town's Subdivision and Zoning Regulations (Sections 24.50.050 and 29.10.06709 of the Town Code), which would offset the project's incremental increase in demand for park and recreation facilities.

In addition to the open space and trail provided on-site, existing nearby recreational facilities that could be utilized by project residents include Hillbrook School (private, but immediately adjacent to the project's northwest boundary), Blossom Hill Elementary School (0.4 mile to the northwest), Heintz Open Space Preserve (approximately 1.1 miles to the east), Belgatos Park (approximately 1.5 miles to the east), Sierra Azul Open Space (about 1.0 mile to the southeast). The project's incremental increase in demand for recreational facilities is considered to be less than significant given the project's proximity to existing recreational facilities and proposed provision of open space and pedestrian/equestrian trail on the project site (privately-owned but publicly accessible). The relatively small number of people who will live in the homes to be built as part of the project would not cause such wear and tear on existing facilities as to lead to or contribute to the substantial physical deterioration of those recreational facilities.

Mitigation Measure 4.13-1: *None Required.*

Impact 4.13-2: Development of the proposed project would include provision of private open space and construction of a pedestrian/equestrian trail across the project site (both publicly accessible), and would not require the construction or expansion of any other off-site recreational facilities that might have an adverse physical effect on the environment. (Less than Significant)

The proposed project would not require the construction or expansion of any off-site recreational facilities that could have an adverse physical effect on the environment. Therefore, the project would have less-than-significant effects from the development of new recreational facilities off-site. Impacts associated with construction of the proposed six-foot wide pedestrian/equestrian trail relate to erosion and tree removal and are addressed in Impact 4.4-3 in Section 4.4, Geology and Soils, and Impact 4.3-10 in Section 4.3, Biological Resources. No trees would be removed to accommodate this trail, but there are three trees near the south end of the trail identified as being in poor health and recommended for removal.

Mitigation Measure 4.13-2: *None Required.*

REFERENCES – RECREATION

Santa Clara County Parks, 1995. *Countywide Trails Master Plan*. November. Available online at http://www.sccgov.org/sites/parks/PlansProjects/Pages/countywide-trails-mstr-pln.aspx.

Town of Los Gatos, 2012. *Parks and Trails*. Available online at http://www.town.los-gatos.ca.us/index.aspx?NID=170.

Town of Los Gatos, 2008. *Town of Los Gatos Parks, Open Space, and Trails Inventory*. Adopted May 16, 2008. Available online at http://www.losgatosca.gov/DocumentCenter/View/1072.

Chapter 5 Other CEQA Considerations

5.1 Effects Not Found to be Significant

CEQA Guidelines Section 15128 provides, in pertinent part, that "[a]n EIR shall contain a statement briefly indicating 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 discussion below satisfies this requirement.

Environmental issues presented under the Significance Criteria sub-section of all environmental topics in Chapter 4 of this EIR were derived from environmental issues and topics identified in the sample Initial Study Checklist found in Appendix G of the *CEQA Guidelines*. The only environmental issues in Appendix G not presented in Chapter 4 were those where the project had no impact under an environmental topic. They are as follows:

Forestry Resources

Based on criteria derived from Appendix G to the *CEQA Guidelines*, a project would have a significant impact on forestry resources if the proposed project would:

- Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined in 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; or
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of forest land to non-forest use.

While the project site is partially covered with mixed oak woodlands, the project would not conflict with or cause the rezoning of land designated for forest land or timberland uses. Since the site does not contain forest land, the project would not result in the loss of forest land or conversion of forest land to non-forest uses.

Mineral Resources

Based on criteria derived from Appendix G to the *CEQA Guidelines*, a project would have a significant impact on mineral resources if the proposed project would:

- 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; or

- 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.

The Los Gatos 2020 General Plan does not identify any regionally or locally important mineral resources on the project site or in its vicinity. The proposed project would not remove any locally or regionally important mineral resources from production or preclude access to important mineral resources.

POPULATION AND HOUSING

Based on criteria derived from Appendix G to the *CEQA Guidelines*, a project would normally have a significant impact on population or housing if the proposed project would:

- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure);
- Displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere; or
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

The Town of Los Gatos has a current estimated population of approximately 30,497.[1] The Town's 2020 General Plan indicates that the community's population is expected to increase from 28,810 in 2008 to approximately 32,600 in 2020, or by about 316 persons per year through the 2020 planning period.[2] Based upon the current estimated population of the Town, population growth between 2008 and 2014 has been approximately 282 persons per year, representing 89% per year of the growth rate assumed in the General Plan and its EIR.

The proposed project would create 10 hillside lots for later development of 10 single-family homes and would increase the Town's population by approximately 24 additional residents. The project's addition of 24 persons could be accommodated within the General Plan's planned growth rate of 316 persons per year (particularly since the population growth rate between 2008 and 2014 has been less than the assumed rate), and therefore, the proposed project would not induce substantial population growth in the Los Gatos community.

Additionally, road and infrastructure improvements would not extend to any undeveloped properties and thereby, not induce new development. The proposed designs for future residences would be subject to the Town's Architecture and Site (A&S) review process to ensure compliance with current standards and

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[1] Town of Los Gatos, 2014. *About Los Gatos: History*. Available at http://www.town.los-gatos.ca.us/index.aspx?NID=515.

[2] Town of Los Gatos, 2010. *Town of Los Gatos 2020 General Plan: Final Environmental Impact Report*. June 16.

guidelines for hillside development in the town and the preservation of private open space on the site. Consequently project-related increases in population would not represent a significant increase in local or regional population, and would not indirectly induce population growth through extension of roads or infrastructure that could lead to development of adjoining parcels.

The project site is currently undeveloped and would not displace substantial numbers of existing housing units (or indeed any). Nor would the project displace substantial numbers of people (or indeed any). Rather, the development of the project would provide new housing in the community and would not necessitate the construction of replacement housing elsewhere.

5.2 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

Section 15126.2 (b) of the *CEQA Guidelines* requires that an EIR describe any significant impacts that cannot be avoided, even with the implementation of feasible mitigation measures. The environmental effects of the proposed project on various aspects of the environment are discussed in detail in Chapter 4 of this EIR.

There are no significant and unavoidable adverse impacts that would occur as the result of the proposed project. All significant and potentially significant impacts identified in Chapter 4 for the proposed project would be mitigated to a less-than-significant level with implementation of mitigation measures included in Chapter 4 of this EIR. Potential impacts associated with construction of proposed roads and infrastructure as well as 10 new residences (assuming potential building envelopes, as indicated in Figure 3-2) have been fully evaluated in this EIR. Although the precise impacts related to specific home designs on individual lots (i.e., consistency with the Town's Tree Protection Ordinance or the HDSG) cannot be determined at this time, all such individual homes would be subject to Architecture and Site (A&S) review as well as all mitigation measures specifically applicable to home construction. During A&S review, any potential for such adverse effects from individual homes would be assessed and reviewed by the Town, and each home design would be required to comply with relevant mitigation measures and the Town's codes and ordinances. Consistency with the Town's General Plan policies and the HDSG would also need to be demonstrated at that time, and such consistency should further ensure that any identified potential adverse effects would be reduced to less than significant.

5.3 GROWTH-INDUCING IMPACTS

As required by *CEQA Guidelines* Section 15126.2(d), an EIR must discuss ways in which a proposed project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. The EIR must also discuss the characteristics of the project that could encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. Growth can be induced in a number of ways, such as through the elimination of obstacles to growth, through the stimulation of economic activity within the region, or through the establishment of policies or precedents that directly or indirectly encourage additional growth.

A detailed evaluation of the population and housing conditions in the San Francisco Bay area, including the Town of Los Gatos, has been prepared by the Association of Bay Area Governments (ABAG) as part of its *Projections 2009* assessment of population, housing, and employment for the region. This ABAG report serves as a basis for the formulation of the Town's certified 2007 – 2014 Housing Element.

As discussed in the certified 2007-2014 Housing Element, regional governments are required by State law to estimate and allocate the number of housing units needed among each member jurisdiction. This estimated number of housing units is called the Regional Housing Needs Allocation (RHNA) and is broken down by income level with the goal of fairly distributing affordable housing throughout the region. The Town of Los Gatos is located in Santa Clara County, one of the nine Bay Area counties that are represented by ABAG. ABAG estimates the total RHNA for Los Gatos to be 562 housing units for the planning period starting July 1, 2007 and ending June 30, 2014.

The draft 2015 – 2023 Housing Element has identified a total of 174 "Above Moderate" income housing units required to meet the RHNA for this category of housing. Based on the 2015 – 2023 Housing Element timeframe, an estimated 132 housing units for this income category would need to be developed during the 2020 General Plan build-out period (which is 2020). The proposed project would provide 10 new housing units for this income category. The project would contribute to the town's proportion of regional housing supply requirements and also be consistent with the development of 1,600 new housing units as anticipated by the 2020 General Plan.

The development of the proposed project would occur on a vacant 17.55-acre site that is surrounded by residential neighborhoods and a school. While the project would require the extension of an access road onto the property, the project would not induce growth beyond the boundaries of the project site itself, since it would not extend roads or infrastructure to any adjacent, undeveloped properties. The Two Access Alternative (discussed below) would entail a second roadway connection to Cerro Vista Court; however, Cerro Vista Court serves existing residential uses north of the project site and a connection of the project's new access road to this existing road would not provide new access to other undeveloped properties or encourage additional growth in the project area (beyond the project site). The Two Access + Two EVA Alternative would have the same roadways connections to Twin Oaks Drive and Cerro Vista Court as the Two Access Alternative. As a result, the project (and its alternatives) would not promote growth beyond the project site through the elimination of obstacles to growth, through the stimulation of economic activity within the region, or through the establishment of policies or precedents that directly or indirectly encourage growth.

5.4 CUMULATIVE IMPACTS

CEQA Guidelines Section 15130 requires the analysis of cumulative impacts that may be associated with the proposed project when they are potentially significant. According to *CEQA Guidelines* Section 15355, "Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Project-specific impacts that are considered individually minor may be "cumulatively considerable" (i.e., significant in and of

themselves) when combined with the environmental effects of other projects; significant cumulative impacts must be addressed, but not in "as great detail" as the discussion of project-related impacts.

Section 15130 provides that a lead agency may describe the cumulative environment by either: (1) a listing of past, present, and probable future projects, or (2) a summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect, including general plans, regional transportation plans, or plans for the reduction of greenhouse gas emissions. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan, and such projections may be supplemented with additional information such as a regional modeling program.

This analysis follows the former (List Method) when evaluating cumulative traffic and associated noise impacts because they are defined more accurately by cumulative traffic increases from specific projects (listed below). However, there are other types of cumulative impacts (i.e., land use planning, air quality, greenhouse gas emissions, public services, utilities, service systems, and recreation) that are better characterized by community-wide growth as defined by a general plan or regional plan (Plan Method) because impacts are more area-wide or regional in character (i.e., community-wide increases in demand, not one specific project, typically result in the need to expand staffing at service agencies or infrastructure capacities). Cumulative impacts related to other environmental topics (land use, aesthetics, biological resources, geology/soils/seismicity, hydrology/water quality, traffic, noise/vibration, hazards/hazardous materials, cultural resources, and energy conservation) are more site-specific in nature and depend on conditions within the site vicinity. For these environmental topics, the cumulative analysis uses the List Method, but only includes those projects located in the project's immediate vicinity. For this project, there is only one project in the site vicinity that would contribute to cumulative impacts under these topics: Hillbrook School Expansion Project. The Hillbrook School project would not involve construction of any new facilities (only the addition of 99 students) and therefore, no cumulative effects associated with construction or operation of any new facilities would occur. The project and Hillbrook School would, however, contribute to cumulative effects related to impacts on East Ross Creek, and potential increases in operational traffic, and associated traffic noise, air pollutant emissions, and greenhouse gas emissions.[3]

The traffic analysis reviews cumulative traffic impacts at two study intersections on Kennedy Drive by adding project traffic to cumulative conditions presented in the EIR for the proposed Hillbrook School

[3] The cumulative analysis in this EIR evaluates the maximum possible traffic impact that would be associated with the Hillbrook School Expansion project, which was identified in the EIR for that project. In March 2015, the Town Council approved the proposed modifications to the conditional use permit to allow a maximum of 880 trips per day, with 10 occasions of up to 960 trips. The EIR evaluated the impacts of a higher limit of an average of 960 trips per day. The Hillbrook School Expansion EIR is available for review at the Los Gatos Community Development Department (located at 110 East Main Street during counter hours from 8:00 a.m. to 1:00 p.m., Monday through Friday) and online through the Town's website: http://www.losgatosca.gov/Hillbrook.

Expansion.[4] A detailed cumulative traffic analysis was completed for the Hillbrook project and it evaluated the cumulative traffic impacts resulting from the following approved (but not yet constructed or constructed but not yet fully occupied) or pending (foreseeable developments that have not been approved) projects in the Town that could add traffic to study intersections:

- Albright Development
- 800 Blossom Hill Road (residential)
- 15940 Blossom Hill Road (residential)
- 16213 Los Gatos Boulevard (residential replaces auto dealership)
- 16005 Los Gatos Boulevard (mixed-use)
- 15400 Los Gatos Boulevard (office/retail)
- 55 Los Gatos Saratoga Road (motel/medical office/restaurant)
- 16922 Mitchell Avenue (residential)
- 15881 Linda Avenue (residential)
- 14881 National Avenue (medical office development replaces a single-family home)
- 55 Placer Oaks (single-family housing)
- 135 Riviera Drive (residential)
- 50 Samaritan Drive (medical office)
- 15700 Shady Lane (residential)
- 14251 Winchester Boulevard (medical office)
- 15720 Winchester Boulevard (office development replaces a single-family home)
- North Forty Specific Plan (mixed-use)
- Bentley Silicon Valley at 620 Blossom Hill Road (pending; redevelopment assumption)
- Dell Avenue Plan (pending; 1 million square feet of office space)
- 146 Gemini Court (pending; residential)
- Classic Community (pending; 11 residential units)
- CVS site at 15600 Los Gatos Boulevard (pending; mixed-use development)
- 15500 Los Gatos Boulevard (pending; redevelopment assumptions for Moore Buick GMC)

LAND USE, AGRICULTURE RESOURCES, PLANS, AND POLICIES

The geographic scope of the cumulative land use analysis is the entire Los Gatos General Plan area because the General Plan policies direct what type of development will occur throughout the Town. For the purposes of this analysis, the project would not contribute considerably to cumulative land use changes in the entire Town, though the project would involve land use change on a small scale. As indicated in Impacts 4.1-1 and 4.1-2, proposed lot sizes would fall within the range of lot sizes that surround the project site and existing surrounding residential densities The General Plan EIR identifies the project site as one of a number of properties that are currently under a Williamson Act agricultural preserve contract and is designated for Agriculture. According to the Land Use Element, there are approximately 136 acres of land within the Town limits and 358 acres of land within the Town's Sphere

[4] CEQA Section 15125 requires that existing conditions be described at the time the Notice of Preparation (NOP) is published, which includes the cumulative project list. The NOP for the Surrey Farms EIR was published on July 26, 2012. However, the cumulative analysis for the Hillbrook School EIR was dated December 16, 2013, more than a year after issuance of the NOP. Therefore, the above cumulative project list reflects conditions that are more current than conditions at the time of the NOP.

of Influence (SOI) that are designated Williamson Act land.[5] The 17.55-acre project site would comprise approximately 13% of Williamson Act lands within Town limits and 3.6% of the Town's total area designated as Williamson Act land (both within the Town and SOI). The 2020 General Plan EIR determined there would be a significant and unavoidable impact on agricultural resources, due primarily to loss of the proposed North Forty Specific Plan Overlay that would convert designated unique farmland to urban use. As indicated in Impact 4.1-3, the site's agricultural potential is limited by the proximity of residential uses, which now surround the project site. Therefore, the project's conversion of such a small proportion of total designated Williamson Act lands in town is considered to be less than cumulatively considerable, a less-than-significant impact.

AESTHETICS

The geographic scope of the cumulative analysis for aesthetics is limited to the public areas from which the proposed project is visible and where the project would have the potential to visibly change the existing visual character of the project area. Since the only other development proposal in the project vicinity is the Hillbrook School Expansion project and it would not include any physical changes to the school's facilities, there would be no visible change in the existing visual character of the school. Therefore, there would be no cumulative changes in the existing visual character resulting from implementation of both of these projects (no impact).

BIOLOGICAL RESOURCES

The geographic scope of the cumulative analysis for biological resources is the project site and the East Ross Creek corridor. This area was chosen because it represents the most significant natural habitat corridor for native plants and wildlife movement in the surrounding area. One of the above-listed cumulative projects, the Hillbrook School Expansion project, is located adjacent to the site's northwestern boundary, and East Ross Creek bisects this property. A biological assessment determined that the proposed increase in the number of students at Hillbrook School would not directly or indirectly adversely affect any native habitat, wildlife, wetlands, or sensitive biological resources. The proposed project would be required to conform to federal and State laws to offset any impacts on waters of the U.S. and waters of the State, which include East Ross Creek and surface tributaries of the Creek (Mitigation Measure 4.3-7), implement creek protection measures (Mitigation Measure 4.3-8), as well as conform to the applicable sections of the *Guidelines and Standards for Land Use Near Streams* (Mitigation Measure 4.3-9). Implementation of these measures would ensure that the project's impacts to East Ross Creek would be reduced to a less-than-significant level. Since the Hillbrook School project would not affect the East Ross Creek corridor and project-related impacts on the creek would be mitigated to a less-than-significant level, cumulative impacts on the creek corridor from the proposed project and Hillbrook School

[5] The 2020 General Plan EIR identifies 112 acres of land under active agricultural use in the Town's Sphere of Influence with a total of 483 acres under Williamson Act contracts.

Expansion project would be less than significant, and the project's contribution to this impact would be less than cumulatively considerable (less than significant).

GEOLOGY, SOILS, AND SEISMICITY

The geographic scope of potential cumulative geologic and seismic impacts encompasses the project site and its immediate vicinity. These types of impacts are generally not additive or synergistic, but rather are site-specific and depend on local geologic and soil conditions. Although in theory there could be cumulative impacts associated with implementation of the proposed project in conjunction with the adjacent proposed Hillbrook School Expansion project, the school project would not include any physical changes to the school's facilities that could combine with or exacerbate the geologic and seismic impacts of the proposed project. Therefore, no cumulative impacts on geology, soils, or seismicity would occur (no impact).

HYDROLOGY AND WATER QUALITY

The geographic scope of potential cumulative hydrology and water quality impacts encompasses the Ross Creek watershed (including its flood zone). The above-listed cumulative projects located within this watershed will be required to implement stormwater Best Management Practices (BMPs) to treat water to State and regional standards to ensure that surface water pollutants will be treated before leaving those respective sites. With required implementation of BMPs in all cumulative projects, cumulative water quality impacts would be less than significant.

While in theory development of the proposed project in conjunction with the Hillbrook School Expansion project could result in cumulative increases in peak flows along East Ross Creek, such cumulative increases would not occur in practice because the project's surface runoff would be detained in two detention basins and because there would be no physical changes to school facilities at Hillbrook School. Therefore, the proposed project would not contribute to any cumulative alteration of any floodway or cumulative increase in the risks of flooding on other upstream or downstream properties (no impact).

TRANSPORTATION AND TRAFFIC

The geographic scope of potential cumulative traffic impacts includes the same local and regional roads that provide access to the project site as well as the same intersections that were evaluated in the project analysis (Section 4.6, Transportation and Traffic). Determination of the appropriate geographic area for the cumulative analysis is described under the Methodology discussion in Section 4.6.3.

There could have been cumulative construction-related traffic impacts if the adjacent Hillbrook School expansion project involved any construction and such construction occurred at the same time as construction of the proposed project. Under such a scenario, construction-related traffic from the two projects could affect the same roadways. However, since the Hillbrook School Expansion project would *not* include any physical changes to the school's facilities and would not generate construction-related traffic on the same local streets as the proposed project, there would be no cumulative construction-

related traffic impacts (no impact), and therefore, the project's construction-related traffic increases would not be cumulatively considerable.

In addition to analyzing project impacts to study intersections in the immediate vicinity of the project, the Town requested a study of two additional intersections on Kennedy Drive under the Cumulative Plus Project condition. Hexagon (2014) reviewed the traffic data and analysis in the EIR prepared for Hillbrook School Expansion project. The Hillbrook School EIR estimated traffic volumes on Kennedy Road for the Background Plus Project Plus Pending Projects conditions for the AM Peak Hour and the School PM Peak Hour periods. The AM peak hour for the school would coincide with the morning peak hour for the proposed Surrey Farm project, thus resulting in a cumulative traffic increase. However, the afternoon school peak hour would not overlap with the afternoon peak hour for the proposed project. Therefore, this analysis evaluated the cumulative impacts only during the AM peak hour.

Table 5-1 shows estimated cumulative and project-related traffic volume increases on the segment of Kennedy Road west of Longmeadow Drive. It was assumed that all project trips passing through the intersection of Kennedy Road/Longmeadow Drive would continue through to Los Gatos Boulevard.

TABLE 5-1

CUMULATIVE PLUS PROJECT TRAFFIC VOLUMES ON KENNEDY ROAD

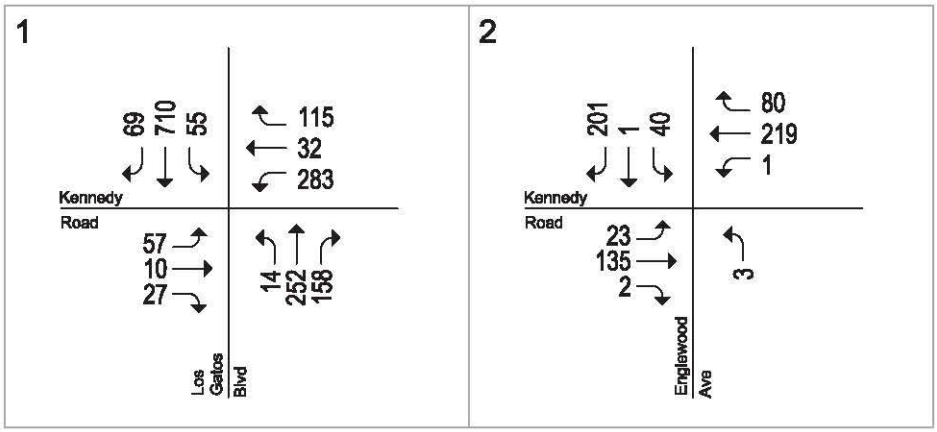
	Cumulative Conditions		Project Trips		Project Conditions	
Roadway Segment	**AM Volume**	**Daily Volume**	**AM Trips**	**Daily Trips**	**AM Volume**	**Daily Volume**
Kennedy Road, west of Longmeadow Drive	300	2,828[a]	8	96	308	2,924

Notes:
[a] Daily volume estimated based on cumulative AM and existing PM peak hour volumes.

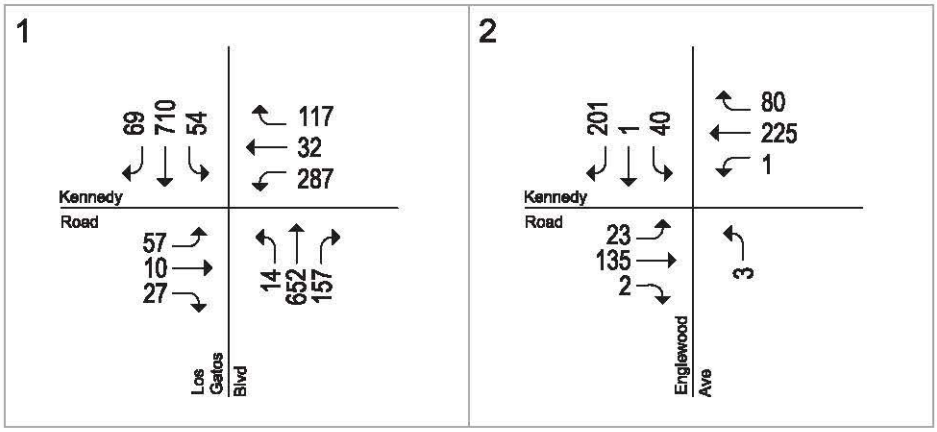
SOURCE: Hexagon Transportation Consultants, Inc. (2014)

Figure 5-1 shows Cumulative and Cumulative Plus Project traffic volumes at the two study intersections during the AM peak hour. The project would add only 8 AM peak hour vehicle trips to Kennedy Road, which is not a considerable contribution toward cumulative traffic volumes in the area. Based on the Hillbrook School EIR, under Cumulative conditions, the study intersections (Kennedy Road/Los Gatos Boulevard and Kennedy Road/Englewood Avenue) are projected to operate at LOS D and A, respectively, during the AM peak hour. The level of service operations at these two intersections would not decrease with addition of project-related traffic increases. Therefore, the project's contribution to cumulative impacts on intersection operations would not be cumulatively considerable, a less-than-significant impact.

Cumulative Conditions - AM



Cumulative Plus Project Conditions - AM



Traffic Volumes at Study Intersections

Source: Hexagon Transportation Consultants, Inc. (2014)

NOISE AND VIBRATION

The geographic scope of potential cumulative noise impacts encompasses the project site and adjoining properties as well as areas adjacent to access and haul routes associated with project construction. There could have been cumulative construction-related noise impacts if the adjacent Hillbrook School expansion project involved any construction and such construction occurred at the same time as construction of the proposed project. Under such a scenario, construction-related traffic from the two projects could have affected the same roadways and operation of construction equipment on both sides could result in cumulative noise impacts on receptors located adjacent to both sites. However, since the Hillbrook School Expansion project does not include any physical changes to the school's facilities, there would be no cumulative construction-related noise impacts (no impact), and therefore, the project's construction-related traffic increases would not be cumulatively considerable.

Cumulative traffic noise increases would occur in the immediate project vicinity and local access streets as a result of the project's operational traffic increases in conjunction with future traffic increases from the Surrey Farm Estates project. The only roadway that would provide access to both projects would be Kennedy Road. When cumulative traffic volumes presented in Table 5-1 are compared to existing volumes in Table 4.6-1, project implementation in conjunction with approved (but unconstructed or unoccupied) and pending projects would result in a cumulative traffic increase of approximately 11% on Kennedy Road (west of Longmeadow Drive), which would result in a traffic increase of less than 1 dB on this section of Kennedy Road. Cumulative development (including Hillbrook School) would contribute 75% of this increase. Based on the Los Gatos Noise Element, existing and future noise levels along Kennedy Road are and will be less than 60 CNEL, which is considered an acceptable residential noise environment (as indicated in Figure NOI-1 of the Noise Element). When compared to the significance thresholds presented in Section 4.7.3, this cumulative noise increases would be less than significant. Therefore, the project's contribution to this cumulative traffic noise increase would be less than cumulatively considerable.

AIR QUALITY

The geographic scope of the cumulative air quality analysis is the entire San Francisco Bay Area Air Basin since project-related air pollutant emissions would have the potential to affect local as well as regional air quality. Because project-related criteria air pollutant emissions would affect regional air quality (i.e., the San Francisco Bay Area Air Basin), evaluation of cumulative impacts is not based on adding emissions from all reasonably foreseeable projects (which would not be feasible on a regional basis for criteria air pollutants). The significance thresholds presented in Section 4.8, Air Quality, are based on individual project thresholds that determine whether the project would result in a cumulatively considerable contribution to a significant cumulative impact on criteria air pollutant emissions on a regional basis. CEQA case law permits lead agencies to rely on cumulative air quality thresholds in lieu of trying to list all relevant past, present, and probable future projects or relying on a summary of projections from a regional or local planning document or EIR. (*Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal.App.4th 899, 933.)

The nature of air emissions is largely a cumulative impact. As a result, most individual projects are not sufficient in size to, by themselves, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to cumulatively significant adverse air quality impacts. The construction-related and operational significance thresholds presented in Section 4.8 are based on the level above which a project's individual emissions would result in a cumulatively considerable contribution to the SFBAAB's existing air quality conditions. Therefore, if a project's emissions exceed this EIR's construction-related or operational thresholds, then the project's impact would be a cumulatively considerable contributor to a significant cumulative impact. As indicated in Tables 4.8-3 and 4.8-4 in Section 4.8, Air Quality, the proposed project's construction-related and operational emissions would not exceed the Town's thresholds for ROG, NO_X, and PM. Therefore, the operational emissions would be less than cumulatively considerable (less than significant).

GREENHOUSE GASES

The geographic scope of the cumulative greenhouse gas analysis is considered on both a state-wide basis (policy consistency) and globally (GHG emissions) since the resulting climate change effects are global. Because GHG emissions affect global climate change, evaluation of cumulative impacts is not based on adding emissions from all reasonably foreseeable projects (which would not be feasible on a global basis for GHGs). The Town has used significance thresholds originally established by BAAQMD for individual projects that determine whether the project would result in cumulatively considerable GHG emissions to analyze the project's greenhouse gas impact in this EIR. As demonstrated in Table 4.9-1 in Section 4.9, Greenhouse Gases, the project's GHG emissions would not exceed the EIR's significance threshold of 1,100 MT CO_2e/year, indicating the project's contribution to significant GHG emissions would not be cumulatively considerable.

The Town adopted a Sustainability Plan in October 2012 to reduce GHG emissions within the Town limits. As explained in Section 4.9, Greenhouse Gases, compliance with the current requirements of the Sustainability Plan is not sufficient by itself at this time to support a determination that a project's greenhouse gas emissions are less than significant by definition, because the Plan will not be fully implemented until the Town Council takes a number of future steps, such as adopting a Green Building Ordinance and developing GreenPoint Rated Building Guidelines. However, the project would be consistent with the applicable goals and policies of the Sustainability Plan as they currently exist. For this reason and since the project's GHG emissions would not exceed the EIR's significance threshold of 1,100 MT CO_2e/year, the project is not considered to conflict with the Town's Sustainability Plan. Therefore, the project's GHG contributions would not be cumulatively considerable (less than significant).

HAZARDS AND HAZARDOUS MATERIALS

The geographic scope of impacts associated with hazards and hazardous materials encompasses the project site and its vicinity. Due to the site-specific nature of hazardous materials impacts, there would be no potential for cumulative effects of hazards or hazardous materials from construction or operation of the proposed project in conjunction with other cumulative development (listed above). Although in theory

there could be cumulative impacts associated with implementation of the proposed project in conjunction with the adjacent proposed Hillbrook School Expansion project, that proposal would not include any physical changes to the school's facilities or increase in transport or use of hazardous materials. Therefore, the project would not contribute to any local or regional cumulative effects related to the exposure to hazardous materials (no impact).

CULTURAL RESOURCES

The geographic scope of potential cumulative impacts on cultural resources encompasses the project site and its vicinity. Although in theory there would be a potential for cumulative impacts on cultural resources to occur with implementation of the proposed project in conjunction with the adjacent proposed Hillbrook School Expansion project, that proposal would not include any physical changes to the school's facilities and thus will not result in any effects on cultural resources. Therefore, the project would not contribute to any cumulative effects on cultural resources. In addition, the proposed project appears to have little or no potential for disturbing cultural resources. A record search was conducted at the Northwest Information Center for the project site and there were no recorded historic and/or prehistoric archaeological sites on the subject property or within ¼ mile of it. For these reasons, the proposed project's potential impact on cultural resources would be less than cumulatively considerable (less than significant).

PUBLIC SERVICES, UTILITIES, AND SERVICE SYSTEMS

The geographic scope of the cumulative public services and utilities analysis consists of the service areas of the various service agencies. Development of the project would have the potential to contribute incrementally to cumulative effects on the demand for public services and utilities as a result of future growth in the community.

As required by the 2020 General Plan, all proposed development plans will be reviewed and evaluated to coordinate community growth in a manner that adheres to the goals of the General Plan and does not significantly affect the levels of service of existing services, utilities, and service systems. The Town's development review process guides community development in a manner that provides adequate services and infrastructure, and manages overall growth. The adherence of the above-listed cumulative projects within the Town to the land use guidelines and objectives of the General Plan will ensure that potential cumulative effects on public services, utilities, and service systems would be less than significant. While the water and wastewater service agencies' boundaries extend beyond the Town's boundary, the 2020 General Plan specifies a growth rate, which provides the basis for these service agencies' future planning efforts to meet projected demand.

As indicated in Section 5.3, Growth-inducing Impacts, the draft 2015 – 2023 Housing Element has identified an estimated 132 housing units for the "Above Moderate" income category that would need to be developed during the 2020 General Plan build-out period. The proposed project would provide 10 new housing units for this income category or approximately 8% of the housing allocation requirement for the 2015 to 2020 period. As discussed above, the proposed project would contribute to the town's proportion

of regional housing supply requirements and also be consistent with the development of 1,600 new housing units as anticipated by the 2020 General Plan. The cumulative effects of developing this new housing on the town's public services, utilities, and service systems were evaluated by the 2020 General Plan EIR and determined to be less than significant with the implementation of the Town's policies and guidelines in conjunction with the EIR's mitigation measures.

Under the population growth estimates identified by the 2020 General Plan, the project would add approximately three new students to the Los Gatos Union School District and two new students to the Los Gatos-Saratoga High School District. Students living in homes that would be built within the proposed project area would contribute to the cumulative demand for educational services and result in enrollments that could exceed district capacities, depending on the timing of individual home construction and occupancy of residences. No new school facilities would be necessary to absorb such a small number of new students. In addition to the goals, policies and actions in the 2020 General Plan, future development within the planning area would be required by law to pay development impact fees to each school district at the time of the building permit issuance. These fees are used by the school districts to mitigate impacts associated with long-term operation and maintenance of school facilities with new development in accordance with State law. Pursuant to Section 65996(3)(h) of the California Government Code, payment of these fees "is deemed to be full and complete mitigation of impacts of any legislative or adjudicative act, or both, involving but not limited to, the planning, use, or development of real property, or any change in government organization or reorganization." Any secondary environmental impacts resulting from the construction of new schools, as ultimately necessitated by students associated with other foreseeable cumulative development, would be analyzed by each School District prior to construction of any new schools. Therefore, with payment of development impact fees to each school district as required by law, the project's impact on the schools attended by project students would be less than significant and its incremental contribution to cumulative impacts on these schools and the school districts overall would not be cumulatively considerable (less than significant).

RECREATION

The geographic scope of the cumulative recreation analysis is the Town boundary since each community typically provides recreational facilities for its population. The EIR for the 2020 General Plan determined that existing parks were adequate to meet existing and future (with growth anticipated by the General Plan) demand for recreational facilities, based on Quimby Act standards. Therefore, no significant cumulative impacts on recreational facilities would occur with project implementation. Nevertheless, based on the state parkland standards (as defined by the Quimby Act), the project's increase in population of 24 people would generate the need for 0.07 to 0.12 acre of additional parkland. Proposed provision of approximately 3.3 acres of open space that would be accessible to the public would more than offset the project's increase in demand (no impact).

ENERGY RESOURCES

The geographic scope of the cumulative energy resources analysis is considered to be the Pacific Gas & Electric (PG&E) service area and state-wide, since cumulative increases in energy demand would affect both the local power transmission facilities and state-wide power grid. The 2020 General Plan EIR considered cumulative impacts with regard to electricity and natural gas consumption (page 4.14-36 of the 2020 General Plan EIR) and concluded that these impacts would be mitigated to a less-than-significant level by implementing the 2020 General Plan goals, policies, and actions. The Environment and Sustainability Element of the 2020 General Plan provides an evaluation of energy consumption issues and includes goals and policies promoting reduction in the use of non-renewable energy and conservation of energy consumption. This is further defined in the Town's recently adopted Sustainability Plan.

Proposed development of 10 lots on the project site would be consistent with the General Plan's anticipated growth rate (see Section 5.3, Growth-inducing Impacts, for more discussion) and this growth rate provides the basis for PG&E's future planning efforts to meet future energy demand. Therefore, the project's contribution to cumulative increases in energy demand would be less than cumulatively considerable.

5.5 ALTERNATIVES

CEQA Section 15126.6(a) requires that an EIR describe "a range of reasonable alternatives to the project, or to the location of any project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the 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. An EIR is not required to consider alternatives that are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no iron-clad rule governing the nature or scope of the alternatives to be discussed, other than the rule of reason."

Section 15126.6(b) states, "[b]ecause an EIR must identify ways to mitigate or avoid the significant effect that a project may have on the environment (Public Resources Code Section 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which 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."

Section 15126.6(c) describes the selection process for a range of reasonable alternatives as, "[t]he 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. The EIR should briefly describe the rationale for selecting the alternatives to be discussed".

Section 15126.6(e) requires the analysis of a No Project Alternative. The analysis must discuss the existing condition, as well as what would be reasonably expected to occur in the foreseeable future if the

project is not approved. The No Project Alternative is the circumstance under which the project does not proceed and wherein the existing environmental setting is maintained. The analysis also must discuss the environmental effects resulting from what would reasonably be expected to occur in the foreseeable future if the project were not approved. If the Environmentally Superior Alternative is the No Project Alternative, the EIR shall also identify an Environmentally Superior Alternative among the other alternatives (CEQA Section 15126.6(e)(2)).

5.5.1 SUMMARY OF POTENTIALLY SIGNIFICANT IMPACTS

When compared to the Town's CEQA significance criteria and thresholds, the project's impacts were determined to be either less than significant or potentially significant but mitigated to a less-than-significant level with implementation of mitigation measures outlined in this EIR. In addition, no significant and unavoidable adverse impacts would occur as the result of the proposed project.

The EIR identifies the following potentially significant impacts, none of which are significant and unavoidable:

- **Biological Resources:** Project construction activities could adversely affect, either directly or through habitat modification, to special-status plant species, nesting special-status and other migratory birds, special-status San Francisco dusky-footed woodrat, special-status bats, California red-legged frogs, and foothill yellow-legged frogs, which could occur on-site. In addition, project development could adversely affect: (1) a surface tributary presumed to fall under the jurisdiction of the USACE, CDFG and/or RWQCB pursuant to federal and State law; (2) riparian habitat of Ross Creek and an unnamed tributary to Ross Creek located within the project site; and (3) approximately 0.51 acres of mixed oak woodland (resulting in the removal of 70 protected trees and transplantation of approximately 30 protected trees on the project site). Project implementation would also require an exception to the *Guidelines and Standards for Land Use Near Streams* because it would encroach into the recommended riparian setback.
- **Geology, Soils, and Seismicity.** Future homes on project lots, like all existing development in the project area, could be subject to damage due to strong ground shaking. Additional impacts associated with future development of homes on project lots include loss of topsoil, slope instability hazards (including debris flow landslides), and expansive soils.
- **Hydrology and Water Quality.** Project-related construction activities within or near a drainage swale, unnamed tributary to East Ross Creek, could adversely affect downstream water quality. Project implementation could substantially alter the existing drainage pattern of the site.
- **Noise:** Project construction activities would result in temporary increases in noise in the project vicinity due to operation of heavy equipment during construction.
- **Hazards and Hazardous Materials:** The proposed project could result in a significant hazard to the public or the environment through the routine use and disposal of household hazardous wastes.

- **Cultural Resources:** Construction activities on the project site could adversely affect any unknown subsurface archaeological or paleontological resources.
- **Energy Conservation:** Construction of proposed roads, infrastructure, and future residences could encourage activities that use energy in a wasteful, inefficient, or unnecessary manner.

All of the above impacts could be mitigated to a less-than-significant level with recommended mitigation measures. Of the above impacts, those related to biological resources, noise, and cultural resources would occur during the project's construction phase only. Geotechnical constraints would relate to individual home designs and water quality impacts would be addressed by provision of on-site self-retaining treatment areas (pursuant to C.3 requirements). All of these impacts could be reduced to a less-than-significant level with implementation of mitigation measures outlined in this EIR. Construction-related mitigation measures specified in this EIR would include implementation of protective (or offsetting) measures for special-status species, nesting birds, the drainage swale (unnamed tributary to Ross Creek), water quality, and any unknown, subsurface archaeological or paleontological resources that could be encountered during construction. The EIR also includes control measures to reduce construction noise and wasteful use of energy.

Additional impacts identified in the EIR related to tree removal/loss, short-term increases in construction-related traffic on local roads, and impacts on schools would be mitigated by regulations or conditions of project approval. Implementation of a Traffic and Safety Control Plan (required as a condition of project approval) and conformance with the Town's Tree Protection Ordinance (including implementation of tree replacement/protection measures specified by the Town's consulting arborist, which is also required as a condition of project approval) would reduce traffic and tree impacts to less than significant. Conformance with state regulations regarding schools (payment of fees pursuant to Section 65996(3)(h) of the California Government Code) would reduce this impact to less than significant.

The Town will evaluate each individual residence during the Architecture and Site review process to analyze design, landscape plans, water quality/C.3 conformance, geotechnical hazards, and fire hazards that cannot be specifically evaluated until home designs are proposed on the individual lots. Such impacts (including conformance with some measures in the Town's HDSG) relate to individual home designs and these impacts will be evaluated as part of the Architecture and Site (A&S) review process when each lot is proposed for development. Mitigation measures from this EIR, along with the Town's General Plan policies and other development standards, would ensure that these impacts would all be mitigated to less than significant.

The alternatives presented below include the CEQA-required No Project Alternative in addition to several other alternatives. As required by CEQA, the Environmentally Superior Alternative is also identified below.

5.5.2 PROJECT OBJECTIVES

APPLICANT PROJECT OBJECTIVES

The objectives of the project applicant for the Surrey Farm Estates project would be as follows:

1. Develop 10 residential lots on developable portions of the project site and designate remaining portions of the site as open space/common area on two common lots.
2. Provide emergency access connections to adjacent roadways, wherever feasible, to improve secondary emergency access to the project site and adjacent neighborhoods currently served by single-access roads.

TOWN PROJECT OBJECTIVES

The project site is located in the part of town subject to the Hillside Development Standards and Guidelines (HDSG) and Hillside Specific Plan (HSP), but the project site is also subject to the Los Gatos 2020 General Plan. While goals, objectives, and policies of these plans are presented and discussed in detail in Chapter 4, Section 4.1, Land Use and Planning, the objectives from these plans that are relevant to development of this property in general and reflect the Town's objectives are listed as follows:

1. Preserve the natural beauty and ecological integrity of the Santa Cruz Mountains and surrounding hillsides by regulating new homes (2020 General Plan Community Design Element, Goal CD-14).
2. Preserve the natural topography and ecosystems within the hillside area by regulating grading, landscaping, and lighting (2020 General Plan Community Design Element, Goal CD-15).
3. Maintain the natural appearance of the hillsides from all vantage points including the valley floor (HDSG, Objective 4).
4. Protect ridgelines from development (HDSG, Objective 5).
5. Maintain the rural, natural, open space character of the hillsides (HDSG, Objective 7).
6. Ensure that development does not dominate, but rather visually blends and achieves harmony between the natural and built environment (HDSG, Objective 9).
7. Conserve the natural features of the site such as topography, natural drainage, vegetation, wildlife habitats, movement corridors and other physical features (HDSG, Objective 10).
8. Cluster dwelling units to preserve the scenic nature of the hillsides and allow for economies in the construction of required public and private facilities (HSP, Policy 1.3.3)
9. Site new homes to maximize privacy, livability, protection of natural plant and wildlife habitats and migration corridors, and adequate solar access and wind conditions, taking advantage of scenic views but not creating significant ecological or visual impacts affecting open spaces,

public places, or other properties (2020 General Plan Community Design Element, Policy CD-6.4)

5.5.3 ALTERNATIVE CONSIDERED BUT REJECTED

REDUCED DENSITY ALTERNATIVE

In an EIR, an alternative involving a reduction in density is typically proposed to: (1) address land use compatibility concerns such as increasing consistency with adjacent densities, lot sizes, and setbacks; or (2) avoid location-specific impacts such as a visual impact, biological impact, or hazardous condition. For this project, the proposed density and lot sizes were determined to be consistent with adjacent lots (see Impact 4.1-1) and visual impacts on adjacent properties were determined to be less than significant (see Impact 4.2-3). In addition, the proposed project would be consistent with the proposed HR-1 (Hillside Residential) zone, which would allow for development of 10 lots with a minimum lot size of 40,000 s.f. Since the project would be consistent with the proposed zone and consistent with adjacent densities, lot sizes, and setbacks, the Town considered but rejected the Reduced Density Alternative.

This EIR's impact conclusions, as described in Chapter 4, also would support the rejection of this alternative. Of the significant or potentially significant impacts listed above (all of which could be mitigated to a less-than-significant level), only the biological and water quality impacts are location-specific, namely, affecting the drainage swale that is traversed by proposed Streets A and B. These impacts could be reduced by implementation of measures outlined in Mitigation Measure 4.3-9, Riparian Encroachment Offsets, which includes maintaining appropriate creek and riparian setbacks on Lot 9. These impacts could also be reduced by realigning Street B, as presented below under the Two Access Alternative. While Mitigation Measure 4.3-9 requires maintaining the riparian setback recommended by the Town's *Guidelines and Standards for Land Use Near Streams*, it is also possible that elimination of Lot 9 could mitigate this impact. However, CEQA Guidelines Section 15092(c) does not allow a reduction in the number of housing units as mitigation, stating, "With respect to a project which includes housing development, the public agency shall not reduce the proposed number of housing units as a mitigation measure if it determines that there is another feasible specific mitigation available that will provide a comparable level of mitigation." (See also Public Resources Code section 21159.26.) Being legally infeasible, a Reduced Density Alternative that involved elimination of Lot 9 to reduce biological and water quality impacts was considered but not carried forward for full analysis in this EIR.

5.5.4 NO PROJECT ALTERNATIVE

Under the No Project Alternative, the proposed project would not be developed and the significant environmental impacts identified in this report (summarized above) as well as the less-than-significant impacts identified in Chapter 4 (including visual impacts) would be avoided. It should also be noted that the HSP seeks provision of secondary access for all existing dead end streets. The HSP also discourages non-residents to use these secondary accesses by allowing such accesses to be restricted to emergency access only. Twin Oaks Drive and Brooke Acres Drive are currently dead-end streets, and would continue to be so under this alternative.

Under the No Project Alternative, the property's existing Williamson Act agricultural preserve contract would remain in effect. However, agricultural use of the site would not meet the applicant's above-listed project objectives. If the property were to be developed with orchards or vineyards, for example, agricultural viability would be unlikely due to the small size of site, access limitations, and land use conflicts with adjacent residential uses. However, if the site were to be cultivated as such, operation of farm equipment and possible application of agricultural chemicals (fertilizers, herbicides, insecticides, etc.) could result in dust, noise, and public health impacts on adjacent residents. With all properties adjacent to this project site already developed with residential uses and continued pressure for more housing in the region, and with agricultural operations likely to be marginally viable at best, it is likely that there will be future proposals involving residential development of this property.

5.5.5 TWO ACCESS ALTERNATIVE

The Two Access Alternative would modify the project's circulation design so that access to six of the project lots would be from Twin Oaks Drive, while Cerro Vista Court would provide access to four lots. This alternative would eliminate the section of Street B that crosses the drainage (ephemeral) swale, which is an unnamed tributary to Ross Creek.

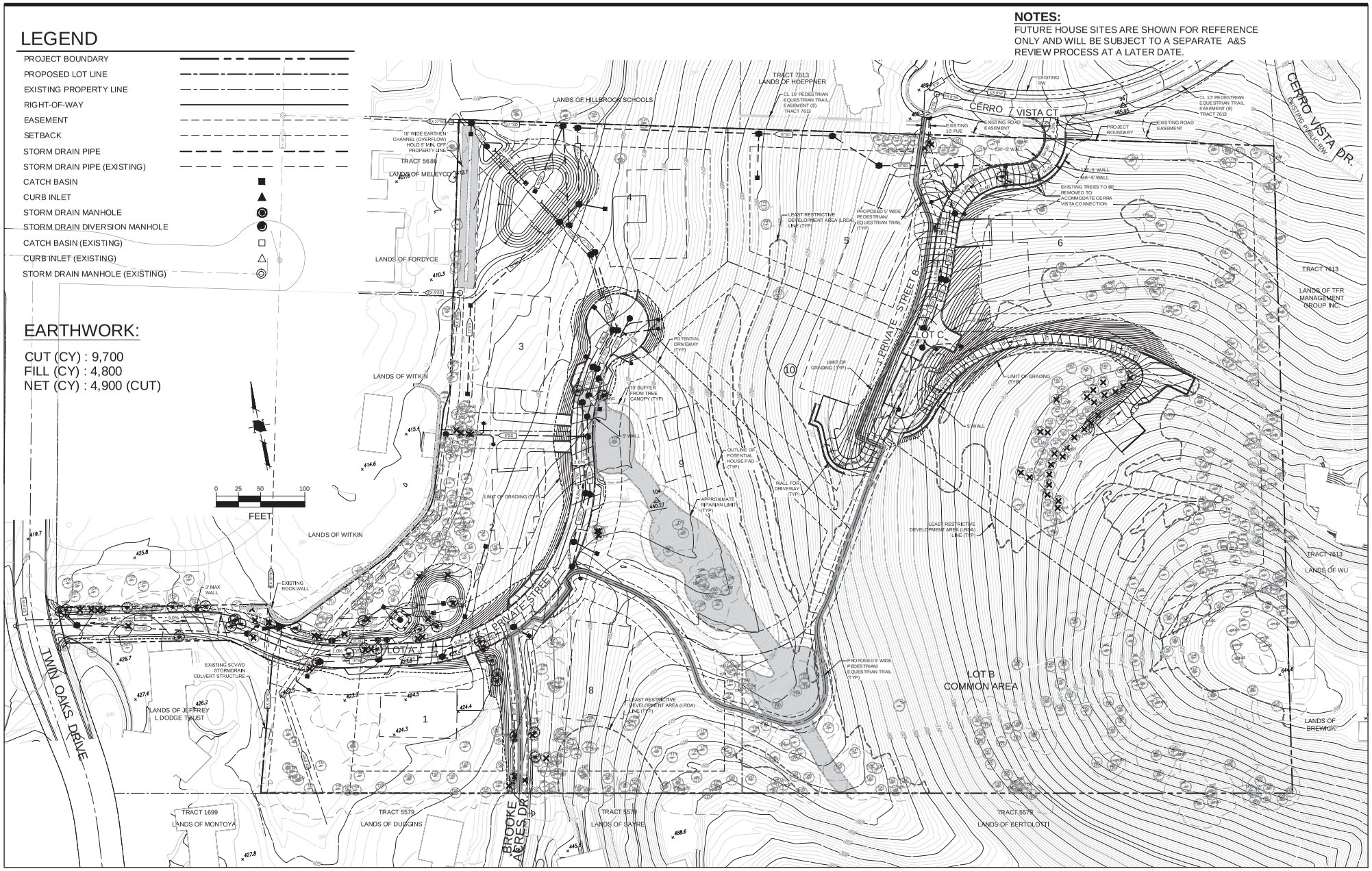
The Two Access Alternative site plan is presented in **Figure 5-2**. Under this alternative, the project proposal (General Plan amendment, rezoning, Tentative Tract Map, and cancellation of the Williamson Act contract, as listed in Section 3.4) would remain the same. The proposed emergency vehicle access (EVA) between Street A and Brooke Acres Drive would remain the same as for the proposed project. In addition, the number and configuration of lots would be essentially the same as for the proposed project (i.e., all lots would be one acre or larger), although elimination of a section of Street B would result in Lot A (comprised of Streets A and B) becoming slightly smaller and contiguous Lots 8, 9, 10, and B becoming slightly larger. The potential building envelopes under this alternative would be the same as for the proposed project, as indicated in Figure 5-2. The proposed road widths, lengths, and grades under this alternative would be the same as the streets proposed as part of the proposed project, except that Street B would be shorter (350 feet long instead of 800 feet). Under this alternative, the trail location and design would also remain the same as for the proposed project. Utility connections and alignments under this alternative would be similar to those of the proposed project, as indicated in Figure 5-2.

Proposed grading and drainage improvements under this alternative are also indicated on Figure 5-2. This alternative would involve less cutting and filling (grading would involve 9,700 cubic yards (c.y.) of cut and 4,800 c.y. of fill whereas the proposed project would involve 11,000 cubic yards (c.y.) of cut and 7,050 c.y. of fill). However, because some of the excess excavated material would no longer be needed to fill in the swale to accommodate Street B, the net export of excavated material would be greater under this alternative (approximately 4,900 c.y.) than the proposed project (3,950 c.y.).

Because most of the replacement tree plantings would occur along project roads and site boundaries, the reconfiguration of Street B would modify locations of some of the replacement tree plantings as well as planting of other landscaping. The modified landscape plan is presented in **Figure 5-3**. While the same

Two Access Alternative - Grading and Drainage

Figure 5-2



Surrey Farm Estates, 170 Twin Oaks Drive

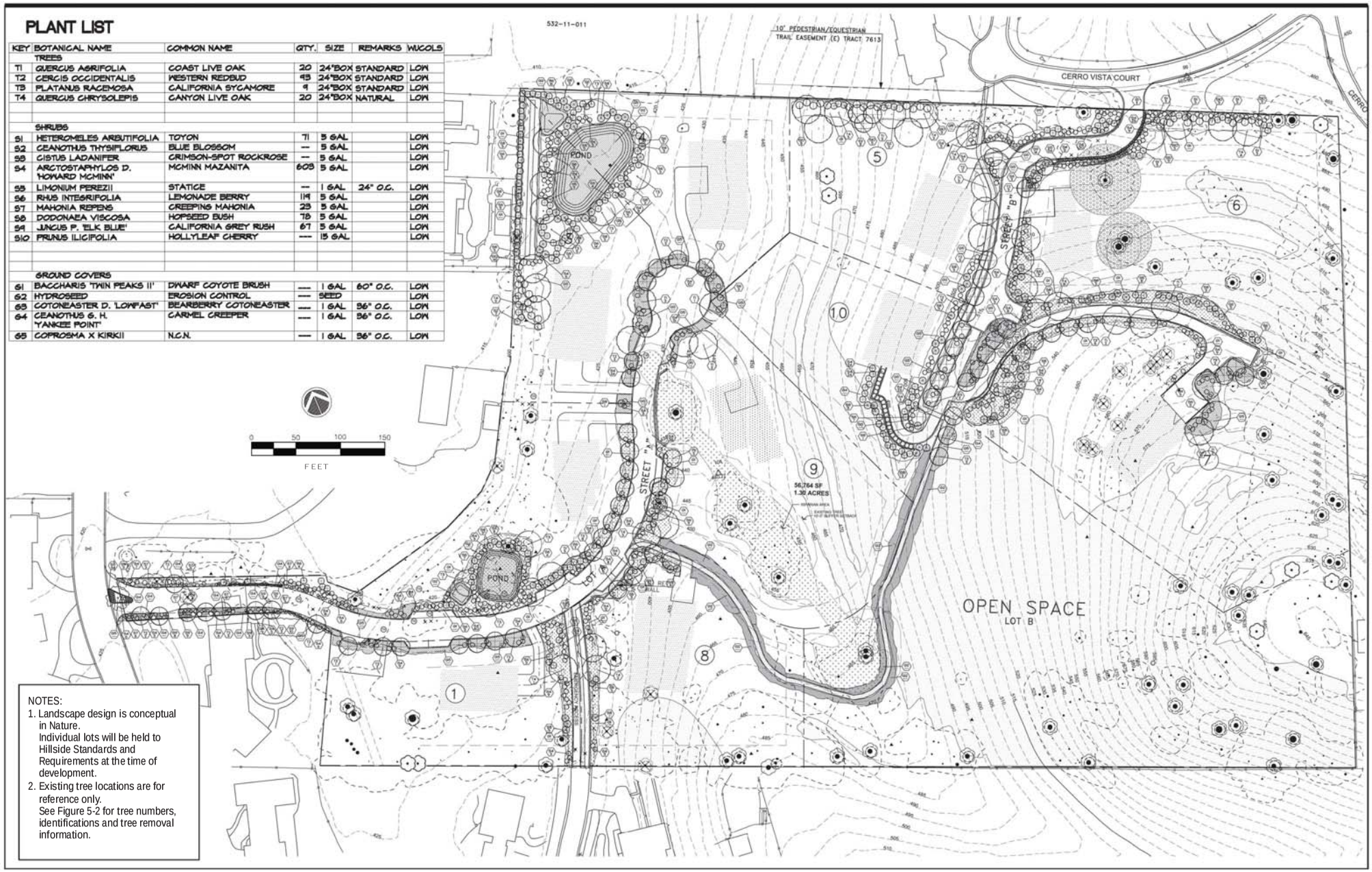
Source: HMH Engineers (2015)

Two Access Alternative - Landscape Plan

Figure 5-3

PLANT LIST

KEY	BOTANICAL NAME	COMMON NAME	QTY.	SIZE	REMARKS	WUCOLS
	TREES					
T1	QUERCUS AGRIFOLIA	COAST LIVE OAK	20	24"BOX	STANDARD	LOW
T2	CERCIS OCCIDENTALIS	WESTERN REDBUD	43	24"BOX	STANDARD	LOW
T3	PLATANUS RACEMOSA	CALIFORNIA SYCAMORE	4	24"BOX	STANDARD	LOW
T4	QUERCUS CHRYSOLEPIS	CANYON LIVE OAK	20	24"BOX	NATURAL	LOW
	SHRUBS					
S1	HETEROMELES ARBUTIFOLIA	TOYON	71	5 GAL		LOW
S2	CEANOTHUS THYSIFLORUS	BLUE BLOSSOM	—	5 GAL		LOW
S3	CISTUS LADANIFER	CRIMSON-SPOT ROCKROSE	—	5 GAL		LOW
S4	ARCTOSTAPHYLOS D. 'HOWARD MCMINN'	MCMINN MAZANITA	603	5 GAL		LOW
S5	LIMONIUM PEREZII	STATICE	—	1 GAL	24" O.C.	LOW
S6	RHUS INTEGRIFOLIA	LEMONADE BERRY	119	5 GAL		LOW
S7	MAHONIA REPENS	CREEPING MAHONIA	23	5 GAL		LOW
S8	DODONAEA VISCOSA	HOPSEED BUSH	78	5 GAL		LOW
S9	JUNCUS P. 'ELK BLUE'	CALIFORNIA GREY RUSH	67	5 GAL		LOW
S10	PRUNUS ILICIFOLIA	HOLLYLEAF CHERRY	---	15 GAL		LOW
	GROUND COVERS					
G1	BACCHARIS 'TWIN PEAKS II'	DWARF COYOTE BRUSH	---	1 GAL	60" O.C.	LOW
G2	HYDROSEED	EROSION CONTROL	---	SEED		LOW
G3	COTONEASTER D. 'LOWFAST'	BEARBERRY COTONEASTER	---	1 GAL	36" O.C.	LOW
G4	CEANOTHUS G. H. 'YANKEE POINT'	CARMEL CREEPER	---	1 GAL	36" O.C.	LOW
G5	COPROSMA X KIRKII	N.C.N.	---	1 GAL	36" O.C.	LOW



NOTES:
1. Landscape design is conceptual in Nature.
   Individual lots will be held to Hillside Standards and Requirements at the time of development.
2. Existing tree locations are for reference only.
   See Figure 5-2 for tree numbers, identifications and tree removal information.

Source: Reed Associates Landscape Architecture (2015)

number of replacement trees as the proposed project would be planted (approximately 178 24-inch box size, 93 36-inch box size, and 8 48-inch box size trees, or equivalent), the proposed landscape plan under this alternative would have the same tree and shrub plantings along site boundaries and Street A; tree plantings would also be located along Street B, but this street would be shorter than the project design.

CONSISTENCY WITH PROJECT OBJECTIVES

This alternative would meet the above-listed project applicant and Town objectives to develop 10 residential lots and provide emergency access connections by connecting Twin Oaks Drive with Brooke Acres Drive (like the project). Town objectives, as reflected in referenced policies from the 2020 General Plan, the HDSG, and the HSP, related to: (1) preserving beauty, ecological integrity, natural topography, natural drainages, ecosystems (including vegetation, wildlife habitats, and movement corridors), ridgelines, and rural/natural/open space character; (2) ensuring development visually blends and achieves harmony between the natural and built environment; and clusters development to preserve the scenic nature of the hillsides while allowing for economies in the construction of required public and private facilities. Since the lot layout for this alternative is essentially the same as the proposed project, this alternative is also considered to meet these objectives for the same reasons presented in the policy consistency tables in Sections 4.1, Land Use, and 4.2, Aesthetics.

CONSISTENCY WITH PLANS AND POLICIES

Throughout Chapter 4, the proposed project was evaluated for consistency with pertinent plans and policies. Like the proposed project, the Two Access Alternative also would be consistent with goals and policies of the Town of Los Gatos 2020 General Plan, the HSP, and the HDSG. Project consistency with pertinent policies relate to the project's physical impacts, and these impacts are discussed in Sections 4.1 (Land Use), 4.2 (Aesthetics), 4.3 (Biological Resources), 4.4 (Geology and Soils), 4.5 (Hydrology and Water Quality), 4.6 (Traffic and Circulation), 4.7 (Noise), 4.8 (Air Quality), 4.9 (Greenhouse Gas Emissions), 4.10 (Hazards and Hazardous Materials), 4.11 (Cultural Resources), 4.12 (Public Services, Utilities, and Service Systems), 4.13 (Recreation), and 4.14 (Energy Conservation). All impacts related to land use, aesthetic, traffic, operational noise, operational air quality, greenhouse gas emissions, public services/utilities/service systems, and recreation were determined to be less than significant for the proposed project, and they would also be less than significant for this alternative. Potentially significant impacts were identified for the proposed project under the following topics: biological resources, geology/soils, hydrology/water quality, construction-related noise and air quality, hazardous materials, cultural resources, and energy conservation. However, mitigation measures specified in Chapter 4 would reduce these impacts to less than significant, ensuring consistency with policies intended to reduce environmental impacts. Under this alternative, these impacts would also be potentially significant and the same mitigation measures would apply except for Mitigation Measure 4.3-8 (modifications indicated below). Therefore, this alternative would also be consistent with identified policies.

There is one difference, however, in this alternative's consistency with one policy of the HSP and it relates to cul-de-sac length. The project's consistency with this HSP policy is discussed in Section 4.6.3,

Regulatory and Planning Framework in the Transportation and Traffic section. The HSP states that cul-de-sacs should not exceed 800 feet in length and neither the project's Street A nor Street B would exceed this length. However, the length of Street B would be reduced from approximately 770 feet to 350 feet. Although both the project and this alternative would be consistent with this policy, the shorter cul-de-sac length under this alternative would be slightly more consistent with the HSP policy than the proposed project.

IMPACT COMPARISON

While the project's environmental impacts identified in Chapter 4 would be less than significant or less than significant with implementation of specified mitigation measures, this alternative would reduce the project's biological and water quality impacts by avoiding the impacts associated with constructing proposed Street B across the drainage swale, which is an unnamed tributary to Ross Creek. The environmental effects of this alternative are compared to the project below and summarized in Table 5-3.

Land Use

The Two Access Alternative would include development of the same 10 lots as would occur under the proposed project. Therefore, this alternative would be consistent with surrounding lot sizes as well as pertinent land use plans and policies, and land use impacts would be less than significant (Impacts 4.1-1 and 4.1-2). Like the project, however, this alternative would conflict with the site's current zoning designation (Agriculture) and Williamson Act Contract), but with proposed rezoning and contract cancellation, this impact would be less than significant (Impact 4.1-3).

Aesthetics

Future homes and proposed landscaping on the project site would be the most visually prominent feature of the proposed project and this alternative. Since the number and configuration of lots under this alternative would be the same as under the proposed project, this alternative's visual impact would be less than significant, similar to that of the proposed project, with respect to: (1) not altering the visibility of the Santa Cruz Mountains hillsides and associated ridgelines from nearby areas or altering views from any of the established viewing platforms (Impact 4.2-1); (2) not affecting scenic resources as defined by CEQA, which include, but are not limited to trees, rock outcroppings, and historic buildings within a State-designated scenic highway (Impact 4.2-2); and (3) not substantially degrading the visual character or quality of the site and its surroundings because of the required A&S review process for all future homes and proposed tree and landscape plantings along project roads and project boundaries and planting to occur before homes are built (Impact 4.2-3). In addition, since lot configurations and the proposed access road intersection at Twin Oaks Drive would be the same as for the proposed project, this alternative would not create new sources of substantial light or glare, which would adversely affect day or nighttime views in the area (Impact 4.2-4).

Biological Resources

Impacts on Special-Status Species and Habitats as well as Native Wildlife Habitats and Movement. Since the number and configuration of lots under this alternative would be the same as for the proposed project, this alternative's impacts on biological resources related to development of future homes on project lots would be the same as those of the proposed project. However, since this alternative eliminates most of Street B and avoids construction in the ephemeral drainage swale, it would have less grading/surface disturbance and, hence, lesser levels of impacts on some sensitive biological resources. When compared to the proposed project, the potential for impacts on special-status plant species would be the same under this alternative (less than significant; Impact 4.3-1). With comparatively less grading (1,300 c.y. less cut and 2,250 c.y. less fill) and four fewer trees to be removed (although more would be transplanted), potential impacts on the following species (if present) would also be proportionately less: nesting white-tailed kites and other special-status and migratory birds (Impact 4.3-2), special-status species San Francisco dusky-footed woodrat (Impact 4.3-3), special-status bats (Impact 4.3-4), red-legged frogs, and foothill yellow-legged frogs (Impact 4.3-5). Like the project, however, specified mitigation would still be required in order to reduce these potential impacts to less than significant. Less than significant impacts on wildlife habitats (including habitat for special-status species) and movement under the proposed project would also be less than significant under this alternative (Impacts 4.3-6, 4.3-11, and 4.2-12).

Also, with no grading and associated tree impacts in the ephemeral swale (unnamed tributary to Ross Creek), potential impacts on the ephemeral swale (and associated need to federal/state permits and creek/swale protections) from construction of Street B would be avoided altogether (Impacts 4.3-7 and 4.3-8). However, because construction of Street A would still affect a short segment of this ephemeral swale, Mitigation Measures 4.3-7 and 4.3-8 would still be required but only with respect to Street A. No modifications to Mitigation Measure 4.3-7 would be needed for this alternative. However, Mitigation Measure 4.3-8 should be modified as follows for this alternative (changes are indicated with ~~strikethrough~~ for text deletions and <u>underline</u> for text additions):

> ***"Mitigation Measure 4.3-8, Creek and Swale Protection:*** *Mitigation for the placement of fill into the ephemeral swale is outlined in Mitigation Measure 4.3-7, above. Construction in and adjacent to Ross Creek and the ephemeral swale requires conformance to the Town's adopted sections of the Guidelines and Standards for Land Use Near Streams. In order to conform to these guidelines, the following measures shall be implemented:*
>
> *a. Protection of the riparian zone shall be assured by establishment of an appropriate riparian corridor buffer:*
>
> - *Based on site conditions, channel geomorphology, slope, size of watershed, and type of habitat, a minimum riparian setback of 25 feet from the top of bank or outer edge of the riparian zone, whichever is greater, would provide for an appropriate protection of the habitat values and water quality associated with Ross Creek.*

- *Based on site conditions, channel geomorphology, slope, size of watershed, and type of habitat, a minimum riparian setback of 10 feet from the top of bank of the incised portion of the ephemeral swale and outer oak canopy edge would provide for an appropriate protection of the habitat values and water quality. It is recognized that the placement of fill into the ephemeral swale is necessary to construct Street~~s~~ A ~~and B~~. At this ~~these~~ location~~s~~, there is no habitat meeting the definitions of "riparian vegetation" or "stream/channel/creek"[6] as provided in the Guidelines. As such, this portion of the proposed project is not in conflict with the Guidelines. Mitigation for these impacts is specified in Mitigation Measure 4.3-7.*

~~*b. Grading and culvert construction to accommodate the construction of Street B would result in impacts on portions of the ephemeral swale that are incised and situated directly beneath the canopy of mature oak woodland. Such grading and construction at this location would not necessarily conflict with the Guidelines[7], but would be subject to review and permitting requirements by the regulatory agencies. Mitigation for these impacts is specified in Mitigation Measure 4.3-7.*~~

c. A 10-foot wide protective easement shall be recorded over the length of the preserved swale across Lot 9. No grading, filling, or trenching shall be permitted within this easement.

d. Orange construction fencing or a similar visual barrier shall be installed to prevent accidental grading or movement of equipment beyond what is specified on the grading plans and approved under the grading permit.

e. Construction activities shall conform to the Town of Los Gatos' Tree Protection Ordinance, as required in Mitigation Measure 4.3-10, Tree Mitigation and Monitoring Plan."

With elimination of the section of Street B that traverses the ephemeral swale under this alternative, Impact 4.3-9 would be less under this alternative and the exception to the *Guidelines* for encroachment into the recommended riparian setback, as required in Mitigation Measure 4.3-9a, would no longer be needed for Street B. Mitigation Measure 4.3-9 should be modified as follows for this alternative (changes are indicated with ~~strikethrough~~ for text deletions and underline for text additions):

"Mitigation Measure 4.3-9, Riparian Encroachment Offsets: *In order to offset potentially significant effects of encroachments into the recommended 10-foot riparian setback, the following mitigation measures shall be implemented:*

a. The Town shall allow an exception to the Guidelines to permit construction of Street~~s~~ A ~~and B~~.

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[6] See Section 2F, Subsection C (Topographic Position) of the Guidelines, p. 2.14.

[7] ~~See Section III.B2, B3, and B4 of the Guidelines, p. 3.9~~

b. The hydrologic connection between the ephemeral swale and upstream watershed and Ross Creek shall be maintained by the installation of appropriately sized culverts beneath Street A and Street B, and between Lots #3 and 4.

c. Protective measures as recommended by the Town's arborist and required by Town Ordinance shall be implemented to preserve the health of oak trees located on Lot 9, and they include the following:

"Section 29.10.1005 Protection of Trees During Construction

a) Protective tree fencing shall specify the following:

1) Size and materials: A five (5) or six (6) foot high chain link fencing, mounted on two-inch diameter galvanized iron posts, shall be driven into the ground to a depth of at least two (2) feet at no more than 10-foot spacing. For paving area that will not be demolished and when stipulated in a tree preservation plan, posts may be supported by a concrete base.

2) Area type to be fenced. Type I: Enclosure with chain link fencing of either the entire dripline area or at the tree protection zone (TPZ), when specified by a certified or consulting arborist.[8] Type II: Enclosure for street trees located in a planter strip: chain link fence around the entire planter strip to the outer branches. Type III: Protection for a tree located in a small planter cutout only (such as downtown): orange plastic fencing shall be wrapped around the trunk from the ground to the first branch with 2-inch wooden boards bound securely on the outside. Caution shall be used to avoid damaging any bark or branches.

3) Duration of Type I, II, III fencing. Fencing shall be erected before demolition, grading or construction begins and remain in place until final landscaping is required. Contractor shall first obtain the approval of the project arborist on record prior to removing a tree protection fence.

4) Warning sign. Each tree fence shall have prominently displayed an 8.5 x 11-inch sign stating: "Warning— Tree Protection Zone-this fence shall not be removed and is subject to penalty according to Town Code 29.10.1025".

b) All persons, shall comply with the following precautions:

1) Prior to the commencement of construction, install the fence at the dripline, or tree protection zone (TPZ) when specified in an approved arborist report, around any tree and/or vegetation to be retained which could be affected by the construction and prohibit any storage of construction materials or other materials or vehicles inside the fence. The dripline shall not be altered in any way so as to increase the encroachment of the construction.

[8] If it is not possible to place Type 1 or Type 2 tree protection fencing at the dripline due to the construction, then place the fencing as far from the trunk as possible, including as much of the dripline as possible, while still allowing for enough room to build improvements. If this happens to be within all or some of the dripline, then so be it. But the contractor must try to fence off as much area under the canopy as possible, do not be irresponsible about this.

2) Prohibit excavation, grading, drainage and leveling within the dripline of the tree unless approved by the director.

3) Prohibit disposal or depositing of oil, gasoline, chemicals or other harmful materials within the dripline of or in drainage channels, swales or areas that may lead to the dripline of a protected tree.

4) Prohibit the attachment of wires, signs or ropes to any protected tree.

5) Design utility services and irrigation lines to be located outside of the dripline when feasible.

6) Retain the services of the certified or consulting arborist for periodic monitoring of the project site and the health of those trees to be preserved. The certified or consulting arborist shall be present whenever activities occur that pose a potential threat to the health of the trees to be preserved.

7) The director and project arborist shall be notified of any damage that occurs to a protected tree during construction so that proper treatment may be administered."

d. Native trees and shrubs shall be planted in existing non-native grassland on Lots 3 and 9 to enhance the vegetative cover within the 10-foot setback."

Tree Removal Impacts. The Two Access Alternative design was reviewed by the applicant's arborist, Michael Bench in October 2014, as well as the Town's arborist, Debbie Ellis, in November 2014. Both reports are included in Appendix C of this EIR. Based on Bench's evaluation that two large, protected oaks (#161 and 383) would be severely affected by the new Street B connection to Cerro Vista Court, the applicant modified the road alignment and potential building envelope on Lot 6. Debbie Ellis reviewed the modified alignment and relocated building envelope and determined that there would be minor root damage to Tree #383 from home construction and no impact on Tree #161.

Under the proposed project, there would be at least 4 protected oaks (#162, 544, 545, and 546) that could be severely affected by construction of the section of proposed Street B that crosses the ephemeral swale. Since this alternative eliminates this section of Street B, it also would avoid this significant impact. Therefore, this impact would reduce the severity of Impact 4.3-10 when compared to the proposed project. However, since this alternative, like the project, would still require removal of 25 protected oaks and 41 protected non-native/non-indigenous trees, as well as transplantation of 30 protected oaks and 4 non-native/non-indigenous trees, Mitigation Measure 4.3-10 would still be required under this alternative.

Geology and Soils

Since the number and configuration of lots under this alternative would be the same as for the proposed project, this alternative would be subject to the same degree of ground shaking (Impact 4.4-1), seismically-induced landslide hazards (Impact 4.4-2), debris flow hazards on Lots 8 and 9 (Impact 4.4-4), seismic hazard related to the same two water quality control/flow control basins (Impact 4.4-4), and other geotechnical hazards (Impact 4.4-4) as the proposed project. Like the proposed project, buildings constructed under the Two Access Alternative would be required to comply with the California Building

Code requirements related to seismic safety. Therefore, impacts related to ground shaking and seismically-induced landslides under this alternative would be less than significant, like those of the proposed project. Similarly, significant debris flow hazards on Lots 8 and 9 and other identified geotechnical hazards would be reduced to less than significant under this alternative with implementation of Mitigation Measures 4.4-4a, Debris Flow Protection, and 4.4-4b, Geotechnical Report Recommendations, as with the proposed project.

This alternative would involve less grading (1,300 c.y. less cut and 2,250 c.y. less fill) and would construct less surface area of streets and utilities (about 11,000 to 12,000 s.f. less) than the proposed project. Therefore, erosion hazards and the potential loss of topsoil associated with ground disturbance would be less than for the proposed project (Impact 4.4-3). Also, fewer utilities would be affected by the site's soils, which have a low to moderate potential for expansion (Impact 4.4-5). Like the proposed project, erosion hazards under this alternative would be less than significant with implementation of the requirements of the Construction General Stormwater Permit and the Town of Los Gatos Grading Permit, while the potential loss of topsoil and soils constraints would be less than significant with implementation of Mitigation Measures 4.4-3, Topsoil Salvage, and 4.4-3b, Geotechnical Report Recommendations.

Hydrology and Water Quality

With comparatively less grading involved and less impervious surface area constructed under this alternative, the following impacts would be less than those of the proposed project: (1) erosion hazards associated with ground disturbance (Impact 4.5-1); (2) post-construction stormwater runoff (Impact 4.5-1); (3) groundwater recharge (Impact 4.5-2); (4) alteration of existing drainage patterns (Impact 4.5-3); (5) impacts on the capacity of existing or planned stormwater drainage systems (Impact 4.5-4); and (6) potential inundation by seiche, tsunami, or mudflow (Impact 4.5-7). Like the proposed project, these impacts would be less than significant under this alternative with implementation of the requirements of the Construction General Stormwater Permit and Town of Los Gatos Grading Permit as well as compliance with C.3 requirements (whereby the project must manage increases in stormwater runoff rates and volumes so that post-development runoff does not exceed the estimated pre-development runoff rates and durations), which the Town will require as a condition of project approval. This alternative, however, would avoid construction of proposed Street B within the drainage swale (unnamed tributary to Ross Creek); therefore, potentially significant water quality impacts identified for the proposed project due to construction of Streets A and B would be less under this alternative. Nevertheless, since construction of Street A under this alternative would still adversely affect this swale, implementation of Mitigation Measures 4.3-7 through 4.3-9 (as modified above under Biological Resources, but listed under Mitigation Measures 4.5-1 and 4.5-3) would still be required under this alternative to reduce these impacts to a less-than-significant level.

Since the configuration and number of proposed lots would remain essentially the same as the proposed project, potential flooding impacts under this alternative would also be less than significant considering the placement of housing outside the 100-year flood hazard area and potential impedance or redirection of flood flows (Impact 4.5-6).

Transportation and Traffic

Construction. During project construction, because some of the excess excavated material would no longer be needed to fill in the swale to accommodate Street B as noted above, this alternative would increase the amount of excavated material that needs to be off-hauled from 3,950 c.y. to 4,900 c.y. (19% increase). This would result in an increase from about 247 truckloads (494 one-way truck trips or trip ends) to about 306 truckloads (612 one-way truck trips or trip ends). This increase in off-haul volume would either increase the duration from 15 days to 18 days or increase the daily volume from 6 truck trips (3 truckloads) per hour or 7 truck trips (3.5 truckloads) per hour if duration were to remain at 15 days. Despite this increase in construction-related truck trips, this impact would be less than significant (like the proposed project) because the Town will require, as a condition of approval, that the applicant implement an approved Traffic and Safety Control Plan, which would ensure that construction-related traffic, even at this higher level would not increase traffic congestion problems during project construction (Impact 4.6-1).

Operation. Under this alternative, the same number of lots would be developed and therefore, this alternative would generate the same number of trips: 96 daily, 8 AM peak hour and 10 PM peak hour trips. However, this alternative would alter the internal circulation system, so that four homes would use Cerro Vista Court and six homes would use Twin Oaks Drive for access. Under this alternative, up to 38 daily, 3 AM peak hour and 4 PM peak hour trips would be diverted to Cerro Vista Court, Cerro Vista Drive, Short Road, and Shannon Road, while project-related traffic on Twin Oaks Drive, Longmeadow Drive, and Kennedy Road would be proportionately reduced to 58 daily, 5 AM peak hour, and 6 PM peak hour trips. Since the existing traffic volumes on Twin Oaks Drive, Longmeadow Drive, Cerro Vista Court, and Cerro Vista Road are very low, these small traffic increases would likely be noticeable (though not significant from a CEQA standpoint). However, outside the immediate neighborhood, project-related traffic increases would not be noticeable to nearby residents. Shannon Road experiences much higher traffic volumes, with approximately 320 westbound and 120 eastbound trips during the AM peak hour. Therefore, project-related traffic increases on Shannon Road would not be noticeable to nearby residents. Project-related traffic increases on Kennedy Road would be less than significant under the proposed project, and with traffic levels decreasing on Kennedy Road under this alternative, they would also be less than significant under this alternative.

Under this alternative, cumulative traffic increases resulting from implementation of the Hillbrook School Expansion project in conjunction with this alternative design, would result in cumulative traffic increases during the AM peak hour on Kennedy Road and Shannon Road. As indicated in Section 5.4 above, cumulative traffic increases on Kennedy Road would have a less-than-significant impact on Kennedy Road intersections during the AM peak hour, and this impact would be even less under this alternative. Based on the Hillbrook School EIR, under Cumulative conditions (Background plus Hillbrook School plus Pending Projects), Shannon Road intersections with Englewood Drive and Hilow Road are projected to operate at LOS C and A, respectively, during the AM peak hour. Under this alternative, one or two trips could be moved from Shannon Road to Short Road and therefore, the impact on Shannon Road

would be less than significant. Therefore, this alternative's contribution to cumulative impacts on intersection operations would not be cumulatively considerable, a less-than-significant impact.

With respect to other traffic-related impacts (i.e., conflicts with transportation plans and programs related to roadways, highways, freeways, public transit, pedestrian and bicycle facilities, the Santa Clara County Congestion Management Program, and safety hazards), they would be less than significant under the proposed project and would also be less than significant under this alternative (Impacts 4.6-2, 4.6-3, and 4.6-5). However, when this alternative is compared to the proposed project, the response time to the four residences accessed by Cerro Vista Court would be faster because the distance between the fire station and these residences would be shorter under this alternative. While the response time by the fire department to all project residences would be acceptable (therefore, there is no significant impact under the proposed project or this alternative), Impact 4.6-4 is considered to be slightly less under this alternative than the proposed project because of the slightly shorter response time to four of the residences.

Noise

Construction. This alternative would involve less grading (1,300 c.y. less cut and 2,250 c.y. less fill) and would construct less surface area of streets and utilities (about 11,000 to 12,000 s.f. less) than the proposed project. With less grading and road/infrastructure construction required, there would be less operation of heavy equipment in the vicinity of the drainage swale. However, since this swale is located away from adjacent noise-sensitive receptors, such reductions in construction noise would not substantially reduce potential noise impacts on adjacent receptors. Therefore, construction-related noise increases at adjacent receptors under this alternative would still be potentially significant, like the proposed project, and implementation of Mitigation Measure 4.7-1, Administrative and Source Controls, would be required to reduce this impact to a less-than-significant level.

Under this alternative, construction duration and associated on-site construction-related noise increases would be less because less grading and road/infrastructure construction would be required in the center of the site, away from adjacent receptors. This reduction in noise impact, however, would be partially offset by the temporary increase in haul trucks (for two more days) and associated increase in truck noise on local access roads under this alternative. Still, overall, this alternative would result in less construction-related noise impacts overall since it would entail less grading and construction (Impact 4.7-1).

Although there would be less grading and road/infrastructure construction required in the center of the site under this alternative, the potential for vibration impacts would be the same as for the proposed project since operation of construction equipment in proximity to adjacent structures would be the same for both the proposed project and the Two Access Alternative (Impact 4.7-2).

Operation. Under this alternative, 60% of project-generated traffic would use Twin Oaks Drive, Longmeadow Drive, and Kennedy Road to access the site, while 40% would use Cerro Vista Court, Cerro Vista Drive, and Shannon Road. Project residents living along Street A (served from Twin Oaks Drive)

would be exposed to a combination of wildlife noise, existing traffic noise, and project-related traffic noise from six project homes served by Street A; and project-related traffic noise on Street A would be less under this alternative than the proposed project. Noise exposure at the project residence closest to Cerro Vista Court would similarly be a combination of wildlife noise, existing traffic noise, and project-related traffic noise from four project homes served by Street B. Hillbrook School would contribute the same levels of noise under both the proposed project and this alternative.

Under this alternative, the project residence located closest to Twin Oaks Drive would be subject to future noise levels of 52 dB DNL,[9] which is below the Town's 55-dB DNL noise goal and considered acceptable (Impacts 4.7-3 and 4.7-4). The project residence located closest to Cerro Visa Court would also be subject to future noise levels of 52 dB DNL,[10] which is below the Town's 55-dB DNL noise goal and considered acceptable (Impacts 4.7-3 and 4.7-4). Since the lot configurations and potential building envelopes under the Two Access Alternative would be similar to those of the proposed project, noise exposure of the project residence located closest to Hillbrook School would be the same as under the proposed project, within the Town's 55 dB DNL noise goal (Impact 4.7-4).

Since this alternative would have the same number of lots as the proposed project, it also would generate 96 daily trips. However, under this alternative, 38 of these daily trips would divert to Cerro Vista Court while the remaining 58 daily trips would occur on Twin Oaks Drive. Although project-related traffic increases on Twin Oaks Drive would be less under this alternative than the proposed project, project-related traffic increases would still result in a 1 dB increase on this road (see Appendix G for more details on this calculation). The total traffic noise exposure would be 51 dB DNL and when combined with the background noise exposure of 52 dB DNL, the total noise exposure on Twin Oaks Drive would be up to 55 dB DNL. Such noise exposures would not exceed the Town's 55 dB DNL noise goal. Based on the significance thresholds outlined in Section 4.7.3, the project's 1-dBA noise increase would be less than significant and overall noise levels would not exceed the Town's 55-dB DNL noise goal (Impact 4.7-3).

The existing ambient noise exposure at 40 feet from the centerline of Cerro Vista Court is 52 dB DNL and is due primarily to normal neighborhood noise and wildlife. Existing traffic volumes on Cerro Vista Court are currently 48 daily trips, which generate a noise level of 36 dB DNL at 40 feet. The much closer property line of the most impacted residence located directly across Cerro Vista Court is approximately 10 feet from this road's centerline, and the noise exposure at this property line is 53 dB DNL, mostly attributable to neighborhood and wildlife noise and less attributable to traffic. Under this alternative, the project is expected to add 38 daily trips to the existing volume of 48 daily trips for a total volume of 86

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[9] 52 dB DNL (wildlife) + 32 dB DNL (existing traffic) + 23 dB DNL (project traffic) = 52 dB DNL. See the detailed noise study in Appendix G for more information.

[10] 52 dB DNL (wildlife) + 36 dB DNL (existing traffic) + 35 dB DNL (project traffic) = 52 dB DNL. See the detailed noise study in Appendix G for more information.

daily trips. This traffic increase would increase traffic noise exposure from 45 dB DNL to 48 dB DNL at the front property line of the residence along Cerro Vista Court, a 3-decibel increase. When traffic noise increases are combined with neighborhood and wildlife noise, the combined noise exposure at this residence's front property line would be up to 54 dB DNL, mostly attributable to neighborhood noise and wildlife and less attributable to the traffic). Although a 3-decibel increase could be perceptible to some people, the overall noise levels would not exceed the Town's 55-dB DNL noise goal. Based on the significance thresholds outlined in Section 4.7.3, a 3-decibel increase where ambient noise levels remain below 55 dB DNL would be less than significant (Impact 4.7-3).

Air Quality

Construction. Since the Two Access Alternative would involve less grading and would construct less surface area of streets and utilities, there would be less operation of heavy equipment and associated air pollutant emissions. However, this reduction in emissions would be partially offset by the increase in off-haul volume and haul truck emissions that would also occur under this alternative. Construction-related emissions associated with this alternative are listed in **Table 5-2**. When compared to construction-related emissions for the proposed project (listed in Table 4.8-3), this alternative would result in slightly lower emissions ROG levels, but slightly higher daily emissions of NO_X, CO, and PM_{10}, and $PM_{2.5}$ because of the lower off-road equipment emissions and higher on-road haul truck emissions. However, construction-related emissions from operation of construction equipment and haul trucks under both the proposed project and this alternative would not exceed the EIR significance thresholds (outlined in Section 4.8), a less-than-significant impact (Impact 4.8-2). Like the proposed project, the BAAQMD CEQA Air Quality Guidelines consider fugitive dust and exhaust emissions to be less than significant if Best Management Practices (BMPs) are employed to reduce these emissions. Therefore, implementation of Mitigation Measure 4.8-2, BAAQMD Basic Construction Measures, would still be required under this alternative to reduce this impact to less than significant.

TABLE 5-2

PROJECT CONSTRUCTION CRITERIA POLLUTANT EMISSIONS

	Average Daily Emissions (pounds/day)					
Project Activity	**ROG**	**NO_X**	**CO**	**SO_2**	**PM_{10} (Total)**	**$PM_{2.5}$ (Total)**
Project Construction[a]						
– 2015 Off-Road Equipment Emissions – Unmitigated	10.7	45.8	30.8	0.1	9.1	5.4
– 2015 Off-Road Equipment Emissions – Mitigated	10.7	45.8	30.8	0.1	5.6	3.6
Significance Thresholds	54	54	-	-	82	54
Exceeds Significance Thresholds?	No	No	-	-	No	No

NOTES: ROG = reactive organic gases; NO_X = nitrogen oxides; CO = carbon monoxide; SO_2 = sulfur dioxide; exhaust PM_{10} = particulate matter less than 10 microns; exhaust $PM_{2.5}$ = particulate matter less than 2.5 microns.

[a] Construction assumptions: grading over 15 days using 1 dozer, 1 grader, 2 backhoes; construction over 220 days using 1 crane, 2 forklifts, 1 generator set, 1 loader/backhoe/tractor, and 3 welders; and paving over 10 days: 1 cement mixer, 1 paver, 1 paving equipment, 2 rollers, and 1 loader/backhoe/tractor.

SOURCE: CalEEMod Output (see Appendix H)

Although $PM_{2.5}$ emissions would be slightly higher (less than 2%) under this alternative, the slightly higher construction-related health risks associated with DPM and TAC emissions from construction would remain well below the EIR significance thresholds and therefore, potential health risks would be less than significant under this alternative (Impact 4.8-4).

Nuisance odors are generated by diesel equipment during construction activities. While there would be less operation of diesel equipment on-site under this alternative, there would be an increase in diesel haul trucks on local roads. Therefore, the potential for nuisance diesel odors would the same under both the project and this alternative, less than significant due to its short-term nature (Impact 4.8-5).

Operation. With the same number of lots proposed under this alternative as the proposed project, this alternative's criteria pollutant emissions also would not conflict with or obstruct implementation of the applicable Air Quality Plan (Impact 4.8-1).

Under the proposed project and this alternative, project residents would generate operational criteria pollutant emissions from both area and mobile sources associated with normal daily residential activities. With the same number of proposed lots under this alternative as the proposed project, this alternative would generate essentially the same level of operational air pollutant emissions as the proposed project (Impact 4.8-3). Although the distribution of traffic on local roadways would vary within the immediate project vicinity under this alternative, such variation makes a negligible difference from an air pollution standpoint; thus, overall air pollutant contributions to the project region from 10 residences would be essentially the same. Therefore, operational emissions from this alternative, like the proposed project, would not exceed the EIR significance thresholds (outlined in Section 4.8), a less-than-significant impact.

Greenhouse Gases

The Two Access Alternative would involve less grading and would construct less surface area of streets and utilities, but would result in more off-haul of excavated materials. Overall, however, this alternative would generate slightly lower construction-related GHG emissions than the proposed project (350 MT CO_2e as compared to the project's 358 MT CO_2e). Such GHG emissions are considered to be less than significant for the same reasons they are considered less than significant for the proposed project (Impact 4.9-1).

With the same number of lots proposed under this alternative as the proposed project, this alternative would generate essentially the same level of operational GHG emissions as the proposed project (140.9 MT CO_2e). Although the distribution of traffic on local roadways would vary within the immediate project vicinity under this alternative, such variation makes a negligible difference from a GHG standpoint; thus, overall GHG emissions from 10 residences would be essentially the same. Since such emissions would not exceed the EIR's significance threshold of 1,100 MT CO_2e, operational GHG emissions under this alternative would also be less than significant (Impact 4.9-1). With the same number and configuration of proposed lots, this alternatives consistency with the Sustainability Plan would be the same as the proposed project, a less-than-significant impact (Impact 4.9-2).

Hazards and Hazardous Materials

With the same number of proposed lots under this alternative as the proposed project, this alternative would produce the same types and quantities of household hazardous wastes; and implementation of Mitigation Measure 4.10-1, Implement Buyer Education Program for Household Hazardous Waste, would also be required under this alternative. In addition, with the configuration of proposed lots and locations of potential building envelopes essentially the same as the proposed project, this alternative would result in the same less-than-significant impacts related to a release of hazardous materials to the environment (Impact 4.10-2) and wildland fire risks (4.10-3). Since the project is located within a Very High Fire Hazard area, the proposed design and siting of future residences under both the proposed project and this alternative would be required to comply with policies of the Los Gatos General Plan and the HDSG intended to minimize fire hazards.

Cultural Resources

This alternative would involve less grading (1,300 c.y. less cut and 2,250 c.y. less fill) than the proposed project, and therefore, this alternative would have a slightly lower potential to encounter any unknown subsurface archaeological and paleontological resources. Still, the potential to encounter such resources during construction of proposed roads, infrastructure, or future residences (which would be in the same locations as the proposed project) would exist, and Mitigation Measures 4.11-1, Observation of Construction Personnel, and 4.11-2, Halt Construction and Evaluate Resource, would be required under this alternative to reduce potential impacts to less than significant.

Public Services, Utilities, and Service Systems

Since the number and configuration of lots under this alternative would be the same as the proposed project, this alternative would have the same less-than-significant impacts on public services, utilities, and service systems (Impacts 4.12-1 through 4.12-6) as the proposed project.

Recreation

Under this alternative, the number of lots would be the same as the proposed project. Therefore, the less-than-significant impacts on recreational facilities that would occur under the proposed project would also occur under this alternative (Impacts 4.13-1 and 4.13-2).

Energy Conservation

Construction. The potential for wasteful, inefficient, or unnecessary use of energy associated with construction of this alternative would be slightly less than the proposed project because less grading would occur on-site and less materials would be required to construct the shorter Street B. While this reduction would be partially offset by increased haul truck operation because there would be more off-haul of excavated materials, overall energy use would be slightly lower under this alternative (indicated by construction-related GHG emissions estimated above). Still, implementation of Mitigation Measure 4.8-2, BAAQMD Basic Construction Measures, would still be required under this alternative (as it would

be required for the proposed project) to avoid excessive idling by construction-related trucks and equipment (i.e., wasteful use of energy). (Impact 4.14-1)

Operation. Since this alternative would have the same number of lots as the proposed project, the project's potential operational impacts related to wasteful or inefficient use of energy associated would also occur under this alternative. Such impacts would be less than significant for the project as well as this alternative with the Town's required conformance to greenhouse gas reduction measures outlined in the Town's Sustainability Plan. In addition, future project homes must comply with the 2013 California Energy Code (adopted by the Town of Los Gatos) and appliances must comply with the 2014 Appliance Efficiency Regulations specified in Title 20 of the California Code of Regulations. (Impact 4.14-2)

5.5.6 TWO ACCESS + TWO EVA ALTERNATIVE

The Two Access + Two EVA Alternative would have the same road alignments as the proposed project, but the north end of Street B would have the same alignment as the Two Access Alternative where it connects with Cerro Vista Court. Street B would be gated between Street A and Lot 10, however, in order to restrict access to emergency vehicles only. Since this gated section of Street B would be an EVA, it is possible that this street section could be narrowed from 22 feet (the width under the proposed project) to 15 feet (per the fire department standards) and surfaced with compacted base rock only instead of asphalt (subject to approval of the Fire Department). With this design, access to project lots would be the same as with the Two Access Alternative, with six project lots accessing from Twin Oaks Drive and four lots accessing from Cerro Vista Court. Although this alternative would not reduce project impacts as much as the Two Access Alternative (because that alternative avoids road construction across the ephemeral swale altogether), it would provide greater public safety benefits by providing more secondary emergency access options to the neighborhood while also reducing the amount of grading required and impacts on the ephemeral swale as compared to the proposed project.

Under this alternative, the entitlements needed for the project proposal (General Plan amendment, rezoning, Tentative Tract Map, and cancellation of the Williamson Act contract, as listed in Section 3.4) would remain the same. The proposed EVA between Street A and Brooke Acres Drive would remain the same. In addition, the number and configuration of lots would be the same as those of the proposed project (i.e., all lots would be one acre or larger, as listed in Table 3-1). The potential building envelopes under this alternative would be the same as for the proposed project (see Figure 3-2). Since the lot layout and road alignments would be the same, it is anticipated that the road widths, lengths, and grades would be the same as for the proposed project with one exception. Under this alternative, the EVA section of Street B would be narrowed to 15 feet and possibly surfaced with compacted base rock instead of asphalt since access would be restricted to emergency vehicles only.[11] Under this alternative, the trail location and

[11] Email communication dated December 2, 2014 from Doug Harding, Santa Clara County Fire Department, to Marni Moseley, Los Gatos Community Development Department, indicating that the minimum required clear net widths are 20 feet roadways, 15 feet for secondary access roads (intended only for emergency vehicles), and 12 feet for driveways serving no more than 2 single-family residences.

design would remain the same as the proposed project. Utility connections and alignments under this alternative would be the same as the proposed project (Figure 3-6).

Proposed grading under this alternative could be less than for the proposed project with the EVA section of Street B is narrowed to 15 feet. A narrower width and possible pervious surfacing with compacted rock for the section of Street B that crosses the ephemeral swale could also reduce impacts on trees that are currently identified as being severely impacted by the proposed project or that would have to be removed to accommodate project development. However, since the excavated material would be used as fill in the swale vicinity (like the Two Access Alternative), there would be less fill needed for the narrower road. Thus, this alternative could require slightly more off-haul than the proposed project, but less than the Two Access Alternative.

CONSISTENCY WITH PROJECT OBJECTIVES

Like the proposed project, this alternative would meet the above-listed project applicant's and Town's objectives to develop 10 residential lots and provide emergency access connections by connecting Twin Oaks Drive with Brooke Acres Drive (like the project). The Town's objectives, based on referenced policies from the 2020 General Plan, the HDSG, and the HSP, relate to: (1) preserving beauty, ecological integrity, natural topography, natural drainages, ecosystems (including vegetation, wildlife habitats, and movement corridors), ridgelines, and rural/natural/open space character; (2) ensuring development visually blends and achieves harmony between the natural and built environment; and (3) clustering development to preserve the scenic nature of the hillsides while allowing for economies in the construction of required public and private facilities. Since the lot layout for this alternative is essentially the same as the proposed project, this alternative is also considered to meet these objectives for the same reasons presented in the policy consistency tables in Sections 4.1, Land Use, and 4.2, Aesthetics.

CONSISTENCY WITH PLANS AND POLICIES

Throughout Chapter 4, the proposed project was evaluated for consistency with pertinent plans and policies. Since the lot and roadway layout would be the same as the proposed project, the Two Access + Two EVA Alternative also would be consistent with goals and policies of the Town of Los Gatos 2020 General Plan, the HSP, and the HDSG. Project consistency with policies relate to the project's physical impacts and these impacts are discussed in Sections 4.1 (Land Use), 4.2 (Aesthetics), 4.3 (Biological Resources), 4.4 (Geology and Soils), 4.5 (Hydrology and Water Quality), 4.6 (Traffic and Circulation), 4.7 (Noise), 4.8 (Air Quality), 4.9 (Greenhouse Gas Emissions), 4.10 (Hazards and Hazardous Materials), 4.11 (Cultural Resources), 4.12 (Public Services, Utilities, and Service Systems), 4.13 (Recreation), and 4.14 (Energy Conservation). All impacts related to land use, aesthetic, traffic, operational noise, operational air quality, greenhouse gas emissions, public services/utilities/service systems, and recreation were determined to be less than significant for the proposed project. Potentially significant impacts were identified for the proposed project under the following topics: biological resources, geology/soils, hydrology/water quality, construction-related noise and air quality, hazardous materials, cultural resources, and energy conservation. However, mitigation measures specified in Chapter 4 would reduce

these impacts to less than significant, ensuring consistency with policies intended to reduce environmental impacts. Like the proposed project, this alternative would also be consistent with identified policies.

The primary difference between the project and this alternative's consistency with pertinent plans and policies would be consistency with the HSP's policy on secondary emergency access. The project's consistency with these HSP policies is discussed in Section 4.6.3, Regulatory and Planning Framework in the Transportation and Traffic section. Consistency of this alternative with these policies would be similar, but this alternative would be more consistent than the project because it would provide secondary emergency access to three dead end streets (Twin Oaks Drive, Brooke Acres Drive, and Cerro Vista Court), whereas the project would provide secondary emergency access to only two dead end streets (Twin Oaks Drive and Brooke Acres Drive). With more emergency access connectivity, this alternative is considered to be more consistent with this HSP policy than the proposed project and the Two Access Alternative.

IMPACT COMPARISON

Since the lot layout and road alignments would be the same as for the proposed project, most of the environmental effects of this alternative would be the same as those of the proposed project. However, since project roads would connect to existing streets like the Two Access Alternative, some impacts under this alternative would be more similar to the Two Access Alternative. Due to this alternative's similarity to the proposed project, it is expected that the significance determinations of the environmental impacts identified in Chapter 4 would be similar for this alternative; all would be less than significant or less than significant with implementation specified mitigation measures. However, narrowing of EVA section of Street B from 22 feet to 15 feet wide (per the fire department standards) could slightly reduce grading impacts and possible impacts on trees but slightly increase the amount of excavated materials to be off-hauled, when compared to the proposed project.

A comparison of the environmental effects of this alternative, the proposed project, and Two Access Alternative is described as follows and summarized below in Table 5-3. The following impacts would be the same for this alternative as they would be for the proposed project: Land Use (Impacts 4.1-1 through 4.1-3), Aesthetics (Impacts 4.2-1 through 4.2-4), Biological Resources (Impact 4.3-1), Geology/Soils (Impacts 4.4-1, 4.4-2, and 4.4-5), Hydrology/Water Quality (Impacts 4.5-5 through 4.5-7), Transportation/Traffic (Impacts 4.6-1 through 4.6-3, and 4.6-5), Vibration (Impact 4.7-2), Air Quality (Impacts 4.8-1 through 4.8-5), Greenhouse Gas Emissions (Impact 4.9-2), Hazards/Hazardous Materials (Impacts 4.10-1 through 4.10-3), Public Services/Utilities/Service Systems (Impacts 4.12-1 through 4.12-6), Recreation (Impacts 4.13-1 and 4.13-2), and Energy Conservation (Impact 4.14-2).

If the EVA section of Street B is allowed to be narrower than the proposed width, the slightly reduced grading and filling requirements in the vicinity of the ephemeral swale could result in slightly less cut and fill volumes and surface disturbance, and fewer impacts on trees. Therefore, potential biological impacts on the following species (if present) would also be proportionately less: nesting white-tailed kites and other special-status and migratory birds (Impact 4.3-2), special-status species San Francisco dusky-footed woodrat (Impact 4.3-3), special-status bats (Impact 4.3-4), red-legged frogs and foothill yellow-legged

frogs (Impact 4.3-5). Like the project, however, specified mitigation would still be required under this alternative in order to reduce these potential impacts to less than significant. Less than significant impacts on wildlife habitats (including habitat for special-status species) and movement under the proposed project would also be slightly less under this alternative with the narrower roadway (Impacts 4.3-6, 4.3-11, and 4.2-12). With the narrower width, impacts related to constructing the EVA section of Street B across the ephemeral creek would be slightly less than those of the proposed project (Impacts 4.3-7 through 4.3-10). Possible use of permeable, compacted base rock instead of asphalt for the EVA's surface under this alternative would also reduce impacts on adjacent trees to be retained. In addition, erosion hazards and the potential loss of topsoil associated with ground disturbance would be slightly less than the proposed project (Impact 4.4-3), while water quality and drainage impacts would also be slightly less than the proposed project (Impacts 4.5-1 through 4.5-4), particularly with the possible use of permeable, compacted base rock instead of impermeable asphalt for the EVA's surface.

With Street B's connection to Street A being restricted to emergency vehicles, this alternative's circulation system would function like the Two Access Alternative, with six project lots accessing from Twin Oaks Drive and four lots accessing from Cerro Vista Court. Therefore, this alternative's operational traffic and associated noise impacts would be the same as the Two Access Alternative with noticeable traffic increases on Twin Oaks Drive, Longmeadow Drive, Cerro Vista Court, and Cerro Vista Road (noticeable but less than significant because existing traffic volumes on this street are very low). However, traffic volumes would remain well within these roadway's traffic capacities and noise increases would not exceed the Town's significance threshold for traffic noise increases. Like the proposed project and Two Access Alternative, these traffic and noise impacts would be less than significant (Impacts 4.6-1, 4.7-3, and 4.7-4) and this alternative's contribution to cumulative impacts on intersection operations also would not be cumulatively considerable.

Similar to the Two Access Alternative, the response time to the four residences accessed by Cerro Vista Court under this alternative would be faster than the response time to these same residences under the proposed project because the distance between the fire station and these residences would be shorter. While the response time by the fire department to all project residences would be acceptable (therefore, there is no significant impact under the proposed project or this alternative), Impact 4.6-4 is considered to have the lowest impact under this alternative when compared to the proposed project and Two Access Alternative because of the slightly shorter response time to four of the residences as well as secondary emergency access provided to existing adjacent residences as well as project residences.

During construction, on-site noise impacts would be slightly less than the proposed project due to the narrower width of the EVA section of Street B and possible use of compacted base rock for the road surface instead of asphalt (Impact 4.7-1). However, this slight decrease in on-site noise impacts would be partially offset by the slight increase in off-site noise impact associated with slightly more off-haul requirements since less fill would be required in the swale vicinity. Still the overall duration of road construction is expected to be slightly shorter than the proposed project. With less grading required, the potential to encounter unknown subsurface archaeological or paleontological resources would also be less (Impact 4.11-1 and 4.11-2). Similarly, energy use would be slightly less with the narrower, unpaved EVA

section of Street B because less grading would result in less fuel used by equipment (Impact 4.14-1). With less fuel used and possible use of base rock instead of asphalt, construction-related greenhouse gas emissions would also be less under this alternative. Construction-related air pollutant emissions would be slightly less with the narrower EVA section of Street B because less grading would result in lower equipment emissions, but this decrease could be offset by slight increases in haul truck emissions associated increased off-haul (Impact 4.8-2, 4.8-4, and 4.8-5). Hence, air quality impacts overall would be similar to the proposed project.

5.5.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The CEQA Guidelines Section 15126.6(e)(2) provides that "[i]f the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." Although neither CEQA nor the CEQA Guidelines creates a methodology for making this determination, under the Town's methodology the Environmentally Superior Alternative would be the alternative that results in the fewest overall environmental impacts.

Notably, CEQA does not require lead agencies to approve the Environmentally Superior Alternative, even if it is feasible. Rather, the requirement to identify the Environmentally Superior Alternative is informational only, except where a number of factors are present. The only scenario in which a lead agency would be required to adopt the Environmentally Superior Alternative would be where: (1) a project as proposed has significant unavoidable environmental effects; (2) the Environmentally Superior Alternative is the only EIR alternative that substantially lessens or avoids these significant unavoidable effects; (3) the Environmentally Superior Alternative is feasible; and (4) the project proponent prefers approval of the Environmentally Superior Alternative to an outright denial of the proposed project. Such circumstances do not exist with respect to the proposed Surrey Farm Estates project.

The preceding discussion compares the impacts of various alternatives with those of the proposed project and a tabular comparison summary is presented in **Table 5-3**. As noted above, all of the project's impacts were determined to be less than significant or less than significant with implementation of specified mitigation measures. The No Project Alternative would avoid these environmental impacts and therefore, would be the Environmentally Superior Alternative. However, with all properties adjacent to this project site already developed with residential uses and continued pressure for more housing in the region, it is likely that there will be future proposals involving development of this property. Thus, at some point in the foreseeable future, development of the project site would be likely to occur – if not through the present application, then through a future one.

Since the Environmentally Superior Alternative is the No Project Alternative, the CEQA Guidelines requires the EIR to identify the Environmentally Superior Alternative among the other alternatives, as noted above. For the reasons discussed below, the Two Access Alternative is considered to be the Environmentally Superior Alternative amongst the action alternatives. The Two Access Alternative would result in fewer impacts overall than the proposed project, and impact reductions are greater under this alternative than under the Two Access + Two EVA Alternative (noted in Table 5-3). The Two Access

Alternative also would be more consistent with Town policies than the proposed project due to the shorter response time to the upper lots by the fire department and shorter length of Street B. The Two Access + Two EVA Alternative, while providing an additional secondary emergency access, would result in the same impacts as the proposed project (although slightly less because of the narrower EVA section of Street B and possible use of compacted base rock instead of asphalt along the EVA section) and would also result in similarly noticeable (but less than significant) traffic and associated noise increases on Cerro Vista Court as the Two Access Alternative (with corresponding decreases on Twin Oaks Drive).

As explained above, the Town's final decision-making body (i.e., the Town Council) has the authority to approve the proposed project over the Environmentally Superior Alternative if the body finds that the mitigation measures recommended for the project will be adopted and will reduce the potentially significant impacts to less-than-significant levels. This is because CEQA is only concerned with *significant* environmental effects, and agencies fully satisfy their CEQA obligations by approving projects with less than significant effects, even if there are other choices with even lower levels of impacts. As noted above, all potentially significant impacts associated with the proposed project could be reduced to less than significant with the adoption of recommended mitigation measures.

REFERENCES – CEQA CONSIDERATIONS

Edward L. Pack Associates, Inc., 2014. *Noise Assessment Study for the Planned Surrey Farm Estates, Single-Family Subdivision, Twin Oaks Drive, Los Gatos. Project No. 46-037.* September 29. (Included as Appendix G of this EIR)

Hexagon Transportation Consultants, Inc., 2014. *Traffic Study for the Surrey Farm Estates Development in Los Gatos, California*. May 30, 2014. (Included as Appendix F of this EIR)

Town of Los Gatos, 2010a. *Town of Los Gatos 2020 General Plan,* September 20. Available online at http://www.losgatosca.gov/index.aspx?NID=27.

Town of Los Gatos, 2010b. *Town of Los Gatos 2020 General Plan Final Environmental Impact Report*. June 16.

TABLE 5-3

SUMMARY COMPARISON OF PROJECT ALTERNATIVES

Potential Impact	Proposed Project Impact Significance	Mitigation Measure	Impact Similar but Greater than (>), Less than (<), Less than or Equal to (≤), or the Same (=) as Proposed Project*		
			No Project	Two Access	Two Access + Two EVAs
Meets Principal Project Applicant Objectives?	Yes	--	No	Yes	Yes
Consistent with Pertinent Plans and Policies?	Yes	With Implementation of Specified Mitigation Measures	<	>	>>
Land Use					
4.1-1: The project would not physically divide an established community.	Less than Significant (LS)	None Required	< (LS)	= (LS)	= (LS)
4.1-2: The project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.	Less than Significant	None Required	< (LS)	= (LS)	= (LS)
4.1-3: The project would conflict with the site's current zoning designation (Agriculture) and Williamson Act Contract, and would require rezoning and contract cancellation as proposed.	Less than Significant	None Required	< (LS)	= (LS)	= (LS)
Aesthetics					
4.2-1: The project would not substantially affect scenic vistas.	Less than Significant	None Required	< (LS)	= (LS)	= (LS)
4.2-2: The project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.	Less than Significant	None Required	< (LS)	= (LS)	= (LS)
4.2-3: The project would not substantially degrade the visual character or quality of the site and its surroundings.	Less than Significant	None Required	< (LS)	= (LS)	= (LS)

* The symbols "<<" or ">>" indicate that an alternative's reduction or increase in an impact is greater than the reduction (<) or increase (>) occurring under the other alternative(s). For example, the Two Access Alternative would have a greater reduction in biological and water quality impacts than the Two Access + Two EVA Alternative.

TABLE 5-2 (CONTINUED)

SUMMARY COMPARISON OF PROJECT ALTERNATIVES

Potential Impact	Proposed Project Impact Significance	Mitigation Measure	Impact Similar but Greater than (>), Less than (<), Less than or Equal to (≤), or Same (=) as Proposed Project*		
			No Project	Two Access	Two Access + Two EVAs
4.2-4: The project would not create new sources of substantial light or glare, which would adversely affect day or nighttime views in the area.	Less than Significant (LS)	None Required	< (LS)	= (LS)	= (LS)
Biological Resources					
4.3-1: Project development would not have a substantial adverse effect, either directly or through habitat modification, to special-status plant species.	Less than Significant	None Required	< (LS)	= (LS)	= (LS)
4.3-2: Project development could have a substantial adverse effect, either directly or through habitat modification, to nesting white-tailed kites and other special-status and migratory birds.	Less than Significant with Mitigation (LSM)	4.3-2, Protection of Nesting Special-status and Migratory Birds	< (LS)	<< (LSM)	< (LSM)
4.3-3: Project development could have a substantial adverse effect, either directly or through habitat modification, to the special-status species San Francisco dusky-footed woodrat, which is present on-site.	Less than Significant with Mitigation	4.3-3, Protection of San Francisco Dusky-footed Woodrat	< (LS)	<< (LSM)	< (LSM)
4.3-4: Project development could have a substantial adverse effect, either directly or through habitat modification, to special-status bats, identified as candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS, which may occur on-site.	Less than Significant with Mitigation	4.3-4, Protection of Roosting Bats	< (LS)	<< (LSM)	< (LSM)
4.3-5: Project development could have a substantial adverse effect, either directly or through habitat modification, to California red-legged frogs and foothill yellow-legged frogs.	Less than Significant with Mitigation	4.3-5, Protection of California Red-legged Frogs and Foothill Yellow-legged Frogs	< (LS)	<< (LSM)	< (LSM)

* The symbols "<<" or ">>" indicate that an alternative's reduction or increase in an impact is greater than the reduction (<) or increase (>) occurring under the other alternative(s). For example, the Two Access Alternative would have a greater reduction in biological and water quality impacts than the Two Access + Two EVA Alternative.

4.3-6: Project development would not substantially reduce the habitat of any wildlife species, cause any wildlife populations to drop below self-sustaining levels, threaten to eliminate a plant or animal community or substantially reduce the number or restrict the range of rare or endangered plant or animal species through the loss or fragmentation of habitats.	Less than Significant (LS)	None Required	< (LS)	<< (LS)	< (LS)
4.3-7: Project development could adversely affect a surface tributary presumed to fall under the jurisdiction of the USACE, CDFG and/or RWQCB pursuant to federal and State law.	Less than Significant with Mitigation (LSM)	4.3-7, Conformance with Applicable Federal and State Regulations	< (LS)	<< (LSM)	< (LSM)
4.3-8: Project development would adversely affect the riparian habitat of Ross Creek and an unnamed tributary to Ross Creek located within the project site.	Less than Significant with Mitigation	4.3-8, Creek and Swale Protections	< (LS)	<< (LSM)	< (LSM)
4.3-9: Project implementation would require an exception to the *Guidelines* by encroaching into the recommended riparian setback.	Less than Significant with Mitigation	**4**.3-9, Riparian Encroachment Offsets	< (LS)	<< (LSM)	< (LSM)
4.3-10: Project implementation would remove about 70 protected trees and transplant approximately 30 protected trees on the project site, which would directly or indirectly affect approximately 0.51 acres of mixed oak woodland.	Less than Significant with Mitigation	4.3-10, Tree Mitigation and Monitoring Plan	< (LS)	<< (LSM)	< (LSM)
4.3-11: Project development would result in the loss of habitat for native wildlife.	Less than Significant	None Required	< (LS)	<< (LS)	< (LS)
4.3-12: Project development would not substantially interfere with the movement of any native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.	Less than Significant	None Required	< (LS)	<< (LS)	< (LS)
Geology and Soils					
4.4-1: The proposed project would not result in exposure of people and structures to potential adverse effects, including risk of loss, injury, or death involving strong ground shaking.	Less than Significant	None Required	< (LS)	= (LS)	= (LS)

* The symbols "<<" or ">>" indicate that an alternative's reduction or increase in an impact is greater than the reduction (<) or increase (>) occurring under the other alternative(s). For example, the Two Access Alternative would have a greater reduction in biological and water quality impacts than the Two Access + Two EVA Alternative.

4.4-2: The proposed project would not result in exposure of people and structures to potential adverse effects, including risk of loss, injury, or death involving seismically-induced landslides.	Less than Significant (LS)	None Required	< (LS)	= (LS)	= (LS)
4.4-3: The proposed project would not result in substantial erosion, but could result in the loss of topsoil.	Less than Significant with Mitigation (LSM)	4.4-3, Topsoil Salvage	< (LS)	<< (LSM)	< (LSM)
4.4-4: The proposed project could cause a geologic unit to become unstable as a result of project construction.	Less than Significant with Mitigation	4.4-4a, Debris Flow Protection 4.4-4b, Geotechnical Report Recommendations	< (LS)	<< (LSM)	< (LSM)
4.4-5: The proposed residences and utilities could be affected by expansive soils.	Less than Significant with Mitigation	4.4-5: Mitigation Measure 4.4-4b	< (LS)	< (LSM)	= (LSM)
Hydrology and Water Quality					
4.5-1: The proposed project could violate water quality standards or waste discharge requirements, or otherwise substantially degrade water quality.	Less than Significant with Mitigation	4.5-1a: Mitigation Measures 4.3-7, Conformance with Applicable Federal and State Regulations, and 4.3-8, Creek and Swale Protection 4.5-1b: C.3 Compliance	< (LS)	<< (LSM)	< (LSM)
4.5-2: The proposed project would not 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.	Less than Significant	None Required	< (LS)	<< (LS)	< (LS)
4.5-3: Project implementation could substantially alter the existing drainage pattern of the site or area by altering the course of a stream or incrementally increasing surface runoff from impervious surfaces in such a manner that could result in substantial erosion, siltation, or flooding on- or off-site.	Less than Significant with Mitigation	4.5-3: Mitigation Measures 4.3-7, Conformance with Applicable Federal and State Regulations, 4.3-8, Creek and Swale Protection, and 4.3-9, Riparian Encroachment Offsets	< (LS)	<< (LSM)	< (LSM)

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4.5-4: Project implementation would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or introduce new sources of polluted runoff.	Less than Significant (LS)	None Required	< (LS)	<< (LS)	< (LS)
4.5-5: Project implementation would not cause significant risks associated with the placement of housing within a 100-year flood hazard area or placement of structures that could impede or redirect flood flows within a 100-year flood hazard area.	Less than Significant	None Required	< (LS)	= (LS)	= (LS)
4.5-6: Project implementation would not cause significant risk of loss, injury or death involving flooding, including flooding from the failure of a levee or dam.	Less than Significant	None Required	< (LS)	= (LS)	= (LS)
4.5-7: The proposed project could be subject to inundation by seiche, tsunami, or mudflow.	Less than Significant	None Required	< (LS)	= (LS)	= (LS)
Transportation and Traffic					
4.6-1: The project would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.	Less than Significant	None Required	< (LS)	= (LS)	= (LS)
4.6-2: The project would not conflict with the Santa Clara County Congestion Management Program.	Less than Significant	None Required	< (LS)	= (LS)	= (LS)
4.6-3: The project would not substantially increase hazards due to a design feature or incompatible uses.	Less than Significant	None Required	< (LS)	= (LS)	= (LS)
4.6-4: The project would not result in inadequate emergency access.	Less than Significant	None Required	= (LS)	< (LS)	<< (LS)

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4.6-5: The project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	Less than Significant (LS)	None Required	< (LS)	= (LS)	= (LS)
Noise					
4.7-1: Project construction could cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project due to operation of heavy equipment during construction.	Less than Significant with Mitigation (LSM)	4.7-1, Administrative and Source Controls	< (LS)	<< (LSM)	≤ (LSM)
4.7-2: Project construction could expose people to or generate excessive groundborne vibration at adjacent residences during construction.	Less than Significant	None Required	< (LS)	= (LS)	= (LS)
4.7-3: Occupation of proposed residences would not result in a substantial permanent increase in ambient noise levels in the project site vicinity or along local roadways.	Less than Significant	None Required	< (LS)	> (LS)	> (LS)
4.7-4: The project would not expose future residents to or generate noise levels in excess of standards established in the local general plan, noise ordinance, or applicable standards of other agencies.	Less than Significant	None Required	< (LS)	< (LS)	< (LS)
Air Quality					
4.8-1: Project-related criteria pollutant emissions would not conflict with or obstruct implementation of the applicable Air Quality Plan.	Less than Significant	None Required	< (LS)	= (LS)	= (LS)
4.8-2: Project construction would not violate any air quality standard or contribute substantially to an existing or projected air quality violation.	Less than Significant with Mitigation	4.8-2, BAAQMD Basic Construction Measures	< (LS)	> (LSM)	= (LSM)
4.8-3: Project operation would not violate any air quality standard or contribute substantially to an existing or projected air quality violation.	Less than Significant	None Required	< (LS)	= (LS)	= (LS)
4.8-4: Project implementation could expose sensitive receptors to substantial pollutant concentrations.	Less than Significant	None Required	< (LS)	> (LS)	= (LS)

* The symbols "<<" or ">>" indicate that an alternative's reduction or increase in an impact is greater than the reduction (<) or increase (>) occurring under the other alternative(s). For example, the Two Access Alternative would have a greater reduction in biological and water quality impacts than the Two Access + Two EVA Alternative.

4.8-5: Project implementation would not create objectionable odors affecting a substantial number of people.	Less than Significant (LS)	None Required	< (LS)	= (LS)	= (LS)
Greenhouse Gas Emissions					
4.9-1: The project would generate greenhouse gas emissions, either directly or indirectly, but would not have a significant impact on the environment.	Less than Significant	None Required	< (LS)	< (LS)	< (LS)
4.9-2: The project would not conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing greenhouse gas emissions.	Less than Significant	None Required	< (LS)	= (LS)	= (LS)
Hazards and Hazardous Materials					
4.10-1: The proposed project could result in a significant hazard to the public or the environment through the routine use and disposal of household hazardous wastes.	Less than Significant with Mitigation (LSM)	4.10-1, Implement Buyer Education Program for Household Hazardous Waste	< (LS)	= (LSM)	= (LSM)
4.10-2: The proposed project would not create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials to the environment during soil excavation and subsequent site use.	Less than Significant	None Required	< (LS)	= (LS)	= (LS)
4.10-3: The project would not to 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.	Less than Significant	None Required	< (LS)	= (LS)	= (LS)
Cultural Resources					
4.11-1: Construction activities on the project site could adversely affect unknown subsurface archaeological resources, if encountered, including the disturbance of human remains.	Less than Significant with Mitigation	4.11-1, Observation by Construction Personnel	< (LS)	<< (LSM)	< (LSM)
4.11-2: Construction activities on the project site could adversely affect unknown subsurface	Less than Significant with Mitigation (LSM)	4.11-2, Halt Construction and Evaluate Resource	< (LS)	<< (LSM)	< (LSM)

* The symbols "<<" or ">>" indicate that an alternative's reduction or increase in an impact is greater than the reduction (<) or increase (>) occurring under the other alternative(s). For example, the Two Access Alternative would have a greater reduction in biological and water quality impacts than the Two Access + Two EVA Alternative.

paleontological resources, but would not affect any unique geological features.					
Public Services, Utilities, and Service Systems					
4.12-1: Development of the project site with new single-family residential uses would require continued fire protection services for future residents, visitors, and property improvements, as has been required for the site; new or physically altered governmental facilities would not be required to provide adequate fire and emergency medical protection services for the proposed project.	Less than Significant (LS)	None Required	≤ (LS)	≤ (LS)	= (LS)
4.12-2: The proposed residential use would require police protection services for future residents, visitors, and property improvements, as has been required for the site; the project would not result in substantial adverse physical impacts associated with the provision of new or physically altered police facilities.	Less than Significant	None Required	≤ (LS)	= (LS)	= (LS)
4.12-3: The proposed residential project would generate new students, but would not contribute substantially to the increase in demand for educational services within the service area of the Los Gatos Union School District and the Los Gatos-Saratoga Union High School District, and would not result in substantial adverse impacts associated with the provision of new or physically altered facilities.	Less than Significant	None Required	< (LS)	= (LS)	= (LS)
4.12-4: The proposed project would not incrementally increase water demand within the service area of the San Jose Water Company and would not require or result in the construction of new water facilities or expansion of existing facilities located off-site; sufficient water supplies are available to serve the project from existing entitlements and resources.	Less than Significant	None Required	< (LS)	= (LS)	= (LS)

* The symbols "<<" or ">>" indicate that an alternative's reduction or increase in an impact is greater than the reduction (<) or increase (>) occurring under the other alternative(s). For example, the Two Access Alternative would have a greater reduction in biological and water quality impacts than the Two Access + Two EVA Alternative.

4.12-5: Development of the proposed residential uses would result in wastewater flows requiring collection and treatment by West Valley Sanitary District Facilities. District facilities have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	Less than Significant (LS)	None Required	< (LS)	= (LS)	= (LS)
4.12-6: Development of proposed residential uses would result in the generation of solid wastes requiring recycling and/or disposal at local landfill sites, in compliance with federal, state, and local statutes and regulations related to solid waste.	Less than Significant	None Required	< (LS)	= (LS)	= (LS)
Recreation					
4.13-1: Development of the proposed project would not increase the use of neighborhood and regional parks or other recreational facilities such that substantial physical deterioration would occur or be accelerated.	Less than Significant	None Required	< (LS)	= (LS)	= (LS)
4.13-2: Development of the proposed project would include provision of private open space and construction of a pedestrian/equestrian trail across the project site (both publicly accessible), and would not require the construction or expansion of any other off-site recreational facilities that might have an adverse physical effect on the environment.	Less than Significant	None Required	< (LS)	= (LS)	= (LS)
Energy Conservation					
4.14-1: Construction of proposed roads, infrastructure, and future residences could encourage activities that use energy in a wasteful, inefficient, or unnecessary manner.	Less than Significant with Mitigation (LSM)	4.14-1: Mitigation Measure 4.8-2	< (LS)	<< (LSM)	< (LSM)
4.14-2: Operation of residences would not encourage activities that use fuel, water, or energy in a wasteful, inefficient, or unnecessary manner.	Less than Significant	None Required	< (LS)	= (LS)	= (LS)

Note: LS: Less than Significant; LSM: Less than Significant with Mitigation

* The symbols "<<" or ">>" indicate that an alternative's reduction or increase in an impact is greater than the reduction (<) or increase (>) occurring under the other alternative(s). For example, the Two Access Alternative would have a greater reduction in biological and water quality impacts than the Two Access + Two EVA Alternative.

CHAPTER 6 LEAD AGENCY AND CONSULTANTS

LEAD AGENCY

TOWN OF LOS GATOS

Joel Paulson, Planning Manager, Community Development Department
Marni Moseley, Associate Planner, Community Development Department
Lisa Peterson, Town Engineer, Parks and Public Works Department
Jessy Pu, Traffic Engineer, Parks and Public Works Department
Trang Tu-Nguyen, Former Senior Civil Engineer, Parks and Public Works Department
Ryan Fong, Former Assistant Engineer, Parks and Public Works Department

TOWN CONSULTANTS

AMEC ENVIRONMENT & INFRASTRUCTURE	Geotechnical Peer Review
DEBBIE ELLIS, MS	Arborist Report
EISENBERG, OLIVIERI & ASSOCIATES	Stormwater Management Peer Review
GEIER & GEIER CONSULTING, INC.	
Valerie Chew Geier	Project Manager, Land Use, Aesthetics, Noise
Frederick Geier	Public Services, Recreation
Hans Giroux	Air Quality
Mary Lucas McDonald	Geology, Hydrology, Hazards, Energy
Manfred Geier	Graphics
GGC Subconsultants	
Edward L. Pack Associates, Inc.	Noise
Wood Biological Consulting, Inc.	Biological Resources
Holman & Associates	Cultural Resources
TJKM TRANSPORTATION CONSULTANTS	Traffic Impact Analysis Peer Review

APPLICANT'S TECHNICAL CONSULTANTS

The applicant retained the following consultants to complete technical studies that were peer reviewed by Town consultants and included in this report:

MICHAEL L. BENCH	Tree Inventory and Evaluation
GEOFORENSICS, INC.	Geotechnical Investigation
HEXAGON TRANSPORTATION CONSULTANTS, INC.	Traffic Study

CHAPTER 7 APPENDICES

APPENDIX A

NOTICE OF PREPARATION (NOP)
AND
PUBLIC COMMENTS RECEIVED

Santa Clara County Clerk – Recorder's Office
State of California

County of Santa Clara

Office of the County Clerk-Recorder
Business Division

County Government Center
70 West Hedding Street, E. Wing, 1st Floor
San Jose, California 95110 (408) 299-5688

L 102836

Document No.: 17570
Number of Pages: 4
Filed and Posted On: 7/27/2012
Through: 8/26/2012
CRO Order Number:
Fee Total: 0.00

REGINA ALCOMENDRAS, County Clerk – Recorder
by Esther Duarte, Deputy Clerk – Recorder,

CEQA DOCUMENT DECLARATION

ENVIRONMENTAL FILING FEE RECEIPT

PLEASE COMPLETE THE FOLLOWING:

1. LEAD AGENCY: Town of Los Gatos
2. PROJECT TITLE: Twin Oaks Planned Development - Surrey Farm Estates
3. APPLICANT NAME: Tom Dodge PHONE: 408-559-0200
4. APPLICANT ADDRESS: 851 McGlincey Lane Campbell, CA 95008
5. PROJECT APPLICANT IS A: ☐ Local Public Agency ☐ School District ☐ Other Special District ☐ State Agency ☒ Private Entity
6. NOTICE TO BE POSTED FOR 30 DAYS.
7. CLASSIFICATION OF ENVIRONMENTAL DOCUMENT

a. PROJECTS THAT ARE SUBJECT TO DFG FEES

☐ 1. ENVIRONMENTAL IMPACT REPORT (PUBLIC RESOURCES CODE §21152)	$ 2,919.00	$ 0.00
☐ 2. NEGATIVE DECLARATION (PUBLIC RESOURCES CODE §21080(C)	$ 2,101.50	$ 0.00
☐ 3. APPLICATION FEE WATER DIVERSION (STATE WATER RESOURCES CONTROL BOARD ONLY)	$ 850.00	$ 0.00
☐ 4. PROJECTS SUBJECT TO CERTIFIED REGULATORY PROGRAMS	$ 992.50	$ 0.00
☐ 5. COUNTY ADMINISTRATIVE FEE (REQUIRED FOR a-1 THROUGH a-4 ABOVE) Fish & Game Code §711.4(e)	$ 50.00	$ 0.00

b. PROJECTS THAT ARE EXEMPT FROM DFG FEES

☐ 1. NOTICE OF EXEMPTION ($50.00 COUNTY ADMINISTRATIVE FEE REQUIRED)	$ 50.00	$ 0.00
☐ 2. A COMPLETED "CEQA FILING FEE NO EFFECT DETERMINATION FORM" FROM THE DEPARTMENT OF FISH & GAME, DOCUMENTING THE DFG'S DETERMINATION THAT THE PROJECT WILL HAVE NO EFFECT ON FISH, WILDLIFE AND HABITAT, OR AN OFFICIAL, DATED RECEIPT / PROOF OF PAYMENT SHOWING PREVIOUS PAYMENT OF THE DFG FILING FEE FOR THE *SAME PROJECT IS ATTACHED ($50.00 COUNTY ADMINISTRATIVE FEE REQUIRED)		
DOCUMENT TYPE: ☐ ENVIRONMENTAL IMPACT REPORT ☐ NEGATIVE DECLARATION	$ 50.00	$ 0.00

c. NOTICES THAT ARE *NOT* SUBJECT TO DFG FEES *OR* COUNTY ADMINISTRATIVE FEES

☒ NOTICE OF PREPARATION ☐ NOTICE OF INTENT	NO FEE	$ NO FEE

8. OTHER: _____ FEE (IF APPLICABLE): $ _____
9. TOTAL RECEIVED..... $ 0.00

*NOTE: "***SAME PROJECT***" MEANS **NO** CHANGES. IF THE DOCUMENT SUBMITTED IS NOT THE SAME (OTHER THAN DATES), A "NO EFFECT DETERMINATION" LETTER FROM THE DEPARTMENT OF FISH AND GAME FOR THE **SUBSEQUENT** FILING OR THE APPROPRIATE FEES ARE REQUIRED.

THIS FORM MUST BE COMPLETED AND ATTACHED TO THE FRONT OF ALL CEQA DOCUMENTS LISTED ABOVE (*INCLUDING COPIES*) SUBMITTED FOR FILING. WE WILL NEED AN ORIGINAL (WET SIGNATURE) AND THREE COPIES. *(YOUR ORIGINAL WILL BE RETURNED TO YOU AT THE TIME OF FILING.)*

CHECKS FOR ALL FEES SHOULD BE MADE PAYABLE TO: SANTA CLARA COUNTY CLERK-RECORDER

PLEASE NOTE: FEES ARE ANNUALLY ADJUSTED (Fish & Game Code §711.4(b); PLEASE CHECK WITH THIS OFFICE AND THE DEPARTMENT OF FISH AND GAME FOR THE LATEST FEE INFORMATION.

". . . NO PROJECT SHALL BE OPERATIVE, VESTED, OR FINAL, NOR SHALL LOCAL GOVERNMENT PERMITS FOR THE PROJECT BE VALID, UNTIL THE FILING FEES REQUIRED PURSUANT TO THIS SECTION ARE PAID." Fish & Game Code §711.4(c)(3)

1-3-2012 (FEES EFFECTIVE 01-01-2012)

Notice of Preparation

To: Interested Parties
Subject: Notice of Preparation of Draft Environmental Impact Report; comment period re-initiated for compliance with County recordation requirements.

Lead Agency: Town of Los Gatos
Community Development Department
110 East Main Street
Los Gatos, CA 95031
Contact: Marni Moseley: 408/354-6802 or *mmoseley@losgatosca.gov*

The Town of Los Gatos will be the Lead Agency and will prepare an Environmental Impact Report (EIR) for the project identified below. The Town is seeking the views of the public and Jurisdictional/Responsible Agencies concerning the scope and content of the environmental information which is germane to agency statutory responsibilities in connection with the proposed project. Jurisdictional agencies may need to use the EIR prepared by the Town when considering your permit or other approvals for the project.

Due to the time limits mandated by state law, your response must be sent at the earliest possible date but ***no later than 30 days*** after receipt of this notice.

Please send your response to Marni Moseley at either the mailing or email addresses shown above. Please identify a contact person for your agency.

Project Title: Surrey Farm Estates
Project Location: Twin Oaks Drive, Los Gatos, CA
(Assessor Parcel Number 532-16-006)

The 17.55-acre undeveloped project site extends eastward from just north of 170 Twin Oaks Drive and is comprised of a west-facing hillside that is approximately located between Twin Oaks Drive on the west and Cerro Vista Drive on the east. Brooke Acres Drive terminates at the project's southern boundary, while Cerro Vista Court abuts the site's northeastern boundary. Single-family homes located at the east end of Longmeadow Drive, north end of Brook Acres Drive, west side of Cerro Vista Court, and west side of Cerro Vista Drive are located contiguous to the project site. The project site is surrounded by single-family homes except where Hillbrook School is located contiguous to the project's northwestern site boundary.

Project Description:
The project applicant is requesting approval of the following:

- General Plan amendment from "Agriculture" to "Hillside Residential (0-1 du/acre)"
- Rezoning from "RC" (Resource Conservation) to "HR:1:PD" (Hillside Residential, 1 unit/acre)

Approval of this General Plan amendment and rezoning would allow the project applicant to subdivide the 17.55-acre property into 10 lots for future development of single-family residences. The southeast corner of the site (approximately 3.22 acres) would be designated as open space. The project would also include development of a private access road, which would provide access to all project lots from Twin Oaks Drive. Project streets would not connect to any other existing streets located near or contiguous to the site (including Cerro Vista Court and Ann Arbor Way). However, a 20-foot wide emergency access road is proposed to connect Brooke Acres Drive to the project's access road. A locked gate would be provided at the project boundary to restrict access to this connection to emergency vehicles only.

Probable Environmental Effects:
Based on preliminary review of the proposed site plan, it is anticipated that the EIR will address the following topics in detail:

Aesthetics: Distant views of the project site are available from the viewing platform at Los Gatos Boulevard and Blossom Hill Road, but existing intervening landscape trees screen most distant views of the site from the town. Due to the distance from this platform and the presence of a higher ridgeline behind the site, the future homes on the highest lot proposed would not extend above the main ridgeline (creating a silhouette). However, future development of homes on proposed lots on the upper portion of the site would have the potential to alter the visual character of the immediate project vicinity. The EIR will focus on the project's potential to significantly alter the visual character of the site and neighborhood vicinity as well as determine whether any scenic vistas from surrounding homes would be adversely affected by project homes. This analysis will use factors identified in the Town's *Hillside Development Standards and Guidelines* (HDS) such as: maintaining the natural appearance of the hillsides from all vantage points including the valley floor; protecting the ridgeline; maximizing contiguous natural open space; conserving the site's natural features such as topography, natural drainage, vegetation, wildlife habitats, movement corridors, etc.

Biological Resources: Implementation of the proposed project would result in direct and indirect impacts on trees and other biological resources located on the project site. There is also a potential that special-status species and habitats could exist on the 17.55-acre, undeveloped site. There is a short section of Ross Creek that extends along the southwestern project boundary before entering a culvert. The EIR will identify existing biological resources observed on the project site (including riparian habitat, wetlands, and/or any special-status plants) and evaluate the project's direct and indirect impacts on these resources.

Cultural Resources: Since there are no structures on the project site, there would be no historical resources issues associated with the proposed project. The EIR will evaluate the project's potential to adversely affect archaeological resources, particularly due to the site's proximity to Ross Creek.

Geology and Soils: The EIR will present the findings of a detailed geotechnical evaluation for the project and peer review by the Town's geotechnical/geological consultant. The evaluation found no significant geologic constraints except for potential debris flow hazard in the drainage swale crossing the lower portion of the project site.

Hazards and Hazardous Materials: The project site is undeveloped and the potential to encounter hazardous materials is expected to be low. Nevertheless, an environmental database record search will be completed as part of the EIR and the potential to encounter hazardous materials during project construction will be assessed. The General Plan's Fire Hazard Area Map indicates the project site is located within the Fire Hazard Area. The EIR will review the project design for consistency with applicable General Plan policies.

Hydrology and Water Quality: The proposed project would introduce new impervious surfaces to the project site, generating additional stormwater flows on the property. In addition, new runoff flows would contain urban pollutants that would be carried to Ross Creek and, ultimately, to San Francisco Bay. The EIR will assess the impacts of constructing proposed storm drainage facilities as well as the adequacy of proposed storm drainage facilities to accommodate expected runoff flows from the project site and proposed erosion control and stormwater treatment measures. This would include the storm water pollution prevention plan and non-point source measures to control pollutant discharges from construction activities and developed areas after construction to minimize degradation of water quality (pursuant to Section C.3 requirements of the Clean Water Act). The EIR will specify mitigation measures as necessary to ensure compliance with the storm drainage and water quality protection requirements of Responsible Agencies

(e.g. Regional Water Quality Control Board). In addition, since Ross Creek is a tributary of Guadalupe Creek, the EIR will review the adequacy of the proposed drainage system to accommodate the 100-year storm event to ensure that the project does not significantly affect downstream flood hazards. The EIR will also identify any on-site flood hazards associated with Ross Creek.

Land Use: The General Plan designates the project site as "Agriculture" and the project applicant proposes to amend the General Plan designation for the project site to "Hillside Residential (0 -1 du/acre)." The Zoning Map designates this property as "RC" (Resource Conservation) and the project applicant proposes to rezone the subject property to "HR:1:PD" (Hillside Residential, 1 unit/acre). The EIR will examine the project's consistency with General Plan policies and zoning requirements that pertain to the project site. In addition, the EIR will evaluate consistency of the proposed project's density and lot sizes with existing surrounding residential densities and lot sizes. The EIR will also assess the compatibility of the proposed residential use with existing adjacent residential and school uses based on criteria such as loss of privacy, project-related noise increases, aesthetics (changes in visual character), and traffic increases.

Public Services and Utilities: The project would result in an incremental increase in demand for public services related to fire and police protection as well as schools. The EIR will examine impacts on service agencies associated with this increase in demand.

Transportation/Traffic: The Town's Traffic Impact Policy (Resolution 1991-174) specifies that projects with a traffic impact of 19 or less additional AM or PM peak hour trips constitute a minor traffic impact on local roadways and intersections. The Town has determined that traffic generated by the proposed 10-lot subdivision would fall below this threshold and a detailed traffic analysis is not required. However, a traffic study was completed by the project applicant and the EIR will present findings of that study, which include an estimate of project-generated trips during the AM and PM peak hours and changes in levels of service on local roadways due to project-related traffic increases. The EIR will also address other CEQA-required topics including the project's contribution to cumulative traffic impacts on local roadways and intersection operations as well as any traffic safety impacts associated with the proposed access road, emergency access, and access to alternative transportation (pedestrian, bicycle, and transit).

Utilities/Service Systems: Utilities that would provide service to the proposed project include the West Valley Sanitation District (WVSD) for wastewater collection and treatment services and San Jose Water Company for water service. The EIR will assess the project's effects on water and wastewater facilities and identify the need for any required improvements both on the site and in its vicinity.

July 27, 2012
Date

Marni Moseley, Associate Planner
Town of Los Gatos

STATE OF CALIFORNIA
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

Memorandum

Date: August 1, 2012

To: All Reviewing Agencies

From: Scott Morgan, Director

Re: SCH # 2012072027
Surrey Farm Estates

RECEIVED
AUG 6 - 2012
TOWN OF LOS GATOS
PLANNING DIVISION

The Lead Agency has corrected some information regarding the above-mentioned project. Please note that the lead agency is re-initiating the comment period to comply with the County recordation requirements. The new end review period has **extended** to *end* on **August 28, 2012**. All other project information remains the same.

cc: Marni Moseley
City of Los Gatos
110 E. Main Street
Los Gatos, CA 95031

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

SANTA CLARA
Valley Transportation Authority

August 10, 2012

Town of Los Gatos
Community Development Department
110 E. Main Street
Los Gatos, CA 95030

Attention: Marni Moseley

Subject: Surrey Farm Estates

Dear Ms. Moseley:

Santa Clara Valley Transportation Authority (VTA) staff have reviewed the NOP for 10 single family homes on Twin Oaks Drive. We have no comments at this time.

Thank you for the opportunity to review this project. If you have any questions, please call me at (408) 321-5784.

Sincerely,

Roy Molseed
Senior Environmental Planner

LG0701

From: Kathrin Turner <KTurner@valleywater.org>
Date: April 13, 2012 12:13:32 PM PDT
To: rgriffin rgriffin <rgriffin@paragondgi.com>

Dear Mr. Griffin:

The Santa Clara Valley Water District (District) staff has reviewed the Surrey Farm site plan, received on February 2, 2012. In accordance with the District's Water Resources Protection Ordinance, any work on or within District right of way (fee title or easement) is subject to review and issuance of a District permit prior to construction.

East Ross Creek is contained within a 36-inch reinforced concrete pipe (RCP) which extends across the southwestern portion of the project site behind Parcel 1. The revised plans need to show the creek. The District has a 110-foot wide flood control easement on the site. Any work within the District's easement will require an encroachment permit. Please note that as of January 3, 2011, there are fees associated with District permits and a copy of the Standard Rate Schedule is enclosed for your reference with the encroachment permit application. The proposed site plan shows a roadway crossing the District's flood easement. Grading of the roadway should be done so that any excess runoff will not impact East Ross Creek.

Overall, construction of the roadway within the District's easement is conceptually acceptable. Please submit two sets of revised plans when they become available. If you have any more questions, please contact me at the number below. Please reference District file No. 9925 on any future correspondence.

Sincerely,

Kathrin A. Turner
kturner@valleywater.org
Assistant Engineer II
Santa Clara Valley Water District
Community Projects Review Unit
5750 Almaden Expressway
San Jose, CA 95118-3614
☎ Phone (408) 265-2607 ext. 2586
Fax (408) 979-5635

"A day without laughter is a day wasted."
- Charles Chaplin –

Law Office of John A. Hickey
2625 Middlefield Road, No. 124 • Palo Alto, CA 94306-2516
jah@bayarealandlaw.com

Presented to GPC 9/12/12 at Meeting.

RECEIVED
SEP 12 2012
TOWN OF LOS GATOS
PLANNING DIVISION

September 12, 2012

Via email: MVakharia@losgatosca.gov

General Plan Committee
Town of Los Gatos
Clerk Department
110 East Main Street
Los Gatos, CA 95030

Re: Twin Oaks Drive (APN: 532-16-006)
General Plan Amendment GP-12-001

Dear Members of the General Plan Committee:

We respectfully request that the Committee consider the following comments, submitted on behalf of a group of concerned Los Gatos residents, regarding the proposed residential subdivision project on Twin Oaks Drive (APN: 532-16-006).

First, we request that the Committee postpone any hearing on the project until a later date, and that the Town provide notice of the hearing pursuant to section 65091 of the Government Code. Unfortunately, we did not learn of today's hearing until this morning, giving us little time to prepare meaningful comments. We believe that the Town is required to provide notice of tonight's hearing pursuant to section 65091, but more importantly, we know that the Committee recognizes the value of informed public input, and we believe that notice pursuant to section 65091 would help to ensure that.

Second, we believe that it is premature for the Committee to consider the project at all. As noted in the staff report for today's hearing,[1] the Town is currently preparing a draft environmental impact report (EIR) for the project which we hope will identify and assess the project's numerous significant impacts. Without the draft EIR, there is no way for the Committee to intelligently evaluate the proposed project. We understand that the Committee intends to consider just the proposed General Plan amendment, not the proposed project. However, the proposed General Plan amendment and the proposed project are intertwined, and we do not believe that the Committee can comment meaningfully on the proposed General Plan amendment in the abstract.

---

[1] Memorandum from Todd Capurso re Twin Oaks: General Plan Amendment (GP-12-001), from Agriculture to Hillside Residential, August 31, 2012

Furthermore, we see no reason why the Committee needs to consider the General Plan amendment now, before the EIR has been prepared. After all, the Town is not allowed to approve any part of the project before the final EIR has been prepared and certified, so there is no rush. It makes more sense to wait until the Committee and the public have the relevant information before holding any hearings or making any premature recommendations.

Third, we believe that it is premature for the Town to entertain any application to amend the General Plan designation for the project site. As the staff report notes, the project site is currently subject to a Williamson Act contract. The staff report suggests that the project site would not currently qualify for a new contract under the Act, but neither the Town nor the owner of the site have filed a notice of non-renewal for the contract. If the site should no longer be subject to contract, the Town or the owner of the site should immediately file a notice of non-renewal. After that, the contract would automatically expire in about ten years, at which point it might be appropriate for the Town to consider amending the General Plan designation for the site.

In the interim, however, the General Plan designation for the project site should remain unchanged. Given more time and the benefit of the information and analysis in the EIR, we would be able to explain in detail why the site is not appropriate for the proposed project. But even without more time or the EIR, we must point out that the State has made it clear that cancelation of a Williamson Act contract is appropriate only in "emergency" situations, not where the objectives could be served instead by non-renewal. (See *Sierra Club v. City of Hayward* (1981) 28 Cal. 3d 840, 852-853.) For example, the State of California's Attorney General's Office has opined that cancellation is impermissible "except upon extremely stringent conditions." (62 Ops. Cal. Atty. Gen. 233, 240 (1979).) The Attorney General has also opined that non-renewal is the preferred contract termination method: "If a landowner desires to change the use of his land under contract to uses other than agricultural production and compatible uses, the proper procedure is to give notices of nonrenewal pursuant to [Government Code] section 51245." (54 Ops. Cal. Atty. Gen. 90, 92 (1971).)

For these reasons, we request that the Committee either postpone any hearing on the project or recommend that the Town deny the application for a General Plan amendment for the project site.

Thank you. Please let us know if you have any questions.

Sincerely,

John A. Hickey

Law Office of John A. Hickey

2625 Middlefield Road, No. 124 • Palo Alto, CA 94306-2516
jah@bayarealandlaw.com

RECEIVED

AUG 2 1 2012

TOWN OF LOS GATOS
PLANNING DIVISION

Marni Moseley

From: Catherine Briggs <briggszoo@gmail.com>
Sent: Monday, August 20, 2012 6:00 PM
To: Marni Moseley
Subject: Proposed Dodge Property/Surrey Farms Estates Subdivision

Dear Marni,
My name is Catherine Briggs - my husband, Gary, and I have lived at 106 Longmeadow Drive for over 10 years now. I am writing to you as I am concerned about the proposed Surrey Farms Estates subdivision from the standpoint of a neighbor as well as the standpoint of a community member.

Regardless of whether or not I lived in the neighborhood that is impacted by the proposed subdivision, I have concerns about it having an adverse affect of the:
* character of neighborhood/town
* removal of trees
* destruction of wildlife and their natural habitats
* change of designation from conservation/agricultural space to a dense residential development

Quite simply, it is sad and disappointing that our town would approve a subdivision when our schools and streets are already crowded - and at a time when we're all seeing the impact of global warming and destruction of wildlife and natural habitats.

As a close neighbor, I am concerned about the impact of traffic, noise, drainage, and increased potential risk for flooding and fire.

I would welcome the opportunity to express my concerns if there were a public forum when you discuss this property.

Thank you so much.

Sincerely,
Catherine C. Briggs
106 Longmeadow Drive
Los Gatos, CA 95032

Marni Moseley

From: Steve Markman <smarkman@me.com>
Sent: Thursday, August 09, 2012 11:11 AM
To: Marni Moseley
Cc: Steve Markman; Pat Markman (tv)
Subject: EIR for "Surrey Farms Estates"

RECEIVED

AUG - 9 2012

TOWN OF LOS GATOS
PLANNING DIVISION

August 9, 2012

Marni Moseley

Town of Los Gatos

Community Development Department

110 East Main Street

Los Gatos, CA 95031

Dear Marni,

We have lived for 26 years at 187 Longmeadow Drive, located at the cul-de-sac extension of the original Surrey Farms subdivision. We have a number of environmental concerns we feel need to be addressed as part of the EIR examining the proposed "Surrey Farms Estates" subdivision.

1. The noise of construction will last an indeterminate amount of time if only the foundations are placed and the homes constructed as the parcels are sold. This is how the project was explained to us.

    a. Dust dirt and noise will be ongoing for years.
    b. Truck traffic will be a nuisance on Longmeadow Drive and Twin Oaks and it will affect the new road surface currently being installed.
    c. Additional exhaust fumes from the trucks and then the additional cars from the new resident's cars, will impact air quality in this little valley.

2. There will be soil erosion and the run off of water and soil will impact the homes and school below.

3. There will be an increased fire danger in what is already a high fire danger zone.

4. There will only be one exit route for cars onto Twin Oaks and then onto Longmeadow Drive. That intersection is already dangerous since people turning onto Longmeadow Drive do not always stop to see if anyone (car or pedestrian) is going into the intersection or the cul-de-sac. There have been numerous "near misses." Twin Oaks will need a stop sign.

5. The only viable exit from the entire development is from Longmeadow Drive onto Kennedy Road. Additional cars will impact morning, afternoon and evening traffic, but especially traffic in an emergency such as fire or earthquake. Cars coming down the Kennedy Road hill often do not stop at the stop sign.

6. There will be a loss of privacy to the existing homes, which will have new houses overlooking their backyards and the sound of barking dogs, children, cars and music all carry great distances in the hills.

7. The lovely natural view of the hillside will be changed forever. The wildlife will also be displaced. There are currently deer, bobcats, coyotes, raccoons and other species living on the hillsides.

8. Services such as cable and telephone are old and of poor overall quality today. They will be further stressed with the addition of new homes without the service providers finally investing in modern upgradesThank you for allowing input on this very important matter.

Very truly yours,

Steven Markman and

Patricia S. Markman

408-358-3499

187 Longmeadow Dr

Los Gatos, CA 95032

smarkman@me.com

pat@markman.tv

APPENDIX B

INVENTORY OF VASCULAR PLANT SPECIES DETECTED IN THE STUDY AREA (APRIL 10, 2013)

POTENTIALLY OCCURRING SPECIAL-STATUS SPECIES (OCTOBER 19, 2014)

EXPLANATION OF SENSITIVITY STATUS CODES (OCTOBER 19, 2014)

CDFW, CNPS, USFWS DATABASE REVEWS (OCTOBER 19, 2014)

BY
WOOD BIOLOGICAL CONSULTING, INC.

Inventory Of Vascular Plant Species Occurring At The Surrey Farm Estates Site

Apr 10, 2013

Sort By : Family

Scientific Name	Common Name	Note
Adoxaceae		
Sambucus nigra ssp. canadensis	blue elderberry	
Agavaceae - Agave Family		
Chlorogalum pomeridianum	wavyleaf soap plant	
Anacardiaceae - Sumac Family		
Toxicodendron diversilobum	poison oak	
Apiaceae - Carrot Family		
Conium maculatum	poison-hemlock	•
Perideridia kelloggii	Kellogg's yampah	
Sanicula bipinnatifida	purple sanicle	
Sanicula crassicaulis	Pacific sanicle	
Scandix pecten-veneris	shepherd's needle	•
Torilis arvensis	hedgeparsley	•
Apocynaceae - Dogbane Family		
Vinca major	big periwinkle	•
Araceae - Arum Family		
Lemna minor	smaller duckweed	
Araliaceae - Ginseng Family		
Hedera canariensis	Algerian ivy	•
Hedera helix	English ivy	•
Arecaceae - Palm Family		
Washingtonia robusta	Mexican fan palm	•
Asteraceae - Sunflower Family		
Achillea millefolium	yarrow	

Footnotes:

1 = federal or State listed Species
2 = other special-status species
AG = agricultural species
3 = CALIPC Listed Invasive Species
* = Species not indigenous to CA
HORT = horticultural species

Inventory Of Vascular Plant Species Occurring At The Surrey Farm Estates Site

Apr 10, 2013

Sort By : Family

Scientific Name	Common Name	Note
Agoseris grandiflora var. *grandiflora*	California dandelion	
Artemisia douglasiana	mugwort	
Baccharis pilularis	coyote brush	
Carduus pycnocephalus	Italian thistle	•
Centaurea solstitialis	yellow starthistle	•
Crepis capillaris	smooth hawksbeard	•
Dittrichia graveolens	stinkwort	
Helminthotheca echioides	bristly ox-tongue	•
Hemizonia congesta ssp. *luzulifolia*	hayfield tarweed	
Hypochaeris glabra	smooth cat's-ear	•
Lactuca serriola	prickly lettuce	•
Logfia gallica	narrow-leaf filago	•
Madia gracilis	slender tarweed	
Micropus californicus var. *subvestitus*	hairy slender cottonweed	
Pseudognaphalium californicum	California everlasting	
Senecio vulgaris	common groundsel	•
Sonchus asper ssp. *asper*	prickly sowthistle	
Wyethia glabra	smooth mule ears	
Boraginaceae - Borage Family		
Amsinckia menziesii	common fiddleneck	
Brassicaceae - Mustard Family		
Cardamine oligosperma	bitter-cress	
Nasturtium officinale	watercress	

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Apr 10, 2013

Sort By : Family

Scientific Name	Common Name	Note
Caprifoliaceae - Honeysuckle Family		
Symphoricarpos albus var. *laevigatus*	common snowberry	
Caryophyllaceae - Pink Family		
Silene gallica	common catchfly	•
Stellaria media	common chickweed	•
Stellaria nitens	shiny chickweed	
Convolvulaceae - Morning-glory Family		
Calystegia subacaulis	hill morning-glory	
Convolvulus arvensis	field bindweed	•
Crassulaceae - Stonecrop Family		
Crassula connata	pygmyweed	
Cucurbitaceae - Gourd Family		
Marah fabacea	California man-root	
Cupressaceae - Cypress Family		
Calocedrus decurrens	incense cedar	
Juniperus chinensis	Chinese juniper	Hort
Sequoia sempervirens	coast redwood	
Cyperaceae - Sedge Family		
Carex tumulicola	foothill sedge	
Cyperus eragrostis	umbrella sedge	
Euphorbiaceae - Spurge Family		
Croton setiger	doveweed	
Euphorbia maculata	spotted spurge	•
Euphorbia peplus	petty spurge	•

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Inventory Of Vascular Plant Species Occurring At The Surrey Farm Estates Site

Apr 10, 2013

Sort By : Family

Scientific Name	Common Name	Note
Fabaceae - Legume Family		
Acmispon brachycarpus	hill lotus	
Genista monspessulana	French broom	•
Lathyrus vestitus var. *vestitus*	common Pacific pea	
Lupinus nanus	Douglas' lupine	
Lupinus succulentus	succulent annual lupine	
Medicago lupulina	black medick	•
Medicago polymorpha	burclover	•
Trifolium ciliolatum	tree clover	
Trifolium hirtum	rose clover	•
Trifolium variegatum	white-tip clover	
Vicia benghalensis	purple vetch	•
Vicia sativa ssp. *nigra*	common vetch	•
Fagaceae - Oak Family		
Quercus agrifolia	coast live oak	
Quercus douglasii	blue oak	
Quercus lobata	valley oak	
Geraniaceae - Geranium Family		
Erodium botrys	long-beaked storksbill	•
Erodium cicutarium	red-stemmed filaree	•
Geranium carolinianum	Carolina geranium	
Geranium dissectum	cut-leaved geranium	•

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Inventory Of Vascular Plant Species Occurring At The Surrey Farm Estates Site

Apr 10, 2013

Sort By : Family

Scientific Name	Common Name	Note
Iridaceae - Iris Family		
Iris douglasiana	Douglas iris	
Sisyrinchium bellum	blue-eyed grass	
Juglandaceae - Walnut Family		
Juglans hindsii	Northern California black walnut	2
Juncaceae - Rush Family		
Juncus bufonius var. *bufonius*	toad rush	
Luzula comosa	Pacific wood rush	
Lamiaceae - Mint Family		
Lamium amplexicaule	common henbit	•
Stachys rigida var. *rigida*	rigid hedge nettle	
Lauraceae - Laurel Family		
Umbellularia californica	California bay	
Liliaceae - Lily Family		
Agapanthus africanus	lily-of-the-Nile	• HORT
Montiaceae		
Claytonia perfoliata	miner's lettuce	
Myrsinaceae - Myrsine family		
Anagallis arvensis	scarlet pimpernel	•
Oleaceae - Olive Family		
Olea europaea	olive	
Onagraceae - Evening Primrose Family		
Epilobium brachycarpum	tall willowherb	

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Inventory Of Vascular Plant Species Occurring At The Surrey Farm Estates Site

Apr 10, 2013

Sort By : Family

Scientific Name	Common Name	Note
Orobanchaceae - Broomrape Family		
Castilleja densiflora ssp. *densiflora*	owl's-clover	
Oxalidaceae - Oxalis Family		
Oxalis pes-caprae	Bermuda buttercup	•
Pinaceae - Pine Family		
Pinus halepensis	Aleppo pine	•
Pinus radiata	Monterey pine	2
Plantaginaceae - Plantain Family		
Kickxia spuria	fluellin	•
Platanaceae - Sycamore Family		
Platanus racemosa	western sycamore	
Poaceae - Grass Family		
Aira caryophyllea	silver European hairgrass	•
Avena fatua	wild oats	•
Avena sativa	cultivated oat	•
Briza maxima	big quaking grass	•
Briza minor	little quaking grass	•
Bromus carinatus var. *carinatus*	California brome	
Bromus diandrus	ripgut brome	•
Bromus hordeaceus	soft chess	•
Bromus madritensis ssp. *rubens*	red brome	•
Cynodon dactylon	Bermudagrass	•
Ehrharta erecta	erect veldtgrass	•
Elymus caput-medusae	medusahead	•

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Inventory Of Vascular Plant Species Occurring At The Surrey Farm Estates Site

Apr 10, 2013

Sort By : Family

Scientific Name	Common Name	Note
Elymus glaucus ssp. *glaucus*	blue wildrye	
Festuca bromoides	six-weeks fescue	•
Festuca myuros	rattail fescue	•
Festuca perennis	perennial ryegrass	•
Gastridium phleoides	nit grass	•
Hordeum marinum ssp. *gussoneanum*	Mediterranean barley	•
Hordeum murinum ssp. *leporinum*	foxtail barley	•
Melica imperfecta	Coast Range melic	
Phalaris minor	littleseed canarygrass	•
Stipa pulchra	purple needlegrass	
Polemoniaceae - Phlox Family		
Navarretia squarrosa	skunkweed	
Polygonaceae - Buckwheat Family		
Polygonum aviculare ssp. *depressum*	common knotweed	•
Polygonum sp.	knotweed	
Rumex acetosella	sheep sorrel	•
Rumex crispus	curly dock	•
Rumex pulcher	fiddle dock	•
Ranunculaceae - Buttercup Family		
Ranunculus californicus var. californiucus	California buttercup	
Rosaceae - Rose Family		
Aphanes occidentalis	western lady's mantle	
Heteromeles arbutifolia	toyon	

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Inventory Of Vascular Plant Species Occurring At The Surrey Farm Estates Site

Apr 10, 2013

Sort By : Family

Scientific Name	Common Name	Note
Prunus cerasifera	cherry plum	•
Pyracantha angustifolia	common firethorn	•
Rubus armeniacus	Himalayan blackberry	•
Rubus ursinus	California blackberry	
Rubiaceae - Madder Family		
Galium aparine	goose grass	
Sherardia arvensis	field madder	•
Saxifragaceae - Saxifrage Family		
Lithophragma affine	San Francisco woodland-star	
Themidaceae -		
Dichelostemma capitatum	blue dicks	
Triteleia laxa	Ithuriel's spear	
Urticaceae - Nettle Family		
Urtica dioica	stinging nettle	
Verbenaceae - Vervain Family		
Verbena lasiostachys	western vervain	
Viscaceae - Mistletoe Family		
Phoradendron leucarpum ssp. *tomentosum*	oak mistletoe	
Zygophyllaceae - Caltrop Family		
Tribulus terrestris	puncture vine	•

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Special-status Plant Species Evaluated For The Surrey Farm Estates Project

Wood Biological Consulting

FAMILY *Scientific Name* Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Asteraceae - Sunflower Family				
Balsamorhiza macrolepis big-scale balsamroot	Federal: none State: none CNPS: 1B.2 G2/S2 Other: DFG: SP	Occurs in cismontane woodland, chaparral, valley and foothill grassland Substrate: sometimes serpentinite. Recorded from Alameda, Butte, Colusa, El Dorado, Lake, Mariposa, Napa, Placer, Santa Clara, Solano, Sonoma, Tehama, Tuolumne.	Mar-Jun Perennial Herb	None: suitable habitat present. Would have been detectable during present survey.
Centromadia parryi ssp. *congdonii* Congdon's tarplant	Federal: none State: none CNPS: 1B.1 G3T2/S2 Other: DFG: SP	Occurs in valley and foothill grassland. Substrate: alkaline. Recorded from Alameda, Contra Costa, Monterey, San Luis Obispo, San Mateo, Santa Clara, Santa Cruz, Solano. Additional distribution: presumed extirpated in Santa Cruz and Solano counties.	May-Nov Annual Herb	None: marginally suitable habitat present. Would have been detectable during present survey.
Cirsium fontinale var. *campylon* Mt. Hamilton thistle	Federal: none State: none CNPS: 1B.2 G2T2/S2 Other: DFG: SP	Occurs in chaparral, cismontane woodland, foothill woodland, valley and foothill grassland Substrate: serpentine. Recorded from Alameda, Santa Clara, Stanislaus.	Feb-Oct Perennial Herb	None: no suitable habitat present. Would have been detectable during present survey.
Helianthus exilis serpentine sunflower	Federal: none State: none CNPS: 4.2 G3Q/S3. Other: DFG: SP	Occurs in chaparral, cismontane woodland, foothill woodland Substrate: serpentine. Recorded from Colusa, Glenn, Lake, Napa, Shasta, Siskiyou, Sonoma, Tehama, Trinity.	Jun-Nov Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Holocarpha macradenia Santa Cruz tarplant	Federal: FT State: SE CNPS: 1B.1 G1/S1 Other: DFG: SP	Occurs in coastal prairie, coastal scrub, valley and foothill grassland. Substrate: often clay, sandy. Recorded from Alameda, Contra Costa, Marin, Monterey, Santa Cruz, Solano. Additional distribution: presumed extirpated in Alameda, Contra Costa, and Marin counties.	Jun-Oct Annual Herb	None: marginally suitable habitat present. Would have been detectable during present survey.

Special-status Plant Species Evaluated For The Surrey Farm Estates Project

Wood Biological Consulting

FAMILY *Scientific Name* Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Lasthenia conjugens Contra Costa goldfields	Federal: FE State: none CNPS: 1B.1 G1/S1 Other: DFG: SP	Occurs in cismontane woodland, playas (alkaline), valley and foothill grassland, vernal pools Moisture: mesic. Recorded from Alameda, Contra Costa, Marin, Mendocino, Monterey, Napa, Santa Barbara, Santa Clara, Solano, Sonoma. Additional distribution: presumed extirpated in Mendocino, Santa Barbara and Santa Clara counties.	Mar-Jun Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Lessingia hololeuca woolly-headed lessingia	Federal: none State: none CNPS: 3 G3/S3 Other: DFG: SP	Occurs in broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland Substrate: serpentinite, clay. Recorded from Alameda, Marin, Monterey, Napa, San Mateo, Santa Clara, Solano, Sonoma, Yolo.	Jun-Oct Annual Herb	None: marginally suitable habitat present. Would have been detectable during present survey.
Lessingia micradenia var. *glabrata* smooth lessingia	Federal: none State: none CNPS: 1B.2 G2T2/S2 Other: DFG: SP	Occurs in chaparral, cismontane woodland Substrate: serpentine. Recorded from Santa Clara.	Jul-Nov Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Micropus amphibolus Mt. Diablo cottonweed	Federal: none State: none CNPS: 3.2 G3G4/S3 Other: DFG: SP	Occurs in broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland Substrate: rocky. Recorded from Alameda, Colusa, Contra Costa, Lake, Marin, Monterey, Napa, San Joaquin, San Luis Obispo, Santa Barbara, Santa Clara, Santa Cruz, Solano, Sonoma.	Mar-May Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Microseris paludosa marsh microseris	Federal: none State: none CNPS: 1B.2 G2/S2 Other: DFG: SP	Occurs in closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. Recorded from Marin, Mendocino, Monterey, San Benito, San Francisco, San Luis Obispo, San Mateo, Santa Cruz, Sonoma; presumed extirpated in San Francisco and San Mateo counties.	Apr-Jul Perennial Herb	None: marginally suitable habitat present. Would have been detectable during present survey.

Special-status Plant Species Evaluated For The Surrey Farm Estates Project

Wood Biological Consulting

FAMILY *Scientific Name* Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Monolopia gracilens woodland woollythreads	Federal: none State: none CNPS: 1B.2 G2G3/S2 Other:	Occurs in broadleafed upland forest (openings), chaparral (openings), cismontane woodland, North Coast coniferous forest (openings), valley and foothill grassland. Substrate: serpentinite. Recorded from Alameda, Contra Costa, Monterey, San Luis Obispo, San Mateo, Santa Clara, Santa Cruz.	Feb-Jul Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Pentachaeta bellidiflora white-rayed pentachaeta	Federal: FE State: SE CNPS: 1B.1 G1/S1 Other: DFG: SP	Occurs in valley and foothill grassland, cismontane woodland Substrate: often on serpentinite. Recorded from Marin, San Mateo, Santa Cruz. Additional distribution: known from fewer than 20 occurrences, presumed extirpated from Marin Co.	Mar-May Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Senecio aphanactis rayless ragwort	Federal: none State: none CNPS: 2B.2 G3?/S2 Other: DFG: SP	Occurs in chaparral, cismontane woodland, coastal scrub. Substrate: sometimes alkaline. Recorded from Alameda, Contra Costa, Fresno, Los Angeles, Merced, Monterey, Orange, Riverside, San Diego, San Luis Obispo, Santa Barbara, Santa Clara, Solano, Ventura.Santa Catalina Island, Santa Cruz Island, Santa Rosa Island.Also recorded from Baja California.	Jan-Apr Annual Herb	None: marginally suitable habitat present. Would have been detectable during present survey.
Boraginaceae - Borage Family				
Amsinckia lunaris bent-flowered fiddleneck	Federal: none State: none CNPS: 1B.2 G2?/S2? Other: DFG: SP	Occurs in coastal bluff scrub, cismontane woodland, valley and foothill grassland. Recorded from Alameda, Colusa, Contra Costa, Lake, Marin, Napa, San Benito, San Mateo, Santa Clara, Santa Cruz, Sonoma, Yolo.	Mar-Jun Annual Herb	None: marginally suitable habitat present. Would have been detectable during present survey.
Plagiobothrys chorisianus var. *chorisianus* Choris's popcorn-flower	Federal: none State: none CNPS: 1B.2 G3T2Q/S Other: DFG: SP	Occurs in chaparral, coastal prairie, coastal scrub, northern coastal scrub Moisture: moist. Recorded from Alameda, San Francisco, San Mateo, Santa Cruz.	Mar-Jun Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.

Special-status Plant Species Evaluated For The Surrey Farm Estates Project

Wood Biological Consulting

FAMILY *Scientific Name* Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Plagiobothrys chorisianus var. *hickmanii* Hickman's popcorn-flower	Federal: none State: none CNPS: 4.2 G3T3Q/S Other: DFG: SP	Occurs in chaparral, closed-cone coniferous forest, coastal scrub, marshes and swamps, vernal pools. Recorded from Monterey, San Benito, San Luis Obispo, San Mateo, Santa Clara, Santa Cruz.	Apr-Jun Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Plagiobothrys diffusus San Francisco popcorn-flower	Federal: none State: SE CNPS: 1B.1 G1Q/S1 Other: DFG: SP	Occurs in coastal prairie, valley and foothill grassland. Recorded from Alameda, San Francisco, San Mateo, Santa Cruz. Additional distribution: presumed extirpated in San Francisco County.	Mar-Jun Annual Herb	None: marginally suitable habitat present. Would have been detectable during present survey.
Plagiobothrys glaber hairless popcorn-flower	Federal: none State: none CNPS: 1A GH/SH Other: DFG: SP	Occurs in meadows, seeps (alkaline), marshes and swamps (coastal salt). Substrate: alkaline. Recorded from Alameda, Marin, San Benito, Santa Clara. Additional distribution: presumed extinct.	Mar-May Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Brassicaceae - Mustard Family				
Arabis blepharophylla coast rock cress	Federal: none State: none CNPS: 4.3 G3/S3.3? Other: DFG: SP	Occurs in broadleafed upland forest, coastal bluff scrub, coastal prairie, coastal scrub, mixed evergreen forest, northern coastal scrub. Recorded from Contra Costa, Marin, Monterey, San Francisco, San Mateo, Santa Cruz, Sonoma.	Feb-May Perennial Herb	None: no suitable habitat present. Would have been detectable during present survey.
Erysimum teretifolium Santa Cruz wallflower	Federal: FE State: SE CNPS: 1B.1 G2/S2 Other: DFG: SP	Occurs in chaparral, lower montane coniferous forest, yellow pine forest Habitats Note: sandy. Recorded from Santa Cruz.	Mar-Jul Perennial Herb	None: no suitable habitat present. Would have been detectable during present survey.

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FAMILY *Scientific Name* Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Streptanthus albidus ssp. *albidus* Metcalf Canyon jewel-flower	Federal: FE State: none CNPS: 1B.1 G2T1/S1 Other: DFG: SP	Occurs in valley and foothill grassland Substrate: serpentinite. Recorded from Santa Clara.	Apr-Jul Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Streptanthus albidus ssp. *peramoenus* most beautiful jewel-flower	Federal: none State: none CNPS: 1B.2 G2T2/S2 Other: DFG: SP	Occurs in chaparral, cismontane woodland, valley and foothill grassland. Substrate: serpentinite. Recorded from Alameda, Contra Costa, Monterey, Santa Clara, San Luis Obispo.	Mar-Oct Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Tropidocarpum capparideum caper-fruited tropidocarpum	Federal: none State: none CNPS: 1B.1 G1/S1 Other: DFG: SP	Occurs in valley and foothill grassland (alkaline hills). Substrate: alkaline. Recorded from Alameda, Contra Costa, Glenn, Monterey, San Joaquin, San Luis Obispo, Santa Clara. Additional distribution: Rediscovered in 2000 on Ft. Hunter Liggett. Presumed extirpated in Alameda, Contra Costa, Glenn, Santa Clara and San Joaquin counties.	Mar-Apr Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Bryaceae				
Anomobryum julaceum slender silver-moss	Federal: none State: none CNPS: 2B.2 G4G5/S2 Other: DFG: SP	Occurs in broadleafed upland forest, lower montane coniferous forest, North Coast coniferous forest. Moisture: damp soil and rock on outcrops, Habitats Note: usually on roadcuts. Recorded from Butte, Contra Costa, Humboldt, Los Angeles, Mariposa, Santa Barbara, Santa Cruz, Shasta, Sonoma.Also recorded from Oregon.	n/a Moss	None: no suitable habitat present. Would have been detectable during present survey.

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FAMILY *Scientific Name* Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Campanulaceae - Bellflower Family				
Campanula californica swamp harebell	Federal: none State: none CNPS: 1B.2 G3/S3 Other: DFG: SP	Occurs in bogs and fens, closed-cone coniferous forest, closed-cone pine forest, coastal prairie, freshwater marsh, marshes and swamps, meadows, North Coast coniferous forest. Moisture: moist. Recorded from Marin, Mendocino, Santa Cruz, Sonoma.	Jun-Oct Perennial Herb (rhizomatous)	None: no suitable habitat present. Would have been detectable during present survey.
Caryophyllaceae - Pink Family				
Arenaria paludicola marsh sandwort	Federal: FE State: SE CNPS: 1B.1 G1/S1 Other: DFG: SP	Occurs in bogs and fens, freshwater marsh, marshes and swamps. Recorded from Los Angeles, Mendocino, San Bernardino, San Francisco, San Luis Obispo, Santa Cruz.Also recorded from Washington.	May-Aug Perennial Herb (stoloniferous)	None: no suitable habitat present. Would have been detectable during present survey.
Silene verecunda ssp. *verecunda* San Francisco campion	Federal: none State: none CNPS: 1B.2 G5T2/S2 Other: DFG: SP	Occurs in chaparral, coastal bluff scrub, coastal prairie, coastal scrub, northern coastal scrub, valley and foothill grassland. Recorded from San Francisco, San Mateo, Santa Cruz.	Mar-Aug Perennial Herb	None: no suitable habitat present. Would have been detectable during present survey.
Convolvulaceae - Morning-glory Family				
Calystegia collina ssp. *venusta* South Coast Range morning-glory	Federal: none State: none CNPS: 4.3 G4T3/S3. Other: DFG: SP	Occurs in chaparral, cismontane woodland, foothill woodland, valley and foothill grassland Substrate: serpentine sedimentary. Recorded from Fresno, Monterey, San Benito, Santa Barbara, Santa Clara.	Apr-Jun Perennial Herb (rhizomatous)	None: marginally suitable habitat present. Would have been detectable during present survey.

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FAMILY *Scientific Name* Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Crassulaceae - Stonecrop Family				
Dudleya abramsii ssp. *setchellii* Santa Clara Valley dudleya	Federal: FE State: none CNPS: 1B.1 G3T2/S2 Other: DFG: SP	Occurs in cismontane woodland, valley and foothill grassland. Substrate: serpentinite, rocky. Recorded from Santa Clara.	Apr-Jun Perennial Herb	None: no suitable habitat present. Would have been detectable during present survey.
Cupressaceae - Cypress Family				
Hesperocyparis abramsiana var. *abramsiana* Santa Cruz cypress	Federal: FE State: SE CNPS: 1B.2 G1T1/S1. Other: DFG: SP	Occurs in chaparral, closed-cone coniferous forest, closed-cone pine forest, lower montane coniferous forest Substrate: granitic sedimentary sandstone. Recorded from San Mateo, Santa Cruz.	n/a Tree (evergreen)	None: no suitable habitat present. Would have been detectable during present survey.
Cyperaceae - Sedge Family				
Carex comosa bristly sedge	Federal: none State: none CNPS: 2B.1 G5/S2 Other: DFG: SP	Occurs in coastal prairie, freshwater marsh, marshes and swamps, valley and foothill grassland. Recorded from Contra Costa, Lake, Mendocino, San Bernardino, San Francisco, San Joaquin, Santa Cruz, Shasta, Sonoma.Also recorded from Idaho, Oregon, Washington.	May-Sep Perennial Herb (rhizomatous)	None: marginally suitable habitat present. Would have been detectable during present survey.
Carex saliniformis deceiving sedge	Federal: none State: none CNPS: 1B.2 G2/S2 Other: DFG: SP	Occurs in coastal prairie, coastal scrub, marshes and swamps, meadows, northern coastal scrub. Recorded from Humboldt, Mendocino, Santa Cruz, Sonoma.	June Perennial Herb (rhizomatous)	None: no suitable habitat present. Would have been detectable during present survey.

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FAMILY *Scientific Name* Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Ericaceae - Heath Family				
Arctostaphylos andersonii Anderson's manzanita	Federal: none State: none CNPS: 1B.2 G2/S2? Other: DFG: SP	Occurs in broadleafed upland forest, chaparral, mixed evergreen forest, North Coast coniferous forest, redwood forest. Recorded from San Mateo, Santa Clara, Santa Cruz.	Nov-Apr Shrub (evergreen)	None: no suitable habitat present. Would have been detectable during present survey.
Arctostaphylos silvicola Bonny Doon manzanita	Federal: none State: none CNPS: 1B.2 G1/S1 Other: DFG: SP	Occurs in chaparral, closed-cone coniferous forest, closed-cone pine forest, lower montane coniferous forest, yellow pine forest Habitats Note: sandy. Recorded from Santa Cruz.	Feb-Mar Shrub (evergreen)	None: no suitable habitat present. Would have been detectable during present survey.
Fabaceae - Legume Family				
Hoita strobilina Loma Prieta hoita	Federal: none State: none CNPS: 1B.1 G2/S2 Other: DFG: SP	Occurs in chaparral, cismontane woodland, riparian woodland Moisture: mesic,Substrate: usually serpentinite, Recorded from Contra Costa, Santa Clara, Santa Cruz, Alameda. Additional distribution: presumed extirpated from Alameda County.	May-Oct Perennial Herb	None: no suitable habitat present. Would have been detectable during present survey.
Trifolium buckwestiorum Santa Cruz clover	Federal: none State: none CNPS: 1B.1 G2/S2 Other: DFG: SP	Occurs in broadleafed upland forest, cismontane woodland, coastal prairie, mixed evergreen forest. Recorded from Monterey, Santa Cruz, Sonoma.	Apr-Oct Annual Herb	None: marginally suitable habitat present. Would have been detectable during present survey.
Trifolium hydrophilum saline clover	Federal: none State: none CNPS: 1B.2 G2/S2 Other: DFG: SP	Occurs in marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools. Recorded from Alameda, Colusa, Monterey, Napa, San Benito, San Luis Obispo, San Mateo, Santa Clara, Santa Cruz, Solano, Sonoma. Additional distribution: questionable in Colusa County.	Apr-Jun Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.

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FAMILY *Scientific Name* Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Fissidentaceae				
Fissidens pauperculus minute pocket-moss	Federal: none State: none CNPS: 1B.2 G3?/S1 Other: DFG: SP	Occurs in North Coast coniferous forest. Moisture: damp,Substrate: soils, Recorded from Butte, Humboldt, Marin, Mendocino, Santa Cruz.	n/a Moss	None: no suitable habitat present. Would have been detectable during present survey.
Geraniaceae - Geranium Family				
California macrophylla round-leaved filaree	Federal: none State: none CNPS: 1B.1 G2/S2 Other: DFG: SP	Occurs in cismontane woodland, valley and foothill grassland Substrate: clay. Recorded from Alameda, Butte, Colusa, Contra Costa, Fresno, Glenn, Kern, Kings, Lake, Lassen, Los Angeles, Merced, Monterey, Napa, Riverside, San Benito, San Diego, San Joaquin, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Solano, Sonoma, Stanislaus, Tehama, Ventura, Yolo.Santa Cruz Island.Also recorded from Baja California, Oregon, Utah.	Mar-May Annual Herb	None: marginally suitable habitat present. Would have been detectable during present survey.
Hypnaceae				
Dacryophyllum falcifolium tear drop moss	Federal: none State: none CNPS: 1B.3 G1/S1 Other:	Occurs in North Coast coniferous forest. Substrate: carbonate. Recorded from Monterey, Santa Cruz.	Moss	None: no suitable habitat present. Would have been detectable during present survey.
Iridaceae - Iris Family				
Iris longipetala coast iris	Federal: none State: none CNPS: 4.2 G3/S3.2 Other:	Occurs in coastal prairie, lower montane coniferous forest, meadows, seeps Moisture: mesic. Recorded from Alameda, Contra Costa, Humboldt, Marin, Mendocino, Monterey, Napa, San Benito, San Francisco, San Mateo, Santa Clara, Solano, Sonoma.	Mar-May Perennial Herb (rhizomatous)	None: marginally suitable habitat present. Would have been detectable during present survey.

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FAMILY *Scientific Name* Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Lamiaceae - Mint Family				
Monardella sinuata ssp. *nigrescens* northern curly-leaved monardella	Federal: none State: none CNPS: 1B.2 G2/S2 Other:	Occurs in chaparral, coastal dunes, coastal scrub, lower montane coniferous forest. Recorded from Marin, Monterey, Santa Cruz. Additional distribution: presumed extirpated from San Francisco County.	Apr-Sep Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Liliaceae - Lily Family				
Fritillaria liliacea fragrant fritillary	Federal: none State: none CNPS: 1B.2 G2/S2 Other: DFG: SP	Occurs in cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland Substrate: often serpentinite. Recorded from Alameda, Contra Costa, Marin, Monterey, San Benito, San Francisco, San Mateo, Santa Clara, Solano, Sonoma.	Feb-Apr Perennial Herb (bulbiferous)	None: marginally suitable habitat present. Would have been detectable during present survey.
Malvaceae - Mallow Family				
Malacothamnus aboriginum Indian Valley bush-mallow	Federal: none State: none CNPS: 1B.2 G2/S2 Other: DFG: SP	Occurs in chaparral, cismontane woodland, foothill woodland Habitats Note: rocky. Recorded from Fresno, Monterey, San Benito, Kings, Santa Clara, San Mateo.	Apr-Oct Shrub (deciduous)	None: no suitable habitat present. Would have been detectable during present survey.
Malacothamnus arcuatus arcuate bush-mallow	Federal: none State: none CNPS: 1B.2 G1Q/S1 Other: DFG: SP	Occurs in chaparral. Recorded from San Mateo, Santa Clara, Santa Cruz.	Apr-Sep Shrub (evergreen)	None: marginally suitable habitat present. Would have been detectable during present survey.

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FAMILY *Scientific Name* Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Malacothamnus hallii Hall's bush-mallow	Federal: none State: none CNPS: 1B.2 G2Q/S2 Other: DFG: SP	Occurs in chaparral, coastal scrub. Recorded from Contra Costa, Mendocino, Merced, San Mateo, Santa Clara, Stanislaus, Lake.	May-Oct Shrub (evergreen)	None: no suitable habitat present. Would have been detectable during present survey.
Sidalcea malachroides maple-leaved checkerbloom	Federal: none State: none CNPS: 4.2 G3G4/S3 Other: DFG: SP	Occurs in broadleafed upland forest, coastal prairie, coastal scrub, mixed evergreen forest, North Coast coniferous forest, redwood forest. Recorded from Del Norte, Humboldt, Mendocino, Monterey, Santa Clara, Santa Cruz, Sonoma.Also recorded from Oregon.	Apr-Aug Perennial Herb	None: marginally suitable habitat present. Would have been detectable during present survey.
Montiaceae - Montia Family				
Calandrinia breweri Brewer's calandrinia	Federal: none State: none CNPS: 4.2 G4/S3.2? Other: DFG: SP	Occurs in chaparral, coastal scrub Substrate: sandy or loamy, Habitats Note: disturbed sites and burns. Recorded from Contra Costa, Los Angeles, Marin, Mariposa, Mendocino, Monterey, Napa, San Bernardino, San Diego, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Sonoma, Ventura. Santa Cruz Island, Santa Rosa Island. Also recorded from Baja California.	Mar-Jun Annual Herb	None: marginally suitable habitat present. Would have been detectable during present survey.
Onagraceae - Evening Primrose Family				
Clarkia breweri Brewer's clarkia	Federal: none State: none CNPS: 4.2 G3/S3.2 Other: DFG: SP	Occurs in chaparral, cismontane woodland, coastal scrub, foothill woodland, northern coastal scrub Substrate: serpentine. Recorded from Alameda, Fresno, Merced, Monterey, San Benito, Santa Clara, Stanislaus.	Apr-May Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.

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FAMILY *Scientific Name* Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Clarkia concinna ssp. *automixa* Santa Clara red ribbons	Federal: none State: none CNPS: 4.3 G5?T3/S Other: DFG: SP	Occurs in chaparral, cismontane woodland. Recorded from Alameda, Santa Clara.	Apr-Jul Annual Herb	None: marginally suitable habitat present. Would have been detectable during present survey.
Clarkia lewisii Lewis's clarkia	Federal: none State: none CNPS: 4.3 G3/S3.3 Other: DFG: SP	Occurs in broadleafed upland forest, chaparral, cismontane woodland, closed-cone coniferous forest, coastal scrub, foothill woodland, northern coastal scrub. Recorded from Monterey, San Benito.	May-Jul Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Orchidaceae - Orchid Family				
Cypripedium fasciculatum clustered lady's-slipper	Federal: none State: none CNPS: 4.2 G4/S3.2 Other: DFG: SP	Occurs in Douglas-fir forest, lower montane coniferous forest, North Coast coniferous forest, redwood forest, yellow pine forest. Substrate: serpentine. Recorded from Butte, Del Norte, Humboldt, Nevada, Plumas, San Mateo, Santa Clara, Santa Cruz, Shasta, Sierra, Siskiyou, Tehama, Trinity, Yuba.Also recorded from Idaho, Oregon, Utah, Washington, Wyoming.	Mar-Jul Perennial Herb (rhizomatous)	None: no suitable habitat present. Would have been detectable during present survey.
Cypripedium montanum mountain lady's-slipper	Federal: none State: none CNPS: 4.2 G4/S4.2 Other: DFG: SP	Occurs in broadleafed upland forest, cismontane woodland, lower montane coniferous forest, mixed evergreen forest, North Coast coniferous forest, yellow pine forest. Recorded from Del Norte, Glenn, Humboldt, Madera, Mariposa, Mendocino, Modoc, Plumas, San Mateo, Santa Cruz, Shasta, Sierra, Siskiyou, Sonoma, Tehama, Trinity, Tuolumne.Also recorded from Idaho, Oregon, Washington, Wyoming.	Mar-Aug Perennial Herb (rhizomatous)	None: no suitable habitat present. Would have been detectable during present survey.

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FAMILY *Scientific Name* Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Piperia candida white-flowered rein orchid	Federal: none State: none CNPS: 1B.2 G3?/S2 Other: DFG: SP	Occurs in broadleafed upland forest, lower montane coniferous forest, North Coast coniferous forest, yellow pine forest. Substrate: serpentine. Recorded from Del Norte, Humboldt, Mendocino, San Mateo, Santa Cruz, Siskiyou, Sonoma, Trinity.Also recorded from Oregon, Washington.	May-Sep Perennial Herb	None: no suitable habitat present. Would have been detectable during present survey.
Phrymaceae - Lopseed Family				
Mimulus rattanii ssp. *decurtatus* Santa Cruz County monkeyflower	Federal: none State: none CNPS: 4.2 G4T3/S3. Other: DFG: SP	Occurs in chaparral, lower montane coniferous forest, yellow pine forest. Recorded from Monterey, Santa Cruz.	May-Jul Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Plantaginaceae - Plantain Family				
Collinsia multicolor San Francisco collinsia	Federal: none State: none CNPS: 1B.2 G2/S2 Other: DFG: SP	Occurs in closed-cone coniferous forest, coastal scrub Substrate: sometimes serpentinite. Recorded from Marin, Monterey, San Francisco, San Mateo, Santa Clara, Santa Cruz.	Mar-May Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Penstemon rattanii var. *kleei* Santa Cruz Mountains beardtongue	Federal: none State: none CNPS: 1B.2 G4T2/S2 Other: DFG: SP	Occurs in chaparral, lower montane coniferous forest, North Coast coniferous forest, yellow pine forest. Recorded from Santa Clara, Santa Cruz.	May-Jun Perennial Herb	None: no suitable habitat present. Would have been detectable during present survey.

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FAMILY *Scientific Name* Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Poaceae - Grass Family				
Elymus californicus California bottle-brush grass	Federal: none State: none CNPS: 4.3 G3/S3.3 Other: DFG: SP	Occurs in broadleafed upland forest, cismontane woodland, North Coast coniferous forest, riparian woodland. Recorded from Marin, San Mateo, Santa Cruz, Sonoma.	May-Nov Perennial Herb	None: suitable habitat present. Would have been detectable during present survey.
Polemoniaceae - Phlox Family				
Leptosiphon acicularis bristly linanthus	Federal: none State: none CNPS: 4.2 G3/S3.2 Other: DFG: SP	Occurs in chaparral, cismontane woodland, coastal prairie, valley and foothill grassland. Recorded from Alameda, Butte, Contra Costa, Fresno, Humboldt, Lake, Marin, Mendocino, Napa, San Mateo, Santa Clara, Sonoma. Additional distribution: questionable in Contra Costa County.	Apr-Jul Annual Herb	None: marginally suitable habitat present. Would have been detectable during present survey.
Leptosiphon ambiguus serpentine linanthus	Federal: none State: none CNPS: 4.2 G3/S3.2 Other: DFG: SP	Occurs in cismontane woodland, coastal scrub, foothill woodland, northern coastal scrub, valley and foothill grassland. Substrate: usually serpentinite. Recorded from Alameda, Contra Costa, Merced, San Benito, San Joaquin, San Mateo, Santa Clara, Santa Cruz, Stanislaus.	Mar-Jun Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Leptosiphon grandiflorus large-flowered linanthus	Federal: none State: none CNPS: 4.2 G3/S3.2 Other: DFG: SP	Occurs in coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal dunes, coastal prairie, coastal scrub, valley and foothill grassland Substrate: usually sandy. Recorded from Alameda, Kern, Madera, Marin, Merced, Monterey, San Francisco, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Sonoma; presumed extirpated in Santa Barbara County.	Apr-Aug Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.

Special-status Plant Species Evaluated For The Surrey Farm Estates Project

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FAMILY *Scientific Name* Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Polygonaceae - Buckwheat Family				
Chorizanthe pungens var. *hartwegiana* Ben Lomond spineflower	Federal: FE State: none CNPS: 1B.1 G2T1/S2 Other: DFG: SP	Occurs in lower montane coniferous forest, yellow pine forest Habitats Note: sandy. Recorded from Santa Cruz.	Apr-Jul Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Chorizanthe pungens var. *pungens* Monterey spineflower	Federal: FT State: none CNPS: 1B.2 G2T2/S2 Other: DFG: SP	Occurs in chaparral, cismontane woodland, coastal dunes, coastal sage scrub, coastal scrub, foothill woodland, northern coastal scrub, valley and foothill grassland Habitats Note: sandy. Recorded from Monterey, San Luis Obispo, Santa Cruz.	Apr-Jun Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Chorizanthe robusta var. *robusta* robust spineflower	Federal: FE State: none CNPS: 1B.1 G2T1/S1 Other: DFG: SP	Occurs in chaparral (maritime), cismontane woodland (openings), coastal dunes, coastal scrub Substrate: sandy, gravelly. Recorded from Alameda, Marin, Monterey, San Francisco, San Mateo, Santa Clara, Santa Cruz. Additional distribution: presumed extirpated in Alameda, Santa Clara and San Mateo counties; questionable in Marin..	Apr-Sep Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.
Eriogonum nudum var. *decurrens* Ben Lomond buckwheat	Federal: none State: none CNPS: 1B.1 G5T1/S1 Other: DFG: SP	Occurs in chaparral, cismontane woodland, foothill woodland, lower montane coniferous forest, yellow pine forest Habitats Note: sandy. Recorded from Alameda, Santa Cruz.	Jun-Oct Perennial Herb	None: no suitable habitat present. Would have been detectable during present survey.
Polygonum hickmanii Scotts Valley polygonum	Federal: FE State: SE CNPS: 1B.1 G1/S1 Other: DFG: SP	Occurs in valley and foothill grassland. Substrate: mudstone and sandstone. Recorded from Santa Cruz. Additional distribution: known from only two occurrences in Scotts Valley.	May-Aug Annual Herb	None: no suitable habitat present. Would have been detectable during present survey.

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FAMILY *Scientific Name* Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Portulacaceae - Purslane Family				
Calyptridium parryi var. *hesseae* Santa Cruz Mountains pussypaws	Federal: none State: none CNPS: 1B.1 G3G4T2/ Other: DFG: SP	Occurs in chaparral, cismontane woodland, foothill woodland. Substrate: sandy or gravelly, Habitats Note: openings. Recorded from Monterey, San Luis Obispo, Santa Clara, Santa Cruz, Stanislaus.	May-Aug Annual Herb	None: marginally suitable habitat present. Would have been detectable during present survey.
Primulaceae - Primrose Family				
Androsace elongata ssp. *acuta* California androsace	Federal: none State: none CNPS: 4.2 G5?T3T4 Other: DFG: SP	Occurs in chaparral, cismontane woodland, coastal scrub, meadows, seeps, pinyon and juniper woodland, valley and foothill grassland Moisture: dry. Recorded from Alameda, Colusa, Contra Costa, Fresno, Glenn, Kern, Los Angeles, Merced, Riverside, San Benito, San Bernardino, San Diego, San Joaquin, San Luis Obispo, San Mateo, Santa Clara, Siskiyou, Stanislaus, Tehama.Also recorded from Oregon, Baja California.	Mar-Jun Annual Herb	None: marginally suitable habitat present. Would have been detectable during present survey.
Ranunculaceae - Buttercup Family				
Ranunculus lobbii Lobb's aquatic buttercup	Federal: none State: none CNPS: 4.2 G4/S3.2 Other: DFG: SP	Occurs in cismontane woodland, North Coast coniferous forest, valley and foothill grassland, vernal pools Moisture: mesic. Recorded from Alameda, Contra Costa, Marin, Mendocino, Napa, Solano, Sonoma, Santa Cruz, San Mateo.Also recorded from Oregon.	Feb-May Annual Herb, Aquatic	None: no suitable habitat present. Would have been detectable during present survey.
Rhamnaceae - Buckthorn Family				
Ceanothus ferrisiae Coyote ceanothus	Federal: FE State: none CNPS: 1B.1 G2/S2 Other: DFG: SP	Occurs in chaparral, coastal scrub, valley and foothill grassland Substrate: serpentinite. Recorded from Santa Clara.	Jan-May Shrub (evergreen)	None: no suitable habitat present. Would have been detectable during present survey.

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FAMILY *Scientific Name* Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Rosaceae - Rose Family				
Horkelia cuneata ssp. *sericea* Kellogg's horkelia	Federal: none State: none CNPS: 1B.1 G4T2/S2 Other: DFG: SP	Occurs in chaparral (maritime), closed-cone coniferous forest, coastal dunes, coastal scrub. Substrate: sandy or gravelly, Habitats Note: openings. Recorded from Alameda, Marin, Monterey, San Francisco, San Luis Obispo, San Mateo, Santa Barbara, Santa Cruz. Additional distribution: presumed extirpated in Alameda, Marin, and San Francisco counties.	Apr-Sep Perennial Herb	None: no suitable habitat present. Would have been detectable during present survey.
Horkelia marinensis Point Reyes horkelia	Federal: none State: none CNPS: 1B.2 G2/S2 Other: DFG: SP	Occurs in coastal dunes, coastal prairie, coastal scrub, coastal strand, northern coastal scrub. Recorded from Marin, Mendocino, San Mateo, Santa Cruz.	May-Sep Perennial Herb	None: no suitable habitat present. Would have been detectable during present survey.
Rosa pinetorum pine rose	Federal: none State: none CNPS: 1B.2 G2Q/S2 Other: DFG: SP	Occurs in closed-cone coniferous forest, red fir forest, yellow pine forest. Recorded from Monterey, San Mateo.	May-Jul Shrub	None: no suitable habitat present. Would have been detectable during present survey.
Rubiaceae - Madder Family				
Galium andrewsii ssp. *gatense* serpentine bedstraw	Federal: none State: none CNPS: 4.2 G5T3/S3. Other: DFG: SP	Occurs in chaparral, cismontane woodland, foothill woodland, lower montane coniferous forest, yellow pine forest Substrate: serpentine. Recorded from Alameda, Contra Costa, Fresno, Monterey, San Benito, San Luis Obispo, Santa Clara.	Apr-Jul Perennial Herb	None: no suitable habitat present. Would have been detectable during present survey.

Special-status Plant Species Evaluated For The Surrey Farm Estates Project

Wood Biological Consulting

FAMILY *Scientific Name* Common Name	Status	Habitat Affinities And Reported Distribution	Blooming Time Life Form	Potential For Occurrence On Site
Thymelaeaceae - Mezereum Family				
Dirca occidentalis western leatherwood	Federal: none State: none CNPS: 1B.2 G2G3/S2 Other: DFG: SP	Occurs in broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, North Coast coniferous forest, riparian forest, riparian woodland Moisture: mesic. Recorded from Alameda, Contra Costa, Marin, San Mateo, Santa Clara, Sonoma.	Jan-Apr Shrub (deciduous)	None: no suitable habitat present. Would have been detectable during present survey.

Special-status Wildlife Species Evaluated For The Surrey Farm Estates Project

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Pelecypoda - Clams And Mussels			
Margaritifera falcata western pearlshell mussel	Federal none State none Other DFW: SA Global/State Rank: G4G5/S1S2	Aquatic; perfers low velocity waters Recorded from Mendocino, Siskiyou counties.	None: no suitable habitat present.
Arachnida - Arachnids			
Microcina homi Hom's micro-blind harvestman	Federal none State none Other DFG: Special Animal	known only from serpentine rocks in grassland habitats. This blind species occurs clinging to the undersides of serpentine rocks near permananent springs. Recorded from Santa Clara County. Nearest record is 7.75 mi E of site.	None: no suitable habitat present.
Malacostraca			
Calasellus californicus no common name	Federal none State none Other DFG: SA	A blind freshwater isopod measuring up to 6.2mm, with 5 setae on the inner lobe of the maxilla. Occurs in freshwater habits including wells and springs. Recorded from Lake, Napa, Santa Clara counties. Additional distribution: known from only a single collection in each county. Nearest record is 3.5 mi SW of site.	Not expected: habitat in Ross Creek at study area presumed to be suitable.
Insecta - Insects			
Adela oplerella Opler's longhorn moth	Federal none State none Other DFG: SA	All known occurrences except Santa Cruz site are from serpentine grassland. Larvae feed on Platystemon californicus. Recorded from Alameda, Marin, Santa Clara, Santa Cruz, Sonoma counties. Nearest record is 10 mi NE of site.	None: no suitable habitat present. Host plants absent from site.

Special-status Wildlife Species Evaluated For The Surrey Farm Estates Project

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Cicindela ohlone Ohlone tiger beetle	Federal FE State none Other DFG: SA	Inhabits poorly-drained substrates of clay or sandy clay soil over bedrock of Santa Cruz mudstone. Found on remnant native grasslands with California oatgrass & purple needlegrass. Recorded from Santa Cruz County. Nearest record is 11 mi SW of site.	None: no suitable habitat present. Outside of species' known range.
Euphilotes enoptes smithi Smith's blue butterfly	Federal FE State none Other DFG: SA	Most commonly associated with coastal dunes and coastal sage scrub plant communities. Host plants are Eriogonum latifolium and Eriogonum parvifolium are utilized as both larval and adult foodplants. Recorded from Monterey, San Luis Obispo, Santa Cruz counties. Nearest record is 13 mi SW of site. Project site is outside of designated Critical Habitat.	None: no suitable habitat present. Host plants absent from site.
Euphydryas editha bayensis bay checkerspot butterfly	Federal FT State none Other DFG: SA	Inhabits native grasslands on outcrops of serpentine soil. The primary host plant is Plantago erecta. Secondary host plants include Orthocarpus densiflorus and O. purpurscens. Recorded from Alameda, San Francisco, San Mateo, Santa Clara counties. Additional distribution: occurs in the vicinity of the San Francisco Bay. Nearest record is 8.4 mi SW of site. Project site is outside of designated Critical Habitat.	None: no suitable habitat present. Primary and secondary host plants absent from site.
Philanthus nasalis Antioch specid wasp	Federal none State none Other DFG: SA	Associated with sand dunes. Previously known only from the Antioch Dunes. Now known only from inland sandhills of Santa Cruz County. Found on flowers of Eriogonum nudum decurrens, Gnaphalium beneolens, G. "Zayateense", Ericameria. Recorded from Contra Costa, Santa Cruz counties. Nearest record is 9.5 mi SW of site.	None: no suitable habitat present.
Polyphylla barbata Mount Hermon June beetle	Federal FE State none Other DFG: SA	Restricted to sand parkland, deciduous/mixed coniferous forest and Sand Hills srub. Recorded among Ponderosa pine, silverleaf manzanita, bracken fern, grasses, and annuals including wallflower. Recorded from Santa Cruz County. Additional distribution: known only from sand hills at Mt. Hermon (type locality). Nearest record is 12-14 mi SW of site.	None: no suitable habitat present. Outside of species' known range.

Special-status Wildlife Species Evaluated For The Surrey Farm Estates Project

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Speyeria callippe callippe callippe silverspot butterfly	Federal FE State none Other DFG: SA Global/State Rank: G5T1/S1 Xerces: C	Inhabits northern coastal scrub. Hostplant is Viola pedunculata. Most adults found on east-facing slopes. Males congregate on hilltops in search of females. Recorded from Alameda, San Mateo, Solano, Sonoma counties.	None: no suitable habitat present.
Speyeria zerene myrtleae Myrtle's silverspot	Federal FE State none Other DFG: SA Global/State Rank: G5T1/S1 Xerces: C	Restricted to the foggy, coastal dunes and hills Larval foodplant thought to be Viola adunca. Recorded from Marin, San Mateo, Sonoma counties. Additional distribution: Point Reyes Peninsula. Extirpated from coastal San Mateo County.	None: no suitable habitat present.
Trimerotropis infantilis Zayante band-winged grasshopper	Federal FE State none Other DFG: SA	Restricted to sand parkland habitat found on ridges and hills within the Zayante San Hills ecosystem. Recorded from Santa Cruz County. Nearest record is 12-13 mi SW of site. Project site is outside of designated Critical Habitat.	None: no suitable habitat present. Outside of species' known range.

Special-status Wildlife Species Evaluated For The Surrey Farm Estates Project

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Actinopterygii - Ray-finned Fishes			
Eucyclogobius newberryi tidewater goby	Federal FE State none Other AFS: E DFG: SSC	Found in shallow coastal lagoons and brackish bays at mouth of freshwater streams. Requires fairly still but not stagnant water and high oxygen levels. Tolerates a wide variation in salinity (1-28 ppt.) and temperature (9-25°C). The substrate and vegetation can vary among lagoon, creek and marsh habitats. Recorded from Alameda, Del Norte, Humboldt, Los Angeles, Marin, Mendocino, Monterey, Orange, San Diego, San Francisco, San Luis Obispo, San Mateo, Santa Barbara, Santa Cruz, Sonoma, Ventura counties. Additional distribution: occurs along the southern California coast from Agua Hedionda Lagoon, to the mouth of the Smith River. Project site is outside of designated Critical Habitat.	None: no suitable habitat present.
Hypomesus transpacificus delta smelt	Federal FT State SE Other AFS: T DFG: SA	Occurs in open brackish and freshwater of large channels. Most frequently found at salinities < 2ppt.; seldom found at salinities > 10 ppt. Occurs in the Sacramento-San Joaquin Delta. Occurs seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Recorded from Solano, Sacramento, San Joaquin, Solano, Yolo counties. Project site is outside of designated Critical Habitat.	None: no suitable habitat present. Outside of species' known range.
Oncorhynchus kisutch coho salmon - Central Cal. coast ESU	Federal FE State SE Other AFS: E DFG: SA	Anadromous. Inhabits Bay Area and coastal rivers and streams with fish access from/to ocean, cover and acceptable water quality. Requires beds of loose, silt-free, coarse gravel for spawning. Also requires cover, cool water and sufficient dissolved oxygen. Federal Listing covers populations between Punta Gorda and San Lorenzo River. State listing covers populations south of San Francisco Bay only. Recorded from Humboldt, Marin, Mendocino, Santa Cruz, Sonoma counties. Project site is outside of designated Critical Habitat.	None: no suitable habitat present. Project site is outside of the range of this ESU.
Oncorhynchus mykiss irideus steelhead - south/central Calif. coast DPS	Federal FT State none Other AFS: T DFG: SSC	The Distinct Population Segment includes steelhead inhabiting streams and tributaries in coastal basins south from the Pajarro River to, but not including, the Santa Maria River. Recorded from Monterey, San Luis Obispo, Santa Clara, Santa Cruz counties. Project site is outside of designated Critical Habitat.	None: no suitable habitat present. Project site is outside of the range of this ESU.

Special-status Wildlife Species Evaluated For The Surrey Farm Estates Project

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Oncorhynchus mykiss irideus steelhead - Central Valley DPS	Federal FT State none Other AFS: T DFG: SA	The Distinct Population Segment includes steelhead inhabiting the Sacramento and San Joaquin Rivers and their tributaries. Also included are river reaches and estuarine areas of the Sacramento-San Joaquin Delta, all waters from Chipps Island westward to Carquinez Bridge, including Honker Bay, Grizzly Bay, Suisun Bay, and Carquinez Strait, all waters of San Pablo Bay westward of the Carquinez Bridge, and all waters of San Francisco Bay (north of the San Francisco/Oakland Bay Bridge) from San Pablo Bay to the Golden Gate Bridge. Project site is outside of designated Critical Habitat.	None: no suitable habitat present. Project site is outside of the range of this ESU.
Oncorhynchus mykiss irideus steelhead - central Calif. coast DPS	Federal FT State none Other AFS: T DFG: SA	The Distinct Population Segment includes steelhead inhabiting streams and tributaries from the Russian River south to Soquel Creek and to, but not including the Pajarro River. Also occurs in the San Francisco and San Pablo basins. Recorded from Alameda, Marin, Napa, San Mateo, Santa Cruz, Sonoma counties. Project site is outside of designated Critical Habitat.	None: the reach of Ross Creek on site does not provide suitable habitat. Project site is within the range of this ESU.
Oncorhynchus tshawytscha chinook salmon - Central Valley spring-run ESU	Federal FT State ST Other AFS: T DFG: SA	Federal listing refers to populations spawning in Sacramento River and its tributaries. Adult numbers dependet on pool depth and volume, amunt of cover,and proximiy to gravel . Water temeratures grater than 27 C lethal to adult. Recorded from Butte, Humboldt, Nevada, Shasta, Siskiyou, Tehama, Trinity, Yuba counties. Project site is outside of designated Critical Habitat.	None: no suitable habitat present. Project site is outside of the range of this ESU.

Special-status Wildlife Species Evaluated For The Surrey Farm Estates Project

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Oncorhynchus tshawytscha chinook salmon - Sacramento River winter-run ESU	Federal FE State SE Other AFS: E DFG: SA	Anadromous. Spawning restricted to the Sacramento River. Requires clean, cold water over gravel beds with water temperatures between 6 and 14 c for spawning. Federal listing refers to populations in the Sacramento River from Keswick Dam, Shasta County (River Mile 302) to Chipps Island (River Mile 0) at the westward margin of the Sacramento-San Joaquin Delta, all waters from Chipps Island westward to Carquinez Bridge, including Honker Bay, Suisun Bay, and Carquinez Strait, all waters of San Pablo Bay westward of the Carquinez Bridge, and all waters of San Francisco Bay (north of the San Francisco/Oakland Bay Bridge) from San Pablo Bay to the Golden Gate Bridge. Recorded from Butte, Colusa, Contra Costa, Glenn, Napa, Nevada, Placer, Plumas, Sacramento, Shasta, Solano, Sutter, Tehama, Trinity, Yolo, Yuba counties. Project site is outside of designated Critical Habitat.	None: no suitable habitat present. Project site is outside of the range of this ESU.
Amphibia - Amphibians			
Ambystoma californiense California tiger salamander - Central Calif. DPS	Federal FT State ST Other DFG: SSC	Needs underground refuges, especially ground squirrel burrows and vernal pools or other seasonal water sources for breeding. Recorded from Alameda, Amador, Butte, Calaveras, Contra Costa, Fresno, Kern, Kings, Madera, Mariposa, Merced, Monterey, Riverside, Sacramento, San Benito, San Joaquin, San Luis Obispo, San Mateo, Santa Clara, Santa Cruz, Solano, Stanislaus, Sutter, Tulare, Yolo counties. Nearest potential breeding site is pond in horse pasture 0.5 mi to SW; nearest record is 3.5 mi E of site. Site is outside of designated Critical Habitat.	Not expected: site lacks breeding habitat and subterranean upland refugia habitat.

Special-status Wildlife Species Evaluated For The Surrey Farm Estates Project

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Rana boylii foothill yellow-legged frog	Federal none State none Other BLM: S DFG: SSC FS: S	Inhabits partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Requires at least 15 weeks to complete metamorphosis. Recorded from Butte, Colusa, Contra Costa, Del Norte, El Dorado, Fresno, Glenn, Humboldt, Lake, Madera, Marin, Mariposa, Mendocino, Merced, Monterey, Napa, Nevada, Placer, Plumas, San Benito, San Joaquin, San Luis Obispo, San Mateo, Santa Clara, Santa Cruz, Shasta, Sierra, Siskiyou, Solano, Sonoma, Stanislaus, Tehama, Trinity, Tulare, Tuolumne, Yolo counties. Nearest record is 3.5 mi SE of site.	Possible: marginally suitable habitat within Ross Creek at site. Potential dispersal along Ross Creek from Guadalupe Creek to study area.
Rana draytonii California red-legged frog	Federal FT State none Other DFG: SSC	Inhabits lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat. Recorded from Alameda, Butte, Butte, Calaveras, Contra Costa, El Dorado, Fresno, Glenn, Lake, Los Angeles, Marin, Mariposa, Mendocino, Merced, Monterey, Napa, Nevada, Placer, Plumas, Riverside, San Benito, San Bernardino, San Diego, San Francisco, San Joaquin, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Shasta, Solano, Sonoma, Stanislaus, Tehama, Tuolumne, Ventura, Yuba counties. Nearest potential breeding site is pond in horse pasture 0.5 mi to SW; nearest record is 4 mi SE of site. Site is outside of designated Critical Habitat.	Possible: no suitable breeding habitat onsite; suitable non-breeding aquatic habitat within Ross Creek. Suitable upland habitat within Ross Creek riparian corridor and adjacent grasslands.
Taricha torosa torosa Coast Range newt	Federal none State none Other DFG: SSC	Lives in terrestrial habitats and will migrate over 1 km to breed in ponds, reservoirs and slow moving streams. Listing refers to populations from Monterey Co. south only. Recorded from Los Angeles, Monterey, Orange, San Benito, San Diego counties. Additional distribution: found in coastal drainages from Mendocino County to San Diego County.	None: suitable habitat present. Outside of species' known range.

Special-status Wildlife Species Evaluated For The Surrey Farm Estates Project

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Reptilia - Reptiles			
Emys marmorata Pacific pond turtle	Federal none State none Other BLM: S DFG: SSC FS: S	A thoroughly aquatic turtle inhabiting ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. Needs basking sites and sandy banks or grassy open fields in upland areas for egg-laying. Recorded from Alameda, Amador, Butte, Calaveras, Colusa, Contra Costa, Del Norte, El Dorado, Fresno, Glenn, Humboldt, Kern, Kings, Lake, Lassen, Los Angeles, Madera, Marin, Mariposa, Mendocino, Merced, Modoc, Monterey, Napa, Nevada, Orange, Placer, Plumas, Riverside, Sacramento, San Benito, San Bernardino, San Diego, San Francisco, San Joaquin, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Solano, Sonoma, Stanislaus, Tehama, Trinity, Tulare, Tuolumne, Ventura, Yolo, Yuba counties. Nearest record is 0.65 mi NE of site.	Not expected: marginally suitable habitat present in Ross Creek at site. Shallow water depth, low stream flow and lack of basking areas.
Phrynosoma blainvillii coast horned lizard	Federal none State none Other DFG: SSC FS: S	Inhabits coastal sage scrub and chaparral in arid and semi-arid climate condit. Prefers friable, rocky, or shallow sandy soils. Recorded from Alameda, Butte, Contra Costa, El Dorado, Fresno, Kern, Los Angeles, Madera, Merced, Monterey, Nevada, Orange, Placer, Riverside, San Bernardino, San Diego, San Joaquin, San Luis Obispo, Santa Barbara, Santa Clara, Stanislaus, Tulare, Tuolumne, Ventura, Ventura counties. Also from Mexico. Nearest record is 10 mi SE of site.	None: no suitable habitat present. Outside of species' known range.
Aves - Birds			
Accipiter cooperii Cooper's hawk	Federal none State none Other DFG: WL FWS: MBTA	Inhabits primarily open, interrupted or marginal woodlands. Nests mainly in riparian groves of deciduous trees in canyon bottoms on river flood-plains. Also nests in coast live oak. DFG listed covers nesting individuals only. Nearest record is 5 mi NE of site. Confirmed nester in W, NW, N and central Santa Clara Co.	Possible: suitable nesting habitat in mixed oak woodland and riparian habitat.

Special-status Wildlife Species Evaluated For The Surrey Farm Estates Project

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Accipiter striatus sharp-shinned hawk	Federal none State none Other DFG: WL FWS: MBTA	Nests in ponderosa pine, black oak, riparian deciduous, mixed conifer and Jeffrey pine habitats. Prefers riparian areas. Nests on north-facing slopes, usually within 275 ft of water. Plucking perches are critical requirements. DFG listing covers nesting birds only. DFG listing covers nesting birds only. Confirmed breeder in northern and central Santa Clara Co.	Possible: suitable nesting habitat in mixed oak woodland and riparian habitat.
Agelaius tricolor tricolored blackbird	Federal none State none Other ABC: WL BLM: S DFG: SSC FWS: BCC; MBTA	Highly colonial species. Requires open water, protected nesting substrate, and foraging areas with insect prey within a few km of the colony. Greatest concentrations are in the Central Valley and vicinity. Largely endemic to California. DFG listing covers nesting colonies only. Not known to nest in W Santa Clara Co.; confirmed nester in N and central Santa Clara Co.	None: no suitable nesting habitat present.
Ammodramus savannarum grasshopper sparrow	Federal none State none Other DFG: SSC FWS: MBTA	Inhabits moderately open grasslands and prairies with patchy bare ground, cultivated fields and forest clearings with short to moderately tall grasses and scattered shrubs. Areas with native bunchgrasses are important features in southern California. Breeds from min-March through August; double or treble-brooded. DFG listing covers nesting birds only. Not known to nest in W Santa Clara Co.; confirmed nester in NW, N and central Santa Clara Co.	Not expected: suitable nesting habitat in grasslands with scattered shrubs.

Special-status Wildlife Species Evaluated For The Surrey Farm Estates Project

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Amphispiza belli belli Bell's sage sparrow	Federal none State none Other ABC: WL DFG: WL FWS: MBTA, BCC	Inhabits dry brushy foothills, chaparral and coastal sage scrub habitats west of the Sierras from Redding south into Baja California, Mexico. Breeding begins in March; double-brooded. DFG listing covers nesting birds only. Confirmed breeder in E and W Santa Clara Co.	Possible: marginally suitable nesting habitat present in shrubby portions of non-native annual grasslands and mixed oak woodland habitat.
Aquila chrysaetos golden eagle	Federal none State none Other CDF: S DFG: FP, WL FWS: BCC, BEPA, MBTA	Nests and winters in rolling foothills and mountain areas in sage-juniper flats and deserts. Nests on cliff-walled canyons and large trees in open areas. DFG listing covers nesting, non-breeding and wintering individuals. DFG listing covers nesting and wintering birds only. Probable breeder in W and NW Santa Clara Co.	Not expected: marginally suitable nesting habitat in larger trees within site and adjacent parcels. Suitable wintering habitat present and suitable but limited foraging habitat in grasslands. No large stick nests present.
Athene cunicularia burrowing owl	Federal none State none Other BLM: S DFG: SSC FWS: BCC; MBTA	Inhabits open, dry annual or perenial grasslands, deserts and scrublands characterized by low-growing vegetation. Nests underground in mammal burrows, especially those of California ground squirrel. DFG listing covers burrow sites and some wintering sites only. Nearest record is 6.5 mi NE of site. Confirmed nester in NW and central Santa Clara Co.	Not expected: site lacks burrow refugia. Only one burrow of suitable size located within study area.

Special-status Wildlife Species Evaluated For The Surrey Farm Estates Project

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Baeolophus inornatus oak titmouse	Federal none State none Other ABC: WL DFG: SA FWS: MBTA	The oak titmouse is a common resident in a variety of habitats, but is primarily associated with oaks. Occurs in montane hardwood-conifer, montane hardwood, blue, valley, and coastal oak woodlands, and montane and valley foothill riparian habitats. Range encircles San Joaquin Valley, extending east from the coast through Kern Co. onto the western slope of the Sierra Nevada north to Shasta Co. DFG listing covers nesting individuals only. Confirmed nester throughout Santa Clara Co.	Detected: suitable nesting and foraging habitat present in woodland habitat. Species observed foraging in old oak tree(s) during site visit on June 26, 2012 survey.
Brachyramphus marmoratus marbled murrelet	Federal FT State SE Other ABC: WL CDF: S DFG: SA FWS: MBTA	Nests in old-growth redwood-dominated forests, up to six miles inland, often in Douglas fir trees. Forages near-shore. Nests inland along the northern California coast. Listings covers nesting sites. Nearest record is 15.5 mi W of site. Project site is outside of designated Critical Habitat.	None: no suitable habitat present.
Buteo swainsoni Swainson's hawk	Federal none State ST Other ABC: WLBCC AUD: WL DFG: SA FS: S FWS: BCC; MBTA Global/State Rank: G5/S3	Breeds in stands with few trees in juniper-sage flats, riparian areas and in oak savannah. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations. DFG listing covers nesting birds. Recorded from Butte, Colusa, Contra Costa, Fresno, Glenn, Inyo, Kern, Kings, Lassen, Los Angeles, Madera, Merced, Modoc, Mono, Placer, Sacramento, San Bernardino, San Joaquin, Siskiyou, Solano, Stanislaus, Sutter, Tehama, Tulare, Yolo counties.	Not expected: marginally suitable nesting habitat present.

Special-status Wildlife Species Evaluated For The Surrey Farm Estates Project

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Chaetura vauxi Vaux's swift	Federal none State none Other DFG: SSC FWS: MBTA	Nests in redwood, Douglas fir, and other coniferous forests. Nests in large hollow trees and snags. Often nests in flocks. Forages over most terrains and habitats but shows a preference for foraging over rivers and lakes. DFG listing covers nesting birds only. Confirmed breeder in central-western Santa Clara Co.	None: marginal nesting habitat present in mature oak trees. Outside of species' known range.
Charadrius alexandrinus nivosus western snowy plover	Federal FT State none Other ABC: WL DFG: SSC FWS: BCC, MBTA	Inhabits sandy beaches, salt pond levees and shores of large alkali lakes. Requires sandy, gravelly or friable soils for nesting. Federal listing applies only to the Pacific coastal population. AUD listing covers full species. Listings cover nesting sites. Nearest record is 20 mi NW of site. Project site is outside of designated Critical Habitat.	None: no suitable habitat present. Outside species present and historic breeding range.
Chondestes grammacus lark sparrow	Federal none State none Other DFG: SA FWS: MBTA	A year-round resident throughout much of California. Inhabits open grasslands, cultivated fields (especially those left fallow), pastures, and shrub-steppe and Pinyon-juniper edges. Nests on ground; nests made of grassess and small twigs. Breeding begins in early April to June; double-brooded. DFG listed covers nesting individuals only. Confirmed nester in N, S, E, W and central Santa Clara Co.	Not expected: suitable nesting habitat present in non-native annual grasslands.
Circus cyaneus northern harrier	Federal none State none Other DFG: SSC FWS: MBTA	Inhabits both freshwater and saltwater marshes and adjacent upland grasslands. Nests on the ground in tall grasses in grasslands and meadows. Breeding begins in March; single-brooded. DFG listing covers nesting individuals only. Confirmed breeder in NW and S Santa Clara Co.	Not expected: moderately suitable nesting habitat in grasslands. Study area is just outside current and historic breeding range.

Special-status Wildlife Species Evaluated For The Surrey Farm Estates Project

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Contopus cooperi olive-sided flycatcher	Federal none State none Other ABC: WL DFG: SSC FWS: BCC	Inhabits open canopy late-successional coniferous forests and Eucalyptus groves in foothill canyons. Prefers edge habitats and openings often associated with clear-cuts, burned areas, slashings, and fragmented forests. Often nests in willows, alders, oaks and eucalyptus trees within lowlands. CA distribution ranges from the Oregon border south along the Modoc Plateau, Sierra Nevada, coastal mountain ranges W of the Central Valley to Santa Barbara Co, and in the higher elevations of the Transverse and Peninsular ranges. Breeds from early May to late Aug.; single-brooded. DFG listed covers nesting individuals only. Confirmed breeder in western, southwestern, northwestern and northern Santa Clara Co.	None: no suitable nesting habitat present.
Cypseloides niger black swift	Federal none State none Other ABC: WL AUD: WL-Y DFG: SSC FWS: BCC; MBTA	Inhabits the coastal belt of the Central Coast, central and southern Sierra Nevada, and San Bernardino and San Jacinto mountains. Breeds in small colonies on cliffs behind or adj to waterfalls in deep canyons and sea-bluffs above surf. Forages widely. DFG listing covers nesting individuals only. Occurrences limited to the coastlines of Santa Cruz and Monterey Co.	None: no suitable habitat present.
Dendroica occidentalis hermit warbler	Federal none State none Other ABC: WL DFG: SA FWS: MBTA	Occurs in coast redwood forests and interior mixed deciduous and coniferous forests farther inland. Requires cool, dark, moist forests for breeding. In migration and winter, also occurs in valley foothill hardwood habitat and in stands of planted pines. Breeds in major mountain ranges from San Gabriel and San Bernardino Mts. northward (Garrett and Dunn 1981), excluding coastal ranges south of Santa Cruz Co. (McCaskie et al. 1979). DFG listed covers nesting individuals only. Confirmed breeder in small patch of western Santa Clara Co.	None: no suitable nesting habitat present.

Special-status Wildlife Species Evaluated For The Surrey Farm Estates Project

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Dendroica petechia brewsteri yellow warbler	Federal none State none Other DFG: SSC FWS: BCC, MBTA	Inhabits riparian plant associations. Prefers willows, cottonwoods, aspens, sycamores, and alders for nesting and foraging. Also nests in montane shrubbery in open conifer forests. DFG listing covers nesting individuals only. Confirmed breeder throughout Santa Clara Co.	Not expected: Moderately suitable nesting habitat present along riparian corridors of Ross Creek.
Elanus leucurus white-tailed kite	Federal none State none Other DFG: FP FWS: MNB, MBTA	Inhabits rolling foothills andvalley margins with scattered oaks and river bottomlands or marshes next to deciduous woodlands. Utilizes open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching. DFG listing covers nesting individuals only. Nearest record is 8.5 mi NW of site. Confirmed nester in N, NW and central Santa Clara Co.	Possible: Suitable nesting and foraging habitat is present on site .
Falco mexicanus prairie falcon	Federal none State none Other DFG: WL FWS: BCC; MBTA	Inhabits dry, open terrain, either level or hilly. Breeding sites located on cliffs. Forages far afield, including marshlands and ocean shores. DFG listing covers nesting birds only. Confirmed breeder in N and E Santa Clara Co.	None: no suitable nesting habitat present within study area.
Falco peregrinus anatum American peregrine falcon	Federal Delisted State Delisted Other CDF: S DFG: FP FWS: BCC, MBTA	Nests near wetlands, lakes, rivers, or other water bodies, on cliffs, banks, dunes, mounds, and human-made structures. Nests consist of a scrape on a depression or ledge in an open site. DFG listing covers nesting individuals only. Nearest record is 6.5 mi SW of site. Not a confirmed nester in Santa Clara Co.	None: no suitable nesting habitat present.

Special-status Wildlife Species Evaluated For The Surrey Farm Estates Project

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Lanius ludovicianus loggerhead shrike	Federal none State none Other DFG: SCC FWS: BCC; MBTA	Year-round resident in California. Inhabits shrublands and open woodlands associated with grasslands with areas bare ground and impaling sites such as thorny vegetation, multi-stemmed plants or barbed wire. Breeds from early Feb. - July; double- to triple-brooded DFG listing covers nesting individuals only. Confirmed nester in S, N, NW and central Santa Clara Co.; possible breeder in W Santa Clara Co.	Possible: suitable nesting habitat within mixed oak woodland and riparian habitats.
Pandion haliaetus osprey	Federal none State none Other CDF: S DFG: WL FWS: MBTA	Nests along ocean shores, bays, freshwater lakes, and larger streams. Constructs large nests in tree-tops within 15 miles of good fish-producing body of water. DFG listing covers nesting individuals only. Nearest record is 5 mi S of site Not known to nest in Santa Clara Co.	None: no suitable nesting habitat present within the study area.
Picoides nuttallii Nuttall's woodpecker	Federal none State none Other ABC: WL DFG: SA FWS: BCC, MBTA	Inhabits oak woodland and mixed riparian woodlands. Forage along bark of trees for insects; also feeds on acorns. Cavity nester. Breeding begins in March; single-brooded. DFG listing covers nesting individuals only. Confirmed nester throughout Santa Clara Co.	Possible: suitable cavity nesting habitat present within mixed oak woodland and riparian habitats. Suitable foraging habitat present.
Progne subis purple martin	Federal none State none Other DFG: SSC	Nests in tall, old trees near a body of water in open forests, woodlands, & riparian habitats. Forages in valley foothills, meadows, grasslands, montane hardwood, riparian habitats, closed-cone pine-cypress, ponderosa pine, Douglas fir, & redwood forests. Breeds from May to mid-August; primarily single-brooded. DFG listed covers nesting individuals only. Confirmed breeder in central-W edge of Santa Clara Co.	None: marginal nesting habitat present within mixed oak woodland and riparian habitats. Study area is outside current breeding range.

Special-status Wildlife Species Evaluated For The Surrey Farm Estates Project

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Rallus longirostris obsoletus California clapper rail	Federal FE State SE Other ABC: WL DFG: FP FWS: MBTA	Inhabits salt-water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs. Confirmed breeder in the NW corner of Santa Clara Co.	None: no suitable habitat present. Occurrences confined to the San Francisco Bay
Selasphorus sasin Allen's hummingbird	Federal none State none Other ABC: WL DFG: SA FWS: BCC, MBTA	Inhabits a variety of woodland and scrub habitats. Breeds in a variety of habitats including moist coastal areas, scrub, chaparral and woodlands. Breeding begins in February; double-brooded. DFG listing covers nesting individuals only. Confirmed nester in W, SW and N Santa Clara Co.	Possible: suitable nesting habitat present throughout study area.
Spinus lawrencei Lawrence's goldfinch	Federal none State none Other ABC: WL DFG: SA FWS: BCC; MBTA	Inhabits arid oak/pine woodlands, foothills and chaparral from northern California west of the Sierra Nevada south to Baja California, Mexico. Breeding begins in March; double-brooded . DFG listing covers nesting individuals only. Confirmed breeder in S, E and central Santa Clara Co.	Not expected: suitable nesting habitat in mixed oak woodland.
Spizella atrogularis black-chinned sparrow	Federal none State none Other ABC: WL FWS: BCC; MBTA	Inhabits open chaparral, sagebrush and dense rocky/scrub habitats. Breeds throughout the arid regions of California. DFG listing covers nesting birds only.	None: No suitable nesting habitat present within study area.

Special-status Wildlife Species Evaluated For The Surrey Farm Estates Project

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Spizella passerina chipping sparrow	Federal none State none Other DFG: SA FWS: MBTA	Inhabits open woodlands, conifers, mostly yellow pine and Douglas fir, orchards, agricultural fields and suburbs. Breeds throughout the west and in much of California except for the Central Valley. Breeding begins in March; double-brooded . DFG listed covers nesting individuals only. Confirmed nester in E, N, NE, SE and W Santa Clara Co.	Not expected: suitable nesting habitat in mixed oak woodland.
Sternula antillarum browni California least tern	Federal FE State SE Other ABC: WL DFG: FP FWS: MBTA	Breeds in colonies on bare or sparsely vegetated, flat substrates consisting of sand beaches, alkali flats, land fills, or paved areas. Nests along the coast from San Francisco Bay south to northern Baja California.	None: no suitable habitat present.
Mammalia - Mammals			
Antrozous pallidus pallid bat	Federal none State none Other BLM: S DFG: SSC FS: S WBWG: H	Inhabits deserts, grasslands, shrublands, woodlands and forests. Most commonly found in open, dry habitats with rocky areas for roosting. Roosts must provide protection from high temperatures. Species is very sensitive to disturbances to roosting sites. Recorded from Calaveras, Imperial, Inyo, Kern, Lake, Marin, Mariposa, Mono, Napa, Orange, Riverside, San Bernardino, San Diego, San Joaquin, San Luis Obispo, Santa Barbara, Siskiyou, Sonoma, Tuolumne counties. Also from Arizona, Nevada, New Mexico, Oregon, Washington. Nearest record is 2.3 mi E of site.	Possible: suitable roosting habitat in mature trees onsite.

Special-status Wildlife Species Evaluated For The Surrey Farm Estates Project

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Corynorhinus townsendii townsendii Townsend's big-eared bat	Federal none State SCT Other BLM: S DFW: SSC FS: S Global/State Rank: G3G4/S2S3 WBWG: H	Inhabits humid coastal regions of northern and central California. Roosts in limestone caves, lava tubes, mines, buildings etc. Will only roost in the open, hanging from walls and ceilings. Roosting sites are limiting. Extremely sensitive to disturbance. BLM, DFW and FS listings cover full species. Recorded from Alameda, Colusa, Humboldt, Lake, Marin, Mendocino, Napa, San Joaquin, Santa Cruz, Yolo counties.	None: no suitable habitat present.
Dipodomys venustus venustus Santa Cruz kangaroo rat	Federal none State none Other DFG: SA	Inhabits silverleaf manzanita mixed chaparral in the Zayante Hills ecosystem of the Santa Cruz mountains. Needs soft, well-drained sand. Recorded from San Mateo, Santa Clara, Santa Cruz counties. Nearest record is 6.5 mi W of site.	None: no suitable habitat present.
Lasiurus cinereus hoary bat	Federal none State none Other DFG: SA WBWG: M	The hoary bat is the most widespread North American bat. May be found at any location in California, although distribution patchy in southeastern deserts. This common, solitary species winters along the coast and in southern California, breeding inland and north of the winter range. During migration, may be found at locations far from the normal range, such as the Channel Islands and the Farallon Islands. Habitats suitable for bearing young include all woodlands and forests with medium to large-size trees and dense foliage. Nearest record is 1.6 mi NW of site.	Not expected: marginal roosting habitat present in mature oak trees within and adjacent to riparian corridor onsite.
Myotis evotis long-eared myotis	Federal none State none Other BLM: S DFG: SA WBWG: M	Inhabits all brush, woodland and forest habitats from sea level to about 9000 ft. in elevation. Prefers coniferous woodlands and forests. Forms nursery colonies in buildings, crevices, spaces under bark, and snags. Caves used primarily as night roosts. General distribution:occurs statewide. Nearest record is 12.5 mi NW of site.	Not expected: marginally suitable roosting habitat present in mature oak woodland and riparian habitats.

Special-status Wildlife Species Evaluated For The Surrey Farm Estates Project

SORTED BY CLASS

Scientific Name Common Name	Status	Habitat Affinities And Reported Distribution	Potential For Occurrence On Site
Myotis yumanensis Yuma myotis	Federal none State none Other BLM: S DFG: SA WBWG: LM	Inhabits open forests and woodlands with sources of water over which to feed. Species is closely tied to bodies of water. Maternity colonies in caves, mines, buildings or crevices. General distribution:occurs throughout California. Nearest record is 9 mi NW of site.	Not expected: marginally suitable roosting habitat present in riparian habitat.
Neotoma fuscipes annectens San Francisco dusky-footed woodrat	Federal none State none Other DFG: SSC	One of eleven recognized subspecies. Inhabits oak and riparian woodlands with a well-developed understory in the SF Bay Area. They exhibit high site fidelity and may live in the same nest community for generations. Nest structures are key indicator of their presence and are easily identified by their conical appearance. Recorded from Alameda, Contra Costa, San Francisco, San Mateo, Santa Clara counties. Study area within subspecies range.	Detected: suitable nesting habitat present. 11 ground and arboreal woodrat nests observed during June 2012 survey.
Taxidea taxus American badger	Federal none State none Other DFG: SSC	Most abundant in dry, open stages of most shrub, forest, and herbaceous habitats. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Excavates its own burrows. General distribution: recorded from every California county except Del Norte. Nearest record is 15 mi E of site.	Not expected: marginally suitable habitat present in annual grassland.
Vulpes macrotis mutica San Joaquin kit fox	Federal FE State ST Other DFG: SA	Inhabits annual grasslands or grassy open stages with scattered shrubby vegetation. Needs loose-textured sandy soils for burrowing, and a suitable prey base. Recorded from Alameda, Contra Costa, Fresno, Kern, Kings, Madera, Merced, Monterey, San Benito, Santa Clara, Tulare counties. Nearest record is 13 mi E of site. Occurrences mostly concentrated in E Contra Costa Co., NE Alameda Co. and SSan Joaquin Co.	None: marginally suitable habitat present. No suitable burrows observed.

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad is (Los Gatos (3712128) or San Jose East (3712137) or San Jose West (3712138) or Castle Rock Ridge (3712221) or Felton (3712211) or Cupertino (3712231) or Santa Teresa Hills (3712127) or Laurel (3712118) or Loma Prieta (3712117))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S3	WL
Adela oplerella Opler's longhorn moth	IILEE0G040	None	None	G2	S2	
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	None	G2G3	S1S2	SSC
Ambystoma californiense California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	SSC
Amsinckia lunaris bent-flowered fiddleneck	PDBOR01070	None	None	G2?	S2?	1B.2
Anomobryum julaceum slender silver moss	NBMUS80010	None	None	G4G5	S2	4.2
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Arctostaphylos andersonii Anderson's manzanita	PDERI04030	None	None	G2	S2?	1B.2
Arctostaphylos silvicola Bonny Doon manzanita	PDERI041F0	None	None	G1	S1	1B.2
Arenaria paludicola marsh sandwort	PDCAR040L0	Endangered	Endangered	G1	S1	1B.1
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Balsamorhiza macrolepis big-scale balsamroot	PDAST11061	None	None	G2	S2	1B.2
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
Calasellus californicus An isopod	ICMAL34010	None	None	G2	S2	
California macrophylla round-leaved filaree	PDGER01070	None	None	G2	S2	1B.1
Calyptridium parryi var. hesseae Santa Cruz Mountains pussypaws	PDPOR09052	None	None	G3G4T2	S2	1B.1
Campanula californica swamp harebell	PDCAM02060	None	None	G3	S3	1B.2
Carex comosa bristly sedge	PMCYP032Y0	None	None	G5	S2	2B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Carex saliniformis deceiving sedge	PMCYP03BY0	None	None	G2	S2	1B.2
Ceanothus ferrisiae Coyote ceanothus	PDRHA041N0	Endangered	None	G2	S2	1B.1
Centromadia parryi ssp. congdonii Congdon's tarplant	PDAST4R0P1	None	None	G3T2	S2	1B.1
Chorizanthe pungens var. hartwegiana Ben Lomond spineflower	PDPGN040M1	Endangered	None	G2T1	S1	1B.1
Chorizanthe pungens var. pungens Monterey spineflower	PDPGN040M2	Threatened	None	G2T2	S2	1B.2
Chorizanthe robusta var. hartwegii Scotts Valley spineflower	PDPGN040Q1	Endangered	None	G2T1	S1	1B.1
Chorizanthe robusta var. robusta robust spineflower	PDPGN040Q2	Endangered	None	G2T1	S1	1B.1
Cicindela ohlone Ohlone tiger beetle	IICOL026L0	Endangered	None	G1	S1	
Cirsium fontinale var. campylon Mt. Hamilton fountain thistle	PDAST2E163	None	None	G2T2	S2	1B.2
Clarkia concinna ssp. automixa Santa Clara red ribbons	PDONA050A1	None	None	G5?T3	S3.3	4.3
Collinsia multicolor San Francisco collinsia	PDSCR0H0B0	None	None	G2	S2	1B.2
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	Candidate Threatened	G3G4	S2S3	SSC
Cypseloides niger black swift	ABNUA01010	None	None	G4	S2	SSC
Dacryophyllum falcifolium tear drop moss	NBMUS8Z010	None	None	G1	S1	1B.3
Dipodomys venustus venustus Santa Cruz kangaroo rat	AMAFD03042	None	None	G4T1	S1	
Dirca occidentalis western leatherwood	PDTHY03010	None	None	G2G3	S2S3	1B.2
Dudleya abramsii ssp. setchellii Santa Clara Valley dudleya	PDCRA040Z0	Endangered	None	G3T2	S2	1B.1
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3	FP
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Eriogonum nudum var. decurrens Ben Lomond buckwheat	PDPGN08492	None	None	G5T1	S1	1B.1
Erysimum teretifolium Santa Cruz wallflower	PDBRA160N0	Endangered	Endangered	G2	S2	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Euphilotes enoptes smithi Smith's blue butterfly	IILEPG2026	Endangered	None	G5T1T2	S1S2	
Euphydryas editha bayensis Bay checkerspot butterfly	IILEPK4055	Threatened	None	G5T1	S1	
Falco peregrinus anatum American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	FP
Fissidens pauperculus minute pocket moss	NBMUS2W0U0	None	None	G3?	S1	1B.2
Fritillaria liliacea fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
Hesperocyparis abramsiana var. abramsiana Santa Cruz cypress	PGCUP04081	Endangered	Endangered	G1T1	S1	1B.2
Hoita strobilina Loma Prieta hoita	PDFAB5Z030	None	None	G2	S2	1B.1
Holocarpha macradenia Santa Cruz tarplant	PDAST4X020	Threatened	Endangered	G1	S1	1B.1
Horkelia cuneata var. sericea Kellogg's horkelia	PDROS0W043	None	None	G4T2	S2?	1B.1
Horkelia marinensis Point Reyes horkelia	PDROS0W0B0	None	None	G2	S2	1B.2
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4?	
Lasthenia conjugens Contra Costa goldfields	PDAST5L040	Endangered	None	G1	S1	1B.1
Lessingia micradenia var. glabrata smooth lessingia	PDAST5S062	None	None	G2T2	S2	1B.2
Malacothamnus aboriginum Indian Valley bush-mallow	PDMAL0Q020	None	None	G2	S2	1B.2
Malacothamnus arcuatus arcuate bush-mallow	PDMAL0Q0E0	None	None	G1Q	S1	1B.2
Malacothamnus hallii Hall's bush-mallow	PDMAL0Q0F0	None	None	G2Q	S2	1B.2
Margaritifera falcata western pearlshell	IMBIV27020	None	None	G4G5	S1S2	
Maritime Coast Range Ponderosa Pine Forest Maritime Coast Range Ponderosa Pine Forest	CTT84132CA	None	None	G1	S1.1	
Microcina homi Hom's micro-blind harvestman	ILARA47020	None	None	G1	S1	
Microseris paludosa marsh microseris	PDAST6E0D0	None	None	G2	S2	1B.2
Monardella sinuata ssp. nigrescens northern curly-leaved monardella	PDLAM18162	None	None	G3T2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Monolopia gracilens woodland woollythreads	PDAST6G010	None	None	G2G3	S2S3	1B.2
Myotis evotis long-eared myotis	AMACC01070	None	None	G5	S4?	
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4?	
North Central Coast Drainage Sacramento Sucker/Roach River North Central Coast Drainage Sacramento Sucker/Roach River	CARA2623CA	None	None	GNR	SNR	
Northern Maritime Chaparral Northern Maritime Chaparral	CTT37C10CA	None	None	G1	S1.2	
Oncorhynchus kisutch coho salmon - central California coast ESU	AFCHA02034	Endangered	Endangered	G4	S2?	
Oncorhynchus mykiss irideus steelhead - central California coast DPS	AFCHA0209G	Threatened	None	G5T2T3Q	S2S3	
Oncorhynchus mykiss irideus steelhead - south/central California coast DPS	AFCHA0209H	Threatened	None	G5T2Q	S2	SSC
Pandion haliaetus osprey	ABNKC01010	None	None	G5	S3	WL
Penstemon rattanii var. kleei Santa Cruz Mountains beardtongue	PDSCR1L5B1	None	None	G4T2	S2	1B.2
Pentachaeta bellidiflora white-rayed pentachaeta	PDAST6X030	Endangered	Endangered	G1	S1	1B.1
Philanthus nasalis Antioch specid wasp	IIHYM20010	None	None	G1	S1	
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Piperia candida white-flowered rein orchid	PMORC1X050	None	None	G3?	S2	1B.2
Plagiobothrys chorisianus var. chorisianus Choris' popcornflower	PDBOR0V061	None	None	G3T2Q	S2	1B.2
Plagiobothrys diffusus San Francisco popcornflower	PDBOR0V080	None	Endangered	G1Q	S1	1B.1
Plagiobothrys glaber hairless popcornflower	PDBOR0V0B0	None	None	GH	SH	1A
Polygonum hickmanii Scotts Valley polygonum	PDPGN0L310	Endangered	Endangered	G1	S1	1B.1
Polyphylla barbata Mount Hermon (=barbate) June beetle	IICOL68030	Endangered	None	G1	S1	
Progne subis purple martin	ABPAU01010	None	None	G5	S3	SSC
Rana boylii foothill yellow-legged frog	AAABH01050	None	None	G3	S2S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Rosa pinetorum pine rose	PDROS1J0W0	None	None	G2Q	S2	1B.2
Senecio aphanactis chaparral ragwort	PDAST8H060	None	None	G3?	S2	2B.2
Serpentine Bunchgrass Serpentine Bunchgrass	CTT42130CA	None	None	G2	S2.2	
Streptanthus albidus ssp. albidus Metcalf Canyon jewelflower	PDBRA2G011	Endangered	None	G2T1	S1	1B.1
Streptanthus albidus ssp. peramoenus most beautiful jewelflower	PDBRA2G012	None	None	G2T2	S2	1B.2
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Trifolium buckwestiorum Santa Cruz clover	PDFAB402W0	None	None	G2	S2	1B.1
Trifolium hydrophilum saline clover	PDFAB400R5	None	None	G2	S2	1B.2
Trimerotropis infantilis Zayante band-winged grasshopper	IIORT36030	Endangered	None	G1	S1	

Record Count: 92

CNPS California Native Plant Society Rare and Endangered Plant Inventory

Plant List

76 matches found. *Click on scientific name for details*

Search Criteria
Found in 9 Quads around 37121B8

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	1B.2	S2?	G2?
Androsace elongata ssp. acuta	California androsace	Primulaceae	annual herb	4.2	S3S4	G5?T3T4
Anomobryum julaceum	slender silver moss	Bryaceae	moss	2B.2	S2	G4G5
Arabis blepharophylla	coast rockcress	Brassicaceae	perennial herb	4.3	S3.3?	G3
Arctostaphylos andersonii	Anderson's manzanita	Ericaceae	perennial evergreen shrub	1B.2	S2?	G2
Arctostaphylos silvicola	Bonny Doon manzanita	Ericaceae	perennial evergreen shrub	1B.2	S1	G1
Arenaria paludicola	marsh sandwort	Caryophyllaceae	perennial stoloniferous herb	1B.1	S1	G1
Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	perennial herb	1B.2	S2	G2
Calandrinia breweri	Brewer's calandrinia	Montiaceae	annual herb	4.2	S3.2?	G4
California macrophylla	round-leaved filaree	Geraniaceae	annual herb	1B.1	S2	G2
Calyptridium parryi var. hesseae	Santa Cruz Mountains pussypaws	Montiaceae	annual herb	1B.1	S2	G3G4T2
Calystegia collina ssp. venusta	South Coast Range morning-glory	Convolvulaceae	perennial rhizomatous herb	4.3	S3.2	G4T3
Campanula californica	swamp harebell	Campanulaceae	perennial rhizomatous herb	1B.2	S3	G3
Carex comosa	bristly sedge	Cyperaceae	perennial rhizomatous herb	2B.1	S2	G5
Carex saliniformis	deceiving sedge	Cyperaceae	perennial rhizomatous herb	1B.2	S2	G2
Ceanothus ferrisiae	Coyote ceanothus	Rhamnaceae	perennial evergreen shrub	1B.1	S2	G2
Centromadia parryi ssp. congdonii	Congdon's tarplant	Asteraceae	annual herb	1B.1	S2	G3T2
Chorizanthe pungens var. hartwegiana	Ben Lomond spineflower	Polygonaceae	annual herb	1B.1	S1	G2T1
Chorizanthe pungens var. pungens	Monterey spineflower	Polygonaceae	annual herb	1B.2	S2	G2T2
Chorizanthe robusta var. hartwegii	Scotts Valley spineflower	Polygonaceae	annual herb	1B.1	S1	G2T1
Chorizanthe robusta var. robusta	robust spineflower	Polygonaceae	annual herb	1B.1	S1	G2T1

Cirsium fontinale var. campylon	Mt. Hamilton fountain thistle	Asteraceae	perennial herb	1B.2	S2	G2T2
Clarkia breweri	Brewer's clarkia	Onagraceae	annual herb	4.2	S3.2	G3
Clarkia concinna ssp. automixa	Santa Clara red ribbons	Onagraceae	annual herb	4.3	S3.3	G5?T3
Clarkia lewisii	Lewis' clarkia	Onagraceae	annual herb	4.3	S3.3	G3
Collinsia multicolor	San Francisco collinsia	Plantaginaceae	annual herb	1B.2	S2	G2
Cypripedium fasciculatum	clustered lady's-slipper	Orchidaceae	perennial rhizomatous herb	4.2	S3.2	G4
Cypripedium montanum	mountain lady's-slipper	Orchidaceae	perennial rhizomatous herb	4.2	S4.2	G4
Dacryophyllum falcifolium	tear drop moss	Hypnaceae	moss	1B.3	S1	G1
Dirca occidentalis	western leatherwood	Thymelaeaceae	perennial deciduous shrub	1B.2	S2S3	G2G3
Dudleya abramsii ssp. setchellii	Santa Clara Valley dudleya	Crassulaceae	perennial herb	1B.1	S2	G3T2
Elymus californicus	California bottle-brush grass	Poaceae	perennial herb	4.3	S3.3	G3
Eriogonum nudum var. decurrens	Ben Lomond buckwheat	Polygonaceae	perennial herb	1B.1	S1	G5T1
Erysimum teretifolium	Santa Cruz wallflower	Brassicaceae	perennial herb	1B.1	S2	G2
Fissidens pauperculus	minute pocket moss	Fissidentaceae	moss	1B.2	S1	G3?
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Galium andrewsii ssp. gatense	phlox-leaf serpentine bedstraw	Rubiaceae	perennial herb	4.2	S3.2	G5T3
Helianthus exilis	serpentine sunflower	Asteraceae	annual herb	4.2	S3.2	G3Q
Hesperocyparis abramsiana var. abramsiana	Santa Cruz cypress	Cupressaceae	perennial evergreen tree	1B.2	S1.1	G1T1
Hoita strobilina	Loma Prieta hoita	Fabaceae	perennial herb	1B.1	S2	G2
Holocarpha macradenia	Santa Cruz tarplant	Asteraceae	annual herb	1B.1	S1	G1
Horkelia cuneata var. sericea	Kellogg's horkelia	Rosaceae	perennial herb	1B.1	S2?	G4T2
Horkelia marinensis	Point Reyes horkelia	Rosaceae	perennial herb	1B.2	S2	G2
Iris longipetala	coast iris	Iridaceae	perennial rhizomatous herb	4.2	S3.2	G3
Lasthenia conjugens	Contra Costa goldfields	Asteraceae	annual herb	1B.1	S1	G1
Leptosiphon acicularis	bristly leptosiphon	Polemoniaceae	annual herb	4.2	S3.2	G3
Leptosiphon ambiguus	serpentine leptosiphon	Polemoniaceae	annual herb	4.2	S3.2	G3
Leptosiphon grandiflorus	large-flowered leptosiphon	Polemoniaceae	annual herb	4.2	S3.2	G3
Lessingia hololeuca	woolly-headed lessingia	Asteraceae	annual herb	3	S3	G3
Lessingia micradenia var. glabrata	smooth lessingia	Asteraceae	annual herb	1B.2	S2	G2T2
Malacothamnus aboriginum	Indian Valley bush-mallow	Malvaceae	perennial deciduous shrub	1B.2	S2	G2
Malacothamnus arcuatus	arcuate bush-mallow	Malvaceae	perennial evergreen shrub	1B.2	S1	G1Q
Malacothamnus hallii	Hall's bush-mallow	Malvaceae	perennial evergreen shrub	1B.2	S2	G2Q

Micropus amphibolus	Mt. Diablo cottonweed	Asteraceae	annual herb	3.2	S3S4	G3G4
Microseris paludosa	marsh microseris	Asteraceae	perennial herb	1B.2	S2	G2
Mimulus rattanii ssp. decurtatus	Santa Cruz County monkeyflower	Phrymaceae	annual herb	4.2	S3.2	G4T3
Monardella sinuata ssp. nigrescens	northern curly-leaved monardella	Lamiaceae	annual herb	1B.2	S2	G2
Monolopia gracilens	woodland woolythreads	Asteraceae	annual herb	1B.2	S2S3	G2G3
Penstemon rattanii var. kleei	Santa Cruz Mountains beardtongue	Plantaginaceae	perennial herb	1B.2	S2	G4T2
Pentachaeta bellidiflora	white-rayed pentachaeta	Asteraceae	annual herb	1B.1	S1	G1
Piperia candida	white-flowered rein orchid	Orchidaceae	perennial herb	1B.2	S2	G3?
Plagiobothrys chorisianus var. chorisianus	Choris' popcorn-flower	Boraginaceae	annual herb	1B.2	S2	G3T2Q
Plagiobothrys chorisianus var. hickmanii	Hickman's popcorn-flower	Boraginaceae	annual herb	4.2	S3.2	G3T3Q
Plagiobothrys diffusus	San Francisco popcorn-flower	Boraginaceae	annual herb	1B.1	S1	G1Q
Plagiobothrys glaber	hairless popcorn-flower	Boraginaceae	annual herb	1A	SH	GH
Polygonum hickmanii	Scotts Valley polygonum	Polygonaceae	annual herb	1B.1	S1	G1
Ranunculus lobbii	Lobb's aquatic buttercup	Ranunculaceae	annual herb	4.2	S3.2	G4
Rosa pinetorum	pine rose	Rosaceae	perennial shrub	1B.2	S2	G2Q
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	2B.2	S2	G3?
Sidalcea malachroides	maple-leaved checkerbloom	Malvaceae	perennial herb	4.2	S3S4.2	G3G4
Silene verecunda ssp. verecunda	San Francisco campion	Caryophyllaceae	perennial herb	1B.2	S2	G5T2
Streptanthus albidus ssp. albidus	Metcalf Canyon jewel-flower	Brassicaceae	annual herb	1B.1	S1	G2T1
Streptanthus albidus ssp. peramoenus	most beautiful jewel-flower	Brassicaceae	annual herb	1B.2	S2	G2T2
Trifolium buckwestiorum	Santa Cruz clover	Fabaceae	annual herb	1B.1	S2	G2
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	1B.2	S2	G2
Tropidocarpum capparideum	caper-fruited tropidocarpum	Brassicaceae	annual herb	1B.1	S1	G1

Suggested Citation

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United States Department of the Interior

FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825

October 19, 2014

Document Number: 141019122415

Mr. Michael Wood
Wood Biological Consulting Inc.
65 Alta Hill Way
Walnut Creek, CA 94595

Subject: Species List for Surrey Farm Estates

Dear: Mr. Wood

We are sending this official species list in response to your October 19, 2014 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested.

Our database was developed primarily to assist Federal agencies that are consulting with us. Therefore, our lists include all of the sensitive species that have been found in a certain area *and also ones that may be affected by projects in the area*. For example, a fish may be on the list for a quad if it lives somewhere downstream from that quad. Birds are included even if they only migrate through an area. In other words, we include all of the species we want people to consider when they do something that affects the environment.

Please read Important Information About Your Species List (below). It explains how we made the list and describes your responsibilities under the Endangered Species Act.

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be January 17, 2015.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found http://www.fws.gov/sacramento/es/Branch-Contacts/es_branch-contacts.htm.

Endangered Species Division

TAKE PRIDE IN AMERICA

U.S. Fish & Wildlife Service

Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 141019122415

Current as of: October 19, 2014

Quad Lists

Listed Species

Invertebrates

Euphydryas editha bayensis
- bay checkerspot butterfly (T)
- Critical habitat, bay checkerspot butterfly (X)

Fish

Eucyclogobius newberryi
- tidewater goby (E)

Hypomesus transpacificus
- delta smelt (T)

Oncorhynchus kisutch
- coho salmon - central CA coast (E) (NMFS)

Oncorhynchus mykiss
- Central California Coastal steelhead (T) (NMFS)
- Central Valley steelhead (T) (NMFS)
- Critical habitat, Central California coastal steelhead (X) (NMFS)

Oncorhynchus tshawytscha
- Central Valley spring-run chinook salmon (T) (NMFS)
- winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
- California tiger salamander, central population (T)
- Critical habitat, CA tiger salamander, central population (X)

Rana draytonii
- California red-legged frog (T)
- Critical habitat, California red-legged frog (X)

Birds

Brachyramphus marmoratus
- Critical habitat, marbled murrelet (X)
- marbled murrelet (T)

Rallus longirostris obsoletus
- California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
- California least tern (E)

Mammals

Vulpes macrotis mutica
- San Joaquin kit fox (E)

Plants

Ceanothus ferrisae
Coyote ceanothus (E)

Chorizanthe robusta var. robusta
robust spineflower (E)

Dudleya setchellii
Santa Clara Valley dudleya (E)

Holocarpha macradenia
Critical habitat, Santa Cruz tarplant (X)
Santa Cruz tarplant (T)

Lasthenia conjugens
Contra Costa goldfields (E)

Streptanthus albidus ssp. albidus
Metcalf Canyon jewelflower (E)

Quads Containing Listed, Proposed or Candidate Species:

SANTA TERESA HILLS (407A)
LOS GATOS (407B)
LAUREL (407C)
LOMA PRIETA (407D)
CASTLE ROCK RIDGE (408A)
SAN JOSE WEST (427C)
SAN JOSE EAST (427D)
CUPERTINO (428D)

County Lists

San Mateo County

Listed Species

Invertebrates

Branchinecta lynchi
vernal pool fairy shrimp (T)

Euphydryas editha bayensis
bay checkerspot butterfly (T)
Critical habitat, bay checkerspot butterfly (X)

Haliotes cracherodii
black abalone (E) (NMFS)

Haliotes sorenseni
white abalone (E) (NMFS)

Icaricia icarioides missionensis
mission blue butterfly (E)

Lepidurus packardi
vernal pool tadpole shrimp (E)

Speyeria callippe callippe

callippe silverspot butterfly (E)

Speyeria zerene myrtleae
Myrtle's silverspot butterfly (E)

Fish

Acipenser medirostris
green sturgeon (T) (NMFS)

Eucyclogobius newberryi
critical habitat, tidewater goby (X)
tidewater goby (E)

Hypomesus transpacificus
delta smelt (T)

Oncorhynchus kisutch
coho salmon - central CA coast (E) (NMFS)
Critical habitat, coho salmon - central CA coast (X) (NMFS)

Oncorhynchus mykiss
Central California Coastal steelhead (T) (NMFS)
Central Valley steelhead (T) (NMFS)
Critical habitat, Central California coastal steelhead (X) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana draytonii
California red-legged frog (T)
Critical habitat, California red-legged frog (X)

Reptiles

Caretta caretta
loggerhead turtle (T) (NMFS)

Chelonia mydas (incl. agassizi)
green turtle (T) (NMFS)

Dermochelys coriacea
leatherback turtle (E) (NMFS)

Lepidochelys olivacea

olive (=Pacific) ridley sea turtle (T) (NMFS)

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)
Critical habitat, Alameda whipsnake (X)

Thamnophis sirtalis tetrataenia
San Francisco garter snake (E)

Birds

Brachyramphus marmoratus
Critical habitat, marbled murrelet (X)
marbled murrelet (T)

Charadrius alexandrinus nivosus
Critical habitat, western snowy plover (X)
western snowy plover (T)

Diomedea albatrus
short-tailed albatross (E)

Pelecanus occidentalis californicus
California brown pelican (E)

Rallus longirostris obsoletus
California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Mammals

Arctocephalus townsendi
Guadalupe fur seal (T) (NMFS)

Balaenoptera borealis
sei whale (E) (NMFS)

Balaenoptera musculus
blue whale (E) (NMFS)

Balaenoptera physalus
finback (=fin) whale (E) (NMFS)

Enhydra lutris nereis
southern sea otter (T)

Eubalaena (=Balaena) glacialis
right whale (E) (NMFS)

Eumetopias jubatus
Steller (=northern) sea-lion (T) (NMFS)

Physeter catodon (=macrocephalus)
sperm whale (E) (NMFS)

Reithrodontomys raviventris
salt marsh harvest mouse (E)

Plants

Acanthomintha duttonii
San Mateo thornmint (E)

Arctostaphylos hookeri ssp. ravenii
Presidio (=Raven's) manzanita (E)

Chorizanthe robusta var. robusta
robust spineflower (E)

Cirsium fontinale var. fontinale
fountain thistle (E)

Cupressus abramsiana
Santa Cruz cypress (E)

Eriophyllum latilobum
San Mateo woolly sunflower (E)

Hesperolinon congestum
Marin dwarf-flax (=western flax) (T)

Lasthenia conjugens
Contra Costa goldfields (E)

Layia carnosa
beach layia (E)

Lessingia germanorum
San Francisco lessingia (E)

Pentachaeta bellidiflora
white-rayed pentachaeta (E)

Potentilla hickmanii
Hickman's potentilla (=cinquefoil) (E)

Suaeda californica

California sea blite (E)

Trifolium amoenum
showy Indian clover (E)

Proposed Species

Plants

Arctostaphylos Franciscana
Critical Habitat, Franciscan Manzanita (X)

Santa Clara County

Listed Species

Invertebrates

Branchinecta conservatio
Conservancy fairy shrimp (E)

Branchinecta lynchi
vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
valley elderberry longhorn beetle (T)

Euphydryas editha bayensis
bay checkerspot butterfly (T)
Critical habitat, bay checkerspot butterfly (X)

Lepidurus packardi
Critical habitat, vernal pool tadpole shrimp (X)
vernal pool tadpole shrimp (E)

Fish

Acipenser medirostris
green sturgeon (T) (NMFS)

Eucyclogobius newberryi
tidewater goby (E)

Hypomesus transpacificus
delta smelt (T)

Oncorhynchus kisutch
coho salmon - central CA coast (E) (NMFS)
Critical habitat, coho salmon - central CA coast (X) (NMFS)

Oncorhynchus mykiss
Central California Coastal steelhead (T) (NMFS)
Central Valley steelhead (T) (NMFS)

Critical habitat, Central California coastal steelhead (X) (NMFS)
South Central California steelhead (T) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)
Critical habitat, CA tiger salamander, central population (X)

Rana draytonii
California red-legged frog (T)
Critical habitat, California red-legged frog (X)

Reptiles

Gambelia (=Crotaphytus) sila
blunt-nosed leopard lizard (E)

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)
Critical habitat, Alameda whipsnake (X)

Thamnophis gigas
giant garter snake (T)

Thamnophis sirtalis tetrataenia
San Francisco garter snake (E)

Birds

Brachyramphus marmoratus
Critical habitat, marbled murrelet (X)
marbled murrelet (T)

Charadrius alexandrinus nivosus
western snowy plover (T)

Pelecanus occidentalis californicus
California brown pelican (E)

Rallus longirostris obsoletus
California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Vireo bellii pusillus

Least Bell's vireo (E)

Mammals

Reithrodontomys raviventris
salt marsh harvest mouse (E)

Vulpes macrotis mutica
San Joaquin kit fox (E)

Plants

Acanthomintha duttonii
San Mateo thornmint (E)

Castilleja affinis ssp. neglecta
Tiburon paintbrush (E)

Ceanothus ferrisae
Coyote ceanothus (E)

Chorizanthe robusta var. robusta
robust spineflower (E)

Cirsium fontinale var. fontinale
fountain thistle (E)

Dudleya setchellii
Santa Clara Valley dudleya (E)

Eriophyllum latilobum
San Mateo woolly sunflower (E)

Hesperolinon congestum
Marin dwarf-flax (=western flax) (T)

Holocarpha macradenia
Critical habitat, Santa Cruz tarplant (X)
Santa Cruz tarplant (T)

Lasthenia conjugens
Contra Costa goldfields (E)
Critical habitat, Contra Costa goldfields (X)

Streptanthus albidus ssp. albidus
Metcalf Canyon jewelflower (E)

Suaeda californica
California sea blite (E)

Trifolium amoenum
showy Indian clover (E)

Proposed Species

Amphibians

Rana draytonii
Critical habitat, California red-legged frog (PX)

Key:

(E) *Endangered* - Listed as being in danger of extinction.

(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.

(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.

Critical Habitat - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.

(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online Inventory of Rare and Endangered Plants.

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. See our Protocol and Recovery Permits pages.

For plant surveys, we recommend using the Guidelines for Conducting and Reporting Botanical Inventories. The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

> Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal consultation with the Service.

  During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

  Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our Map Room page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them

for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. More info

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6520.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be January 17, 2015.

APPENDIX C

AN EVALUATION OF TREES AT THE SURREY FARM ESTATES
(DECEMBER 20, 2010)

LETTER UPDATE
(JANUARY 8, 2013),

COMPARISON REPORT
(OCTOBER 20, 2014)

BY

MICHAEL L. BENCH, CONSULTING ARBORIST

ARBORIST REPORT
(DECEMBER 2, 2014)

REPLACEMENT TREE CALCULATIONS
(NOVEMBER 26, 2014)

BY

DEBORAH ELLIS, CONSULTING ARBORIST AND HORTICULTURALIST

RECEIVED
MAR 10 2011
TOWN OF LOS GATOS
PLANNING DIVISION

AN EVALUATION OF TREES AT THE SURREY FARM ESTATES
APN: 532-16-006
LOS GATOS, CALIFORNIA

PREPARED AT THE REQUEST OF
MR. ROGER GRIFFIN
PARAGON DESIGN GROUP, INC.
405 ALBERTO WAY, SUITE C
LOS GATOS, CALIFORNIA 95032

PREPARED BY
MICHAEL L. BENCH
CONSULTING ARBORIST
DECEMBER 20, 2010

An Evaluation of Trees at the Surrey Farm Estates
APN: 532-16-006
Los Gatos, California

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Assumptions and Limiting Conditions 21

Map Exhibit 22

Prepared by Michael L. Bench
Consulting Arborist

December 20, 2010

Evaluation of the Trees at the
Surrey Farm Estates Sub-Division
Los Gatos, California

Assignment

I was asked by Mr. Roger Griffin, Paragon Design Group, to prepare an inventory of the trees located off Twin Oaks Drive on the parcel titled the Surrey Farm Estates, APN: 532-16-006, Los Gatos, California. Also, I was asked by Mr. Griffin to use the numbering previously assigned by the surveyor.

The map provided for this inventory is the Proposed Subdivision PD, prepared by the Paragon Design Group, Los Gatos, California, 11-16-10, based on a land survey done by Mr. Roger Dodge, Penn Valley, California 95946.

Summary

A total of 599 trees are included in this inventory. The trees are tagged Tree # 1 through Tree # 603, including four numbers that are unused. All trees on the property, which have a trunk measurement of 4 inches in diameter or larger at 3 feet above grade, are included.

All of the 599 trees are identified by species, briefly described (trunk diameter, height, spread, health, structural integrity). The health and structure of each tree is rated on a scale of 1-5 as follows: Excellent = 1; Good = 2; Fair = 3; Poor = 4; Extremely Poor = 5.

The individual trees are tagged with an identifying number, which corresponds to this report.

The locations of the trees are shown on the attached map, prepared by a surveyor. I have added a few trees, including trees located on neighboring properties that extend onto this property and, thus, potentially could be adversely affected by construction.

Some existing site conditions are described, which tend to have an adverse effect on the health of some trees. Procedures for remediation are suggested.

A list of the larger specimens in good condition are provided with the recommendation that they be the preferred specimens for preservation.

Tree Survey Methods

The trunk measurements of the existing trees are taken using a standard measuring tape at 3 feet above soil grade, except those specimens whose form does not allow for a representative measurement at this height. For example, a specimen that initiates dual leaders at 3 feet may illicit a measurement significantly greater than the single primary leader. When possible, the trunk measurement is taken below the lowest fork on the trunk of a dual stem or multi-stem specimen. The measurement is usually done on the largest side of the trunk and is rounded to the nearest inch. The canopy height and spread are estimated using visual references only.

The trees had been previously tagged with metallic labels by an engineer and located on the map provided by Paragon Designs. I added several trees that were not shown on the engineering plan. I also added trees, which are located on neighboring properties, having their canopies (and no doubt their root zones) extending onto this property. I tagged all of the added trees for field identification. The locations of the added trees are estimated using visual references only.

The Tree Protection Ordinance 2114 (revised April 4, 2003) for the Town Code is stated in Chapter 29, Division II for the Town of Los Gatos. "The trees protected by this division are:

(1) All trees which have a twelve-inch or greater diameter (thirty-seven and one half circumference) of any trunk, or in the case of multi-trunk trees a total of twelve-inches or greater diameter or more of the sum diameter (thirty-seven and one half circumference) of all trunks, where such trees are located on developed residential property.
(2) All trees of the following species which have an eight inch diameter (twenty-five inch circumference):
    a. Blue oak (Quercus douglasii)
    b. Black oak (Quercus kelloggii)
    c. California Buckeye (Aesculus californica)
    d. Pacific Madrone (Arbutus menziesii)
(3) All trees which have a four-inch or greater diameter (twelve and one half-inch circumference) of any trunk, when removal relates to any review for which zoning approval or subdivision approval is required.
(4) Any tree that existed at the same time of a zoning approval or subdivision approval and was a specific subject of such approval or otherwise covered by subsection (2) of this section (e.g., landscape or site plans).
(5) Any tree that was required to be planted or retained by the terms and conditions of a development application, building permit or subdivision approval in all zoning districts, tree removal permit or code enforcement action."

Thus, all trees having a trunk diameter of 4 inches at 3 feet above grade are included in this inventory.

Observations

I estimate that there are approximately 650-700 total trees on this 17.55 acre property. Among these total trees, there are 599 trees having a trunk measurement of 4 inches in diameter or larger at 3 feet above grade. All of these 599 trees are included in this inventory. The trees are numbered Tree # 1 through Tree # 603, including 4 unused numbers. The unused numbers are: 277, 331, 373, and 374.

Where the canopies the neighboring trees extend on to this site, or where the root systems likely extend on to this site, those neighboring trees have been included in this inventory. The attached map shows the locations of all 599 trees. Metallic labels have been affixed to all of trees for field reference. Exceptions include trees located on neighboring properties, in which the labels were affixed to the fence nearest the tree.

A summary of the 599 trees in terms of their classification is as follows:

Quantity	Common Name	Botanical Name
205	Valley oak	*Quercus lobata*
194	Coast live oak	*Quercus agrifolia*
53	Blue oak	*Quercus douglasii*
1	Hybrid oak	*Quercus species*
62	Aleppo pine	*Pinus halepensis*
43	Incense cedar	*Calocedrus decurrens*
18	European olive	*Olea europea*
4	California sycamore	*Platanus racemosa*
7	Wild Plum	*Prunus cerasifera*
2	Elderberry	*Sambucus caerulea*
1	California black walnut	*Juglans hindsii*
1	English walnut	*Juglans regia*
1	California bay laurel	*Umbellularia californica*
1	California buckeye	*Aesculus californica*
1	Poison oak	*Toxiodendron diversiloba*
1	Crabapple	*Malus species*
1	Monterey Cypress	*Cupressus macrocarpa*
1	Cypress	*Cypress species*
1	Southern magnolia	*Magnolia grandiflora*
1	Monterey pine	*Pinus radiata*

Each tree is listed by number on the attached data sheets. The particulars of each tree (species, trunk diameter, height, spread, and structure) are included on the data sheets.

The health and structure of each specimen is rated on a scale of 1-5 using the following range: (1) Excellent, (2) Good, (3) Fair, (4) Poor, (5) Extremely Poor.

A few specimens were dead, and for these only the trunk diameter and the species is given.

This time of year, the health ratings assigned to deciduous specimens, particularly Valley oak (*Q. lobata*) and Blue oak (*Q. douglasii*), may be less than accurate. Because most of the leaves already have fallen, the health ratings (for deciduous specimens only) at this time are based on the quantity of live branch tips. A more accurate assessment of the health of some of the deciduous specimens may be achieved in late Spring or Summer, because the primary components of the health rating are the quantity of leaves, leaf color, and annual branch tip growth.

The structure rating is an opinion of a tree's integrity and has little to do with aesthetics. Those trees that have a Fair (3) to Poor (4) rating for structure can usually be improved, if not greatly

improved, by proper pruning or cabling. For example, a tree with a health rating of excellent (1) and a structure rating of poor (4) may be well worth preserving, especially if pruned and/or cabled. A structure rating of Extremely Poor (5) typically cannot be improved or repaired.

Site Conditions

The perimeter of the property has been plowed recently with a disc to create a fire break. It appears that this has been done routinely for years. With regard to the existing trees this practice causes things to occur adversely affecting the trees:

1. Discing cuts and destroys large quantities of absorbing roots that exist just under the surface of the soil from the adjacent trees.
2. Discing creates drying of the soil much faster than normal in the Spring and Summer, resulting in less moisture available to the adjacent trees during the dry months.
3. Discing promotes soil movement down slope. Often the root collars of adjacent trees become covered by the soil from up slope. Covering the root collars of trees greatly increases the possibility of attack by root collar diseases, such as oak root fungus (*Armellaria mellea*).

As a result of the routine discing over the years, many of the trees adjacent to the disced areas have declined. Many of these trees are in only fair to poor condition. As an alternative, I recommend that the grass be mowed instead.

In the central area of the property (Lot 7), a grove of Aleppo pine (*Pinus halepensis*) and Incense cedar (*Calocedrus decurrens*) had been planted several years ago. Remnants of an irrigation system still exist, indicating that the trees were irrigated at the time of planting. It appears that the irrigation was discontinued before most of the trees were well established. Most of these trees are in poor condition, exhibiting symptoms of severe drought stress. Many of the trees have died.

There exists a dense grove of trees on the east side of the Historic Rock Wall, which is planned to be preserved. It appears that this grove was intended to create a dense screen in years past, because European olive trees (*Olea europea*) were planted among the coast live oak trees (*Quercus agrifolia*). Over time the olive trees were topped near soil grade to create large shrubs. However, the overall density of the olive tree planting combined with new coast live oak seedlings has created intense competition among the trees of this grove. The result is that many of the specimens, of which many are coast live oak trees, are in only fair to poor condition. This grove could be improved by the selective removal of the poor specimens. The reduction in competition would improve the surviving specimens over time, but improvement would not occur quickly.

Comments about Specific Trees

Blue oak (*Quercus douglasii*) typically grow at a much slower rate than the other two oak species (Valley oak, *Quercus lobata* and Coast live oak, *Quercus agrifolia*) found at this site. There are several large Valley oak and Coast live oak specimens found at this site. It is likely that some of the moderate size Blue oak specimens may be the older specimens.

There are many large specimens that are in very good condition. Some these are exceptional and indeed stately specimens.
Although there are many smaller specimens, which would be well worth preserving in my opinion, it is certainly the larger specimens in good condition, which would be preferred for preservation. The following list are the larger specimens on site and are preferred for preservation, because of their size and condition:

Tree #	Name	Diameter	Height	Spread
17	Valley oak	17	50	70
49	Valley oak	23	35	40
77	Valley oak	25	50	50
78	Valley oak	21	60	50
85	Coast live oak	46	35	50
108	Coast live oak	23	40	40
111	Coast live oak	29	40	50
121	Valley oak	20	40	35
134	Valley oak	39	50	70
161	Valley oak	56	35	70
167	Coast live oak	30	45	40
168	Valley oak	40	30	45
173	Valley oak	45	35	60
177	Valley oak	26	35	50
188	Valley oak	27	45	35
229	Blue oak	38	40	60
236	Blue oak	34	45	65
237	Blue oak	20	40	40
241	Coast live oak	22	40	40
249	Coast live oak	19/18	30	50
256	Coast live oak	29	35	60
268	Coast live oak	33	40	50
278	Coast live oak	28	40	50
280	Coast live oak	29	35	30
285	Coast live oak	23	25	35
302	Valley oak	28	45	45
303	Coast live oak	24	30	45
337	Valley oak	25	50	50
340	Coast live oak	26	50	70
341	Valley oak	25	45	35
383	Coast live oak	49	35	70
384	Coast live oak	43	40	60
385	Valley oak	36	40	60
386	Valley oak	23	30	40
390	Valley oak	26	40	40
392	Hybrid oak	26	30	50
403	Valley oak	38	40	35

Continued preferred list for preservation, because of their size and condition:

Tree #	Name	Diameter	Height	Spread
441	Blue oak	26	40	60
442	Blue oak	23	40	50
443	Blue oak	25	45	50
467	Blue oak	36	40	60
483	Blue oak	24	40	40
495	Valley oak	19	40	40
550	Blue oak	18	40	45
561	Valley oak	18	35	40
566	Valley oak	19	25	30

Respectfully submitted,

Michael L. Bench, Consulting Arborist
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American Society of Consulting Arborists Member

Surrey Farm Estates, APN: 532-16-06, Los Gatos, CA
Prepared by Michael L. Bench, Consulting Arborist

Field Data															Date: 12 / 20 / 10
	Tree Name	DBH	DBH	DBH	Hght	Sprd	Hlth	Strc	CD/IB	Tppd	Cbl?	I/D	R C	H2O	Notes
1	Coast live oak Quercus agrifolia	11			15	20	3	2					3	3	Discing of the root zone
2	Coast live oak	6			15	15	2	1					3	2	Discing of the root zone
3	Valley oak Quercus lobata	15			35	30	1	1							
4	Coast live oak	9			10	15	1	3							
5	Incense cedar Calocedrus decurrens	5			12	10	2	1							Moderately Sparse Canopy
6	Coast live oak	13			15	25	1	3	X						
7	Incense cedar	4			10	10	3	2							Chlorotic
8	Coast live oak	9	7		25	20	1	3	X						
9	Coast live oak	7			15	10	1	3	X						
10	Coast live oak	8			15	10	1	3	X						
11	Coast live oak	7			20	15	1	4							Chain fence imbedded in trunk
12	Coast live oak	11			20	15	1	3	X						
13	CA black walnut Juglans hindsii	19			15	35	2	4		X					Lean approx 45 degrees
14	Aleppo pine Pinus halepensis	5			15	10	3	2							
15	English Walnut Juglans regia	11			20	20	3	4							
16	Aleppo pine	12			35	15	3	4							Trunk stake damage
17	Valley oak	17			50	70	1	2							
18	Coast live oak	20	16		35	35	1	3	X						
19	Coast live oak	8			10	15	2	4							
20	Coast live oak	22			45	30	1	3							
21	Coast live oak	20			35	30	1	4							
22	California buckeye Aesculus californica	8	6		20	20	1	2							
23	Coast live oak	7			20	15	2	2							
24	Coast live oak	21			30	30	1	4	X						Primary leaders
25	Coast live oak	11			20	20	1	4	X						
26	Coast live oak	10			15	15	1	4	X						Fence imbedded in trunk
27	Coast live oak	16			20	15	1	4	X						
28	Coast live oak	10			20	15	1	2							
29	Coast live oak	14			25	15	1	4	X						
30	Valley oak	19			35	30	3	3							
31	Coast live oak	7			20	15	2	2							
32	European olive Olea europea	5	3		20	15	2	2							Sparse
33	Valley oak	14			45	30	3	3							
34	Coast live oak	12			35	25	1	3							
35	Valley oak	17			20	30	1	4							
36	Valley oak	16			30	25	2	3							
37	Valley oak	8			25	20	3	3							
38	Coast live oak	18			50	30	2	2							
39	Valley oak	25			60	30	2	2							
40	Valley oak	15			25	30	2	3							
41	Valley oak	11			40	20	3	4	X						

DBH - Diameter Breast Height
Hght - Height
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Hlth - Health

Strc - Structure
CD/IB - Co-Dominant Stems w/ Imbedded Bark
Tppd - Topped
CBL? - Cables Recommended

I/D - Insects or Disease
RC - Root Collar Covered
H2O - Needs Water

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	Tree Name	DBH	DBH	DBH	Hght	Sprd	Hlth	Strc	CD/IB	Tppd	Cbl?	I/D	RC	H2O	Notes
42	Valley oak	6			20	15	2	3							
43	Valley oak	12			45	25	2	3							
44	Coast live oak	7			10	15	3	1							
45	Coast live oak	8			15	15	1	2							
46	Valley oak	16			45	30	2	1							
47	Coast live oak	11			20	20	1	4	X						
48	Valley oak	8			15	15	3	4		X					Line clearing (LC)
49	Valley oak	23			35	40	2	2							
50	Aleppo pine	17			50	30	2	2				X			W Rust Gall
51	Valley oak	11			30	25	1	4		X					LC
52	Coast live oak	21			40	30	1	1							
53	Valley oak	7			20	10	1	4		X					LC
54	Coast live oak	5			15	10	2	2							
55	Coast live oak	5			20	15	1	2							
56	Coast live oak	9			40	20	1	2							
57	Coast live oak	15			20	25	1	4							LC
58	Coast live oak	12			20	15	1	4							LC
59	Coast live oak	6			15	15	1	4							LC
60	Coast live oak	8			20	15	1	3							
61	Coast live oak	8			20	15	1	3							
62	Coast live oak	18	15		20	30	1	3	X						
63	Coast live oak	15			25	30	1	3							
64	Coast live oak	8			20	15	1	2							
65	Coast live oak	16			15	20	1	4	X						
66	Valley oak	10			35	25	2	2							
67	Coast live oak	12			30	30	1	2							
68	Valley oak	9			35	25	2	3							
69	Coast live oak	12			40	20	1	2							
70	Aleppo pine	7			35	10	2	3							
71	Aleppo pine	14			45	15	1	2							
72	Aleppo pine	13			35	15	1	4		X					LC
73	Coast live oak	10			25	20	1	3							
74	Coast live oak	8			30	20	1	3							
75	Coast live oak	21			30	35	1	3	X						
76	Coast live oak	7			25	15	1	3							
77	Valley oak	25			50	50	1	3							
78	Valley oak	21			60	50	1	1							
79	California sycamore Platanus racemosa	41			50	35	1	4	X						
80	California sycamore	36			65	35	1	2							
81	California sycamore	37			40	30	1	3							
82	California sycamore	42			30	30	1	3							
83	Aleppo pine	7			15	15	1	4							
84	Elderberry Sambucus caerulea	9	8	7	20	30	1	2							
85	Coast live oak	46			35	50	1	3	X						In Upper Canopy

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	Tree Name	DBH	DBH	DBH	Hght	Sprd	Hlth	Strc	CD/IB	Tppd	Cbl?	I/D	R C	H2O	Notes
86	Aleppo pine	16			-	-	-	-							Dead
87	Aleppo pine	15			40	15	4	2							LC
88	Coast live oak	7			15	10	2	4							LC
89	Elderberry	12			20	15	4	5							Major Trunk Decay
90	Coast live oak	12			15	15	1	4	X						
91	Coast live oak	6			30	15									
92	Valley oak	7			25	15	5	4							
93	Aleppo pine	13			25	25	5	4				X			W Rust Gall
94	Coast live oak	8			30	20	1	2							
95	Coast live oak	6			15	10	1	2							
96	Coast live oak	11			25	25	1	3	X						
97	Coast live oak	5			20	15	2	4							
98	Valley oak	25			35	40	2	1					3		
99	Valley oak	10			35	30	2	1					2		
100	Coast live oak	10			35	20	1	3							
101	Coast live oak	13			35	30	1	4	X						
102	Coast live oak	7			35	20	1	3							
103	Coast live oak	15			35	30	1	1							
104	Coast live oak	8			15	35	1	3							Horizontal Structure
105	Valley oak	7			35	15	1	3							
106	Coast live oak	22			40	40	1	4							
107	Valley oak	6			25	15	2	4		X					LC
108	Coast live oak	23			40	40	1	2							
109	Coast live oak	15			25	30	1	1							
110	Wild plum Prunus cerasifera	6			10	10	5	4							
111	Coast live oak	29			40	50	1	3							
112	Blue oak	14			35	35	1	1							
113	Coast live oak	17			30	30	1	2							
114	Valley oak	13			25	25	1	4							LC
115	Valley oak	7			25	20	2	3							
116	Coast live oak	8			20	15	2	2							
117	Coast live oak	17			40	30	1	2							
118	Coast live oak	15			40	25	1	2							
119	Valley oak	13			25	25	1	4							
120	Coast live oak	18			40	30	1	3							
121	Valley oak	20			40	35	1	1							
122	Coast live oak	14	10	10/7	40	35	1	4	X						
123	Coast live oak	12			-	-	-	-							
124	Coast live oak	14			40	30	3	2							
125	Coast live oak	10			30	25	1	3							
126	Coast live oak	16			25	40	1	4	X						
127	Coast live oak	13			40	25	1	3							
128	Coast live oak	19			40	40	1	4	X						
129	Coast live oak	15			40	30	1	2							
130	Coast live oak	20			40		1	2							

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	Tree Name	DBH	DBH	DBH	Hght	Sprd	Hlth	Strc	CD/IB	Tppd	Cbl?	I/D	RC	H2O	Notes
131	Coast live oak	6			25	15	1	2							
132	Valley oak	21			45	45	1	1							
133	Valley oak	7			30	20	1	3							
134	Valley oak	39			50	70	1	2							
135	Coast live oak	8			20	20	1	2							
136	Valley oak	7			15	15	1	1							
137	Coast live oak	5	5	3	15	10	5	4							Herbicide damage?
138	Coast live oak	10			20	20	1	4	X						
139	Coast live oak	8			20	15	2	1							
140	Coast live oak	18			20	25	1	4	X						
141	European olive	21			15	25	1	1							
142	Wild. Plum	5			10	10	4	3							
143	Wild. Plum	6			10	10	4	3							
144	European olive	11	5	5	10	20	1	1							
145	Aleppo pine	12			20	15	1	4	X						
146	Aleppo pine	11			20	20	1	3	X						
147	Aleppo pine	11			30	20	1	3	X						
148	Aleppo pine	8			15	10	1	3	X						
149	Aleppo pine	9			20	15	1	1							
150	Aleppo pine	10			25	15	1	4	X						
151	Aleppo pine	9			25	20	1	1							
152	Aleppo pine	8			25	15	1	2							
153	Aleppo pine	9			25	20	1	2							
154	Aleppo pine	16			30	30	1	1							
155	Aleppo pine	9			20	15	1	3		X					Top died- discing damage
156	Aleppo pine	9			20	20	1	3		X					Top died- discing damage
157	Incense cedar	7			15	10	1	1							
158	Aleppo pine	9			20	15	1	2		X					Top died- discing damage
159	Aleppo pine	10			20	20	1	2							
160	Valley oak	11			20	25	2	1					2		
161	Valley oak	56			35	70	1	2							
162	Coast live oak	7			25	15	1	2							
163	Valley oak	10			20	20	2	1							
164	Valley oak	11			20	20	2	1							
165	Coast live oak	5			10	10	1	1							
166	Valley oak	11			25	30	2	1							
167	Coast live oak	30			45	40	1	3	X						
168	Valley oak	40			30	35	1	3	X						
169	Valley oak	30			40	45	1	1							
170	European olive	10	6	5/4/4	25	35	1	2							
171	European olive	11	9	8/7	45	35	1	3							
172	Valley oak	10			20	20	4	4							Trunk decay
173	Valley oak	45			35	60	1	3							
174	European olive	17	6	6	25	35	1	2							
175	Valley oak	9			20	15	3	2							Decline from discing root damage

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	Tree Name	DBH	DBH	DBH	Hght	Sprd	Hlth	Strc	CD/IB	Tppd	Cbl?	I/D	R C	H2O	Notes
176	Valley oak	16			25	20	4	4							Top 1/3 of canopy - dead
177	Valley oak	26			35	50	2	2							Decline from discing root damage
178	Valley oak	14			35	25	2	2							Decline from discing root damage
179	Valley oak	12			15	20	3	1							Decline from discing root damage
180	Valley oak	27			35	60	3	2							Decline from discing root damage
181	Valley oak	12			25	25	3	2							Decline from discing root damage
182	Valley oak	14			25	25	2	2							Decline from discing root damage
183	Valley oak	14			25	25	3	2							
184	Valley oak	8			10	15	2	2							
185	Valley oak	18			25	25	2	2				X			Mistletoe
186	Valley oak	25			25	35	1	1							
187	European olive	16	15	15	35	40	1	1							
188	Valley oak	27			45	35	1	2					3		
189	European olive	6	5	3	20	25	2	1							
190	Valley oak	16			30	25	2	3							
191	European olive	12	10	6/6	25	35	1	1							
192	European olive	19	12	5	30	30	1	1							
193	European olive	8	4		15	20	1	2							
194	Valley oak	12			30	30	2	2							
195	Valley oak	12			30	30	1	3							
196	Valley oak	18			30	30	2	3							
197	Valley oak	10			20	20	3	1							
198	Valley oak	13			30	25	1	2							
199	Valley oak	12			35	35	2	2							
200	Valley oak	15			35	45	1	3							
201	Valley oak	8			20	15	4	4							
202	Valley oak	12			25	25	4	4							
203	Valley oak	10			30	30	3	3							
204	Valley oak	9			30	20	2	3							
205	Valley oak	21			25	25	4	5							Major Trunk Decay
206	California bay laurel Umbellularia californica	13			25	30	1	1							
207	Valley oak	10			30	25	2	2							
208	Valley oak	14			40	30	3	3							
209	Valley oak	12			40	40	3	2							
210	Valley oak	11			15	25	2	3							
211	Valley oak	14			35	30	3	3							
212	Coast live oak	14			30	35	1	3							
213	Valley oak	16			35	30	2	2							
214	Valley oak	14			35	30	3	3							
215	Valley oak	13			35	20	3	2							
216	Blue oak Quercus douglasii	7			15	15	1	2							
217	Valley oak	10			15	20	2	2							
218	European olive	18	10	8/8	20	40	1	4							Major leader failure
219	Valley oak	8			10	10	5	4		X					Topped at 8 feet

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Surrey Farm Estates, APN: 532-16-06, Los Gatos, CA
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	Tree Name	DBH	DBH	DBH	Hght	Sprd	Hlth	Strc	CD/IB	Tppd	Cbl?	I/D	R C	H2O	Notes
220	European olive	13			30	30	1	1							
221	Valley oak	8			25	15	2	3							
222	Valley oak	12			40	20	4	3							
223	Valley oak	15			35	30	3	3							
224	Coast live oak	32	21	10	35	40	4	4							Trunk decay
225	Valley oak	12			35	35	4	3							
226	Valley oak	9			-	-	-	-							Dead
227	Valley oak	9			20	20	3	1							
228	Aleppo pine	10			30	20	1	1							
229	Blue Oak	38			40	60	1	1					2		
230	Valley oak	19			35	40	3	2							
231	Valley oak	16			35	25	3	2							
232	Blue Oak	14			25	20	3	3							
233	Blue Oak	14			40	35	3	2							
234	Blue Oak	14			25	20	2	3							
235	Blue Oak	10			10	20	3	3							
236	Blue Oak	34			45	65	1	2							
237	Blue Oak	20			40	40	2	2							
238	Blue Oak	14			30	25	2	3							
239	Blue Oak	27			40	50	2	3							
240	Valley oak	15			25	30	4	4							
241	Coast live oak	22			40	40	1	1							
242	Coast live oak	15			35	45	1	2							
243	Valley oak	14			35	30	1	3							
244	Coast live oak	14			40	20	1	3							
245	Coast live oak	17			45	35	1	1							
246	Coast live oak	17			40	30	1	2							
247	Blue Oak	12			35	40	1	1							
248	Valley oak	11	8		35	30	1	2							
249	Coast live oak	19	18		30	50	1	2							
250	Coast live oak	8			25	15	1	3							
251	Blue Oak	9	9		30	35	1	1							
252	Blue Oak	9			40	20	2	3							
253	Coast live oak	13			40	20	1	2							
254	Coast live oak	12	11		40	40	1	4	X						
255	Coast live oak	12			15	30	1	3							
256	Coast live oak	29			35	60	1	3	X						
257	Blue oak	14			40	40	2	2							
258	Coast live oak	17			40	35	1	3	X						
259	Coast live oak	10	8		35	25	1	4	X						
260	Coast live oak	15			25	30	1	3							
261	Coast live oak	25			35	50	1	2							
262	Coast live oak	7			20	15	1	2							
263	Coast live oak	18			30	45	1	3							
264	Coast live oak	20			25	35	1	4	X						

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	Tree Name	DBH	DBH	DBH	Hght	Sprd	Hlth	Strc	CD/IB	Tppd	Cbl?	I/D	R C	H2O	Notes
265	Coast live oak	18			30	35	1	3							
266	Valley oak	13			30	30	2	1							
267	Coast live oak	9	9		20	25	2	3							
268	Coast live oak	33			40	50	1	1							
269	Coast live oak	25			35	40	1	3							
270	Coast live oak	23			40	40	1	2							
271	Coast live oak	17			35	30	1	3							
272	Coast live oak	7			20	20	1	2							
273	Coast live oak	17			35	35	1	2							
274	Coast live oak	26			35	40	1	2							
275	Coast live oak	26			35	40	1	3							
276	Coast live oak	16			30	25	1	3							
277	Unused Number														
278	Coast live oak	28			40	50	1	2							
279	Valley oak	9			30	20	1	2							
280	Coast live oak	29			35	30	1	2							
281	Valley oak	26			45	50	2	2							
282	Blue Oak	19			35	40	2	1							
283	Blue Oak	18			30	50	2	1							
284	Blue Oak	18			35	25	2	1							
285	Coast live oak	23			25	35	1	1							
286	Blue Oak	15			25	20	2	2							
287	Blue Oak	14			30	25	3	2							
288	Blue Oak	7			20	15	3	2							
289	Blue Oak	10			25	25	2	2							
290	Blue Oak	18			30	25	2	1							
291	Blue Oak	10			20	15	2	2							
292	Valley oak	22			20	25	2	5							Major trunk decay
293	Coast live oak	26			35	45	1	2							
294	Valley oak	8			25	20	1	2							
295	Valley oak	11			25	30	1	2							
296	Poison oak Toxiodendron diversiloba	8	7		10	15	1	2							
297	Coast live oak	21	10		20	35	1	2							
298	Valley oak	15			40	35	1	1							
299	European olive	6	5/5	5/4	15	20	1	3							
300	Valley oak	40			45	40	2	2							
301	Coast live oak	6			15	15	1	2							
302	Valley oak	28			45	45	1	2							
303	Coast live oak	24			30	45	1	2							
304	Valley oak	7			25	30	3	1							
305	Valley oak	13			30	30	1	2							
306	Valley oak	6			30	10	3	2							
307	Valley oak	10			20	10	5	4							
308	Valley oak	16			35	30	1	2							

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	Tree Name	DBH	DBH	DBH	Hght	Sprd	Hlth	Strc	CD/IB	Tppd	Cbl?	I/D	R C	H2O	Notes
309	Coast live oak	6			15	10	1	2							
310	Valley oak	15			30	35	1	2							
311	Valley oak	10			30	20	2	2							
312	Valley oak	6			15	15	3	3							
313	Valley oak	6			10	10	4	4							
314	Coast live oak	5			10	10	1	2							
315	Coast live oak	6			15	10	1	2							
316	Blue oak	4			20	15	1	1							
317	Coast live oak	7			15	15	1	1							
318	Valley oak	14			25	20	3	3							
319	Coast live oak	6			15	15	2	3							
320	European olive	5	4	3	20	20	1	2							
321	European olive	6	5	4	30	25	1	3							
322	Valley oak	12			30	30	1	3							
323	Valley oak	16			45	35	2	1							
324	Valley oak	16			35	25	3	3	X						
325	Coast live oak	13			30	25	1	2							
326	Valley oak	16			35	30	2	3	X						
327	Coast live oak	6			10	10	1	3							
328	Coast live oak	5			10	10	1	3							
329	Valley oak	10			25	15	5	4							
330	Coast live oak	5			20	15	1	3	X						
331	Unused Number														
332	Valley oak	10			40	20	3	2							
333	Coast live oak	11			40	20	1	2							
334	Coast live oak	7			20	15	2	2							
335	Valley oak	10			30	20	3	3							
336	Valley oak	23			45	40	2	2							
337	Valley oak	25			50	50	1	2							
338	Coast live oak	6			15	15	1	2							
339	Valley oak	15			45	35	2	3							
340	Coast live oak	26			50	70	2	1							
341	Valley oak	25			45	35	1	1							
342	Valley oak	13			40	20	3	2							
343	Valley oak	24			40	30	2	4	X						
344	Coast live oak	7			15	15	1	2							
345	Coast live oak	8			25	15	2	2							
346	Valley oak	14			35	25	2	2							
347	Coast live oak	16			25	30	1	1					2		1
348	Valley oak	11			20	25	1	1							
349	Coast live oak	10			15	20	1	2					2		Discing of half of the root zone
350	Coast live oak	6			10	15	1	1					2		Discing of half of the root zone
351	Coast live oak	10			15	15	1	1					2		Discing of half of the root zone
352	Valley oak	16			45	35	2	1					3		Discing
353	Valley oak	20			50	40	2	1							Discing

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	Tree Name	DBH	DBH	DBH	Hght	Sprd	Hlth	Strc	CD/IB	Tppd	Cbl?	I/D	R C	H2O	Notes
354	Crabapple Malus species	6	6	5	15	15	3	2							Discing
355	Coast live oak	10			20	25	1	1							
356	Valley oak	17			40	40	1	3		X					Partial for Line Clearing
357	Incense cedar	9			25	20	1	1							
358	Incense cedar	8			20	20	2	1							
359	Incense cedar	5			15	15	3	1							
360	Incense cedar	6			10	15	3	4		X					
361	Incense cedar	7			15	10	2	1							
362	Incense cedar	6			6	10	4	4		X					
363	Aleppo pine	13			30	25	1	2							
364	Incense cedar	7			15	15	4	1							
365	Incense cedar	9			20	15	1	1							
366	Incense cedar	9			25	15	2	1							
367	Incense cedar	5			6	10	3	4		X					
368	Incense ced	6			10	10	2	1							
369	Incense cedar	6			15	15	1	1							
370	Incense cedar	10			15	20	2	3		X					Top 2 feet dead
371	Valley oak	5			25	10	1	3	X						
372	Coast live oak	5	3		10	15	3	3							Sparse
373	Unused Number														
374	Unused Number														
375	Valley oak	5	4		20	20	1	2							
376	Coast live oak	7			15	15	1	2							
377	Coast live oak	18	9		30	30	1	4	X						CD High Risk
378	Coast live oak	10	8		25	25	1	3	X						
379	Coast live oak	11	8		25	25	1	2							
380	Coast live oak	9			20	25	1	3	X						
381	Coast live oak	12			25	25	1	2							
382	Valley oak	6			15	10	4	2							
383	Valley oak	49			35	70	1	2							
384	Coast live oak	43			35	60	1	2							Dense leaf litter - Very good
385	Valley oak	36			40	60	1	1							
386	Valley oak	23			30	40	1	2							
387	Valley oak	17			30	30	2	2							
388	European olive	12	8		25	40	1	1							
389	Coast live oak	13			25	40	1	4	X						Split in progress
390	Valley oak	26			40	40	1	2							
391	Valley oak	15			15	25	2	2							
392	Hybrid oak Quercus species	26			30	55	1	1							
393	Valley oak	11			15	30	2	3							
394	Valley oak	11			15	20	2	3							
395	Valley oak	18			30	30	2	4							Previous CD Failure
396	Valley oak	24			35	65	2	2							
397	Valley oak	22			30	50	2	1							

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	Tree Name	DBH	DBH	DBH	Hght	Sprd	Hlth	Strc	CD/IB	Tppd	Cbl?	I/D	R C	H2O	Notes
398	Valley oak	17			20	30	2	3							
399	Valley oak	12			20	25	3	2							
400	Valley oak	10			15	20	3	2							
401	Valley oak	11			15	15	3	2							
402	Valley oak	12			20	20	3	2							
403	Valley oak	38			40	35	1	2							
404	Valley oak	22			30	40	2	1							
405	Valley oak	21			35	70	2	2							
406	Valley oak	11			25	25	2	1							
407	Valley oak	20			25	25	5	5		X					Primary leader gone
408	Valley oak	27			40	35	3	3							
409	Valley oak	12			25	25	2	4	X			X			Previous CD failure - limb decay
410	Coast live oak	15			40	45	1	1							
411	Valley oak	23			40	15	3	3							
412	Valley oak	10			30	15	2	3							
413	Valley oak	11			35	30	3	2							
414	Valley oak	12			35	25	2	2							
415	Valley oak	15			30	20	2	3					3		
416	Valley oak	16			30	35	5	4					3		
417	Valley oak	13			25	20	3	2					3		
418	Valley oak	15			35	30	2	2							
419	Coast live oak	30	18		45	60	1	1							
420	Valley oak	15			35	30	3	2							
421	Valley oak	14			30	30	1	3							
422	Valley oak	23			35	40	2	1							
423	Aleppo pine	6			20	10	1	1							
424	Aleppo pine	9			25	25	1	4		X					
425	Aleppo pine	7			25	25	1	1							
426	Aleppo pine	8			25	25	1	1							
427	Aleppo pine	7			25	20	1	1							
428	Valley oak	24			30	35	2	2							
429	Valley oak	10			20	20	4	3							
430	Aleppo pine	8			10	15	1	3							
431	Valley oak	18			25	35	2	2							
432	Blue oak	16			30	25	3	3							
433	Valley oak	11			30	25	3	2							
434	Valley oak	12			20	15	3								
435	Coast live oak	17			30	35	2	1							
436	Valley oak	21			-	-	-	-							
437	Valley oak	16			30	35	3	3							
438	Valley oak	40			35	30	3	4							
439	Valley oak	12			30	25	3	2							
440	Valley oak	12			35	20	4	3							
441	Blue Oak	26			40	60	2	1							
442	Blue Oak	23			40	50	2	1							

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443	Blue Oak	25			45	50	2	1							Discing
444	Aleppo pine	8			25	15	1	1							
445	Blue Oak	9	9		-	-	-	-							Dead
446	Valley oak	12			35	30	4	4							
447	Valley oak	29			40	55	3	3							
448	Coast live oak	60			45	70	2	2			X				
449	Aleppo pine	9			20	15	2	2							
450	Aleppo pine	12			20	15	2	3	X						
451	Aleppo pine	11			20	20	3	3	X						
452	Aleppo pine	14			20	20	3	3							
453	Incense cedar	6			15	10	3	1							
454	Aleppo pine	11			25	20	3	3							
455	Incense cedar	8			15	10	5	4							Top 2/3 dead
456	Incense cedar	6			15	10	4	1							
457	Incense cedar	7			15	10	2	1							
458	Incense cedar	6			15	10	3	1							
459	Incense cedar	5			10	10	5	4							Top 2/3 dead
460	Aleppo pine	9			20	15	3	3							
461	Aleppo pine	10			25	15	4	2							
462	Incense cedar	7			15	10	5	4							Top 2/3 dead
463	Incense cedar	5			15	10	4	1							
464	Incense cedar	6			15	10	3	1							
465	Blue Oak	25			40	45	2	1							
466	Valley oak	14			35	30	4	3							
467	Blue Oak	36			40	60	2	1							
468	Valley oak	16			30	30	2	2							
469	Blue Oak	28			45	70	3	2							
470	Blue Oak	15			25	25	2	2							
471	Valley oak	8			15	10	4	3							
472	Valley oak	17			20	30	2	2							
473	Blue Oak	14			20	25	1	3							
474	Blue Oak	21			30	35	2	3	X						
475	Valley oak	17			30	30	3	2							
476	Blue Oak	20			35	40	2	2							
477	Blue Oak	12			20	25	2	3							
478	Blue oak	31			35	35	3	4							
479	Blue Oak	11			20	25	3	3							
480	Valley oak	13			25	20	3	4							
481	Blue Oak	20			30	25	4	3							
482	Blue Oak	21			35	45	2	2							
483	Blue Oak	24			40	40	2	1							
484	Valley oak	18			40	30	3	2							
485	Valley oak	15			30	35	3	2							
486	Valley oak	20			30	45	3	2							
487	Valley oak	12			30	30	3	3							

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	Tree Name	DBH	DBH	DBH	Hght	Sprd	Hlth	Strc	CD/IB	Tppd	Cbl?	I/D	R C	H2O	Notes
488	Valley oak	26			25	55	3	2							Mistletoe
489	Valley oak	14			40	20	3	2							
490	Blue Oak	23			45	45	3	1							
491	Valley oak	21			25	45	4	4							
492	Valley oak	21			30	40	3	2							
493	Valley oak	28			30	25	3	4							
494	Valley oak	21			40	40	2	1							
495	Valley oak	19			40	40	1	1							
496	Aleppo pine	11			30	30	1	1							
497	Aleppo pine	12			30	30	1	1							
498	Valley oak	12			30	30	3	3							
499	Blue Oak	18			40	45	3	2							
500	Blue Oak	19			30	45	3	2							
501	Blue Oak	7			15	10	4	3							
502	Aleppo pine	8	7		25	25	3	3							
503	Aleppo pine	10			25	25	3	3							
504	Aleppo pine	11			25	15	3	3	X						
505	Incense cedar	5			10	10	2	1							
506	Incense cedar	5			15	10	4	1							
507	Incense cedar	5			10	10	5	4							Top 2/3 dead
508	Incense cedar	5			10	10	3	3							
509	Incense cedar	8			10	10	3	3	X						
510	Aleppo pine	11			25	25	2	3							
511	Aleppo pine	10			25	15	2	3	X						
512	Aleppo pine	15			25	25	3	2							
513	Aleppo pine	12			25	20	3	1							
514	Incense cedar	6			15	10	3	1							
515	Incense cedar	6			15	10	3	1							
516	Incense cedar	6			10	10	4	1							
517	Incense cedar	5			10	10	3	1							
518	Incense cedar	5			10	10	3	1							
519	Aleppo pine	11			20	20	3	3	X						
520	Aleppo pine	9			20	20	2	3							
521	Aleppo pine	13			25	20	2	3							
522	Aleppo pine	9			20	15	4	3							
523	Incense cedar	5			10	10	2	1							
524	Incense cedar	5			10	10	3	1							
525	Aleppo pine	10			20	20	2	4	X						
526	Incense cedar	7			15	10	2	1							
527	Incense cedar	5			10	10	4	1							
528	Incense cedar	5			10	10	4	1							
529	Aleppo pine	9			20	15	3	4	X						Top dead
530	Aleppo pine	11			20	20	2	4	X						
531	Aleppo pine	13			25	25	3	3							
532	Aleppo pine	11			20	15	2	2							

DBH - Diameter Breast Height
Hght - Height
Sprd - Canopy Spread
Hlth - Health

Strc - Structure
CD/IB - Co-Dominant Stems w/ Imbedded Bark
Tppd - Topped
CBL? - Cables Recommended

I/D - Insects or Disease
RC - Root Collar Covered
H2O - Needs Water

Surrey Farm Estates, APN: 532-16-06, Los Gatos, CA
Prepared by Michael L. Bench, Consulting Arborist

	Tree Name	DBH	DBH	DBH	Hght	Sprd	Hlth	Strc	CD/IB	Tppd	Cbl?	I/D	R C	H2O	Notes
533	Incense cedar	6			10	10	3	1							
534	Aleppo pine	16			25	30	3	4	X						
535	Aleppo pine	11			20	15	4	4	X						
536	Aleppo pine	10			20	15	2	3							
537	Aleppo pine	16			20	20	3	4	X						
538	Wild Plum	9	6		10	10	4	2							
539	Wild Plum	9			10	10	3	2							
540	Coast live oak	11			25	30	1	2							
541	Coast live oak	15	7		35	35	1	1							
542	Coast live oak	12			35	15	1	3							
543	Coast live oak	11			35	30	1	2							
544	Valley oak	10			35	20	1	1							
545	Coast live oak	5			15	10	1	3							
546	Coast live oak	12			25	20	1	3	X						
547	Coast live oak	13			30	25	1	2							
548	Coast live oak	27			30	40	1	3	X						
549	Coast live oak	15			20	30	1	2							
550	Blue oak	18			40	45	1	2							
551	Coast live oak	16			40	20	1	3							
552	Coast live oak	21			40	35	1	2							
553	Coast live oak	12			40	20	1	2							
554	Coast live oak	15			35	30	1	3							
555	Coast live oak	27			40	25	1	4	X						
556	Coast live oak	7			25	15	1	3							
557	Coast live oak	6			25	15	1	3							
558	Coast live oak	10			30	20	1	3							
559	Coast live oak	17			40	35	1	2							
560	Blue oak	10			35	30	1	3							
561	Valley oak	18			35	40	1	2							
562	Coast live oak	13			30	30	1	2							
563	Coast live oak	20			35	30	1	3	X						
564	Coast live oak	19			30	35	1	3	X						
565	Coast live oak	16			30	30	1	2							
566	Valley oak	19			25	30	1	3							
567	Coast live oak	22			35	30	1	3	X						
568	Wild Plum	12	6		15	20	4	5							
569	Coast live oak	10			20	20	1	1							
570	Blue Oak	13			15	20	3	3	X						
571	Wild plum	6			-	-	-	-							Dead
572	Monterey Cypress Cupressus macrocarpa	7			10	15	1	1							
573	Valley oak	14			35	30	1	2							
574	Incense cedar	10			25	15	1	1							
575	Southern magnolia Magnolia grandiflora	8			10	15	2	1							
576	Coast live oak	6			15	15	2	1							

DBH - Diameter Breast Height
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Surrey Farm Estates, APN: 532-16-06, Los Gatos, CA
Prepared by Michael L. Bench, Consulting Arborist

	Tree Name	DBH	DBH	DBH	Hght	Sprd	Hlth	Strc	CD/IB	Tppd	Cbl?	I/D	R C	H2O	Notes
577	Cypress Cupressus species	5	4	4	15	10	2	1							
578	Coast live oak	5			15	15	1	1							
579	Coast live oak	5			15	10	2	3							
580	Coast live oak	6			15	10	2	2							
581	Coast live oak	4			10	10	2	2							
582	Valley oak	5			15	15	4	4							
583	Valley oak	4			20	10	3	3							
584	Coast live oak	4			15	10	3	2							
585	Valley oak	7			35	15	1	4							
586	Valley oak	6			20	20	3	3							
587	Coast live oak	6			15	15	2	3							
588	Coast live oak	8	8		15	20	1	4	X						
589	Valley oak	11			20	25	2	3							
590	Monterey pine	40			45	40	2	3							
591	Valley oak	33			50	60	2	2							
592	Coast live oak	32			45	40	1	2							
593	Coast live oak	10			15	15	2	2							
594	Incense cedar	5			10	10	2	1							
595	European olive	8	8	5	25	25	1	3							
596	Coast live oak	14			20	30	1	2							
597	Coast live oak	40			35	45	1	3							
598	Coast live oak	30			30	45	1	1							
599	Coast live oak	17			35	45	1	2							
600	Blue Oak	20			40	30	2	3							
601	Blue Oak	17			40	30	1	3							
602	Blue Oak	12			25	25	2	3							
603	Valley oak	40			50	80	1	2							

DBH - Diameter Breast Height
Hght - Height
Sprd - Canopy Spread
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Strc - Structure
CD/IB - Co-Dominant Stems w/ Imbedded Bark
Tppd - Topped
CBL? - Cables Recommended

I/D - Insects or Disease
RC - Root Collar Covered
H2O - Needs Water

Michael L. Bench
Consulting Arborist
ISA #1897, ASCA
(831) 594-5151 Fax (831) 663-0373
7327 Langley Canyon Rd., Prunedale, CA 93907

Subject: Surrey Farm Estates
APN: 532-16-006
Los Gatos, California

December 20, 2009

Assumptions and Limiting Conditions

1. Any description provided to the appraiser/consultant is assumed to be correct. Any titles and ownerships to any property are assumed to be good and marketable. No responsibility is assumed for legal matters in character nor is any opinion rendered as to the quality of any title.

2. It is assumed that any property is not in violation of any applicable codes, ordinances, statutes, or other govermental regulations.

3. Care has been taken to obtain information from reliable sources. All data has been verified insofar as reasonably possible. However, the appraiser/consultant can neither guarantee nor be responsible for the accuracy of information provided by others.

4. The appraiser/consultant shall not be required to give testimony or to attend court by reason of this appraisal unless written arrangements are made, inclucing payment of additional fees for services.

5. Loss or removal of any part of this report invalidates the entire appraisal/evaluation.

6. Possession of this report, or any copy thereof, does not imply right of publication or use for any purpose by any person other than to whom this report is addressd without writen consent of this appraiser/consultant.

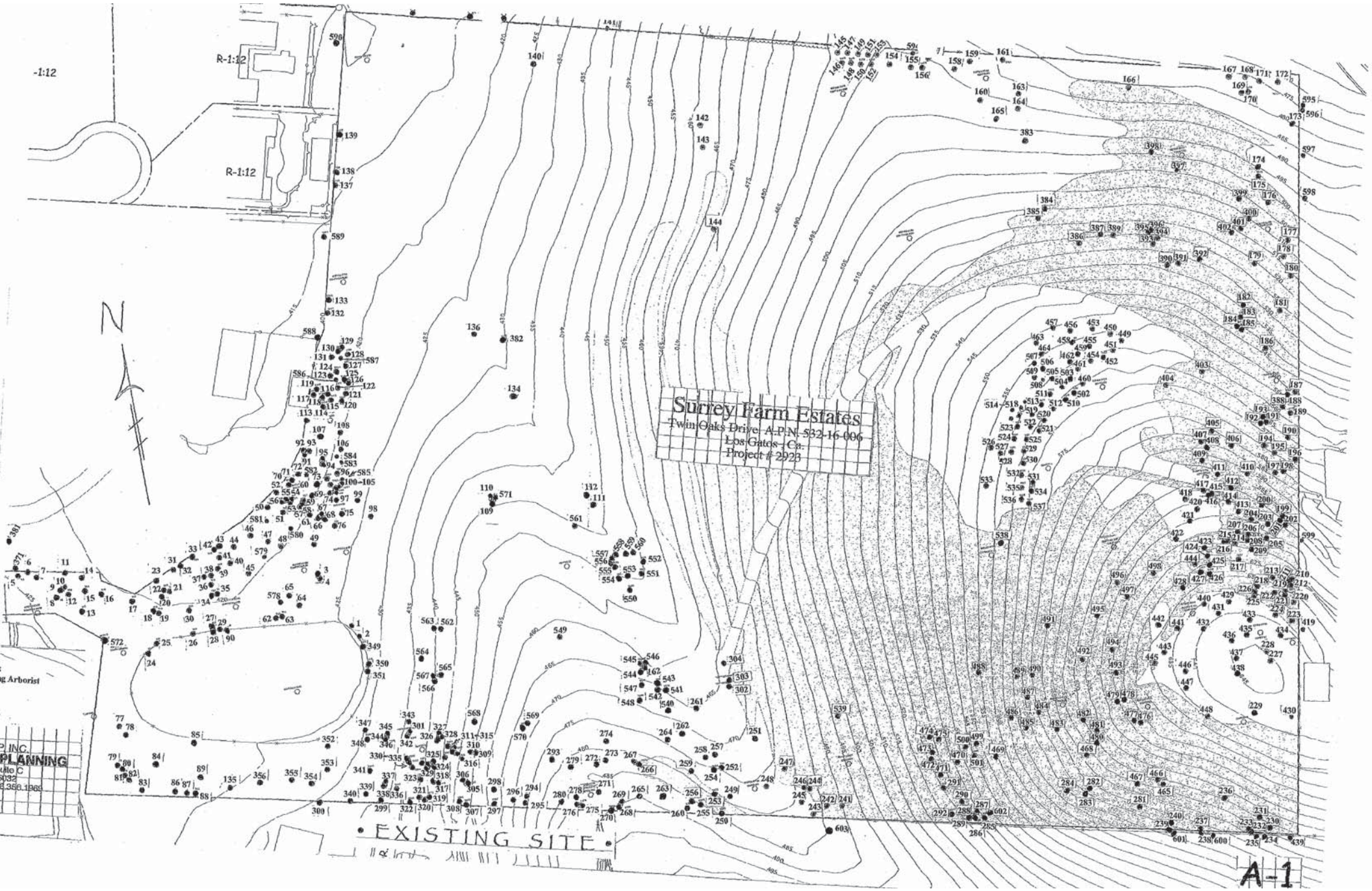
7. Neither all nor any part of the contents of this report, nor copy thereof, shall be used for any purpose by anyone but the client to whom this report is addressed, without the prior written consent of the appraiser/consultant; nor shall it be conveyed by anyone, including the client, to the public through advertizing, public relations, news, sales, or other media, without the written consent and approval of the author; particularly as to value considerations, identity of the appraiser/consultant to any professional society or institute or to any designation conferred upon by the appraiser/consultant as stated in his/her qualifications.

8. This report and the values expressed herein represent the opinion of the appraiser/consultant. Further, the appraiser/consultant's fee is in no way contingent upon the reporting of a specified value nor upon any finding or recommendation reported.

9. Sketches, diagrams, graphs, photos, etc., in this report are intended as visual aides and are not done necessarily to scale and should not be construed as engineering information or specifications.

10. This report has been made in conformity with generally acceptable appraisal/evaluation/diagnostic reporting methods and produres and is consistent with practices recommended by the International Society of Arboriculture and the American Society of Consulting Arborists.

11. The appraiser/consultant takes no responsibility for any defects in any tree's structure. No tree described in this report/evaluation has been climbed, unless othewise stated, and, as such, structural defects that could only have been discovered by climbing are not reported. Likewise, a root collar inspection, consisting of excavation of soil around the tree for the purpose of uncovering major root defects/weaknesses, has not been performed, unless otherwise stated.


Surrey Farm Estates
Twin Oaks Drive A.P.N. 532-16-006
Los Gatos, Ca.
Project # 2923
R-1:12
R-1:12
-1:12
N
EXISTING SITE
A-1

Michael L. Bench
Consulting Arborist
(831) 594-5151

7327 Langley Canyon Road
Prunedale, CA 93907

Mr. Roger Griffin
Paragon Design Group, Inc.
405 Alberto Way, Suite C
Los Gatos, California 95032

January 8, 2013

Mr. Griffin:
I have reviewed the Revised Grading and Drainage Plans for the Surrey Farm Estates, Twin Oaks Drive, APN # 532-16-006, Los Gatos, California. This review included the Plans prepared by the Paragon Design Group, Inc., and the Preliminary Grading and Drainage Plans prepared by Westfall Engineers, Inc., originally drafted in August 20, 2011.

This revised plan reduces the impact to Trees # 137, 138, and 139, located on this property and also reduces the impact to neighboring Trees # 590, 591, and 592, located on neighboring properties near the retention pond proposed at the northwest corner of the property (Lots 3 and 4). With the revisions currently proposed, these trees should survive in good condition.

The revised plan has added retaining walls near Tree # 371 and Tree # 544, reducing the impact to them. It appears both of these should survive in good condition. These retaining walls are planned to be dry stacked block walls, for example “Versa-Lok” or similar system. It will be essential that the footings for these walls be no deeper than approximately 4 inches in depth.

Respectfully submitted,

Michael L. Bench, Consulting Arborist
International Society of Arboriculture Certification # WE 1897
American Society of Consulting Arborist Member

Attachment: Field Data Sheet with Disposition Information

	Field Data Sheet Surrey Farm Estates					
	Tree Name	DBH	Condition	Last Date Reviewed	Disposition	Construction Impacts
1	Coast live oak Quercus agrifolia	11	Fair	8/20/12	Remove	Roadway Construction
2	Coast live oak	6	Good	10/11/12	Remove	Roadway Construction
3	Valley oak Quercus lobata	15	Excellent	12/20/10	Transplant	
4	Coast live oak	9	Good	8/20/12	Remove	Retention Pond Construction
5	Incense cedar Calocedrus decurrens	5	Good	8/20/12	Remove	Roadway Construction
6	Coast live oak	13	Good	8/20/12	Preserve	Roadway Construction- Low Impact
7	Incense cedar	4	Fair	8/20/12	Preserve	Roadway Construction- Low Impact
8	Coast live oak	9/7	Good	10/11/12	Transplant	
9	Coast live oak	7	Good	8/20/12	Remove	Roadway Construction
10	Coast live oak	8	Good	8/20/12	Remove	Roadway Construction
11	Coast live oak	7	Good/Fair	12/20/10	Preserve	
12	Coast live oak	11	Good	8/20/12	Remove	Roadway Construction
13	California black walnut Juglans hindsii	19	Poor	8/20/12	Remove	Roadway Construction
14	Aleppo pine Pinus halapensis	5	Fair/Poor	12/20/10	Preserve	
15	English walnut Juglans regia	11	Poor	8/20/12	Remove	Roadway Construction
16	Aleppo pine	12	Poor	8/20/12	Remove	Roadway Construction
17	Valley oak	17	Good	10/11/12	Transplant	
18	Coast live oak	20/16	Good	8/20/12	Remove	Roadway Construction
19	Coast live oak	8	Fair/Poor	8/20/12	Remove	Roadway Construction
20	Coast live oak	22	Good	12/20/10	Preserve	
21	Coast live oak	20	Good/Fair	12/20/10	Preserve	
22	California buckeye Aesculus californica	8/6	Good	12/20/10	Preserve	
23	Coast live oak	7	Fair	12/20/10	Preserve	
24	Coast live oak	21	Good/Fair	8/20/12	Remove	Roadway / Storm Drain Construction
25	Coast live oak	11	Good/Fair	8/20/12	Remove	Roadway / Storm Drain Construction
26	Coast live oak	10	Good/Fair	8/20/12	Remove	Roadway Construction
27	Coast live oak	16	Good/Fair	8/20/12	Remove	Roadway Construction
28	Coast live oak	10	Good	8/20/12	Remove	Roadway Construction
29	Coast live oak	14	Good/Fair	8/20/12	Remove	Roadway Construction
30	Valley oak	19	Fair	8/20/12	Remove	Roadway Construction/Storm Drain
31	Coast live oak	7	Fair	12/20/10	Preserve	
32	European olive Olea europea	5/3	Fair	12/20/10	Preserve	
33	Valley oak	14	Fair	12/20/10	Preserve	
34	Coast live oak	12	Good	8/20/12	Remove	Storm Drain Construction
35	Valley oak	17	Good/Fair	8/20/12	Remove	Storm Drain Construction
36	Valley oak	16	Fair	12/20/10	Preserve	
37	Valley oak	8	Fair/Poor	12/20/10	Preserve	
38	Coast live oak	18	Fair	12/20/10	Preserve	
39	Valley oak	25	Fair	12/20/10	Preserve	
40	Valley oak	15	Fair	12/20/10	Preserve	
41	Valley oak	11	Fair/Poor	12/20/10	Preserve	
42	Valley oak	6	Fair	12/20/10	Preserve	
43	Valley oak	12	Fair	12/20/10	Preserve	

44	Coast live oak	7	Fair	12/20/10	Preserve	
45	Coast live oak	8	Good	12/20/10	Preserve	
46	Valley oak	16	Fair	12/20/10	Preserve	
47	Coast live oak	11	Good/Fair	12/20/10	Preserve	
48	Valley oak	8	Fair/Poor	8/20/12	Remove	Retention Pond Construction
49	Valley oak	23	Fair	10/11/12	Transplant	
50	Aleppo pine	17	Fair	12/20/10	Preserve	
51	Valley oak	11	Good/Fair	12/20/10	Preserve	
52	Coast live oak	21	Excellent	12/20/10	Preserve	
53	Valley oak	7	Good/Fair	12/20/10	Preserve	
54	Coast live oak	5	Fair	12/20/10	Preserve	
55	Coast live oak	5	Good	12/20/10	Preserve	
56	Coast live oak	9	Good	12/20/10	Preserve	
57	Coast live oak	15	Good/Fair	12/20/10	Preserve	
58	Coast live oak	12	Good/Fair	12/20/10	Preserve	
59	Coast live oak	6	Good/Fair	12/20/10	Preserve	
60	Coast live oak	8	Good	12/20/10	Preserve	
61	Coast live oak	8	Good	12/20/10	Preserve	
62	Coast live oak	18/15	Good	8/20/12	Remove	Roadway Construction
63	Coast live oak	15	Good	8/20/12	Remove	Roadway Construction
64	Coast live oak	8	Good	8/20/12	Remove	Retention Pond Construction
65	Coast live oak	16	Good/Fair	8/20/12	Remove	Retention Pond Construction
66	Valley oak	10	Fair	12/20/10	Preserve	
67	Coast live oak	12	Good	12/20/10	Preserve	
68	Valley oak	9	Fair	12/20/10	Preserve	
69	Coast live oak	12	Good	12/20/10	Preserve	
70	Aleppo pine	7	Fair	12/20/10	Preserve	
71	Aleppo pine	14	Good	12/20/10	Preserve	
72	Aleppo pine	13	Good/Fair	12/20/10	Preserve	
73	Coast live oak	10	Good	12/20/10	Preserve	
74	Coast live oak	8	Good	12/20/10	Preserve	
75	Coast live oak	21	Good	12/20/10	Preserve	
76	Coast live oak	7	Good	12/20/10	Preserve	
77	Valley oak	25	Good	12/20/10	Preserve	
78	Valley oak	21	Good	12/20/10	Preserve	
79	California sycamore Platanus racemosa	41	Good/Fair	12/20/10	Preserve	
80	California sycamore	36	Good	12/20/10	Preserve	
81	California sycamore	37	Good	12/20/10	Preserve	
82	California sycamore	42	Good	12/20/10	Preserve	
83	Aleppo pine	7	Good/Fair	12/20/10	Preserve	
84	Elderberry Sambucus caerulea	9/8/7	Good	12/20/10	Preserve	
85	Coast live oak	46	Good	12/20/10	Preserve	
86	Aleppo pine	16	Dead	12/20/10	Preserve	
87	Aleppo pine	15	Ext Poor	12/20/10	Preserve	
88	Coast live oak	7	Fair/Poor	12/20/10	Preserve	
89	Elderberry	12	Ext Poor	12/20/10	Preserve	
90	Coast live oak	12	Good/Fair	8/20/12	Remove	Roadway Construction

91	Coast live oak	6	Good	12/20/10	Preserve	
92	Valley oak	7	Ext Poor	12/20/10	Preserve	
93	Aleppo pine	13	Ext Poor	12/20/10	Preserve	
94	Coast live oak	8	Good	12/20/10	Preserve	
95	Coast live oak	6	Good	12/20/10	Preserve	
96	Coast live oak	11	Good	12/20/10	Preserve	
97	Coast live oak	5	Fair/Poor	12/20/10	Preserve	
98	Valley oak	25	Fair	12/20/10	Preserve	
99	Valley oak	10	Fair	12/20/10	Preserve	
100	Coast live oak	10	Good	12/20/10	Preserve	
101	Coast live oak	13	Good/Fair	12/20/10	Preserve	
102	Coast live oak	7	Good	12/20/10	Preserve	
103	Coast live oak	15	Excellent	12/20/10	Preserve	
104	Coast live oak	8	Good	12/20/10	Preserve	
105	Valley oak	7	Good	12/20/10	Preserve	
106	Coast live oak	22	Good/Fair	12/20/10	Preserve	
107	Valley oak	6	Fair/Poor	12/20/10	Preserve	
108	Coast live oak	23	Good	12/20/10	Preserve	
109	Coast live oak	15	Excellent	8/20/12	Remove	Roadway Construction
110	Wild plum Prunus cerasifera	6	Ext Poor	8/20/12	Remove	Roadway Construction
111	Coast live oak	29	Good	12/20/10	Preserve	
112	Blue oak Quercus douglasii	14	Excellent	12/20/10	Preserve	
113	Coast live oak	17	Good	12/20/10	Preserve	
114	Valley oak	13	Good/Fair	12/20/10	Preserve	
115	Valley oak	7	Fair	12/20/10	Preserve	
116	Coast live oak	8	Fair	12/20/10	Preserve	
117	Coast live oak	17	Good	12/20/10	Preserve	
118	Coast live oak	15	Good	12/20/10	Preserve	
119	Valley oak	13	Good/Fair	12/20/10	Preserve	
120	Coast live oak	18	Good	12/20/10	Preserve	
121	Valley oak	20	Excellent	12/20/10	Preserve	
122	Coast live oak	14/10/10/7	Good/Fair	12/20/10	Preserve	
123	Coast live oak	12	Dead	8/20/12	Remove	Sanitary Sewer Construction
124	Coast live oak	14	Fair	12/20/10	Preserve	
125	Coast live oak	10	Good	1/08/13	Remove	Sanitary Sewer Construction
126	Coast live oak	16	Good/Fair	8/20/12	Remove	Sanitary Sewer Construction
127	Coast live oak	13	Good	12/20/10	Preserve	
128	Coast live oak	19	Good/Fair	12/20/10	Preserve	
129	Coast live oak	15	Good	12/20/10	Preserve	
130	Coast live oak	20	Good	12/20/10	Preserve	
131	Coast live oak	6	Good	12/20/10	Preserve	
132	Valley oak	21	Excellent	12/20/10	Preserve	
133	Valley oak	7	Good	12/20/10	Preserve	
134	Valley oak	39	Good	8/20/12	Preserve	Retention Pond Construction- Low Impact
135	Coast live oak	8	Good	8/20/12	Remove	Roadway Construction
136	Valley oak	7	Excellent	8/20/12	Remove	Roadway Construction
137	Coast live oak	5/5/3	Ext Poor	1/08/13	Preserve	Retention Pond Construction- Low Impact

138	Coast live oak	10	Good/Fair	1/08/13	Preserve	Retention Pond Construction- Low Impact
139	Coast live oak	8	Fair	1/08/13	Preserve	Retention Pond Construction- Low Impact
140	Coast live oak	18	Good/Fair	12/20/10	Preserve	
141	European olive	21	Excellent	12/20/10	Preserve	
142	Wild plum	5	Ext Poor	12/20/10	Preserve	
143	Wild plum	6	Ext Poor	12/20/10	Preserve	
144	European olive	11/5/5	Excellent	12/20/10	Preserve	
145	Aleppo pine	12	Good/Fair	12/20/10	Preserve	
146	Aleppo pine	11	Good	12/20/10	Preserve	
147	Aleppo pine	11	Good	12/20/10	Preserve	
148	Aleppo pine	8	Good	12/20/10	Preserve	
149	Aleppo pine	9	Excellent	12/20/10	Preserve	
150	Aleppo pine	10	Good/Fair	12/20/10	Preserve	
151	Aleppo pine	9	Excellent	12/20/10	Preserve	
152	Aleppo pine	8	Good	12/20/10	Preserve	
153	Aleppo pine	9	Good	12/20/10	Preserve	
154	Aleppo pine	16	Excellent	8/20/12	Remove	Sanitary Sewer Construction
155	Aleppo pine	9	Good	12/20/10	Preserve	
156	Aleppo pine	9	Good	12/20/10	Preserve	
157	Incense cedar	7	Excellent	12/20/10	Preserve	
158	Aleppo pine	9	Good	12/20/10	Preserve	
159	Aleppo pine	10	Good	12/20/10	Preserve	
160	Valley oak	11	Fair	10/11/12	Transplant	
161	Valley oak	56	Good	12/20/10	Preserve	
162	Coast live oak	7	Good	1/08/13	Preserve	
163	Valley oak	10	Fair	12/20/10	Preserve	
164	Valley oak	11	Fair	12/20/10	Preserve	
165	Coast live oak	5	Excellent	12/20/10	Preserve	
166	Valley oak	11	Good	12/20/10	Preserve	
167	Coast live oak	30	Good	12/20/10	Preserve	
168	Valley oak	40	Good	12/20/10	Preserve	
169	Valley oak	30	Exellent	12/20/10	Preserve	
170	European olive	10/6/5/4/4	Good	12/20/10	Preserve	
171	European olive	11/9/8/7	Good	12/20/10	Preserve	
172	Valley oak	10	Ext Poor	12/20/10	Preserve	
173	Valley oak	45	Good	12/20/10	Preserve	
174	European olive	17/6/6	Good	12/20/10	Preserve	
175	Valley oak	9	Fair	12/20/10	Preserve	
176	Valley oak	16	Ext Poor	12/20/10	Preserve	
177	Valley oak	26	Fair	12/20/10	Preserve	
178	Valley oak	14	Fair	12/20/10	Preserve	
179	Valley oak	12	Fair	12/20/10	Preserve	
180	Valley oak	27	Fair	12/20/10	Preserve	
181	Valley oak	12	Fair	12/20/10	Preserve	
182	Valley oak	14	Fair	12/20/10	Preserve	
183	Valley oak	14	Fair	12/20/10	Preserve	
184	Valley oak	8	Fair	12/20/10	Preserve	

185	Valley oak	18	Fair	12/20/10	Preserve	
186	Valley oak	25	Excellent	12/20/10	Preserve	
187	European olive	16/15/15	Excellent	12/20/10	Preserve	
188	Valley oak	27	Good	12/20/10	Preserve	
189	European olive	6/5/3	Fair	12/20/10	Preserve	
190	Valley oak	16	Fair	12/20/10	Preserve	
191	European olive	12/10/6/6	Excellent	12/20/10	Preserve	
192	European olive	19/12/5	Excellent	12/20/10	Preserve	
193	European olive	8/4	Good	12/20/10	Preserve	
194	Valley oak	12	Fair	12/20/10	Preserve	
195	Valley oak	12	Good	12/20/10	Preserve	
196	Valley oak	18	Fair	12/20/10	Preserve	
197	Valley oak	10	Fair	12/20/10	Preserve	
198	Valley oak	13	Good	12/20/10	Preserve	
199	Valley oak	12	Fair	12/20/10	Preserve	
200	Valley oak	15	Good	12/20/10	Preserve	
201	Valley oak	8	Ext Poor	12/20/10	Preserve	
202	Valley oak	12	Ext Poor	12/20/10	Preserve	
203	Valley oak	10	Fair	12/20/10	Preserve	
204	Valley oak	9	Fair	12/20/10	Preserve	
205	Valley oak	21	Ext Poor	12/20/10	Preserve	
206	California bay laurel Umbellularia californica	13	Excellent	12/20/10	Preserve	
207	Valley oak	10	Fair	12/20/10	Preserve	
208	Valley oak	14	Fair	12/20/10	Preserve	
209	Valley oak	12	Fair	12/20/10	Preserve	
210	Valley oak	11	Fair	12/20/10	Preserve	
211	Valley oak	14	Fair	12/20/10	Preserve	
212	Coast live oak	14	Good	12/20/10	Preserve	
213	Valley oak	16	Fair	12/20/10	Preserve	
214	Valley oak	14	Fair	12/20/10	Preserve	
215	Valley oak	13	Fair	12/20/10	Preserve	
216	Blue oak Quercus douglasii	7	Good	12/20/10	Preserve	
217	Valley oak	10	Fair	12/20/10	Preserve	
218	European olive	18/10/8/8	Good/Fair	12/20/10	Preserve	
219	Valley oak	8	Ext Poor	12/20/10	Preserve	
220	European olive	13	Excellent	12/20/10	Preserve	
221	Valley oak	8	Fair	12/20/10	Preserve	
222	Valley oak	12	Poor	12/20/10	Preserve	
223	Valley oak	15	Fair	12/20/10	Preserve	
224	Coast live oak	32/21/10	Ext Poor	12/20/10	Preserve	
225	Valley oak	12	Poor	12/20/10	Preserve	
226	Valley oak	9	Dead	12/20/10	Preserve	
227	Valley oak	9	Fair	12/20/10	Preserve	
228	Aleppo pine	10	Excellent	12/20/10	Preserve	
229	Blue oak	38	Excellent	12/20/10	Preserve	
230	Valley oak	19	Fair	12/20/10	Preserve	
231	Valley oak	16	Fair	12/20/10	Preserve	

232	Blue oak	14	Fair	12/20/10	Preserve	
233	Blue oak	14	Fair	12/20/10	Preserve	
234	Blue oak	14	Fair	12/20/10	Preserve	
235	Blue oak	10	Fair	12/20/10	Preserve	
236	Blue oak	34	Good	12/20/10	Preserve	
237	Blue oak	20	Fair	12/20/10	Preserve	
238	Blue oak	14	Fair	12/20/10	Preserve	
239	Blue oak	27	Fair	12/20/10	Preserve	
240	Valley oak	15	Ext Poor	12/20/10	Preserve	
241	Coast live oak	22	Excellent	12/20/10	Preserve	
242	Coast live oak	15	Good	12/20/10	Preserve	
243	Valley oak	14	Good	12/20/10	Preserve	
244	Coast live oak	14	Good	12/20/10	Preserve	
245	Coast live oak	17	Excellent	12/20/10	Preserve	
246	Coast live oak	17	Good	12/20/10	Preserve	
247	Blue oak	12	Excellent	12/20/10	Preserve	
248	Valley oak	11/8	Good	12/20/10	Preserve	
249	Coast live oak	19/18	Good	12/20/10	Preserve	
250	Coast live oak	8	Good	12/20/10	Preserve	
251	Blue oak	9/9	Excellent	12/20/10	Preserve	
252	Blue oak	9	Fair	12/20/10	Preserve	
253	Coast live oak	13	Good	12/20/10	Preserve	
254	Coast live oak	12/11	Good/Fair	12/20/10	Preserve	
255	Coast live oak	12	Good	12/20/10	Preserve	
256	Coast live oak	29	Good	12/20/10	Preserve	
257	Blue oak	14	Fair	12/20/10	Preserve	
258	Coast live oak	17	Good	12/20/10	Preserve	
259	Coast live oak	10/8	Good/Fair	12/20/10	Preserve	
260	Coast live oak	15	Good	12/20/10	Preserve	
261	Coast live oak	25	Good	12/20/10	Preserve	
262	Coast live oak	7	Good	12/20/10	Preserve	
263	Coast live oak	18	Good	12/20/10	Preserve	
264	Coast live oak	20	Good	12/20/10	Preserve	
265	Coast live oak	18	Good	12/20/10	Preserve	
266	Valley oak	13	Good/Fair	12/20/10	Preserve	
267	Coast live oak	9/9	Fair	12/20/10	Preserve	
268	Coast live oak	33	Excellent	12/20/10	Preserve	
269	Coast live oak	25	Good	12/20/10	Preserve	
270	Coast live oak	23	Good	12/20/10	Preserve	
271	Coast live oak	17	Good	12/20/10	Preserve	
272	Coast live oak	7	Good	12/20/10	Preserve	
273	Coast live oak	17	Good	12/20/10	Preserve	
274	Coast live oak	26	Good	12/20/10	Preserve	
275	Coast live oak	26	Good	12/20/10	Preserve	
276	Coast live oak	16	Good	12/20/10	Preserve	
277	Unused Number					
278	Coast live oak	28	Good	12/20/10	Preserve	

279	Valley oak	9	Good	12/20/10	Preserve	
280	Coast live oak	29	Good	12/20/10	Preserve	
281	Valley oak	26	Fair	12/20/10	Preserve	
282	Blue oak	19	Fair	12/20/10	Preserve	
283	Blue oak	18	Fair	12/20/10	Preserve	
284	Blue oak	18	Fair	12/20/10	Preserve	
285	Coast live oak	23	Excellent	12/20/10	Preserve	
286	Blue oak	15	Fair	12/20/10	Preserve	
287	Blue oak	14	Fair	12/20/10	Preserve	
288	Blue oak	7	Fair	12/20/10	Preserve	
289	Blue oak	10	Fair	12/20/10	Preserve	
290	Blue oak	18	Fair	12/20/10	Preserve	
291	Blue oak	10	Fair	12/20/10	Preserve	
292	Valley oak	22	Ext Poor	12/20/10	Preserve	
293	Coast live oak	26	Good	12/20/10	Preserve	
294	Valley oak	8	Good	12/20/10	Preserve	
295	Valley oak	11	Good	12/20/10	Preserve	
296	Poison Oak Toxiodendron diversiloba	8/7	Good	12/20/10	Preserve	
297	Coast live oak	21/10	Good	12/20/10	Preserve	
298	Valley oak	15	Excellent	12/20/10	Preserve	
299	European olive	6/5/5/5/4	Good	8/20/12	Remove	Roadway Construction
300	Valley oak	40	Fair	12/20/10	Preserve	
301	Coast live oak	6	Good	8/20/12	Remove	Roadway Construction
302	Valley oak	28	Good	12/20/10	Preserve	
303	Coast live oak	24	Good	12/20/10	Preserve	
304	Valley oak	7	Fair	12/20/10	Preserve	
305	Valley oak	13	Good	12/20/10	Preserve	
306	Valley oak	6	Fair	12/20/10	Preserve	
307	Valley oak	10	Ext Poor	12/20/10	Preserve	
308	Valley oak	16	Good	12/20/10	Preserve	
309	Coast live oak	6	Good	12/20/10	Preserve	
310	Valley oak	15	Good	12/20/10	Preserve	
311	Valley oak	10	Fair	12/20/10	Preserve	
312	Valley oak	6	Fair	12/20/10	Preserve	
313	Valley oak	6	Poor	12/20/10	Preserve	
314	Coast live oak	5	Good	12/20/10	Preserve	
315	Coast live oak	6	Good	12/20/10	Preserve	
316	Blue oak	4	Excellent	12/20/10	Preserve	
317	Coast live oak	7	Excellent	12/20/10	Preserve	
318	Valley oak	14	Fair	12/20/10	Preserve	
319	Coast live oak	6	Fair	12/20/10	Preserve	
320	European olive	5/5/3	Good	12/20/10	Preserve	
321	European olive	6/5/4	Good	12/20/10	Preserve	
322	Valley oak	12	Good	12/20/10	Preserve	
323	Valley oak	16	Fair	12/20/10	Preserve	
324	Valley oak	16	Fair	12/20/10	Preserve	
325	Coast live oak	13	Good	12/20/10	Preserve	

326	Valley oak	16	Fair	12/20/10	Preserve	
327	Coast live oak	6	Good	12/20/10	Preserve	
328	Coast live oak	5	Good	12/20/10	Preserve	
329	Valley oak	10	Ext Poor	12/20/10	Preserve	
330	Coast live oak	5	Good	12/20/10	Preserve	
331	Unused Number					
332	Valley oak	10	Fair	8/20/12	Remove	Roadway Construction
333	Coast live oak	11	Good	8/20/12	Remove	Roadway Construction
334	Coast live oak	7	Fair	12/20/10	Preserve	
335	Valley oak	10	Fair	12/20/10	Preserve	
336	Valley oak	23	Fair	8/20/12	Remove	Roadway Construction
337	Valley oak	25	Good	8/20/12	Remove	Roadway Construction
338	Coast live oak	6	Good	8/20/12	Remove	Roadway Construction
339	Valley oak	15	Fair	12/20/10	Preserve	
340	Coast live oak	26	Fair	12/20/10	Preserve	
341	Valley oak	25	Excellent	12/20/10	Preserve	
342	Valley oak	13	Fair	8/20/12	Remove	Roadway Construction
343	Valley oak	24	Fair	8/20/12	Remove	Roadway Construction
344	Coast live oak	7	Good	12/20/10	Preserve	
345	Coast live oak	8	Fair	8/20/12	Remove	Roadway Construction
346	Valley oak	14	Fair	10/11/12	Transplant	
347	Coast live oak	16	Excellent	12/20/10	Preserve	
348	Valley oak	11	Excellent	12/20/10	Preserve	
349	Coast live oak	10	Good	8/20/12	Remove	Roadway Construction
350	Coast live oak	6	Excellent	8/20/12	Remove	Roadway Construction
351	Coast live oak	10	Excellent	8/20/12	Remove	Roadway Construction
352	Valley oak	16	Good	12/20/10	Preserve	
353	Valley oak	20	Good	12/20/10	Preserve	
354	Crabapple Malus species	6/6/5	Fair	12/20/10	Preserve	
355	Coast live oak	10	Excellent	12/20/10	Preserve	
356	Valley oak	17	Good	12/20/10	Preserve	
357	Incense cedar	9	Excellent	8/20/12	Remove	Roadway Construction
358	Incense cedar	8	Good	8/20/12	Remove	Roadway Construction
359	Incense cedar	5	Fair	8/20/12	Remove	Roadway Construction
360	Incense cedar	6	Poor	8/20/12	Remove	Roadway Construction
361	Incense cedar	7	Good	8/20/12	Remove	Roadway Construction
362	Incense cedar	6	Ext Poor	8/20/12	Remove	Roadway Construction
363	Aleppo pine	13	Good	8/20/12	Remove	Roadway Construction
364	Incense cedar	7	Poor	8/20/12	Remove	Roadway Construction
365	Incense cedar	9	Excellent	10/11/12	Transplant	
366	Incense cedar	9	Good	8/20/12	Remove	Roadway Construction
367	Incense cedar	5	Poor	8/20/12	Remove	Roadway Construction
368	Incense cedar	6	Good	8/20/12	Remove	Roadway Construction
369	Incense cedar	6	Excellent	10/11/12	Transplant	
370	Incense cedar	10	Fair	8/20/12	Preserve	Roadway Construction- Low Impact
371	Valley oak	5	Good	1/08/13	Preserve	Roadway Construction- Low Impact
372	Coast live oak	5/3	Fair	12/20/10	Preserve	

373	Unused Number					
374	Unused Number					
375	Valley oak	5/4	Good	12/20/10	Preserve	
376	Coast live oak	7	Good	12/20/10	Preserve	
377	Coast live oak	18/9	Good/Fair	12/20/10	Preserve	
378	Coast live oak	10/8	Good	12/20/10	Preserve	
379	Coast live oak	11/8	Good	12/20/10	Preserve	
380	Coast live oak	9	Good	12/20/10	Preserve	
381	Coast live oak	12	Good	12/20/10	Preserve	
382	Valley oak	6	Poor	8/20/12	Remove	Roadway Construction
383	Valley oak	49	Good	12/20/10	Preserve	
384	Coast live oak	43	Good	12/20/10	Preserve	
385	Valley oak	36	Excellent	12/20/10	Preserve	
386	Valley oak	23	Good	12/20/10	Preserve	
387	Valley oak	17	Fair	12/20/10	Preserve	
388	European olive	12/8	Excellent	12/20/10	Preserve	
389	Coast live oak	13	Fair	12/20/10	Preserve	
390	Valley oak	26	Good	12/20/10	Preserve	
391	Valley oak	15	Fair	12/20/10	Preserve	
392	Hybrid oak Quercus species	26	Excellent	12/20/10	Preserve	
393	Valley oak	11	Fair	12/20/10	Preserve	
394	Valley oak	11	Fair	12/20/10	Preserve	
395	Valley oak	18	Fair/Poor	12/20/10	Preserve	
396	Valley oak	24	Fair	12/20/10	Preserve	
397	Valley oak	22	Good/Fair	12/20/10	Preserve	
398	Valley oak	17	Fair	12/20/10	Preserve	
399	Valley oak	12	Fair	12/20/10	Preserve	
400	Valley oak	10	Fair	12/20/10	Preserve	
401	Valley oak	11	Fair	12/20/10	Preserve	
402	Valley oak	12	Fair	12/20/10	Preserve	
403	Valley oak	38	Good	8/20/12	Remove	Grading / Drivevay Construction
404	Valley oak	22	Fair	12/20/10	Preserve	
405	Valley oak	21	Fair	12/20/10	Preserve	
406	Valley oak	11	Fair	12/20/10	Preserve	
407	Valley oak	20	Ext Poor	12/20/10	Preserve	
408	Valley oak	27	Fair	12/20/10	Preserve	
409	Valley oak	12	Fair/Poor	12/20/10	Preserve	
410	Coast live oak	15	Excellent	12/20/10	Preserve	
411	Valley oak	23	Fair	12/20/10	Preserve	
412	Valley oak	10	Fair	12/20/10	Preserve	
413	Valley oak	11	Fair	12/20/10	Preserve	
414	Valley oak	12	Fair	12/20/10	Preserve	
415	Valley oak	15	Fair	12/20/10	Preserve	
416	Valley oak	16	Ext Poor	12/20/10	Preserve	
417	Valley oak	13	Fair	12/20/10	Preserve	
418	Valley oak	15	Fair	12/20/10	Preserve	
419	Coast live oak	30/18	Excellent	12/20/10	Preserve	

420	Valley oak	15	Fair	12/20/10	Preserve	
421	Valley oak	14	Good	12/20/10	Preserve	
422	Valley oak	23	Fair/Good	12/20/10	Preserve	
423	Aleppo pine	6	Excellent	12/20/10	Preserve	
424	Aleppo pine	9	Fair	12/20/10	Preserve	
425	Aleppo pine	7	Excellent	12/20/10	Preserve	
426	Aleppo pine	8	Excellent	12/20/10	Preserve	
427	Aleppo pine	7	Excellent	12/20/10	Preserve	
428	Valley oak	24	Fair	12/20/10	Preserve	
429	Valley oak	10	Poor	12/20/10	Preserve	
430	Aleppo pine	8	Good	12/20/10	Preserve	
431	Valley oak	18	Fair	12/20/10	Preserve	
432	Blue oak	16	Fair	12/20/10	Preserve	
433	Valley oak	11	Fair	12/20/10	Preserve	
434	Valley oak	12	Fair	12/20/10	Preserve	
435	Coast live oak	17	Good	12/20/10	Preserve	
436	Valley oak	21	Dead	12/20/10	Preserve	
437	Valley oak	16	Fair	12/20/10	Preserve	
438	Valley oak	40	Fair	12/20/10	Preserve	
439	Valley oak	12	Fair	12/20/10	Preserve	
440	Valley oak	12	Poor	12/20/10	Preserve	
441	Blue oak	26	Good	12/20/10	Preserve	
442	Blue oak	23	Good	12/20/10	Preserve	
443	Blue oak	25	Good	12/20/10	Preserve	
444	Aleppo pine	8	Excellent	12/20/10	Preserve	
445	Blue oak	9/9	Dead	12/20/10	Preserve	
446	Valley oak	12	Poor	12/20/10	Preserve	
447	Valley oak	29	Fair	12/20/10	Preserve	
448	Coast live oak	60	Fair	12/20/10	Preserve	
449	Aleppo pine	9	Fair	8/20/12	Remove	Grading / Drivevay Construction
450	Aleppo pine	12	Fair	12/20/10	Preserve	
451	Aleppo pine	11	Fair	8/20/12	Remove	Grading / Drivevay Construction
452	Aleppo pine	14	Fair	8/20/12	Remove	Grading / Drivevay Construction
453	Incense cedar	6	Fair	12/20/10	Preserve	
454	Aleppo pine	11	Fair	8/20/12	Remove	Grading / Drivevay Construction
455	Incense cedar	8	Ext Poor	12/20/10	Preserve	
456	Incense cedar	6	Poor	12/20/10	Preserve	
457	Incense cedar	7	Fair	12/20/10	Preserve	
458	Incense cedar	6	Fair	12/20/10	Preserve	
459	Incense cedar	5	Ext Poor	12/20/10	Preserve	
460	Aleppo pine	9	Fair	8/20/12	Remove	Grading / Drivevay Construction
461	Aleppo pine	10	Poor	12/20/10	Preserve	
462	Incense cedar	7	Ext Poor	12/20/10	Preserve	
463	Incense cedar	5	Poor	12/20/10	Preserve	
464	Incense cedar	6	Fair	12/20/10	Preserve	
465	Blue oak	25	Good	12/20/10	Preserve	
466	Valley oak	14	Poor	12/20/10	Preserve	

467	Blue oak	36	Good	12/20/10	Preserve	
468	Valley oak	16	Fair	12/20/10	Preserve	
469	Blue oak	28	Fair	12/20/10	Preserve	
470	Blue oak	15	Fair	12/20/10	Preserve	
471	Valley oak	8	Poor	12/20/10	Preserve	
472	Valley oak	17	Fair	12/20/10	Preserve	
473	Blue oak	14	Good	12/20/10	Preserve	
474	Blue oak	21	Fair	12/20/10	Preserve	
475	Valley oak	17	Fair	12/20/10	Preserve	
476	Blue oak	20	Fair	12/20/10	Preserve	
477	Blue oak	12	Fair	12/20/10	Preserve	
478	Blue oak	31	Fair/Poor	12/20/10	Preserve	
479	Blue oak	11	Fair	12/20/10	Preserve	
480	Valley oak	13	Fair	12/20/10	Preserve	
481	Blue oak	20	Poor	12/20/10	Preserve	
482	Blue oak	21	Fair	12/20/10	Preserve	
483	Blue oak	24	Fair	12/20/10	Preserve	
484	Valley oak	18	Fair	12/20/10	Preserve	
485	Valley oak	15	Fair	12/20/10	Preserve	
486	Valley oak	20	Fair	12/20/10	Preserve	
487	Valley oak	12	Fair	12/20/10	Preserve	
488	Valley oak	26	Fair	12/20/10	Preserve	
489	Valley oak	14	Fair	12/20/10	Preserve	
490	Blue oak	23	Fair	12/20/10	Preserve	
491	Valley oak	21	Poor	12/20/10	Preserve	
492	Valley oak	21	Fair	12/20/10	Preserve	
493	Valley oak	28	Fair/Poor	12/20/10	Preserve	
494	Valley oak	21	Good	12/20/10	Preserve	
495	Valley oak	19	Excellent	12/20/10	Preserve	
496	Aleppo pine	11	Excellent	12/20/10	Preserve	
497	Aleppo pine	12	Excellent	12/20/10	Preserve	
498	Valley oak	12	Fair	12/20/10	Preserve	
499	Blue oak	18	Fair	12/20/10	Preserve	
500	Blue oak	19	Fair	12/20/10	Preserve	
501	Blue oak	7	Poor	12/20/10	Preserve	
502	Aleppo pine	8/7	Fair	8/20/12	Remove	Grading / Drivevay Construction
503	Aleppo pine	10	Fair	12/20/10	Preserve	
504	Aleppo pine	11	Fair	12/20/10	Preserve	
505	Incense cedar	5	Fair	12/20/10	Preserve	
506	Incense cedar	5	Poor	12/20/10	Preserve	
507	Incense cedar	5	Ext Poor	12/20/10	Preserve	
508	Incense cedar	5	Fair	12/20/10	Preserve	
509	Incense cedar	8	Fair	12/20/10	Preserve	
510	Aleppo pine	11	Fair	8/20/12	Remove	Grading / Drivevay Construction
511	Aleppo pine	10	Fair	12/20/10	Preserve	
512	Aleppo pine	15	Fair	12/20/10	Preserve	
513	Aleppo pine	12	Fair	12/20/10	Preserve	

514	Incense cedar	6	Fair	12/20/10	Preserve	
515	Incense cedar	6	Fair	12/20/10	Preserve	
516	Incense cedar	6	Poor	12/20/10	Preserve	
517	Incense cedar	5	Fair	12/20/10	Preserve	
518	Incense cedar	5	Fair	12/20/10	Preserve	
519	Aleppo pine	11	Fair	12/20/10	Preserve	
520	Aleppo pine	9	Fair	12/20/10	Preserve	
521	Aleppo pine	13	Fair	12/20/10	Preserve	
522	Aleppo pine	9	Poor	12/20/10	Preserve	
523	Incense cedar	5	Fair	12/20/10	Preserve	
524	Incense cedar	5	Fair	12/20/10	Preserve	
525	Aleppo pine	10	Fair	12/20/10	Preserve	
526	Incense cedar	7	Fair	12/20/10	Preserve	
527	Incense cedar	5	Poor	12/20/10	Preserve	
528	Incense cedar	5	Poor	12/20/10	Preserve	
529	Aleppo pine	9	Poor	12/20/10	Preserve	
530	Aleppo pine	11	Poor	12/20/10	Preserve	
531	Aleppo pine	13	Fair	12/20/10	Preserve	
532	Aleppo pine	11	Fair	12/20/10	Preserve	
533	Incense cedar	6	Fair	12/20/10	Preserve	
534	Aleppo pine	16	Fair	12/20/10	Preserve	
535	Aleppo pine	11	Poor	12/20/10	Preserve	
536	Aleppo pine	10	Fair	12/20/10	Preserve	
537	Aleppo pine	16	Fair/Poor	12/20/10	Preserve	
538	Wild plum	9/6	Poor	12/20/10	Preserve	
539	Wild plum	9	Fair	12/20/10	Preserve	
540	Coast live oak	11	Good	12/20/10	Preserve	
541	Coast live oak	15/7	Excellent	12/20/10	Preserve	
542	Coast live oak	12	Good	12/20/10	Preserve	
543	Coast live oak	11	Good	12/20/10	Preserve	
544	Valley oak	10	Excellent	1/08/13	Preserve	
545	Coast live oak	5	Good	1/08/13	Preserve	
546	Coast live oak	12	Good	1/08/13	Preserve	Roadway Construction-Low Impact
547	Coast live oak	13	Good	12/20/10	Preserve	
548	Coast live oak	27	Good	12/20/10	Preserve	
549	Coast live oak	15	Good	12/20/10	Preserve	
550	Blue oak	18	Good	12/20/10	Preserve	
551	Coast live oak	16	Good	12/20/10	Preserve	
552	Coast live oak	21	Good	12/20/10	Preserve	
553	Coast live oak	12	Good	12/20/10	Preserve	
554	Coast live oak	15	Good	12/20/10	Preserve	
555	Coast live oak	27	Good	12/20/10	Preserve	
556	Coast live oak	7	Good	12/20/10	Preserve	
557	Coast live oak	6	Good	12/20/10	Preserve	
558	Coast live oak	10	Good	12/20/10	Preserve	
559	Coast live oak	17	Good	12/20/10	Preserve	
560	Blue oak	10	Good	12/20/10	Preserve	

561	Valley oak	18	Good	12/20/10	Preserve	
562	Coast live oak	13	Good	12/20/10	Preserve	
563	Coast live oak	20	Good	12/20/10	Preserve	
564	Coast live oak	19	Good	12/20/10	Preserve	
565	Coast live oak	16	Good	12/20/10	Preserve	
566	Valley oak	19	Good	12/20/10	Preserve	
567	Coast live oak	22	Good	12/20/10	Preserve	
568	Wild plum	12/6	Poor	12/20/10	Preserve	
569	Coast live oak	10	Excellent	12/20/10	Preserve	
570	Blue oak	13	Fair	12/20/10	Preserve	
571	Wild plum	6	Dead	8/20/12	Remove	Roadway Construction
572	Monterey cypress Cupressus macrocarpa	7	Excellent	8/20/12	Remove	Roadway Construction
573	Valley oak	14	Good	10/11/12	Transplant	
574	Incense cedar	10	Excellent	10/11/12	Transplant	
575	Southern magnolia Magnolia grandiflora	8	Good	8/20/12	Remove	Roadway Construction
576	Coast live oak	6	Good/Fair	12/20/10	Preserve	
577	Cypress Cupressus species	5/4/4	Good/Fair	12/20/10	Preserve	
578	Coast live oak	5	Excellent	10/11/12	Transplant	
579	Coast live oak	5	Fair	12/20/10	Preserve	
580	Coast live oak	6	Fair	12/20/10	Preserve	
581	Coast live oak	4	Fair	12/20/10	Preserve	
582	Valley oak	5	Poor	12/20/10	Preserve	
583	Valley oak	4	Fair	12/20/10	Preserve	
584	Coast live oak	4	Fair	12/20/10	Preserve	
585	Valley oak	7	Good/Fair	12/20/10	Preserve	
586	Valley oak	6	Fair	8/20/12	Remove	Sanitary Sewer Construction
587	Coast live oak	6	Fair	12/20/10	Preserve	
588	Coast live oak	8/8	Good/Fair	12/20/10	Preserve	
589	Valley oak	11	Fair	12/20/10	Preserve	
590	Monterey pine	40	Fair	1/08/13	Preserve	Retention Pond Construction-Low Impact
591	Valley oak	33	Fair	1/08/13	Preserve	Retention Pond Construction-Low Impact
592	Coast live oak	32	Good	1/08/13	Preserve	Retention Pond / Storm Drain Construction
593	Coast live oak	10	Fair	1/08/13	Preserve	Storm Drain Construction
594	Incense cedar	5	Fair	8/20/12	Remove	Sanitary Sewer Construction
595	European olive	8/8/5	Good	12/20/10	Preserve	
596	Coast live oak	14	Good	12/20/10	Preserve	
597	Coast live oak	40	Good	12/20/10	Preserve	
598	Coast live oak	30	Excellent	12/20/10	Preserve	
599	Coast live oak	17	Good	12/20/10	Preserve	
600	Blue oak	20	Fair	12/20/10	Preserve	
601	Blue oak	17	Good	12/20/10	Preserve	
602	Blue oak	12	Fair	12/20/10	Preserve	
603	Valley oak	40	Good	12/20/10	Preserve	

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A Comparison Between A Single Access Entry Road Plan and
A Two Access Entry Road Plan
Surrey Farm Estates
Los Gatos, California

Assignment

I was asked to prepare a comparison chart showing the impacts to the existing trees between the two plans:
Plan A-1 – To Construct a Single Access Road to the Site, and
Plan A-1AD – To Construct Two Access Roads to the Site

Observations

Previously this was attempted with two spreadsheet charts, but these were long, consisting of multiple pages, and difficult to compare in such a format.

After attempting to achieve this task again, I find that these charts, when viewed side by side, are near identical, which few differences between the other. In order to make the chart more manageable I have revised the chart omitting all of the trees (as requested) that would not be expected to be impacted by the construction proposed by these two plans. This Chart is attached.

Thus, instead of preparing two near identical charts, I have included in this report a single Chart listing the impacts to both plans, but those trees impacted by the Alternate Access Road off Cerro Vista Court are noted as “Alternate Access”.

Also, I shall list the differences between the Two Plans with regard to the impacts to individual trees later in this report.

First, it appears useful to identify the scope of this comparison and the similarities between the two Plans. The Civil Plans C2 and C8 indicate that the grading for the roadway, regardless of the plan proposed, and the grading for the retention ponds would be done at the same time. The grading for the retention ponds are identical on both of the two plans. Thus, the impacts to the trees, as a result of grading for the retention ponds, is identical between the two plans. Also, the grading for the driveway to Lot 7 and the grading for building pad for Lot 7 is shown on both plans as identical. Thus, the impacts to the trees as a result of this feature are also identical. The entry Roadway from Twin Oaks Drive, titled Street A to the bulb turn-around is identical. The proposed Storm Drain construction between the two plans appears identical. All of these features, which appear to be identical between the two plans, create the long list of impacts to trees listed in the attached chart. The differences between the two plans are as follows.

Comparison 1
Plan A-1 provides the access to Lots 5, 6, 7, and 10 by proposed Street B, which would cross the swale between Trees # 550 and the cluster of Trees # 545, 546, 162 and 544. Retaining walls and a drainage pipe would be constructed. By this plan Trees # 545, 546, and 162 would not live very long (5-10 years estimated) as a result of this construction. Tree # 550 and the trees near it (north of the swale fill area) should survive in good condition. Tree #544 and the trees south of the swale area should survive in good condition.

As the Access Roads proposed by the two plans do not connect, the Alternate Access Road Plan A-1A would not impact the trees in the swale area (Trees #545, 546, 162, 544).

Comparison 2
Plan A-1 would provide a "Hammer Head" turn around at the end of Street B. No Trees would be removed, but Tree # 160 would be Transplanted.

To the same geographical area of the site, Plan A-1A proposes instead an Alternate Access Road off Cerro Vista Court. Trees # 160, 163, 164, 165 are proposed to be Transplanted.

The proposed Alternative Access road would significantly impact Trees # 161 (56 inch diameter Valley Oak) and Tree # 383 (49 inch diameter Valley Oak). An estimated 30% of the root zone of Tree 161 would be damaged by fill and retaining wall construction, but Tree # 161 would be expected to survive with regular irrigation for 3 years. An estimated 20% of the root zone of Tree # 383 would be damaged by the road construction, including the construction of the proposed retaining walls. The most recent Revised Plan to relocate the footprint of the residence on Lot # 6 would make the chances of survival (in good condition) for Tree # 383 very good, assuming the landscape amenities would be mitigated in terms of risk to this tree. Because of the road construction, Tree # 383 would also require supplemental irrigation for 3 years, which would be a typical recovery period for a tree of this size.

Tree # 154 would be severely damaged and, thus, required to be removed resulting from the Storm Drain Construction. It appears that Trees # 152, 153 and 155 would survive. This feature is the same for both plans proposed.

Tree # 592 (32 inch diameter Coast live oak) would suffer relatively minor root damage as a result of grading for the retention pond. This feature is the same for both plans.

Tree # 593 (10 inch diameter Coast live oak) would suffer relatively minor root damage from Storm Drain Construction. This estimate is based on the trunk diameter, which provides an estimate of the size of the root mass. This feature is the same for both plans.

Respectfully submitted,

Michael L. Bench, Consulting Arborist
International Society of Arboriculture Certification # WE 1897A
American Society of Consulting Arborists Member

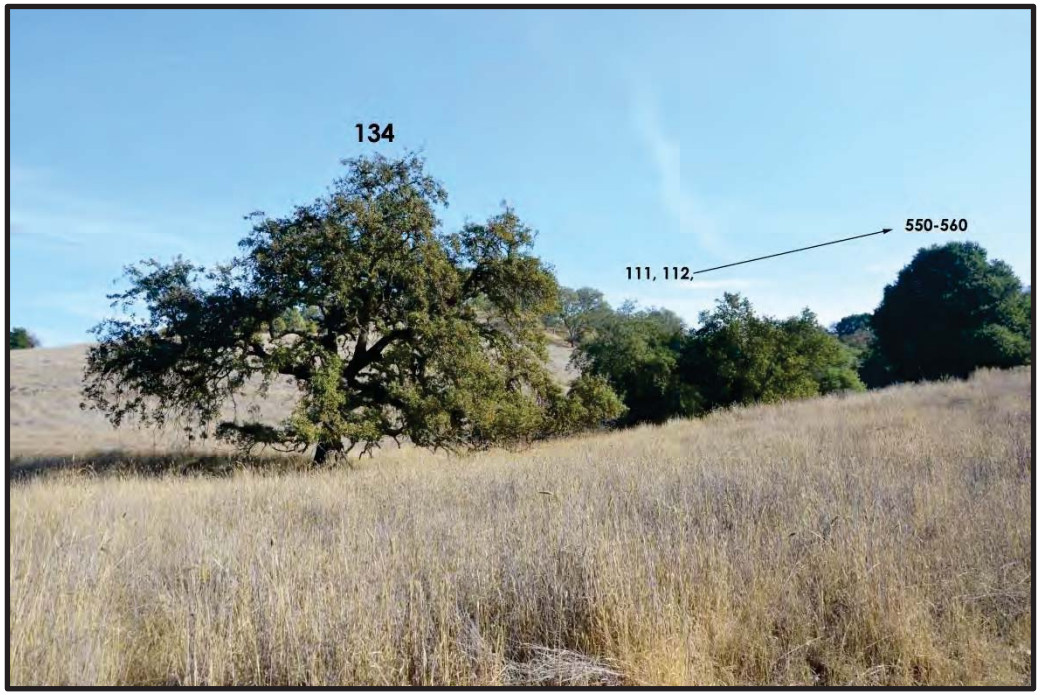
Deborah Ellis, MS

Consulting Arborist & Horticulturist

Service since 1984

ARBORIST REPORT

Surrey Farm Estates, Los Gatos



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DECEMBER 2, 2014

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TREE MAP

Aerial map of the site with some of the numbered trees that are discussed in this report.

INTRODUCTION

I have reviewed the following documents since my last report on this project which was dated May 7, 2013:

- *Impacts to Trees by Proposed Plans A-1 and A-1A*. Michael Bench, October 20, 2014 (Excel spreadsheet).
- *A Comparison between a Single Access Entry Road Plan <A1>and a Two Access Entry Road Plan <A-1A> Surrey Farm Estates, Los Gatos, California*. Michael Bench, October 20, 2014.
- *Proposed Subdivision PD*. Sheet A-1, Paragon Design Group. August 18, 2014 Revision.
- Same as above, *Alternate Subdivision PD*, Sheet A-1A.
- Same as above, with Lot 6 house relocated (partial plan). Received November 29, 2014.
- Same as above, associated plan sheets A0-A5
- *Civil Plans* for the project by HMH Engineers, August 15, 2014, sheets C1-C7.

In addition I visited the site again on November 6, 2014 to review the trees that are of concern relative to the two different entry schemes that are proposed (Plan A-1 with a single entry off Twin Oaks Drive) or Plan A-1A, (a double entry with one entry of Twin Oaks Drive and another off Cerro Vista Court).

The tree condition ratings and dispositions in this report are taken from Michael Bench's October 20, 2014 report. For trees not listed in that report that I added, I referred to Michael Bench's January 8, 2013 tree spreadsheet which includes all evaluated trees on the project site.

PURPOSE OF THIS REPORT:

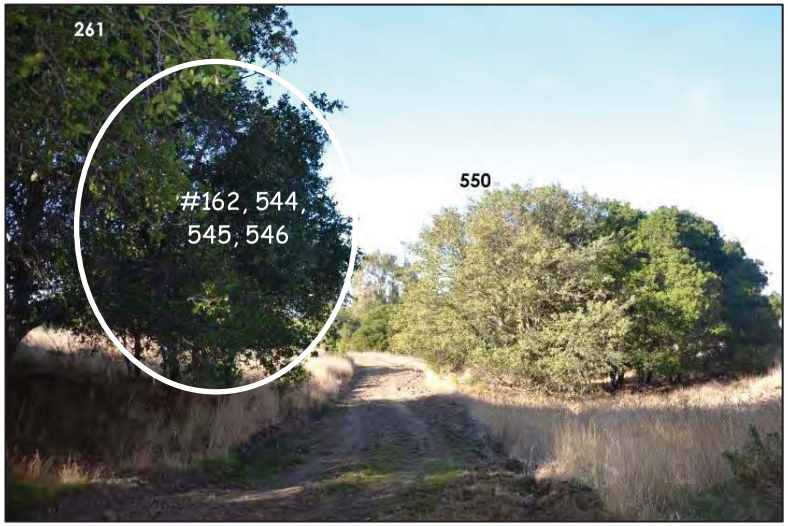
The purpose of this report is to consolidate all of my previous reports and also previous reports and tree spreadsheets by Michael Bench. A history of my reports for this project can be found on page 22. In this current report I have organized and made some changes to Michael Bench's latest Excel spreadsheet dated October 20, 2014. I have also made some corrections to my last report dated November 7, 2014. The Tree Tables in this report are listed on the next page. I have also sent you a copy of my Excel spreadsheet dated November 3, 2014 which contains the same tables.

LIST OF TABLES

- **Table 1 Complete Tree Table** (listed only impacted trees, totaling 141 trees, including trees that are adjacent to proposed improvements but have estimated low impacts). Trees are color-coded as to their Disposition (*Preserve, Remove, Transplant, Debatable or Unused Number. Debatable* is a category containing 3 trees that have a questionable impact and disposition. Read about these trees in order to determine how they should be handled. Unused number is a category that contains no trees but contains 4 numbers that were not used, within the range of numbers that were used).
- **Table 2** Trees to Preserve (33 trees)
- **Table 3** Trees to Remove (71 trees)
- **Table 4** Trees to Transplant (30 trees)
- **Table 5** Trees that are Debatable (3 trees)
- **Table 6** Unused Numbers (4)

SUMMARY OF CHANGES I HAVE MADE TO THE TREE TABLES:

1) **Three trees listed with an estimated construction impact of "Severe" have been changed from "Preserve" to "Remove"**, if they were previously listed as "Preserve". We can try to save these trees during construction, but for EIR purposes I am listing them as probable removals. These are trees **#162** (7" coast live oak) **#544** (10" valley oak), **#545** (5" coast live oak) and **#546** (12" coast live oak). These trees all grow together in a small grove near the natural drainage area that the existing dirt road crosses and the new roadway will also cross. These trees are labeled in the photo at right.

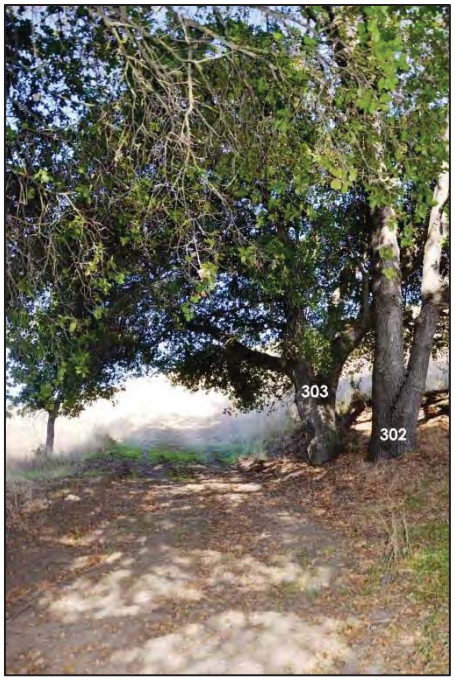


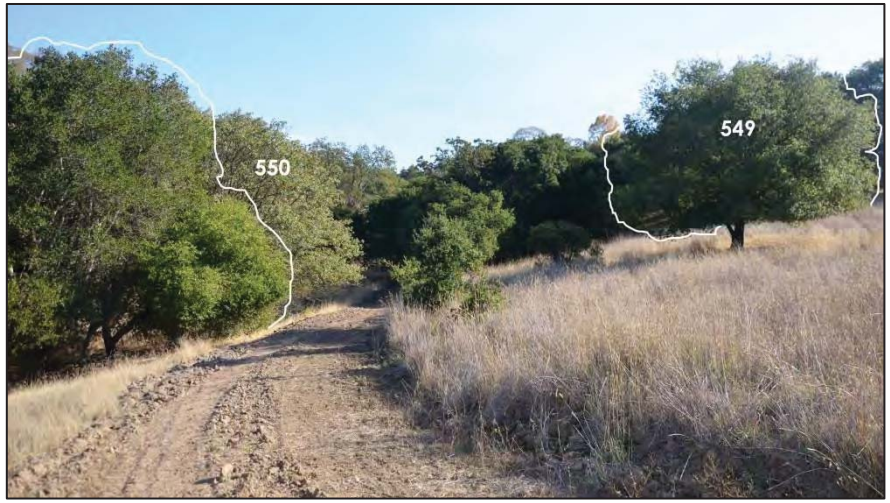
2) **Three trees were changed to the designation "Debatable"** by me, after review of the plans and Michael Bench's spreadsheets. These are trees:

a) **#302**, 28" valley oak, shown to be removed on the plans but the Town Engineer does not think this tree needs to be removed. This is a nice tree on the side slope of the natural drainage area, so it seems important for the environment in this location. The tree was listed as "Preserve" in Michael Bench's October 20, 2014 spreadsheet.

b) #**303**, 24" coast live oak. Same as above.

c) **#549**, 15" coast live oak (not shown on any of the construction plans, but visible on the aerial maps of the site. This tree will be very close to a house on lot 8. The house should be moved farther from the tree or the tree should be transplanted. This is a very nice tree and we should keep it.





Left photo: **coast live oak #303** and **valley oak #302**, on the right side of the dirt road just as it heads up the hill after crossing the drainage.

Right photo: **coast live oak #549** across from **blue oak #550**, heading toward the drainage area.

CLARIFICATIONS:

Tree #162 (7" coast live oak) is not missing on the plans. It is not located near **trees #161 – 165** near Cerro Vista Court *(see photo below)*. Instead, it is located near **trees #544, 545, 546** and across the roadway from #**550** *(see photo on page 4)*.

Cerro Vista Drive and Court in the background with **Aleppo pines and Incense cedars #145-159**, and **valley oaks #161 and 383**.

Large valley oak #161 is shown it the photo at left, taken almost at the top of Cerro Vista Drive, just below the Cerro Vista cul-de-sac. An arrow points to valley oak #160 (11") behind #161.

In the right photo, which is a close-up of the aerial map the access road is proposed to pass between oaks #161 and 383. The smaller oaks between (160, 163, 64, and 65) are proposed to be transplanted.

TREE TABLES

TABLE 1 COMPLETE TREE TABLE

Continued through page 14.

	Field Data Sheet Surrey Farm Estates Tree Name	DBH	Condition	Last Date Reviewed	Disposition	Reason(s) for Disposition Impacts
001	Coast live oak Quercus agrifolia	11	Fair	10/20/14	Transplant	Roadway Construction
002	Coast live oak	6	Good	10/20/14	Transplant	Roadway Construction
003	Valley oak Quercus lobata	15	Excellent	10/20/14	Transplant	Roadway Construction
004	Coast live oak	9	Good	10/20/14	Remove	Retention Pond Construction
005	Incense cedar Calocedrus decurrens	5	Good	10/20/14	Remove	Roadway Construction
006	Coast live oak	13	Good	10/20/14	Transplant	Roadway Construction
007	Incense cedar	4	Fair	10/20/14	Preserve	Roadway Construction- Low Impact
008	Coast live oak	9/7	Good	10/20/14	Transplant	Roadway Construction
009	Coast live oak	7	Good	10/20/14	Transplant	Roadway Construction
010	Coast live oak	8	Good	10/20/14	Transplant	Roadway Construction
011	Coast live oak	7	Good/Fair	10/20/14	Preserve	Roadway Construction
012	Coast live oak	11	Good	10/20/14	Transplant	Roadway Construction
013	California black walnut Juglans hindsii	19	Poor	10/20/14	Remove	Roadway Construction
014	Aleppo pine Pinus halepensis	5	Fair/Poor	10/20/14	Remove	Roadway Construction
015	English walnut Juglans regia	11	Poor	10/20/14	Remove	Roadway Construction
016	Aleppo pine	12	Poor	10/20/14	Remove	Roadway Construction
017	Valley oak	17	Good	10/20/14	Transplant	Roadway Construction
018	Coast live oak	20/16	Good	10/20/14	Remove	Roadway Construction

Table 1 Complete Tree Table *(continued from the previous page)*

Field Data Sheet Surrey Farm Estates	Tree Name	DBH	Condition	Last Date Reviewed	Disposition	Reason(s) for Disposition Impacts
019	Coast live oak	8	Fair/Poor	10/20/14	Remove	Roadway Construction
024	Coast live oak	21	Good/Fair	10/20/14	Remove	Roadway / Storm Drain Construction
025	Coast live oak	11	Good/Fair	10/20/14	Transplant	Roadway / Storm Drain Construction
026	Coast live oak	10	Good/Fair	10/20/14	Transplant	Roadway Construction
027	Coast live oak	16	Good/Fair	10/20/14	Remove	Roadway Construction
028	Coast live oak	10	Good	10/20/14	Transplant	Roadway Construction
029	Coast live oak	14	Good/Fair	10/20/14	Remove	Roadway Construction
030	Valley oak	19	Fair	10/20/14	Remove	Roadway Construction/Storm Drain
034	Coast live oak	12	Good	10/20/14	Transplant	Storm Drain Construction
035	Valley oak	17	Good/Fair	10/20/14	Remove	Storm Drain Construction
048	Valley oak	8	Fair/Poor	10/20/14	Remove	Retention Pond Construction
062	Coast live oak	18/15	Good	10/20/14	Remove	Roadway Construction
063	Coast live oak	15	Good	10/20/14	Remove	Roadway Construction
064	Coast live oak	8	Good	10/20/14	Transplant	Retention Pond Construction
065	Coast live oak	16	Good/Fair	10/20/14	Remove	Retention Pond Construction
090	Coast live oak	12	Good/Fair	10/20/14	Transplant	Roadway Construction
109	Coast live oak	15	Excellent	10/20/14	Remove	Roadway Construction
110	Wild plum Prunus cerasifera	6	Ext Poor	10/20/14	Remove	Roadway Construction
123	Coast live oak	12	Dead	10/20/14	Remove	Sanitary Sewer Construction
124	Coast live oak	14	Fair	10/20/14	Preserve	Sanitary Sewer Construction
125	Coast live oak	10	Good	10/20/14	Remove	Sanitary Sewer Construction
126	Coast live oak	16	Good/Fair	10/20/14	Remove	Sanitary Sewer Construction
134	Valley oak	39	Good	10/20/14	Preserve	Retention Pond Construction- Low Impact
135	Coast live oak	8	Good	10/20/14	Transplant	Roadway Construction

Table 1 Complete Tree Table *(continued from the previous page)*

	Field Data Sheet Surrey Farm Estates Tree Name	DBH	Condition	Last Date Reviewed	Disposition	Reason(s) for Disposition Impacts
136	Valley oak	7	Excellent	10/20/14	Transplant	Roadway Construction
137	Coast live oak	5/5/3	Ext Poor	10/20/14	Preserve	Retention Pond Construction- Low Impact
138	Coast live oak	10	Good/Fair	10/20/14	Preserve	Retention Pond Construction- Low Impact
139	Coast live oak	8	Fair	10/20/14	Preserve	Retention Pond Construction- Low Impact
149	Aleppo pine	9	Excellent	12/20/10	Remove	Grading for Retention Pond
152	Aleppo pine	8	Good	10/20/14	Preserve	Sanitary Sewer Construction
153	Aleppo pine	9	Good	10/20/14	Preserve	Sanitary Sewer Construction
154	Aleppo pine	16	Excellent	10/20/14	Remove	Sanitary Sewer Construction
155	Aleppo pine	9	Good	10/20/14	Preserve	Sanitary Sewer Construction
160	Valley oak	11	Fair	10/11/12	Preserve	
161	Valley oak	56	Good	12/20/10	Preserve	
162	Coast live oak	7	Good	1/08/13	Remove	Severely Damaged by Grading and Retaining Wall Construction. DE (11/13/14) changed from preserve to remove. #162 is near trees #544, 545, 550.
163	Valley oak	10	Fair	12/20/10	Preserve	
164	Valley oak	11	Fair	12/20/10	Preserve	
165	Coast live oak	5	Excellent	12/20/10	Preserve	
277	Unused Number					
299	European olive	6/5/5/5/4	Good	10/20/14	Remove	Roadway Construction
301	Coast live oak	6	Good	10/20/14	Transplant	Roadway Construction
302	Valley oak	28	Good	10/20/14	Debatable	Grading (but Town engineer thinks doesn't have to be removed.
303	Coast live oak	24	Good	10/20/14	Debatable	Grading (but Town engineer thinks doesn't have to be removed.
330	Coast live oak	5	Good	10/20/14	Remove	Roadway Construction
331	Unused Number					
333	Coast live oak	11	Good	10/20/14	Transplant	Roadway Construction
336	Valley oak	23	Fair	10/20/14	Remove	Roadway Construction

Table 1 Complete Tree Table *(continued from the previous page)*

	Field Data Sheet Surrey Farm Estates Tree Name	DBH	Condition	Last Date Reviewed	Disposition	Reason(s) for Disposition Impacts
337	Valley oak	25	Good	10/20/14	Remove	Roadway Construction
338	Coast live oak	6	Good	10/20/14	Transplant	Roadway Construction
342	Valley oak	13	Fair	10/20/14	Remove	Roadway Construction
345	Coast live oak	8	Fair	10/20/14	Remove	Roadway Construction
346	Valley oak	14	Fair	10/20/14	Remove	Roadway Construction
349	Coast live oak	10	Good	10/20/14	Transplant	Roadway Construction
350	Coast live oak	6	Excellent	10/20/14	Transplant	Roadway Construction
351	Coast live oak	10	Excellent	10/20/14	Transplant	Roadway Construction
357	Incense cedar	9	Excellent	10/20/14	Transplant	Roadway Construction
358	Incense cedar	8	Good	10/20/14	Transplant	Roadway Construction
359	Incense cedar	5	Fair	10/20/14	Remove	Roadway Construction
360	Incense cedar	6	Poor	10/20/14	Remove	Roadway Construction
361	Incense cedar	7	Good	10/20/14	Remove	Roadway Construction
362	Incense cedar	6	Ext Poor	10/20/14	Remove	Roadway Construction
363	Aleppo pine	13	Good	10/20/14	Remove	Roadway Construction
364	Incense cedar	7	Poor	10/20/14	Preserve	Roadway Construction
365	Incense cedar	9	Excellent	10/20/14	Preserve	Roadway Construction
366	Incense cedar	9	Good	10/20/14	Preserve	Roadway Construction
367	Incense cedar	5	Poor	10/20/14	Preserve	Roadway Construction
368	Incense cedar	6	Good	10/20/14	Preserve	Roadway Construction
369	Incense cedar	6	Excellent	10/20/14	Transplant	Roadway Construction
370	Incense cedar	10	Fair	10/20/14	Preserve	Roadway Construction- Low Impact
371	Valley oak	5	Good	10/20/14	Preserve	Roadway Construction- Low Impact
372	Coast live oak	5/3	Fair	10/20/14	Preserve	Roadway Construction
373	Unused Number					

Table 1 Complete Tree Table *(continued from the previous page)*

	Field Data Sheet Surrey Farm Estates Tree Name	DBH	Condition	Last Date Reviewed	Disposition	Reason(s) for Disposition Impacts
374	Unused Number					
382	Valley oak	6	Poor	10/20/14	Remove	Roadway Construction
383	Valley oak	49	Good	10/20/14	Preserve	Minor Root Damage house construction
403	Valley oak	38	Good	10/20/14	Remove	Grading / Driveway Construction
449	Aleppo pine	9	Fair	10/20/14	Remove	Grading / Driveway Construction
451	Aleppo pine	11	Fair	10/20/14	Remove	Grading / Driveway Construction
452	Aleppo pine	14	Fair	10/20/14	Remove	Grading / Driveway Construction
454	Aleppo pine	11	Fair	10/20/14	Remove	Grading / Driveway Construction
455	Incense cedar	8	Ext Poor	10/20/14	Remove	Grading
459	Incense cedar	5	Ext Poor	10/20/14	Remove	Grading
460	Aleppo pine	9	Fair	10/20/14	Remove	Grading / Driveway Construction
461	Aleppo pine	10	Poor	10/20/14	Remove	Grading
462	Incense cedar	7	Ext Poor	10/20/14	Remove	Grading
502	Aleppo pine	8/7	Fair	10/20/14	Remove	Grading / Driveway Construction
507	Incense cedar	5	Ext Poor	10/20/14	Remove	Grading
510	Aleppo pine	11	Fair	10/20/14	Remove	Grading / Driveway Construction
512	Aleppo pine	15	Fair	10/20/14	Remove	Grading
515	Incense cedar	6	Fair	10/20/14	Remove	Grading
516	Incense cedar	6	Poor	10/20/14	Remove	Grading
520	Aleppo pine	9	Fair	10/20/14	Remove	Grading
521	Aleppo pine	13	Fair	10/20/14	Remove	Grading
522	Aleppo pine	9	Poor	10/20/14	Remove	Grading
525	Aleppo pine	10	Fair	10/20/14	Remove	Grading
526	Incense cedar	7	Fair	10/20/14	Remove	Grading
527	Incense cedar	5	Poor	10/20/14	Remove	Grading

Table 1 Complete Tree Table *(continued from the previous page)*

	Field Data Sheet Surrey Farm Estates Tree Name	DBH	Condition	Last Date Reviewed	Disposition	Reason(s) for Disposition Impacts
529	Aleppo pine	9	Poor	10/20/14	Remove	Grading
530	Aleppo pine	11	Poor	10/20/14	Remove	Grading
531	Aleppo pine	13	Fair	10/20/14	Remove	Grading
532	Aleppo pine	11	Fair	10/20/14	Remove	Grading
534	Aleppo pine	16	Fair	10/20/14	Remove	Grading
544	Valley oak	10	Excellent	1/08/13	Remove	Severely Damaged by Grading and Retaining Wall Construction
545	Coast live oak	5	Good	1/08/13	Remove	Severely Damaged by Grading and Retaining Wall Construction
546	Coast live oak	12	Good	10/20/14	Remove	Severely Damaged by Grading and Retaining Wall Construction
549	Coast live oak	15	Good	12/20/2010	Debatable	Appears too close to house, not on construction plans. Move house or transplant
561	Valley oak	18	Good	10/20/14	Preserve	Road Construction - Moderate Impact
571	Wild plum	6	Dead	10/20/14	Remove	Roadway Construction
572	Monterey cypress Cupressus macrocarpa	7	Excellent	10/20/14	Preserve	Roadway Construction
573	Valley oak	14	Good	10/11/12	Transplant	Roadway Construction
574	Incense cedar	10	Excellent	10/11/12	Transplant	Roadway Construction
575	Southern magnolia Magnolia grandiflora	8	Good	10/20/14	Preserve	Roadway Construction
576	Coast live oak	6	Good/Fair	10/20/14	Preserve	Roadway Construction
577	Cypress Cupressus species	5/4/4	Good/Fair	10/20/14	Preserve	Roadway Construction
578	Coast live oak	5	Excellent	10/11/12	Transplant	Grading for Retention Pond
586	Valley oak	6	Fair	10/20/14	Remove	Sanitary Sewer Construction
590	Monterey pine	40	Fair	10/20/14	Preserve	Retention Pond Construction-Low Impact
591	Valley oak	33	Fair	10/20/14	Preserve	Retention Pond Construction-Low Impact
592	Coast live oak	32	Good	10/20/14	Preserve	Grading for Pond- Moderate
593	Coast live oak	10	Fair	10/20/14	Preserve	Grading for Pond- Minor / Storm Drain Impact - Moderate Possibly Severe

Table 1 Complete Tree Table *(continued from the previous page)*

	Field Data Sheet Surrey Farm Estates Tree Name	DBH	Condition	Last Date Reviewed	Disposition	Reason(s) for Disposition Impacts
594	Incense cedar	5	Fair	10/20/14	Remove	Sanitary Sewer Construction
595	European Olive	8/8/5	Good	10/20/14	Preserve	Sanitary Sewer Construction

End of Table 1. 141 trees.

TABLE 2 TREES TO PRESERVE

Continued on the next page

	Field Data Sheet Surrey Farm Estates Tree Name	DBH	Condition	Last Date Reviewed	Reason(s) for Disposition Impacts
007	Incense cedar	4	Fair	10/20/14	Roadway Construction- Low Impact
011	Coast live oak	7	Good/Fair	10/20/14	Roadway Construction
124	Coast live oak	14	Fair	10/20/14	Sanitary Sewer Construction
134	Valley oak	39	Good	10/20/14	Retention Pond Construction- Low Impact
137	Coast live oak	5/5/3	Ext Poor	10/20/14	Retention Pond Construction- Low Impact
138	Coast live oak	10	Good/Fair	10/20/14	Retention Pond Construction- Low Impact
139	Coast live oak	8	Fair	10/20/14	Retention Pond Construction- Low Impact
152	Aleppo pine	8	Good	10/20/14	Sanitary Sewer Construction
153	Aleppo pine	9	Good	10/20/14	Sanitary Sewer Construction
155	Aleppo pine	9	Good	10/20/14	Sanitary Sewer Construction
161	Valley oak	56	Good	12/20/10	
163	Valley oak	10	Fair	12/20/10	
164	Valley oak	11	Fair	12/20/10	
165	Coast live oak	5	Excellent	12/20/10	
364	Incense cedar	7	Poor	10/20/14	Roadway Construction

Table 2 Trees to Preserve *(continued from the previous page)*

	Field Data Sheet Surrey Farm Estates Tree Name	DBH	Condition	Last Date Reviewed	Reason(s) for Disposition Impacts
365	Incense cedar	9	Excellent	10/20/14	Roadway Construction
366	Incense cedar	9	Good	10/20/14	Roadway Construction
367	Incense cedar	5	Poor	10/20/14	Roadway Construction
368	Incense cedar	6	Good	10/20/14	Roadway Construction
370	Incense cedar	10	Fair	10/20/14	Roadway Construction- Low Impact
371	Valley oak	5	Good	10/20/14	Roadway Construction- Low Impact
372	Coast live oak	5/3	Fair	10/20/14	Roadway Construction
383	Valley oak	49	Good	10/20/14	Minor Root Damage house construction
561	Valley oak	18	Good	10/20/14	Road Construction - Moderate Impact
572	Monterey cypress Cupressus macrocarpa	7	Excellent	10/20/14	Roadway Construction
575	Southern magnolia Magnolia grandiflora	8	Good	10/20/14	Roadway Construction
576	Coast live oak	6	Good/Fair	10/20/14	Roadway Construction
577	Cypress Cupressus species	5/4/4	Good/Fair	10/20/14	Roadway Construction
590	Monterey pine	40	Fair	10/20/14	Retention Pond Construction-Low Impact
591	Valley oak	33	Fair	10/20/14	Retention Pond Construction-Low Impact
592	Coast live oak	32	Good	10/20/14	Grading for Pond- Moderate
593	Coast live oak	10	Fair	10/20/14	Grading for Pond- Minor / Storm Drain Impact - Moderate Possibly Severe
595	European Olive	8/8/5	Good	10/20/14	Sanitary Sewer Construction

End of Table. 33 Trees.

TABLE 3 TREES TO REMOVE

Continued through page 19.

Field Data Sheet Surrey Farm Estates	Tree Name	DBH	Condition	Last Date Reviewed	Disposition	Reason(s) for Disposition Impacts
004	Coast live oak	9	Good	10/20/14	Remove	Retention Pond Construction
005	Incense cedar Calocedrus decurrens	5	Good	10/20/14	Remove	Roadway Construction
013	California black walnut Juglans hindsii	19	Poor	10/20/14	Remove	Roadway Construction
014	Aleppo pine Pinus halepensis	5	Fair/Poor	10/20/14	Remove	Roadway Construction
015	English walnut Juglans regia	11	Poor	10/20/14	Remove	Roadway Construction
016	Aleppo pine	12	Poor	10/20/14	Remove	Roadway Construction
018	Coast live oak	20/16	Good	10/20/14	Remove	Roadway Construction
019	Coast live oak	8	Fair/Poor	10/20/14	Remove	Roadway Construction
024	Coast live oak	21	Good/Fair	10/20/14	Remove	Roadway / Storm Drain Construction
027	Coast live oak	16	Good/Fair	10/20/14	Remove	Roadway Construction
029	Coast live oak	14	Good/Fair	10/20/14	Remove	Roadway Construction
030	Valley oak	19	Fair	10/20/14	Remove	Roadway Construction/Storm Drain
035	Valley oak	17	Good/Fair	10/20/14	Remove	Storm Drain Construction
048	Valley oak	8	Fair/Poor	10/20/14	Remove	Retention Pond Construction
062	Coast live oak	18/15	Good	10/20/14	Remove	Roadway Construction
063	Coast live oak	15	Good	10/20/14	Remove	Roadway Construction
065	Coast live oak	16	Good/Fair	10/20/14	Remove	Retention Pond Construction
109	Coast live oak	15	Excellent	10/20/14	Remove	Roadway Construction
110	Wild plum Prunus cerasifera	6	Ext Poor	10/20/14	Remove	Roadway Construction
123	Coast live oak	12	Dead	10/20/14	Remove	Sanitary Sewer Construction

Table 3 Trees to Remove *(continued from the previous page)*

Field Data Sheet Surrey Farm Estates	Tree Name	DBH	Condition	Last Date Reviewed	Disposition	Reason(s) for Disposition Impacts
125	Coast live oak	10	Good	10/20/14	Remove	Sanitary Sewer Construction
126	Coast live oak	16	Good/Fair	10/20/14	Remove	Sanitary Sewer Construction
149	Aleppo pine	9	Excellent	12/20/10	Remove	Grading for Retention Pond
154	Aleppo pine	16	Excellent	10/20/14	Remove	Sanitary Sewer Construction
162	Coast live oak	7	Good	1/08/13	Remove	Severely Damaged by Grading and Retaining Wall Construction. DE (11/13/14) changed from preserve to remove. #162 is near trees #544, 545, 550.
299	European olive	6/5/5/5/4	Good	10/20/14	Remove	Roadway Construction
330	Coast live oak	5	Good	10/20/14	Remove	Roadway Construction
336	Valley oak	23	Fair	10/20/14	Remove	Roadway Construction
337	Valley oak	25	Good	10/20/14	Remove	Roadway Construction
342	Valley oak	13	Fair	10/20/14	Remove	Roadway Construction
345	Coast live oak	8	Fair	10/20/14	Remove	Roadway Construction
346	Valley oak	14	Fair	10/20/14	Remove	Roadway Construction
359	Incense cedar	5	Fair	10/20/14	Remove	Roadway Construction
360	Incense cedar	6	Poor	10/20/14	Remove	Roadway Construction
361	Incense cedar	7	Good	10/20/14	Remove	Roadway Construction
362	Incense cedar	6	Ext Poor	10/20/14	Remove	Roadway Construction
363	Aleppo pine	13	Good	10/20/14	Remove	Roadway Construction
382	Valley oak	6	Poor	10/20/14	Remove	Roadway Construction
403	Valley oak	38	Good	10/20/14	Remove	Grading / Driveway Construction
449	Aleppo pine	9	Fair	10/20/14	Remove	Grading / Driveway Construction
451	Aleppo pine	11	Fair	10/20/14	Remove	Grading / Driveway Construction
452	Aleppo pine	14	Fair	10/20/14	Remove	Grading / Driveway Construction
454	Aleppo pine	11	Fair	10/20/14	Remove	Grading / Driveway Construction
455	Incense cedar	8	Ext Poor	10/20/14	Remove	Grading

Table 3 Trees to Remove *(continued from the previous page)*

Field Data Sheet Surrey Farm Estates	Tree Name	DBH	Condition	Last Date Reviewed	Disposition	Reason(s) for Disposition Impacts
459	Incense cedar	5	Ext Poor	10/20/14	Remove	Grading
460	Aleppo pine	9	Fair	10/20/14	Remove	Grading / Driveway Construction
461	Aleppo pine	10	Poor	10/20/14	Remove	Grading
462	Incense cedar	7	Ext Poor	10/20/14	Remove	Grading
502	Aleppo pine	8/7	Fair	10/20/14	Remove	Grading / Driveway Construction
507	Incense cedar	5	Ext Poor	10/20/14	Remove	Grading
510	Aleppo pine	11	Fair	10/20/14	Remove	Grading / Driveway Construction
512	Aleppo pine	15	Fair	10/20/14	Remove	Grading
515	Incense cedar	6	Fair	10/20/14	Remove	Grading
516	Incense cedar	6	Poor	10/20/14	Remove	Grading
520	Aleppo pine	9	Fair	10/20/14	Remove	Grading
521	Aleppo pine	13	Fair	10/20/14	Remove	Grading
522	Aleppo pine	9	Poor	10/20/14	Remove	Grading
525	Aleppo pine	10	Fair	10/20/14	Remove	Grading
526	Incense cedar	7	Fair	10/20/14	Remove	Grading
527	Incense cedar	5	Poor	10/20/14	Remove	Grading
529	Aleppo pine	9	Poor	10/20/14	Remove	Grading
530	Aleppo pine	11	Poor	10/20/14	Remove	Grading
531	Aleppo pine	13	Fair	10/20/14	Remove	Grading
532	Aleppo pine	11	Fair	10/20/14	Remove	Grading
534	Aleppo pine	16	Fair	10/20/14	Remove	Grading
544	Valley oak	10	Excellent	1/08/13	Remove	Severely Damaged by Grading and Retaining Wall Construction
545	Coast live oak	5	Good	1/08/13	Remove	Severely Damaged by Grading and Retaining Wall Construction
546	Coast live oak	12	Good	10/20/14	Remove	Severely Damaged by Grading and Retaining Wall Construction

Table 3 Trees to Remove *(continued from the previous page)*

Field Data Sheet Surrey Farm Estates	Tree Name	DBH	Condition	Last Date Reviewed	Disposition	Reason(s) for Disposition Impacts
571	Wild plum	6	Dead	10/20/14	Remove	Roadway Construction
586	Valley oak	6	Fair	10/20/14	Remove	Sanitary Sewer Construction
594	Incense cedar	5	Fair	10/20/14	Remove	Sanitary Sewer Construction

End of Table. 71 trees.

TABLE 4 TREES TO TRANSPLANT

Continued on the next page.

Field Data Sheet Surrey Farm Estates	Tree Name	DBH	Condition	Last Date Reviewed	Disposition	Reason(s) for Disposition Impacts
001	Coast live oak Quercus agrifolia	11	Fair	10/20/14	Transplant	Roadway Construction
002	Coast live oak	6	Good	10/20/14	Transplant	Roadway Construction
003	Valley oak Quercus lobata	15	Excellent	10/20/14	Transplant	Roadway Construction
006	Coast live oak	13	Good	10/20/14	Transplant	Roadway Construction
008	Coast live oak	9/7	Good	10/20/14	Transplant	Roadway Construction
009	Coast live oak	7	Good	10/20/14	Transplant	Roadway Construction
010	Coast live oak	8	Good	10/20/14	Transplant	Roadway Construction
012	Coast live oak	11	Good	10/20/14	Transplant	Roadway Construction
017	Valley oak	17	Good	10/20/14	Transplant	Roadway Construction
025	Coast live oak	11	Good/Fair	10/20/14	Transplant	Roadway / Storm Drain Construction
026	Coast live oak	10	Good/Fair	10/20/14	Transplant	Roadway Construction
028	Coast live oak	10	Good	10/20/14	Transplant	Roadway Construction

Table 4 Trees to Transplant *(continued from the previous page)*

Field Data Sheet Surrey Farm Estates	Tree Name	DBH	Condition	Last Date Reviewed	Disposition	Reason(s) for Disposition Impacts
034	Coast live oak	12	Good	10/20/14	Transplant	Storm Drain Construction
064	Coast live oak	8	Good	10/20/14	Transplant	Retention Pond Construction
090	Coast live oak	12	Good/Fair	10/20/14	Transplant	Roadway Construction
135	Coast live oak	8	Good	10/20/14	Transplant	Roadway Construction
136	Valley oak	7	Excellent	10/20/14	Transplant	Roadway Construction
160	Valley oak	11	Fair	10/11/12	Transplant	Near hammerhead
301	Coast live oak	6	Good	10/20/14	Transplant	Roadway Construction
333	Coast live oak	11	Good	10/20/14	Transplant	Roadway Construction
338	Coast live oak	6	Good	10/20/14	Transplant	Roadway Construction
349	Coast live oak	10	Good	10/20/14	Transplant	Roadway Construction
350	Coast live oak	6	Excellent	10/20/14	Transplant	Roadway Construction
351	Coast live oak	10	Excellent	10/20/14	Transplant	Roadway Construction
357	Incense cedar	9	Excellent	10/20/14	Transplant	Roadway Construction
358	Incense cedar	8	Good	10/20/14	Transplant	Roadway Construction
369	Incense cedar	6	Excellent	10/20/14	Transplant	Roadway Construction
573	Valley oak	14	Good	10/11/12	Transplant	Roadway Construction
574	Incense cedar	10	Excellent	10/11/12	Transplant	Roadway Construction
578	Coast live oak	5	Excellent	10/11/12	Transplant	Grading for Retention Pond

End of Table. 30 Trees.

TABLE 5 TREES THAT ARE DEBATABLE

	Field Data Sheet Surrey Farm Estates Tree Name	DBH	Condition	Last Date Reviewed	Reason(s) for Disposition Impacts
302	Valley oak	28	Good	10/20/14	Grading (but Town engineer thinks doesn't have to be removed.
303	Coast live oak	24	Good	10/20/14	Grading (but Town engineer thinks doesn't have to be removed.
549	Coast live oak	15	Good	12/20/2010	Appears too close to house, not on construction plans. Move house or transplant

End of Table. 3 Trees.

TABLE 6 UNUSED NUMBERS

	Field Data Sheet Surrey Farm Estates Tree Name
277	Unused Number
331	Unused Number
373	Unused Number
374	Unused Number

End of Table. 4 Trees.

APPENDIX

LIST OF PREVIOUS REPORTS FOR THIS PROJECT BY D. ELLIS

1) March 30, 2011. Surrey Farm Estates, Twin Oaks Drive, Los Gatos.
2) September 21, 2011. Arborist Review of the most current set of plans for Surrey Farm Estates/Twin Oaks Drive
3) June 12, 2012. Surrey Farm Estates – Review of plan set dated May 21 and 22, 2012 relative to existing trees to be removed and saved
4) January 29, 2013. Surrey Farm Estates Proposed Subdivision
5) February 23, 2013. Surrey Farm Estates Proposed Subdivision
6) May 7, 2013. Surrey Farm Estates Proposed Subdivision. Update on status relative to existing tree issues
7) November 7, 2014. Surrey Farm Estates (comparing differences in Plan A1, Proposed Subdivision PD and Plan A-1A Alternative Subdivision PD

PLANS I HAVE REVIEWED FROM PROJECT ARBORIST MICHAEL BENCH

1. December 20, 2010. An Evaluation of Trees at the Surrey Farm Estates.
2. January 8, 2013. Tree Spreadsheet for Twin Oaks Drive. (Excel spreadsheet).
3. October 20, 2014. Impacts to Trees by Proposed Plans A-1 and A-1A. (Excel spreadsheet).
4. October 20, 2014. A Comparison between a Single Access Entry Road Plan <A1>and a Two Access Entry Road Plan <A-1A> Surrey Farm Estates, Los Gatos, California.

****

I certify that the information contained in this report is correct to the best of my knowledge, and that this report was prepared in good faith. Thank you for the opportunity to provide service again. Please call me if you have questions or if I can be of further assistance.

Sincerely,

Deborah Ellis

Deborah Ellis, MS.
Consulting Arborist & Horticulturist
Certified Professional Horticulturist #30022
ASCA Registered Consulting Arborist #305
I.S.A. Board Certified Master Arborist WE-457B

Enclosure: Surrey Farm Estates Tree Table Spreadsheets. Excel Spreadsheets. D. Ellis, December 2, 2014.

Deborah Ellis, MS

Consulting Arborist & Horticulturist

Service since 1984

Marni Moseley
Town of Los Gatos Community Planning Department
110 E. Main Street
Los Gatos, CA 95031

November 26, 2014

Surrey Farm Estates Replacement Tree Calculations

Dear Marni:

Based upon the 71 definite tree removals as listed in my November 19, 2014 Arborist Report for this project, my calculations for the number of replacement trees required are listed in the Table below and continued on the next page. Since arborist Michael Bench did not include canopy dimension measurements in his tree tables for this project, I have modified the Town's tree replacement requirements based upon trunk diameter, as explained in the Table.

Table 1 Tree Replacement Calculations

Canopy dimension	Tree tag #'s of trees to be removed	Number of trees to be removed	Box size of replacement tree required	Number of replacement trees required	Notes
Category 1 **4 to 9 feet: (4-10" trunk diameter):**	4,5,14,19,48, 110, 125, 149, 162, 299, 330, 345, 359, 360, 361, 362, 382, 449, 455, 459, 460, 461, 462, 502, 507, 515, 516, 520, 522, 525, 526, 527, 529, 544, 545, 571, 586, 594	38 (37)	2 x 24" box OR 1 x 36"	74 x 24" OR 37 x 36"	#571 is dead, so it is not counted toward replacement trees.
Category 2 **10 to 27 feet: (>10-20" trunk diameter):**	13,15, 16,18, 27, 29, 30, 35,62, 63, 65, 109, 123, 126, 154, 342, 346, 363, 451, 452, 454, 510, 512, 521, 530,531, 532, 534, 546,	29 (28)	3 x 24" box OR 2 x 36"	84 x 24" OR 56 x 36"	#123 is dead, so it is not counted toward replacement trees.
Category 3 **28 to 40 feet: (>20-30" trunk diameter):**	24, 336, 337,	3	4 x 24" OR 2 x 48"	12 x 24" OR 6 x 48"	

Canopy dimension	Tree tag #'s of trees to be removed	Number of trees to be removed	Box size of replacement tree required	Number of replacement trees required	Notes
Category 4 **40 to 56 feet: (>30-40" trunk diameter):**	403	1	6 x 24" OR 2 x 24" + 2 x 48"	6 x 24" OR 2 x 24" + 2 x 48"	
56 to 60 feet: (>40-50" trunk diameter):	0	0	2 x 24", 36" and 48" OR To be determined by Director	0 x 24" 0 x 36" 0 x 48" OR to be determined by Director	
60 feet + (>50" trunk diameter):	0	0	To be determined by Director	To be determined by Director	

Potential Totals (Depending upon how which approved box size trees the applicant chooses to use for each category of removed tree):

- **24" box:** 74 + 84 + 12 + 6 + 2 = 178
- **36" box:** 37 + 56 = 93
- **48" box:** 6 + 2 = 8

****

Sincerely,

Deborah Ellis, MS.
Consulting Arborist & Horticulturist
Certified Professional Horticulturist #30022
ASCA Registered Consulting Arborist #305
I.S.A. Board Certified Master Arborist WE-457B

PO Box 3714, Saratoga, CA 95070. 408-725-1357. decah@pacbell.net. http://www.decah.com.

APPENDIX D

GEOTECHNICAL INVESTIGATION
(DECEMBER 2010)

RESPONSE TO PEER REVIEW COMMENTS
(JUNE 15, 2011)

BY
GEOFORENSICS INC.

PEER REVIEWS - GEOTECHNICAL INVESTIGATION REPORT AND PLANS
(JUNE 3, 2011 AND OCTOBER 24, 2011)

BY
AMEC GEOMATRIX/AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

STORMWATER BASIN STABILITY ANALYSIS
(JULY 29, 2014)

BY
BALANCE HYDROLOGICS, INC.

GEOTECHNICAL INVESTIGATION
FOR PROPOSED
NEW SUBDIVISION

at the

Dodge Family Subdivision

Twin Oaks Drive

APN 532-16-006

Los Gatos, California

Report Prepared for:

Surrey Family Estates, LLC

c/o Dodge Construction

Report Prepared by:

GeoForensics, Inc.

December 2010

GEOFORENSICS INC. Consulting Soil Engineering

561 Pilgrim Dr., Suite D, Foster City, California 94404 Phone: (650) 349-3369 Fax: (650) 571-1878

File: 210121
December 17, 2010

Surrey Farms Estates LLC
c/o Dodge Construction
851 McGlincy Lane
Campbell, CA 95008

Attention: Tom Dodge

Subject: **Dodge Family Subdivision**
Twin Oaks Drive (APN 532-16-006)
Los Gatos, California
GEOTECHNICAL INVESTIGATION
FOR PROPOSED NEW SUBDIVISION

Mr. Dodge:

In accordance with your authorization, we have performed a subsurface investigation into the geotechnical conditions present at the location of the proposed subdivision improvements. This report summarizes the conditions we measured and observed, and presents our opinions and recommendations for the design and construction of the proposed new subdivision.

Site Description

The subject site is a gently to steeply sloping, flag-shaped parcel located off the eastern side of Twin Oaks Drive (at the approximate location shown on Figure 1).

The site is currently an empty lot covered by a growth of small bushes and weeds, with a few small to medium sized trees.

The ground surface in the site vicinity has an overall slope down towards the west (as shown on Figure 2). At the site, the ground slopes gently to moderately down towards the north and west. Surface gradients range from 20:1 to 2:1 (horizontal:vertical, H:V). A narrow topographic swale passes through the property, flowing from the southeast to the northwest. The head of the swale is located on a property to the southeast of the current site. A small rounded hilltop area occurs near the southeast corner of the property.

There is no evidence that there has previously been any significant grading activities at the site, other than a dirt road that climbs from the bottom of the property to the hilltop area. A corrugated metal pipe located within the narrow drainage swale was apparently installed as a culvert to protect the dirt road crossing the swale. The culvert, however, is no longer operational.

No other man-made improvements are located on the site.

Proposed Construction

We understand that the current development plans for the site propose the subdividing of the property into 10 individual lots, upon which single family residences with associated improvements will be constructed. It is expected that the new houses will be of conventional, wood-framed construction. It has been assumed that new foundation loads will be typical for this type of structure (i.e. light).

The scope of grading work is currently undefined, although we would expect the work to include: roadway grading; utility installation; building pad preparation; and, crawlspace and foundation excavations. It is likely that various house and site retaining walls will be required for the development of individual lots and perhaps roadway support. We understand that the southeastern portion of the property will be dedicated Open Space, so it will not be developed. *Should the actual proposed scope of work vary from that just described, then our office should be contacted to verify the appropriateness of our design recommendations.*

INVESTIGATION

Scope and Purpose

The purpose of our investigation was to determine the nature of the subsurface soil conditions so that we could provide geotechnical recommendations for the construction of the subdivision level improvements and for the proposed residences. In order to achieve this purpose, we have performed the following scope of work:

1 - visited the property to observe the geologic and geotechnical setting of the area to be developed;
2 - completed an engineering geologic site reconnaissance;
3 - reviewed historical stereographic aerial photographs;
4 - reviewed relevant published geotechnical and geologic maps;
5 - drilled 8 borings across the project;
6 - performed laboratory testing on collected soil samples;
7 - assessed the collected information and prepared this report.

The findings of these work items are discussed in the following sections of this report.

Site Observations

We visited the site on November 15, 2010 and December 16, 2010 to observe the geologically and geotechnically relevant site conditions. During our visits, we noted the following conditions:

A - The trees in the area were observed to be generally straight, suggesting that there has not been any significant slope creep or landsliding affecting these areas in the past.

B - The surfaces of the site slopes were generally smooth and planar, with no hummocky terrain to suggest any historic landsliding or slope instabilities have previously affected the site.

C - Several old fruit trees are spread around the slopes, relics of previous agricultural usage of the property.

D - Drainage at the property is generally characterized as sheet flow off of the slopes to the central drainage swale on the western third of the property. Currently, surface waters from the site will tend to flow offsite along the axis of this swale towards adjacent developed residential properties. As the swale reaches the north western portion of the property, the swale broadens to an alluvial fan, with little or no definition to the drainage patterns.

E - Based upon observations of road cut exposures, examination of bedrock materials occurring as "float", soil colors observed in review of air photos, results of our subsurface investigation, and interpretation of site geomorphology, a Site Geologic Map has been produced as Figure 3b.

Geologic Map Review

We reviewed *The Town of Los Gatos Geologic Hazards Map*, by Nolan Associates (revised 2002), and the *State of California Seismic Hazards Zone Map; Los Gatos Quadrangle* (2002). The relevant portion of the Nolan and State maps have been reproduced in Figures 3 and 3a.

The Nolan map indicates that the site is underlain by the Santa Clara Formation (map symbol "QTsc") Temblor Sandstone (map symbol "Tmt") Older Alluvial Fan Deposits (map symbol "Qfo"), and Monterey Shale (map symbol "Tmt"). Based upon our studies, however, we have revised the locations of the the approximate geologic contacts as shown on Figure 3b.

Our subsurface exploration (see below) encountered clay, sand, and gravelly materials judged to be consistent with the Santa Clara Formation.

The State Seismic Hazards Zone Map indicates the eastern portion of the site is inside of the areas where "*previous occurrences of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacement such that mitigation, as defined in Public Resource Code Section 2693(c) would be required.*" The state map indicates that the site area is not in an area believed to be subject to potential earthquake-induced liquefaction.

The active San Andreas Fault is mapped approximately 4.3 miles (7 km) southwest of the site, and the potentially active Monte Vista-Shannon Fault is mapped approximately 0.2 miles (0.3 km) to the southwest.

Air Photo Review

The following pairs of black and white aerial photographs were examined to observe site conditions and to aid in identifying potential fault or landslide hazards.

Date	Photo Identification	Type	Scale
6-9-56	CIV-6R-50 & 51	B&W	1:20,000
5-15-65	SCL-9-138 & 139	B&W	1:12,000

The subject property is evident as grass-covered hillside terrain in the air photos reviewed. A dirt road was constructed on the property sometime between the 1956 and 1965 photo dates.

A gently-inclined narrow drainage swale crosses the lower portion of the property. The head of the swale is located on a property to the southeast on more steeply-inclined terrain. The head of the drainage swale could be the source of shallow soil slips producing potential debris flow landslides. Evidence of active erosion, soil slips, or debris flow deposition, however, was not observed within the drainage swale in any of the photos reviewed.

Evidence of active or older landsliding is not apparent on the property in the photographs reviewed.

Subsurface Exploration

On November 15, 2010 we drilled 8 borings at the site at the locations shown on Figure 4. The borings were drilled using a Mobile B-24 truck-mounted drilling rig equipped with 4.0 inch diameter, helical flight augers. Logs of the soils encountered during drilling record our observations of the cuttings traveling up the augers and of relatively undisturbed samples collected from the base of the advancing holes. The final boring logs are based upon the field logs with occasional modifications made upon further laboratory examinations of the recovered samples and laboratory test results. The final logs are attached in Appendix A.

The relatively undisturbed samples were obtained by driving a 3.0 inch (outer diameter) Modified California Sampler and a Standard Penetration Sampler (as noted on logs) into the base of the advancing hole by repeated blows from a 140 pound hammer lifted 30 inches. On the logs, the number of blows required to drive the sampler the final 12 inches of the 18 inch drive, have been recorded as the Blow Counts. These blows have not been adjusted to reflect equivalent blows of any other type of sampler or hammer, or to account for the different samplers used.

Subsurface Conditions

On the steep eastern hillsides, Borings 1 and 2 penetrated 2.5 to 5 feet of residual soils consisting of medium dense silty sand or stiff silty sandy clay. This was underlain by weathered bedrock materials which took the form of medium dense to very dense silty sands with varying amounts of clay and gravel down to the terminated boring depths of 12.5 to 19.5 feet.

Towards the base of the eastern slope, Boring 3 first penetrated 2.5 feet of silty sand. This was underlain by very stiff silty clay, which graded to dense silty sand by a depth of 8 feet. At 13.5 feet the boring encountered silty gravelly sand down to the terminated boring depth of 14.5 feet. We interpret the materials encountered below a depth of 8 feet to be bedrock.

Boring 4 was also located towards the base of the eastern slopes. This boring penetrated medium dense to very dense silty sand with varying amounts of clay and fine gravel down to the terminated boring depth of 11.5 feet. We judged the materials encountered at approximately 6 feet to represent weathered bedrock.

Near the northeastern edge of the drainage swale, Boring 5 penetrated 7 to 8 feet of colluvial silty sand with varying amounts of clay and gravel. This was underlain by very stiff silty clay with varying amounts of gravel down to the terminated boring depths of 14.5 feet. Bedrock was not interpreted to have been encountered to the base of our boring.

At the western lateral margin of the swale, Boring 6 encountered a surficial deposit of about 2.5 feet of silty sand with fine gravel. The sand was underlain by a very stiff silty sandy clay and dense silty gravelly sand by a depth of 9 feet (weathered bedrock). This material graded to very dense silty sand by a depth of 16 feet, which remained consistent to the bottom of the boring at a depth of 17.5 feet.

Boring 7, on the crest of a small secondary ridge at the southern end of the project, also first encountered 2.5 feet of silty sand. This was underlain by sandstone in the form of a dense to very dense silty sand down to the terminated boring depth of 12.5 feet.

At the southwestern corner of the property, off of the hillside slopes, Boring 8 encountered about 2.5 feet of silty sand over the top of medium dense silty sands. This material gave way to sandy clays by a depth of 8 feet, which continued to the base of the boring at 14.5 feet. We did not identify any materials which we considered to be bedrock in this boring.

Please refer to Appendix A for a more detailed description of each boring.

Groundwater was generally not encountered in any of the borings, with the exception of Boring 6, where we did encounter water at a depth of 16.5 feet during the drilling. The level of the water rose slightly to a depth of 16 feet after approximately 1.5 hours. Although we generally did not encounter ground water in our borings, we would anticipate that during periods of heavy rain, late in the winter, or due to heavy irrigation practices, that groundwater seepage may exist in other areas of the project at relatively shallow depths, most likely occurring as perched water atop bedrock or more clay-rich layers.

Laboratory Testing

The relatively undisturbed samples collected during the drilling process were returned to the laboratory for testing of engineering properties. In the lab, selected soil samples were tested for moisture content, density, plasticity, 200 sieve wash, and strength.

Plasticity Index (PI) testing performed on the site near surface and claystone bedrock materials produced PI results of 13, 22, 24, and 27. This testing indicated that the near surface materials (PI = 13 and 22) have low to moderate plasticity and are likely to be of low to moderate expansion potential. Even the deeper claystone bedrock (PI= 24 to 27) has moderate plasticity and is therefore judged to be moderately expansive.

A 200 Sieve Wash Analysis performed on a sample of the alluvial materials (Sample 6-1 @ 3 feet) showed the tested materials are composed of 3.4 percent gravel, 43.1 percent sand, and 53.5 percent silt and clay. This would indicate that there is a sufficiently high fines content that the potential for liquefaction is considered to be very low.

Strength testing was conducted on samples of the recovered soil and bedrock materials. The bedrock (Sample 1-1 @ 3.5 feet), proved to have high strength parameters (cohesion = 2.4 ksf, friction angle = 27 degrees). Similarly, the strength testing of the soil sample (Sample 8-1 @ 3 feet) showed that this material has moderately high strength parameters (cohesion = 100 psf, friction angle = 35 degrees). The other deeper soils at the site were judged to also have high strengths based upon the blow counts obtained during the sampling process.

R-Value testing was conducted on the soils of the lower portions of the site. The R-value testing is not yet complete, but is expected to yield a value of 5 to 11, which was used for our pavement design calculations.

The results of the laboratory tests are attached to this report in Appendix B.

Seismic Analysis

As noted above, portions of the subject site have been mapped as being located in an area potentially subject to seismic-induced landsliding. In order to evaluate the potential for such slope instability, we have conducted a preliminary slope stability analyses using the procedures identified in the "Development of a Screen Analysis Procedure for Seismic Slope Stability" presented as Appendix A in the publication **Recommended Procedures for Implementation of DMG Special Publication 117 Guidelines for Analyzing and Mitigating Landslide Hazards in California** by the Southern California Earthquake Center (Seismic Guidelines Report).

In applying the recommended procedures in DMG 117, we have utilized design values provided in **Open File Report 2000-010** of the **Seismic Hazard Evaluation of the Los Gatos 7.5-Minute Quadrangle, Santa Clara and San Mateo Counties California**, by the Department of Conservation, Division of Mines and Geology (Seismic Hazard Report).

From Figure 3.1 of the Seismic Hazard Report, the anticipated maximum peak ground acceleration (10% probability of exceedance in 50 years) for the site is 0.63g from a magnitude 7.9 Mw earthquake located at a distance of 9.5 km from the site (Figure 3.1). This value should be adjusted to account for the non-linear response of the materials above the slide plane, to a value of 0.30 g (SP-117 Figure 11.1 assuming a 15cm threshold for minimal damage).

The strength parameters provided by the Seismic Hazard Report for the Los Gatos Quadrangle provide proposed shear strength parameters for Santa Clara Formation bedrock of 900 psf for cohesion, and 26 degree friction angle. As noted above, our measurements of the bedrock strengths resulted in a similar friction angle, but higher cohesive strength.

Based upon our review of existing site topographic conditions and geologic mapping, the existing slope has not experienced any apparent episodes of previous slope instability to suggest that there is an existing geometry upon which the slope is prone to fail. Therefore, we have used a random search analysis to generate multiple potential slide planes to search for the potential failure surface with the lowest possible factor of safety against sliding.

To perform our analysis, we used the computer program GSTABL7 with STEDwin (version 2.005) to model the site conditions under seismic shaking. The geometry of the slope was obtained from the site topographic survey. Groundwater conditions were modeled assuming that the ground water at the time of the earthquake would most likely consist of perched water in the upper thin colluvial layers, but there would not be any hydrostatic pressures within the bedrock slope.

Results of Seismic Analysis

The result of a slope stability analysis is presented as a Factor of Safety against sliding. The factor of safety is simply the sum of factors which are resisting sliding, divided by the sum of the factors attempting to make the slope fail. If the resistance is greater than the driving forces, the factor of safety is greater than 1. If there is insufficient resistance available, then the factor of safety is below 1. A factor of safety of 1.0 implies there is a balance between the driving and resisting forces, and the slope is assumed to be "on the brink" of failure.

Jurisdictions previously required that a calculated factor of safety for a site to be developed with a residential structure be at least 1.5 for non seismic conditions, and typically 1.1 to 1.2 for seismic conditions. At the turn of the century, methodology for assessing the seismic stability of a slope was substantially changed as the State Division of Mines and Geology issued Special Publication 117. Recommended procedures for the implementation of DMB 117 were issued in June 2002. Among other things, these new guidelines provided a methodology for determining whether the design earthquake is likely to cause substantial movement which may affect a residence. We have used the 15 cm threshold for our analysis. Using the recommended procedures, a resulting factor of safety of 1.0 now indicates that movements of the slide mass during the design earthquake will result in approximately 15 cm of movement.

Static - Our static calculations found that the site is very stable during static conditions, as indicated by a Factor of Safety of approximately 2.0 (using the State's bedrock strength parameters).

Seismic - During seismic shaking from a major earthquake (Mw=7.9) on the San Andreas Fault, our analysis has determined that the Seismic Factor of Safety for the slide mass is 0.987 (just below 1.0) when using the State bedrock strength parameters. Using charts prepared by Makdisi and Seed (1978), the projected permanent seismic displacement of the slide mass would be on the order of 15

centimeters (6 inches). A displacement of 15 centimeters would likely cause some damage to the residence, but should not result in a catastrophic failure of the structure (i.e. the house should not fall down). Conversely, using the bedrock strength parameters measured during our investigation of the subject site, we calculated that the factor of safety was 1.3, indicating that the site is stable during such an event. Based upon these analyses, it is our opinion that the probability of a deep seated bedrock landslide occurring during a major seismic event is extremely low, and that no special design considerations are necessary for residential structures constructed on the subject site.

CONCLUSIONS AND RECOMMENDATIONS

General

Based upon our investigation, we believe that the proposed improvements can be safely constructed. Geotechnical development of the site is controlled by the presence of moderately expansive soils and bedrock, locally hard bedrock, a drainage swale, and steep slopes.

Our geotechnical study has found that there are no significant geotechnical hazards which would preclude the construction of residential structures on any of the proposed lots. A potential debris flow hazard associated with the drainage swale crossing the lower portion of the property can be mitigated with appropriate building setbacks from the drainage swale or construction of a detention pond near the southern boundary of the property.

Expansive Soils - derive their name from their propensity to change volume in response to changes in moisture content. When they are dry, they shrink; when they become wet, they swell. The pressures these soils can exert as they expand can be sufficiently high to move conventional residential foundations. The foundation movement induced by the soil shifting can cause wall coverings to crack, doors and windows to stick, and floors to slope. Seasonal movements of expansive soils have caused such distress to countless houses in the Bay Area.

To combat seasonal expansive soil movements, it is necessary to utilize a foundation system which derives its support from the deeper, more stable soils or bedrock materials. The deeper support may be achieved by the use of either a drilled, cast-in-place pier foundation system, or alternatively, a deepened spread footing system. Recommendations have been provided for each system, along with recommendations for mat slabs where houses will be embedded into the hillside slopes.

Drainage Swale – There is a drainage swale which passes down into the project from the southeast. Within the project site, the swale reaches flatter ground and spreads out into an alluvial fan shape which will distribute surface water flows over a relatively wide area as the water then flows off-site onto adjacent developed properties. The project Civil Engineer will need to address the flows from this swale and its potential downstream impacts.

Hard Bedrock – on some areas of the hillside slopes, our borings encountered moderately hard bedrock materials. We generally anticipate that these materials can be readily excavated using moderate weight excavation equipment, although light-weight machinery may encounter localized problems with excavation work, especially in areas of limited excavation such as deep trenches.

The recommendations in this report should be incorporated into the design and construction of the proposed new residences and associated improvements.

Seismicity

The greater San Francisco Bay Area is recognized by Geologists and Seismologists as one of the most active seismic regions in the United States. Several major fault zones pass through the Bay Area in a northwest direction which have produced approximately 12 earthquakes per century strong enough to cause structural damage. The faults causing such earthquakes are part of the San Andreas Fault System, a major rift in the earth's crust that extends for at least 700 miles along western California. The San Andreas Fault System includes the San Andreas, San Gregorio, Hayward, Calaveras Fault Zones, and other faults.

During 1990, the U.S. Geological Survey cited a 67 percent probability that an earthquake of Richter magnitude 7, similar to the 1989 Loma Prieta Earthquake, would occur on one of the active faults in the San Francisco Bay Region in the following 30 years. Recently, this probability was increased to 70 percent, as a result of studies in the vicinity of the Hayward Fault. A 23 percent probability is still attributed specifically to the potential for a magnitude 7 earthquake to occur along the San Andreas Fault by the year 2020.

Ground Rupture - The lack of mapped active fault traces through the site, suggests that the potential for primary rupture due to fault offset on the property is low.

Ground Shaking - The subject site is likely to be subject to very strong to violent ground shaking during its life span due to a major earthquake in one of the above-listed fault zones. Current (2007) building code design may be followed by the structural engineer to minimize damages due to seismic shaking, using the following input parameters from the USGS Java Ground Motion Parameter Calculator:

Site Class - C	$SM_s = 2.343$	$SM_1 = 1.084$	$SD_S = 1.562$	$SD_1 = 0.723$

Landsliding - The subject site and the surrounding area range from gently to moderately sloping. The State of California Seismic Hazards Zones map of the Los Gatos Quadrangle (9/23/02) indicates that the site is in an area potentially subject to seismically-induced landsliding. Our seismic slope stability analysis has indicated that the site does possess adequate factors of safety against seismically-induced landsliding. Therefore, it is our opinion that the hazard due to seismically-induced landsliding is very low for the site

Liquefaction - The state of California Seismic Hazards Zones map for the Los Gatos Quadrangle (9/23/02) indicates that the site is not in an area potentially subject to liquefaction. Liquefaction most commonly occurs during earthquake shaking in loose fine sands and silty sands associated with a high ground water table. These conditions were demonstrated to be absent in the upper 19.5 feet of site materials. Based upon the subsurface investigation, the proposed building site is underlain by clayey soils then bedrock materials at shallow depths. Therefore, it is our opinion the liquefaction is unlikely to occur on the subject property.

Ground Subsidence - Ground subsidence may occur when poorly consolidated soils densify as a result of earthquake shaking. Since the proposed building site is underlain at shallow depths by resistant materials, the hazard due to ground subsidence is, in our opinion, considered to be low.

Lateral Spreading - Lateral spreading may occur when a weak layer of material, such as a sensitive silt or clay, loses its shear strength as a result of earthquake shaking. Overlying blocks of competent material may be translated laterally towards a free face. Such conditions were not encountered on the proposed building site, therefore, the hazard due to lateral spreading is, in our opinion, considered very low.

Site Preparation and Grading

Although no existing improvements or utilities are expected to exist at the site, if found, all debris resulting from the demolition of any existing improvements should be removed from the site and may not be used as fill. Similarly, any existing underground utility lines encountered at the site should be removed from the site.

Any vegetation and organically contaminated soils should be cleared from the building areas. All holes resulting from removal of tree stumps and roots, or other buried objects, should be over-excavated into firm materials and then backfilled and compacted with native materials.

The placement of fills at the site is expected to include: general mass grading for the street; mass grading for potential building pads; utility trench backfill, retaining wall backfill, slab subgrade materials, and finished drainage and landscaping grading. These and all other fills should be placed in conformance with the following guidelines:

Fills may use organic-free soils available at the site or import materials. Import soils should be free of construction debris or other deleterious materials and be non-expansive. *A minimum of 3 days prior to the placement of any fill, our office should be supplied with a 30 pound sample (approximately a full 5 gallon bucket) of any soil or baserock to be used as fill (including native and import materials) for testing and approval.*

All areas to receive fills should be stripped of organics and loose or soft near-surface soils. Fills should be placed on level benches in lifts no greater than 6 inches thick (loose) and be compacted to at least 90 percent of their Maximum Dry Density (MDD), as determined by ASTM D-1557. If native expansive soils are used for fill at the site, then the soils should be placed at 3 to 5% over

Optimum Moisture. In pavement (concrete or asphalt) areas to receive vehicular traffic, all baserock materials should be compacted to at least 95 percent of their MDD. Also, the upper 6 inches of soil subgrade beneath any pavements should be compacted to at least 95 percent of its MDD. If fills thicker than 15 feet are proposed, our office should be contacted for further recommendations for these deep fills.

All unretained fills to be placed on slopes steeper than 6 to 1 (horizontal to vertical, H:V) will need to be keyed and benched into competent native materials as identified by our personnel in the field. Fills on slopes steeper than 4:1 will need to be keyed and benched into bedrock, located about 2.5 to 9 feet below grade. Any retained fills will need to be benched into competent native materials, however, a formal keyway is not required. The entire base of any keyway should extend into competent materials. The entire bases of all benches should extend into competent materials, as identified in the field by representatives from our office. It should be anticipated that the outer edge of bench excavations will extend at least 4 feet below native grade. Keyways and benches should be sloped back into the hillside at a minimum 2% gradient.

For fills over 5 feet thick, or where deemed necessary by our personnel, a blanket drain should be provided within any keyway excavations, and chimney drains should be provided at the back of any benches identified by our office in the field, and at vertical increments not to exceed 10 feet. The blanket drain should cover the entire keyway and consist of a minimum 6 inch thick layer of clean crushed drain rock completely covered (top and sides) with filter fabric (Mirafi 140N or approved equivalent). Chimney drains should consist of a minimum 6 inch wide column of clean crushed drain rock, also wrapped with filter fabric, for at least half the height and for the full width of the bench. Alternatively, Miradrain panels may be used for the chimney drains under certain circumstances approved by our office. The subsurface water collection systems should drain to 4 inch diameter perforated pipes, placed at the base of the drain rock. The pipes should consist of Schedule 40 PVC or SDR 35 for drains located no more than 15 feet below grade. Deeper pipes should consist of Schedule 80 PVC or equivalent. ***No flexible, corrugated pipe may be used within any drainage system installed as part of this project***. The bench drain pipes may connect to the keyway blanket drain pipe. A solid line should be used to convey the water to an appropriate discharge point. We note that *Caltrans Class 2 permeable rock* is an acceptable substitution for clean drain rock and filter fabric.

Temporary, dry-weather, vertical excavations should remain stable for short periods of time to heights of 5 feet. All excavations should be shored or sloped in accordance with OSHA standards. Cuts deeper than 16 feet near the base of the slope may encounter groundwater and may require temporary (and perhaps permanent) dewatering.

Even moderately deep cuts are likely to encounter hard bedrock, and may require heavy excavation equipment. It may be necessary to utilize hand-held jackhammers to clean out the footing excavations in some areas.

Permanent cut and/or fill slopes should be no steeper than 2:1 (H:V). However, even at this gradient, minor sloughing of slopes may still occur in the future. Positive drainage improvements

(e.g. drainage swales, catch basins, etc.) should be provided to prevent water from flowing over the tops of cut and/or fill slopes.

Lots located in the low lying areas would likely benefit from the construction of raised building pads to help keep the residences above ground water levels during periods of heavy rainfall, as well as to provide for better drainage gradients on the lots.

Debris Flow Mitigation

As noted above, there is a currently undefined potential for debris flow materials to be generated by failures on the slopes to the southeast of the subject parcel. These flows could potentially flow down the narrow drainage channel and into the subject property. If residential structures are to be built proximate to the drainage swale, then it may be necessary to mitigate the potential for damage by either constructing a catchment basin across the swale near the southern side of the property, or alternatively providing deflection berms or walls proximate to the residences. Our office will need to evaluate any proposed residential development on lots spanning across the swale (i.e. Lots 8 and 9).

Foundation Alternative #1 - Drilled Piers

Any new improvements built on, or within 15 feet of the crests of slopes steeper than 4:1 (H:V), will need to be supported by a drilled pier foundation system. Piers can also be used in level areas, if desired.

In level areas (flatter than 4:1, H:V) , the piers should penetrate a minimum of 8 feet below lowest adjacent grade, and 5 feet into competent material, whichever is deeper. In sloping areas (steeper than 4:1), the piers should penetrate a minimum of 12 feet below lowest adjacent grade, and 8 feet into competent weathered rock, whichever is deeper. It should be assumed that up to 6 feet of overburden will exist on the steeper slopes, depending on the scope of the grading.

Holes greater than 16 feet may encounter groundwater even if drilled in the summer months, while other holes may encounter ground water if drilled in the winter or spring months. The contractor should be prepared to tremmie the piers, drill and pour the piers, and/or case the piers in the event of caving.

The piers should have a minimum diameter of 16 inches and be nominally reinforced with a minimum of four #4 bars vertically. Piers should be spaced a maximum of 10 feet center to center, and be spaced no closer than 4 diameters, center to center. However, actual pier depth, diameter, reinforcement, and spacing should be determined by the structural engineer based upon the following design criteria:

A friction value of 600 psf may be assumed to act on that portion of the pier within bedrock, and 450 within soils below a depth of 5 feet (in level areas). Lateral support may be assumed to be developed along the length of the pier within bedrock using a passive pressure of 500 pcf

Equivalent Fluid Weight (EFW), while this value should be reduced to 350 pcf for competent soils below a depth of 5 feet in level areas. Passive resistance may be assumed to act over 1.5 projected pier diameters. Above the bedrock or 5 foot depth, no frictional or lateral support may be assumed. These design values may be increased 1/3 for transient loads (i.e. seismic and wind).

Even though piers are designed to derive their vertical resistance through skin friction, the bases of the piers holes should be clean and firm prior to setting steel and pouring concrete. If more than 6 inches of slough exists in the base of the pier holes after drilling, then the slough should be removed. If less than 6 inches of slough exists, the slough may be tamped to a stiff condition. Piers should not remain open for more than a few days prior to casting concrete. In the event of rain, shallow groundwater, or caving conditions it may be necessary to pour piers immediately.

All perimeter piers, and piers under load-bearing walls, should be connected by concrete grade beams. Where crawl space areas slope more steeply than 4:1 we recommend that tie beams be provided between upslope and downslope piers to limit lateral deflections. Perimeter grade beams should penetrate a minimum of 6 inches below crawlspace grade (unless a perimeter footing drain is installed to intercept water attempting to enter around the perimeter). Interior grade beams do not need to penetrate below grade. All other isolated floor supports must also be pier supported to resist expansive soil uplift, however, they do not need to be connected by grade beams.

Piers on slopes steeper than 6:1 should also be designed to resist a lateral creep force of 60 pcf EFW acting over two diameters in the upper 5 feet of the piers.

In order to reduce any expansive soil uplift forces on the base of the grade beams, the beams should have either a uniform 2 inch void between their base and the soil, or should be constructed with a knife edge and triangular shaped void in a rectangular trench. The void can be created by the use of prefabricated cardboard void material (e.g. K-void, SureVoid, Carton-void), half a sonotube faced concave down, or other methods devised by the contractor and approved by our offices. *The use of Styrofoam is not acceptable for creating the void.*

All improvements connected directly to any pier supported structure, also need to be supported by piers. This includes, but is not limited to: porches, decks, entry stoops and columns, etc. If the designer does not wish to pier support these items, these items will be subject to movements, and care must be taken to structurally isolate them (with expansion joints, etc.) from the pier supported structure.

If the above recommendations are followed, total foundation settlements should be less than 1 inch, while differential settlements should be less than ½ inches.

Foundation Alternative #2 – Embedded Foundations

Our borings encountered moderately expansive and non-expansive bedrock and soil materials across the site. Where excavations extend more than 5 feet below existing and finished grades (e.g. daylight basements/garages), the foundation elements will be protected from movements associated

with seasonal expansive movements. In these areas, the foundations for the new houses may consist of conventional spread footings or mat slabs.

Footings - All footings should be a minimum of 12 inches wide. Strip footings should be embedded a minimum of 18 inches below interior grade and 24 inches below interior grade, *whichever is deeper*. Isolated footings (e.g. interior pads or exterior post supports) should be embedded at least 24 inches below lowest adjacent grade. Where expansive bedrock materials are exposed, localized deepening may be required by our field personnel.

All footings should bear on weathered sandstone (bedrock of low expansion potential), as verified by our office in the field. Localized deepening of footings may be required if they are located on expansive bedrock bedrock.

The footings should be founded below an imaginary line projecting at a 1:1 slope from the base of any adjacent, parallel utility trenches. The footings must be embedded so that there is a minimum of 20 feet of horizontal cover between the face of the footings and any adjacent, parallel slope.

The footings should be designed to exert pressures on the ground, which do not exceed 3500 psf for Dead plus Live Loads. The weight of the embedded portion of the footings may be neglected when determining bearing pressures. Lateral pressures may be resisted by friction between the base of the footings and the ground surface. A friction coefficient of 0.40 may be assumed. Alternatively, lateral pressures may be resisted by a passive pressure of 400 pcf EFW assumed to be acting against the face of the footings (or shear keys, if required). These values may be increased 1/3 for transient loads (i.e. seismic and wind).

Footings should be nominally reinforced with four #4 bars (two at top and two at bottom). The designer should determine actual width, embedment and reinforcement for the footings.

Mat Slabs – were below grade portions of residential structures are to be created by excavating into the hillside materials, mat slabs may be used to support the foundations. The base of the mat slab must be a minimum of 5 feet below existing and finished grade. Where basements will "daylight", those portions of the slab which are less than 5 feet below grade may have their edges deepened to achieve the 5 foot penetration, or may be pier supported along these exterior edges. A modulus of subgrade reaction of 100 pci may be used for design of these slabs. We would further recommend that no mat slabs have a thickness less than 12 inches. Should expansive materials be exposed in localized areas under the slabs, our field personnel may require localized removal of these materials, or other treatment.

If the above recommendations are followed, total foundation settlements should be less than 1 inch, while differential settlements should be less than ¾ inches.

Retaining Walls

Retaining walls which are structurally connected to residences; walls which are located on, or within 10 feet of the crest of, slopes steeper than 5:1 (H:V); and, walls for which expansive soil movements are undesirable, should utilize a pier and grade beam foundation system. Site retaining walls which are detached from residences and are located in level areas (flatter than 5:1, H:V) may be supported by drilled piers or by spread footings depending upon wall type. If spread footings are utilized, then some expansive soil movements of the walls may occur. Therefore, in order to reduce the detrimental effect of such movements on site walls, we recommend the use of a "flexible" wall system (e.g. Keystone, Allan Block, wood lagging, etc.), or the liberal use of vertical construction joints.

Retaining walls should not be located within a distance of ½ H (where H is the height of the wall) from the downslope edge of a pavement, as normal lateral deformations to accommodate active pressures will result in some lateral extension of the pavement surface and associated cracking. If retaining walls are to be closely situated on the downslope side of pavements, then the walls will need to be designed using "restrained" active pressures, or the pavements will need to be reinforced to limit potential cracking.

Wall Forces - Any unrestrained retaining walls required for the proposed construction should be designed to resist an active pressure of 45 pcf Equivalent Fluid Weight (EFW) in supporting soils with retained slopes less than 4:1 (H:V). An active pressure of 65 pcf EFW should be utilized for retained slopes with an inclination of 2:1 (H:V). Where retained slopes are greater than 4:1, though less than 2:1, the designer should linearly interpolate between 45 and 65 pcf EFW.

Any restrained retaining walls required should be designed for the aforementioned active pressures with an additional uniform pressure of 8H psf, where H is the height of the wall in feet. We leave it to the design professional's judgment in determining whether a wall is restrained or not. An additional force of 10H may be applied to account for seismic forces on the wall, although it is our opinion that such forces need not be applied.

All retaining walls should also be designed to resist a point load applied at the midpoint of the wall, equal to ½ the maximum applied surcharge.

Drilled Piers - We note that pier-supported walls <u>may not</u> rely upon a toe footing to resist overturning forces. All vertical and lateral forces should be resisted by piers. This may require the use of a staggered, double row of piers, depending upon the wall height and any surcharges.

Please refer to the *Foundation Alternative #1* section of this report for the applicable pier design recommendations. Where piers are located in cuts deeper than 5 feet below original grade, or where bedrock is exposed at the excavated grade, the piers may be designed for to obtain support (vertical and lateral) with only a 1 foot deep "neglect" zone.

If drilled piers are utilized beneath a concrete or block wall, they will need to be connected by a concrete grade beam. No grade beam is required for a wood lagging wall.

Spread Footings - For detached site walls in level areas (flatter than 5:1, H:V), and where expansive soil shifting is acceptable, spread footings may be used. Walls located 15 or more feet from the crest of slopes steeper than 4:1 where sandstone bedrock is encountered may utilize a spread footing foundation system. Spread footings for these retaining walls may assume a bearing pressure of 2500 psf on soil, or 3500 psf on bedrock materials. Resistance to lateral forces may be developed through a passive pressure on a shear key of 350 pcf EFW acting from the base of the footing, or by frictional resistance assuming a value of 0.35.

Wall Drainage - The above values have been provided assuming that back-of-wall drains will be installed to prevent build-up of hydrostatic pressures behind all walls. This drainage system may consist of a prefabricated drainage panel (i.e. Miradrain) or a gravel and filter fabric type system. We also recommend that any interior residential retaining walls, or walls through which efflorescence transmission would be undesirable, should be waterproofed. The waterproofing should be specified by the designer, though we suggest the use of Bituthene, Miradri, or other similar waterproofing membrane. Surface drainage above the wall should preclude overtopping of the wall, and should also preclude ponding on the ground surface above the wall. Ideally, the ground surface above all walls should form a drainage swale to carry water to the sides of the wall and/or to area drain locations.

The back-of-wall drain systems should be installed with a minimum 3-inch diameter perforated pipe placed a minimum of 4 inches below the top of the footing (preferably at the base of the footing heel). The pipe should not be placed on top of the heel of the wall footing unless seepage through the base of the wall is acceptable. Perforations should be placed face-down (at 5 and 7 o'clock). The perforated pipe should connect to a solid discharge line, which discharges away from the new structures. This solid line should not connect to surface water drain lines (i.e. downspout and area drain lines). If water transmission through the base of a wall is not a concern, then weep holes may be used in place of the pipe.

If used, the gravel system should consist of a minimum 12 inch wide column of drain rock ($^3/_8$ to $^3/_4$ inch clean, crushed rock) extending the full width of the wall. The rock should continue to within 12 inches of finish grade. Prior to backfilling with the drain rock, a layer of filter fabric (Mirafi 140N or approved equivalent) should be placed against all soil surfaces to separate the rock and soil. The filter fabric should wrap over the top of the gravel and then a 12 inch thick cap of native soils should be placed at the top of the drain. If concrete flatwork is to directly overlay the back-of-wall drain, or if the drain is located in a residence's crawlspace area, then the soil cap should be eliminated.

If prefabricated drainage panels are used, a packet of filter fabric-wrapped drain rock should be placed around the perforated collector pipe at the base of the panel. The tops of the panels should be sealed and secured in accordance with the manufacturer's recommendations. The base of the drainage panels should extend down below the top of the filter fabric-wrapped drain rock.

We note that Caltrans Class II permeable rock may be utilized in lieu of clean drain rock and filter fabric. The Class II permeable rock needs to be compacted into place, and needs to be certified by the quarry or rockery that it meets the Caltrans Class II permeable rock specifications. Additionally, the perforated collector pipes will need to be wrapped in a filter fabric sock to prevent the permeable rock from washing into the pipe.

Slabs-on-Grade

Floors for residential structures should not consist of conventional concrete slabs-on-grade. This is due to the expansive nature of the site soils which would cause deformations in a conventional slab-on-grade. However, as discussed above, mat slabs may be used for embedded basement/garage floors. Similarly, sidewalks, driveways, residential patios, and garage floors may consist of conventional concrete slabs-on-grade. Though, it should be expected that some seasonal/post-construction shifting of such slabs will occur. We have provided guidelines to help reduce post-construction movements, however, it is nearly impossible to economically eliminate all shifting.
To help reduce cracking, we recommend slabs be a minimum of 4 inches thick and be nominally reinforced with #4 bars at 18 inches on center, each way. Slabs which are thinner or more lightly reinforced may experience undesirable cosmetic cracking. However, actual reinforcement and thickness should be determined by the structural engineer based upon anticipated usage and loading.

In large non-interior slabs (e.g. patios, garages, etc.), score joints should be placed at a maximum of 10 feet on center. In sidewalks, score joints should be placed at a maximum of 5 feet on center. All slabs should be separated from adjacent improvements (e.g. footings, porches, columns, etc.) with expansion joints. Interior floor slabs will experience shrinkage cracking. These cosmetic cracks may be sealed with epoxy or other measures specified by the architect.

It would be prudent (though not required) to underlay all slabs with at least 12 inches of non-expansive materials. This will help to reduce future expansive soil movements of the slabs. Slabs which are not underlain by this non-expansive material may undergo excessive seasonal shifting where located on expansive soils or bedrock.

All interior residential slabs (including garage slab) should be underlain by 2 inches of sand over 4 inches of clean ¾ inch crushed drain rock. The sand and drain rock should be separated by a vapor barrier which conforms to ASTM E1745-97 (e.g. Stego Wrap or an approved equivalent).

Slabs which will be subject to light vehicular loads <u>and</u> through which moisture transmission is not a concern (e.g. driveways or street sidewalks) should be underlain by at least 6 inches of compacted baserock, in lieu of the sand and gravel. The 6 inches of granular subgrade may be included as part of the 12 inches of non-expansive materials. Exterior landscaping flatwork (e.g. patios and residential sidewalks) may be placed directly on proof-rolled soil subgrade materials (e.g. no granular subgrade), however, they will be potentially subject to shifting and moisture transmission.

As stated previously, in pavement (concrete or asphalt) areas to receive vehicular traffic, all baserock materials should be compacted to at least 95 percent of their MDD. Also, the upper 6 inches of native soil subgrade beneath any pavements should be compacted to at least 95 percent of its MDD.

Unless they consist of mat slabs, the garage slabs should "float" independently from the perimeter grade beam. The slab should be separated from the grade beam with an expansion joint completely around the perimeter and at any interior isolated columns. Ideally, the grade beam at the front of the garage should continue to final floor elevation, with the slab inside the grade beam. This will help to assure that the garage doors always shut upon the grade beam, which should experience little or no movement (while the slab has the potential for greater movements).

To reduce post-construction expansive soil movements (i.e. heave) of any slabs, care should be taken to keep the subgrade moist for an extended period of time prior to pouring the slabs. *Shrinkage cracks should not be allowed to develop in the soil beneath any proposed slabs.*

Drainage

Due to the sloping nature of the site and the expansive nature of the site soils, it will be important to provide good drainage improvements at the project. Further, the site will need to be evaluated by your project civil engineer to ensure that surface water runoff is appropriately discharged into off-site facilities in conformance with local municipal requirements.

Lot Specific Surface Drainage - Adjacent to any buildings, the ground surface should slope at least 4 percent away from the foundations within 5 feet of the perimeter. Impervious surfaces should have a minimum gradient of 2 percent away from the foundation.

Surface water should be directed away from all buildings into drainage swales, or into a surface drainage system (i.e. catch basins and a solid drain line). "Trapped" planting areas should not be created next to any buildings without providing means for drainage (i.e. area drains).

All roof eaves should be lined with gutters. The downspouts may be connected to solid drain lines, or may discharge onto paved surfaces which drain away from the structure. The downspouts may be connected to the same drain line as any catch basins, but must not connect to any perforated pipe drainage system. If splash blocks are preferred, then a perimeter footing drain system **must** be installed.

Footing Drain - Due to the potential for changes to surface drainage provisions, the potential for perched waters on the bedrock, and shallow water in the swales, we recommend that **perimeter footing drains** be installed to intercept water attempting to enter the crawlspaces of buildings. In the swale areas, we would further suggest that a **blanket drain** be installed across the entire crawl space of these residences so that water does not percolate up from under the building to accumulate in the crawl space.

The footing drain systems should consist of a 12 inch wide gravel-filled trench, *dug at least 12 inches below the elevation of the adjacent crawlspace*. Where basement retaining wall drains are provided for the perimeter walls, these drains will substitute for the perimeter footing drains. The trench should be lined with a layer of filter fabric (Mirafi 140N or equivalent) to prevent migration of silts and clays into the gravel, but still permit the flow of water. Then 1 to 2 inches of drain rock (clean crushed rock or pea gravel) should be placed in the base of the lined trench. Next a perforated pipe (minimum 3 inch diameter) should be placed on top of the thin rock layer. The perforations in the pipe should be face down. The trench should then be backfilled with more rock to within 6 inches of finished grade. The filter fabric should be wrapped over the top of the rock. Above the filter fabric 6 inches of native soils should be used to cap the drain. If concrete slabs are to directly overlay the drain, then the gravel should continue to the base of the slab, without the 6 inch soil cap. <u>This drain should not be connected to any surface drainage system.</u>

As discussed above, the drainage swale sites may experience seasonally shallow ground water. Under these houses a blanket drain should be considered. Such a drain would consist of a minimum of 6 inches of ¾ inch drain rock across the entire house footprint. The native grade under the gravel should be sloped to drain to locations where collector pipes can be installed to remove any water. Ideally, this drain pipe system should outlet via gravity. Should gravity outfall be impractical, then a sump and pump will be required. The gravel layer should be covered with a layer of concrete "rat proofing".

Detention and Percolation Systems – Current drainage designs often require the incorporation of on-site detention or percolation systems to reduce flows into the public collections systems. Either type of system may be used at this site, however, any percolation system must be located a minimum of 30 feet away from any structural improvement due to the expansive site soils. Percolation systems must not be used on slopes steeper than 5:1. Percolation systems in the swale area may also tend to encounter seasonal ground water levels which preclude significant percolation. Therefore, we anticipate that most of the site waters will be addressed using detention systems.

A detention system conventionally consists of a large diameter storage pipe with a small diameter outfall pipe used to meter out the discharge to an acceptable rate. We recommend that a sedimentation basin be installed upstream of the storage pipe of the system (downstream of all surface water collection systems) in order to limit the collection of debris and sediment in any underground pipes. The basin should include a gravel-set base for summer percolation, and an outfall line with a turned down inlet to keep out floating debris from the line (an optional grated cover can be added at the end of this outlet pipe). At the outfall end of the system, an emergency overflow should be provided to prevent back up of the system during unusually heavy rainfall. This overflow may double as clean-out access to the large diameter pipe system.

Backfill of the large diameter pipes should use granular bedding materials up to the spring line of the pipe to facilitate proper support for the pipes. Depending upon the granular materials used, filter fabric will likely be required to prevent loss of adjacent soils into the granular materials. If used as part of a percolation system, then the base of the excavation must not be covered with filter fabric so as to prevent clogging of the fabric as the collected waters are percolated into the soils.

Drainage Discharge – Drainage systems on individual lots should discharge at least 15 feet away from any residential structures, preferably discharging onto the street, or into existing storm water management systems. The discharge location(s) may need to be protected by energy dissipaters to reduce the potential for erosion. Care should be taken not direct concentrated flows of water towards neighboring properties. This may require the use of multiple discharge points.

The footing drains and any back-of-wall drain lines should discharge independently from the surface drainage systems. A sump pump may be required for the footing drain discharge systems in the lower lying lots. The surface and subsurface drain systems should not be connected to one another.

Drainage Materials - Drain lines should consist of hard-walled pipes (e.g. SDR 35 or Schedule 40 PVC). In areas where vehicle loading is not a possibility, and where pipes are buried less than 3 feet below grade, SDR 38 or HDPE pipes may be used. Corrugated, flexible pipes may not be used in any drain system installed at the project.

Surface drain lines (e.g. downspouts, area drains, etc.) should be laid with a minimum 2 percent gradient (¼ inch of fall per foot of pipe). Any subsurface drain systems (e.g. footing drains) should be laid with a minimum 1 percent gradient (1/8 inch of fall per foot of pipe).

Utility Lines

Unless they pass through the perimeter footing drain system, all utility trenches should be backfilled with compacted native clay-rich materials within 5 feet of any buildings. This will help to prevent migration of surface water into trenches and then underneath the structures' perimeter. The rest of the trenches may be compacted with other native soils or clean imported fill. The remainder of the utility trenches may be backfilled with native or import materials.

Only mechanical means of compaction of trench backfill will be allowed. Jetting of sands is not acceptable. Trench backfill should be compacted to at least 90 percent of its MDD. However, under pavements, concrete flatwork, and footings the upper 12 inches of trench backfill must be compacted to at least 95 percent of its MDD.

Pavement

The new streets and driveways are expected to be constructed of asphaltic concrete over Caltrans Class II aggregate base (baserock).We have assessed the pavement section for this project assuming a TI of 5 and an assumed R-value for the soils of 5 and 11.

Based upon our calculations, the asphalt should have a minimum thickness of 3 inches for the streets, and 2 inches for individual driveways. The baserock should have a minimum thickness of 10 inches. If a different traffic index is considered to be appropriate by the project civil engineer, then our office should be contacted to provide revised pavement sections.

All of the baserock should attain a minimum compaction of 95 percent of its MDD. The upper 6 inches of the soil subgrade and any fill below this layer should also attain a minimum of 95 percent relative compaction.

Where utility lines are located under the pavements at the base of slopes, we recommend that shallow subdrains be installed to collect any excess waters which may be chasing the utility trenches so that water does not tend to percolate up through the pavement.

Plan Review and Construction Observations

The use of the recommendations contained within this report is contingent upon our being contracted to review the plans, and to observe geotechnically relevant aspects of the construction. We should be provided with a full set of plans to review at the same time the plans are submitted to the building/planning department for review. A minimum of one working week should be provided for review of the plans.

At a minimum, our construction observations should include: key and bench excavations; compaction testing of fills and subgrades; footing excavations; pier drilling; forming of the grade beams voids; pavement, slab and driveway subgrade preparation; installation of any drainage system (e.g. back-of-wall, footing, and surface), and final grading. A minimum of 48 hours notice should be provided for all construction observations.

LIMITATIONS

This report has been prepared for the exclusive use of the addressee, and their architects and engineers for aiding in the design and construction of the proposed development. It is the addressee's responsibility to provide this report to the appropriate design professionals, building officials, and contractors to ensure correct implementation of the recommendations.

The opinions, comments and conclusions presented in this report were based upon information derived from our field investigation and laboratory testing. Conditions between or beyond our borings may vary from those encountered. Such variations may result in changes to our recommendations and possibly variations in project costs. Should any additional information become available, or should there be changes in the proposed scope of work as outlined above, then we should be supplied with that information so as to make any necessary changes to our opinions and recommendations. Such changes may require additional investigation or analyses, and hence additional costs may be incurred.

File: 210121
December 17, 2010

Our work has been conducted in general conformance with the standard of care in the field of geotechnical engineering currently in practice in the San Francisco Bay Area for projects of this nature and magnitude. We make no other warranty either expressed or implied. By utilizing the design recommendations within this report, the addressee acknowledges and accepts the risks and limitations of development at the site, as outlined within the report.

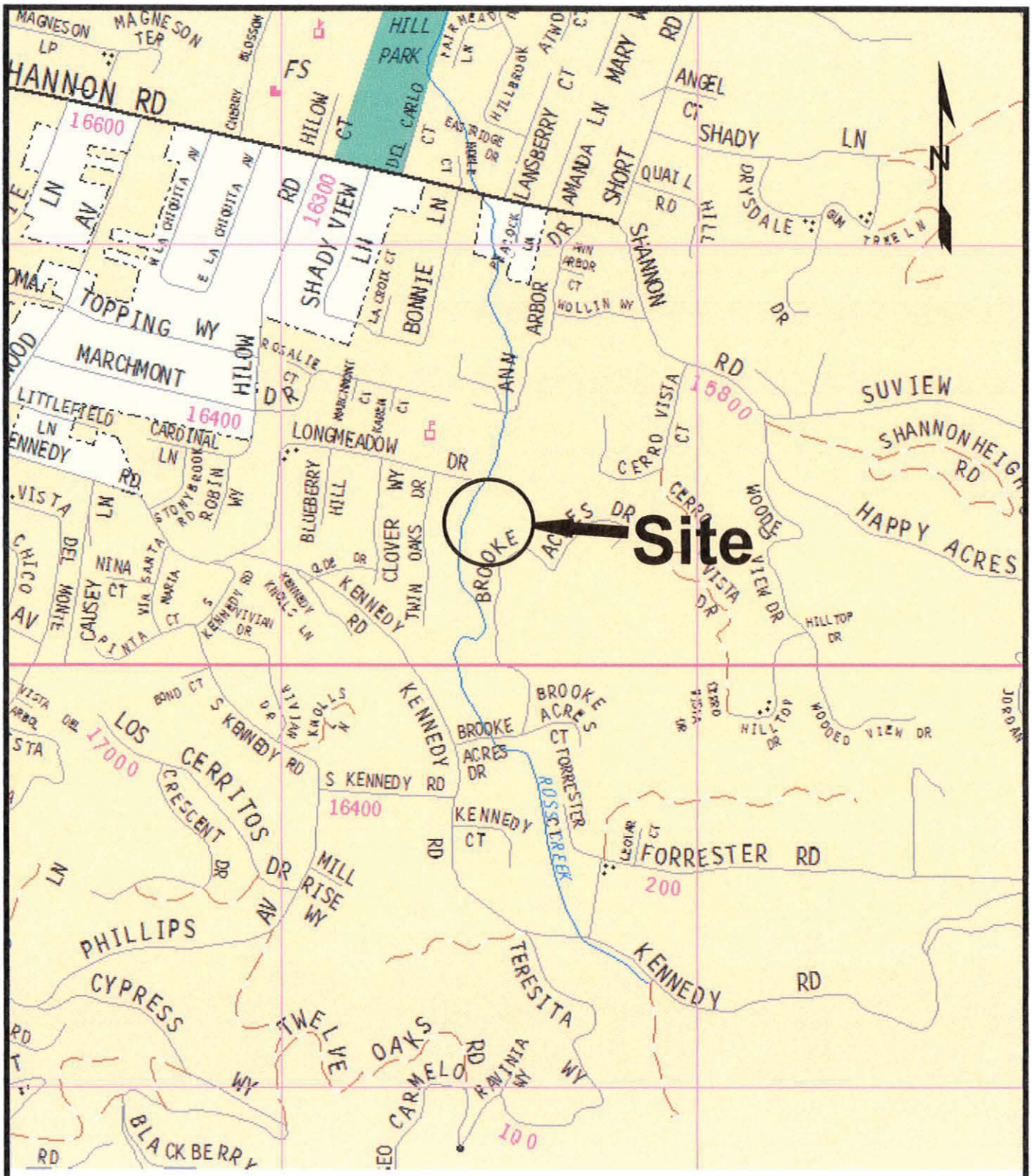
Respectfully Submitted;
GeoForensics, Inc.

REGISTERED PROFESSIONAL ENGINEER
Daniel F. Dyckman
No. 002145
Geotechnical
STATE OF CALIFORNIA

Daniel F. Dyckman, PE, GE
Senior Geotechnical Engineer, GE 2145

Bernard A. Atendido
Field Engineer

cc: 5 to addressee



Source: Thomas Brothers Maps

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Figure 1 - Site Location

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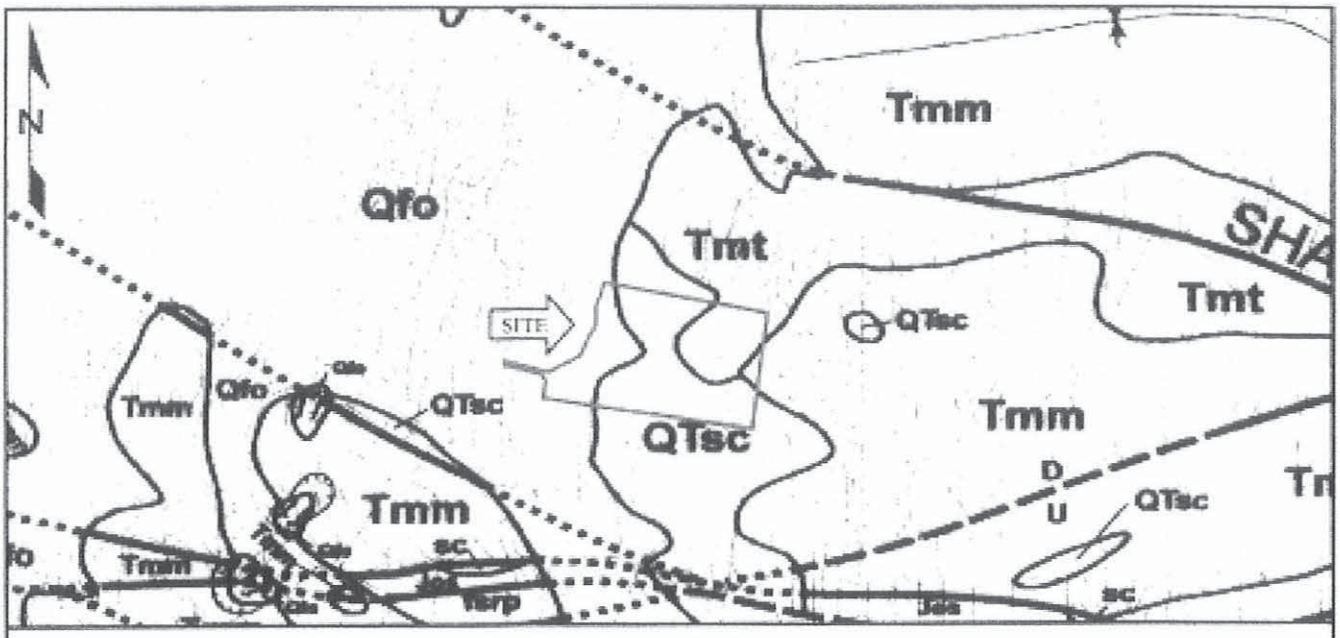
Figure 2 - Vicinity Topography



EXPLANATION

Qfl	Modern fluvial deposits	Qtsc	Santa Clara Formation
Qls	Landslide deposits	Tmm	Monterey Shale
Qal	Undifferentiated alluvium	Tmt	Temblor Sandstone
Qt	Youngest fluvial terrace deposits	Tmv	Dacitic tuff, tuff breccia, and intrusive rocks
Qf	Youngest alluvial fan deposits	Jas	Serpentinite
Qto	Older fluvial terrace deposits	sc	Siliceous, mercury bearing carbonates
Qfo	Older alluvial fan deposits	fp	Limestone
	Contact, dashed where approximate, dotted where concealed	fcp	Chert
U D	Fault, dashed where approximate, dotted where concealed, queried where uncertain. U and D denote up and downthrown blocks	fvp	Basalt
	Thrust fault, barbs on upper plate	fsrp	Melange
	Synclinal axis	fsm	Metasandstone
	Landslide headscarp	fcm	Radiolarian chert
	Landslide mass, arrows indicate direction of movement	fvm	Basalt
		fsrm	Melange

Source: Nolan Associates, revised 11/21/02

Town Geologic Hazards Map	APN 532-16-006 Twin Oaks Drive Los Gatos, California			
STEVEN F. CONNELLY, C.E.G. Consulting In Engineering Geology	Project #	Scale	Date	Figure
	100x	1 Inch = 1000 Feet	10/28/10	4

Source: Geologic map from Steven F. Connelly, C.E.G.

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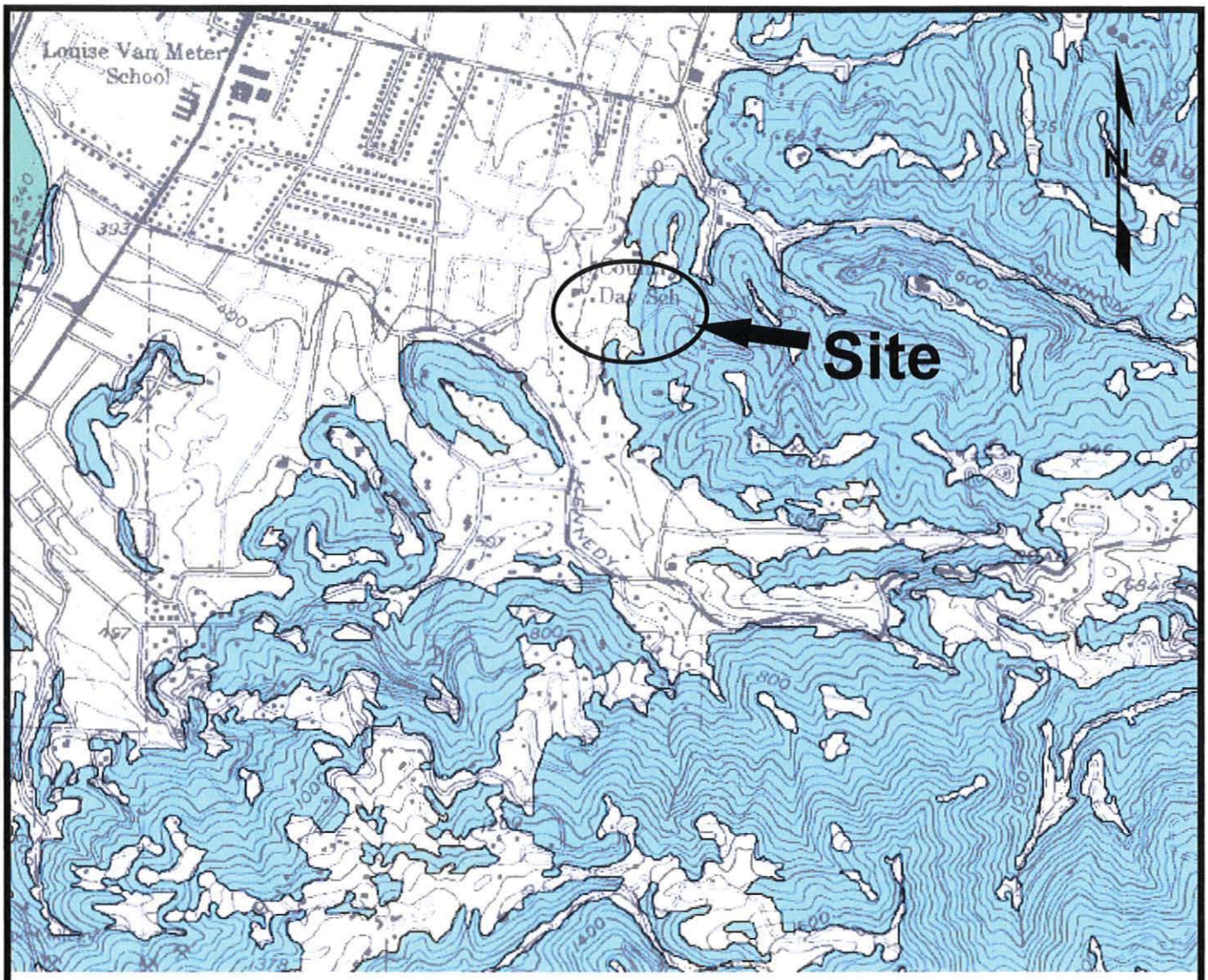
Figure 3 - Geologic Map



MAP EXPLANATION

Zones of Required Investigation:

Liquefaction

Areas where historic occurrence of liquefaction, or local geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

Earthquake-Induced Landslides

Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

State of California Seismic Hazards Zones; Los Gatos Quadrangle Official Map
Released: September 23, 2002

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Figure 3a - Seismic Hazards Zone Map

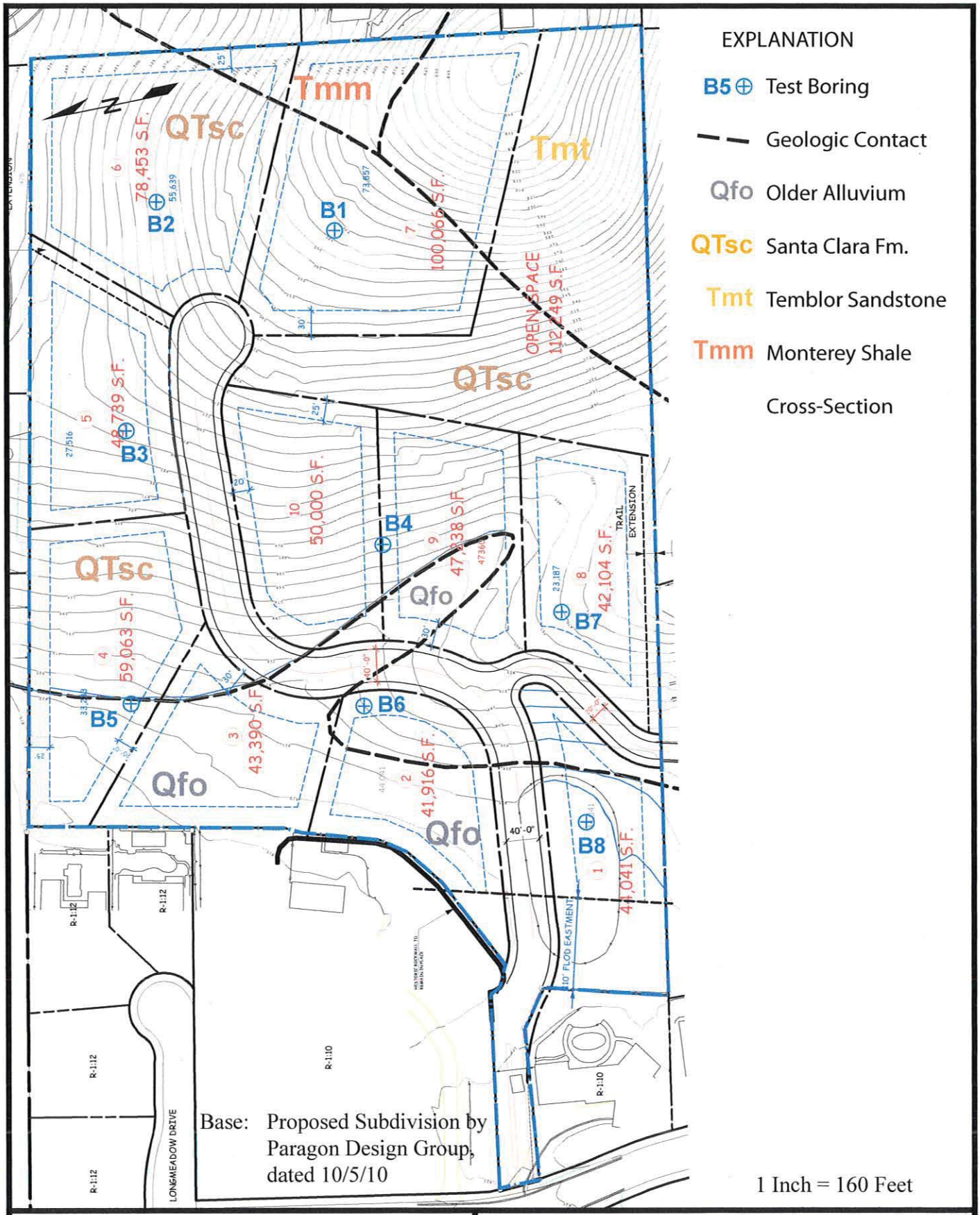

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Figure 3b - Site Geologic Map

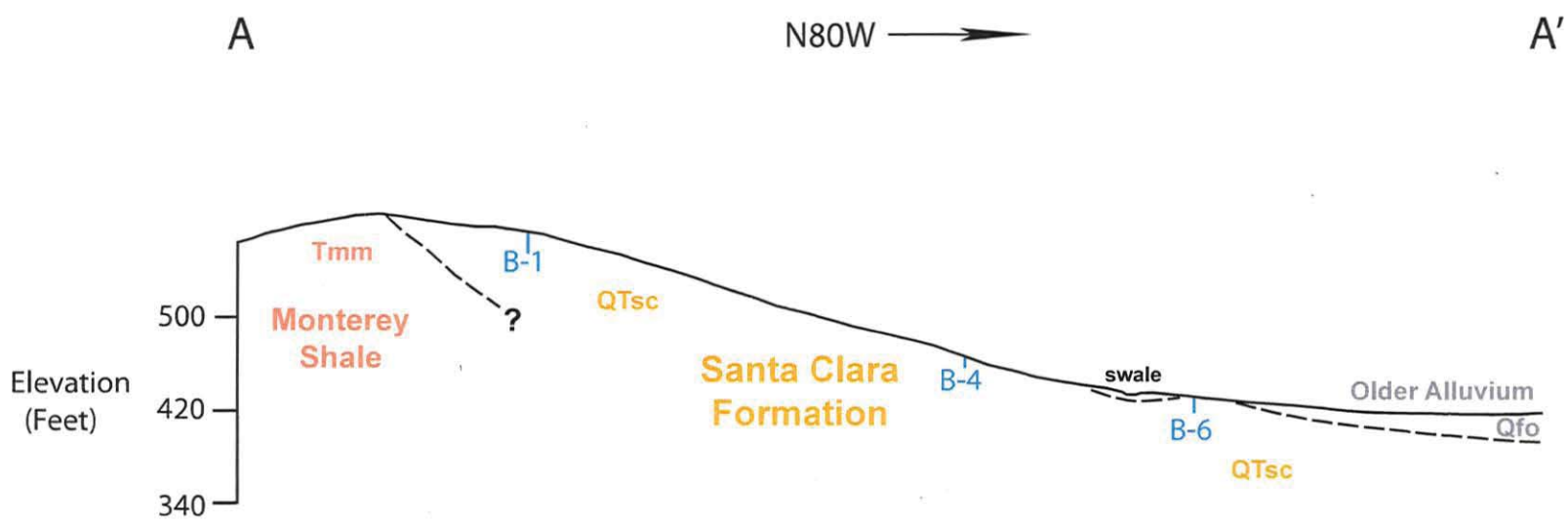

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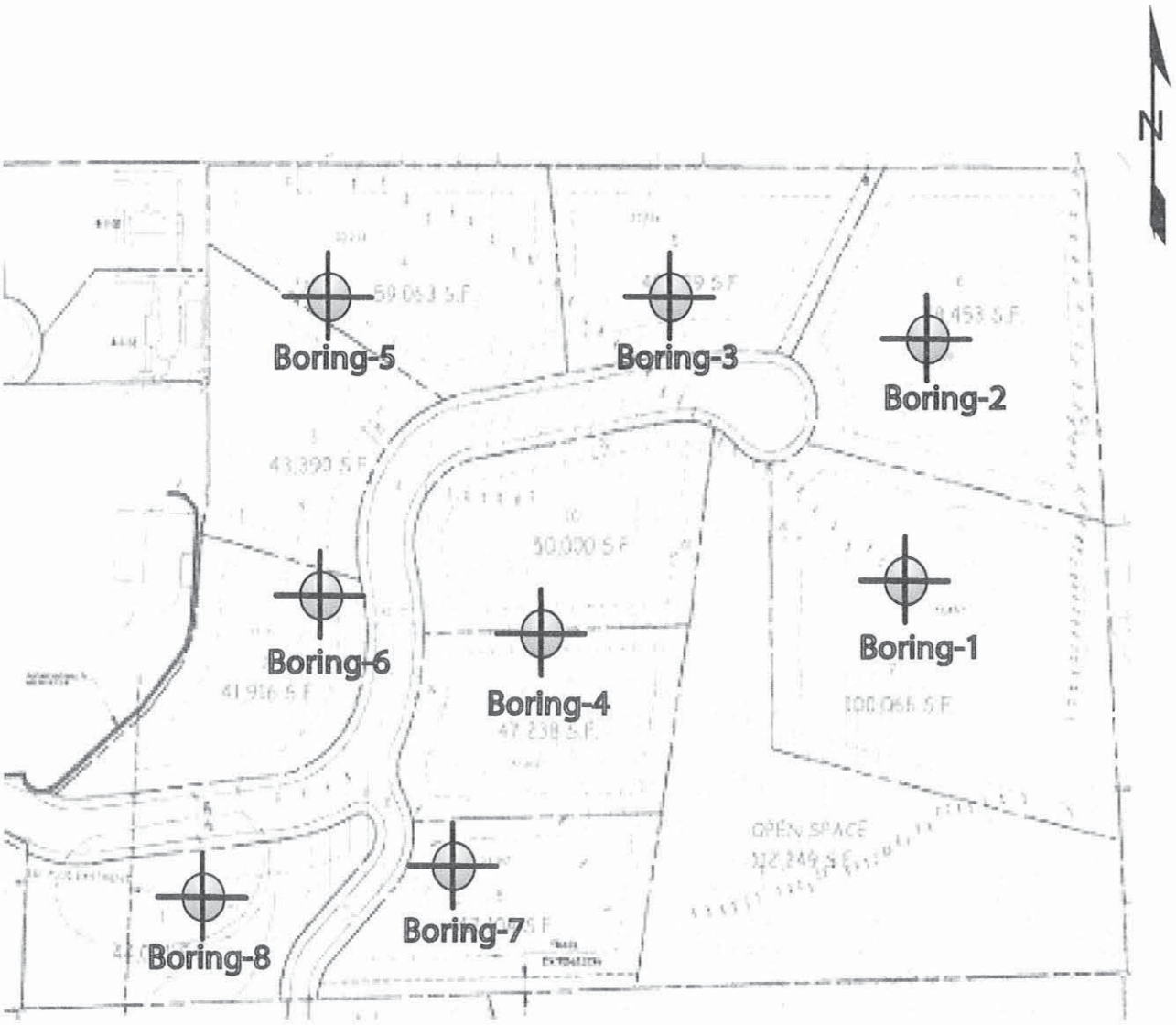
Figure 3c - Geologic Section



Base Drawing provided from Paragon Design Group, Inc.

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Figure 4 - Site Plan with approximate Boring Locations

APPENDIX A - BORING LOGS

LOG OF BORING

DEPTH (ft)	SAMPLE NUMBER	SAMPLE LOC.	BLOW COUNTS (12 inches)	MATERIAL DESCRIPTION	DRY DENSITY (pcf)	MOISTURE CONTENT (%)
				silty clayey SAND/sandy CLAY; brown; slightly moist (SC/CL)		
	1-1		71	silty SANDSTONE; yellow brown; slightly moist; dense to very dense(SM)	-	-
5						
	1-2		32	silty gravelly SAND with some clay; red brown and brown; slightly moist; dense (SM)	-	13.1
10						
				silty CLAY with gravels; greenish brown; slightly moist (CL)		
	1-3		22	silty gravelly SAND; red brown and green brown; slightly moist; medium dense (SM)	-	14.5
15						
	1-4		46	as above; dense (SM)	-	7.7
20						
				Bottom of boring at 19.5 feet		
25						
30						

No ground water encountered
Bottom of Boring at 19.5 feet
Drilled on 11/15/10

Logged by: BA
Mobile B-24 Drilling Rig
140 Pound Hammer

Mod. Cal Sampler
SPT Sampler

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Figure A1 - Log of Boring 1

LOG OF BORING

DEPTH (ft)	SAMPLE NUMBER	SAMPLE LOC.	BLOW COUNTS (12 inches)	MATERIAL DESCRIPTION	DRY DENSITY (pcf)	MOISTURE CONTENT (%)
	2-1		20	silty clayey SAND/sandy CLAY; brown; slight moist; medium dense/ stiff (SC/CL)	102.2	8.2
5	2-2		80/10"	silty gravelly SAND with trace CLAY and sandstone fragments; red brown; slight moist; very dense (SM)	-	-
10	2-3		55	silty gravelly SAND; as above (SM)	-	6.4
15				Refusal just short of 15 feet. No Sample taken. Cuttings as above		
				Refusal just short of 15 feet.		
20						
25						
30						

No ground water encountered
Bottom of Boring at 15 feet
Drilled on 11/15/10

Logged by: BA
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140 Pound Hammer

Mod. Cal Sampler
SPT Sampler

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Figure A2 - Log of Boring 2

LOG OF BORING

DEPTH (ft)	SAMPLE NUMBER	SAMPLE LOC.	BLOW COUNTS (12 inches)	MATERIAL DESCRIPTION	DRY DENSITY (pcf)	MOISTURE CONTENT (%)
				silty SAND with some clay; brown; slightly moist (SM)		
5	3-1		44	silty sandy CLAY; orange brown with green brown; slightly moist; very stiff (CL)	-	-
				grades to		
10	3-2		73	silty SAND with clay (SANDSTONE); as above; dense (SM)	-	-
				more clayey with depth		
15	3-3		59	silty gravelly SAND (Santa Clara Formation); red brown; slightly moist; very dense (SM)	-	8.6
20				Bottom of Boring at 14.5 feet		
25						
30						

No ground water encountered
Bottom of Boring at 14.5 feet
Drilled on 11/15/10

Logged by: BA
Mobile B-24 Drilling Rig
140 Pound Hammer

Mod. Cal Sampler
SPT Sampler

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Figure A3 - Log of Boring 3

LOG OF BORING

DEPTH (ft)	SAMPLE NUMBER	SAMPLE LOC.	BLOW COUNTS (12 inches)	MATERIAL DESCRIPTION	DRY DENSITY (pcf)	MOISTURE CONTENT (%)
	4-1		27	silty SAND with some fine gravel; red brown; slightly moist; medium dense (SM)	-	8.5
5	4-2		51	silty clayey SAND ; red brown; slightly moist; very dense (SC)	-	-
10	4-3		46	silty gravelly SAND (Santa Clara Formation) with some clay seams; red brown with green brown; slightly moist; dense (SM)	-	9.5
15				Bottom of boring 11.5 feet		
20						
25						
30						

No ground water encountered
Bottom of Boring at 11.5 feet
Drilled on 11/15/10

Logged by: BA
Mobile B-24 Drilling Rig
140 Pound Hammer

Mod. Cal Sampler
SPT Sampler

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Figure A4 - Log of Boring 4

LOG OF BORING

DEPTH (ft)	SAMPLE NUMBER	SAMPLE LOC.	BLOW COUNTS (12 inches)	MATERIAL DESCRIPTION	DRY DENSITY (pcf)	MOISTURE CONTENT (%)
				silty SAND ; brown; slightly moist (SM)		
	5-1		54	silty gravelly SAND with clay; red brown and gray brown; slightly moist; dense (SM)	-	-
5						
	5-2		24	silty CLAY with sand pockets and some fine gravel; red brown and gray brown; slightly moist; very stiff (CL)	-	-
10						
	5-3		18	silty sandy CLAY with gravel; as above (CL)	-	-
15						
				Bottom of boring 14.5 feet		
20						
25						
30						

No ground water encountered
Bottom of Boring at 14.5 feet
Drilled on 11/15/10

Logged by: BA
Mobile B-24 Drilling Rig
140 Pound Hammer

Mod. Cal Sampler
SPT Sampler

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Figure A5 - Log of Boring 5

LOG OF BORING

DEPTH (ft)	SAMPLE NUMBER	SAMPLE LOC.	BLOW COUNTS (12 inches)	MATERIAL DESCRIPTION	DRY DENSITY (pcf)	MOISTURE CONTENT (%)
				silty SAND ; brown; slightly moist (SM)		
	7-1		60	silty SANDSTONE; yellow brown; slightly moist; dense to very dense (SM)	108.5	13.0
5						
	7-2		63	as above (SM)	-	11.1
10						
	7-3		67	as above (SM)	-	13.8
15				Bottom of Boring 12.5 feet		
20						
25						
30						

No ground water encountered
Bottom of Boring at 12.5 feet
Drilled on 11/15/10

Logged by: BA
Mobile B-24 Drilling Rig
140 Pound Hammer

Mod. Cal Sampler
SPT Sampler

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Figure A7 - Log of Boring 7

APPENDIX B - LABORATORY TEST RESULTS

Moisture-Density-Porosity Report
Cooper Testing Labs, Inc. (ASTM D 2937)

CTL Job No:	060-2059a	**Project No.**	210121	**By:**	RU
Client:	GeoForensics	**Date:**	11/23/10		
Project Name:	Twin Oaks Subdivison	**Remarks:**			

Boring:	1-2	1-3	1-4	2-1	2-3	3-3	4-1	4-3
Sample:								
Depth, ft:	9	14	19	2	11	14	2	11
Visual Description:	Olive Brown Clayey SAND w/ Gravel	Brown Clayey SAND w/ Gravel	Olive Brown Clayey SAND w/ Gravel	Brown Clayey SAND	Brown Clayey SAND w/ Gravel	Brown Clayey SAND w/ Gravel	Brown Clayey SAND	Yellowish Brown Clayey SAND
Actual G_s								
Assumed G_s				2.70				
Moisture, %	13.1	14.5	7.7	8.2	6.4	8.6	8.5	9.5
Wet Unit wt, pcf				110.5				
Dry Unit wt, pcf				102.2				
Saturation, %				34.0				
Total Porosity, %				39.4				
Volumetric Water Cont, θw				13.4				
Volumetric Air Cont., θa				26.0				
Void Ratio				0.65				
Series	1	2	3	4	5	6	7	8

Note: If an assumed specific gravity (Gs) was used then the saturation, porosities, and void ratio should be considered approximate.

The Zero Air-Voids curves represent the dry density at 100% saturation for each value of specific gravity

COOPER TESTING LABORATORY

Moisture-Density-Porosity Report
Cooper Testing Labs, Inc. (ASTM D 2937)

CTL Job No:	060-2059b	**Project No.**	210121	**By:**	RU
Client:	GeoForensics	**Date:**	11/23/10		
Project Name:	Twin Oaks Subdivision	**Remarks:**			

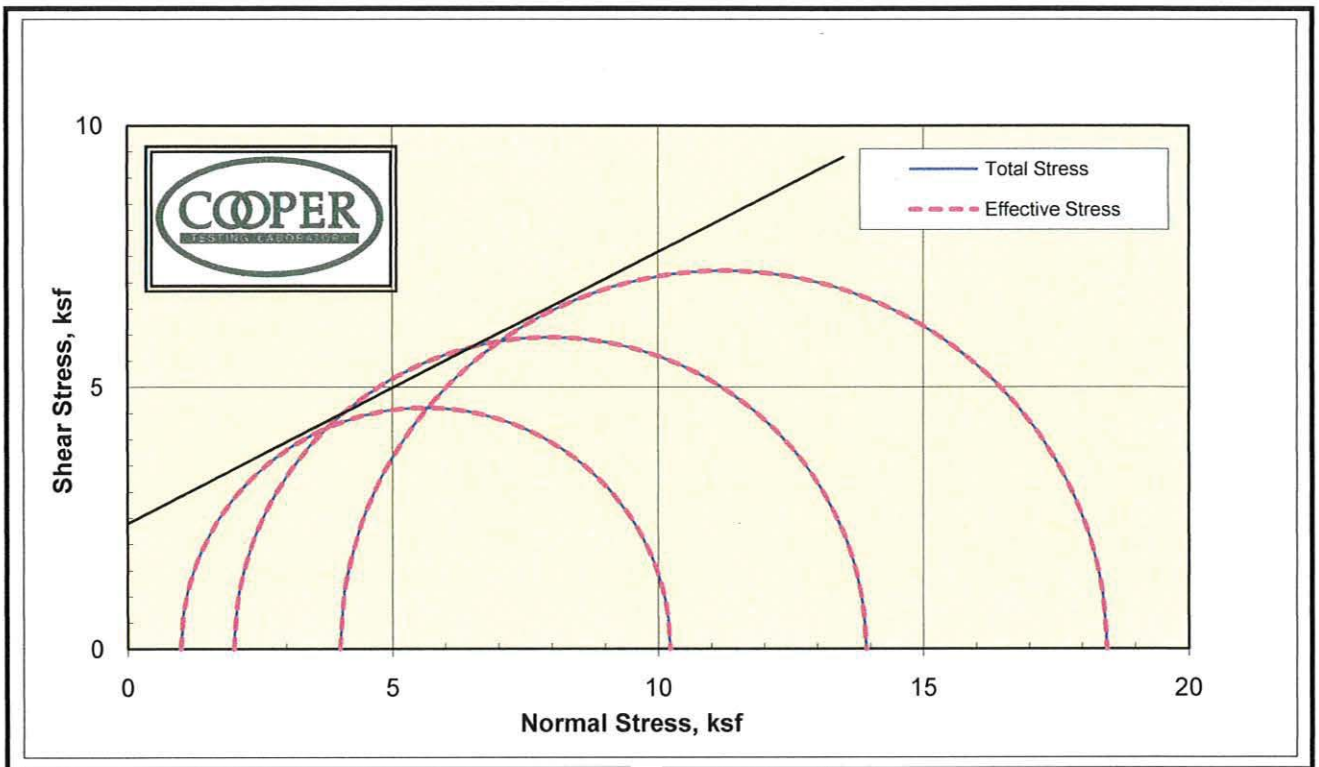
Boring:	6-2	6-3	7-1	7-2	7-3	8-2	8-3	
Sample:								
Depth, ft:	10	17	2.5	8	12	9	14	
Visual Description:	Olive Brown Clayey SAND	Dark Olive Clayey SAND	Olive Brown Clayey SAND	Yellowish Brown Silty SAND (slightly plastic)	Olive Brown Clayey SAND	Gray Sandy CLAY	Olive Clayey SAND	
Actual G_s								
Assumed G_s			2.70					
Moisture, %	11.1	14.1	13.0	11.1	13.8	22.2	20.0	
Wet Unit wt, pcf			122.6					
Dry Unit wt, pcf			108.5					
Saturation, %			63.3					
Total Porosity, %			35.7					
Volumetric Water Cont, θw			22.6					
Volumetric Air Cont., θa			13.1					
Void Ratio			0.56					
Series	1	2	3	4	5	6	7	8

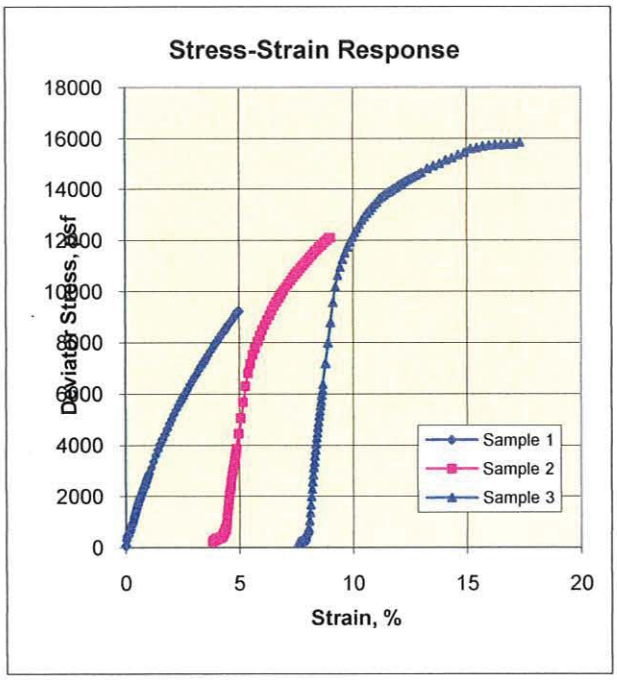
Note: If an assumed specific gravity (Gs) was used then the saturation, porosities, and void ratio should be considered approximate.

The Zero Air-Voids curves represent the dry density at 100% saturation for each value of specific gravity

COOPER TESTING LABORATORY

Triaxial Consolidated Undrained (Total Stress Only)
(ASTM D4767m)





Stage	1	2	3
MC, %	26.4		
Dry Dens., pcf.	94.3		
Sat. %	90.6		
Void Ratio	0.787		
Diameter in	2.43		
Height, in	5.00		
	Final		
MC, %	31.3	31.1	31.0
Dry Dens., pcf.	95.1	95.3	95.5
Sat. %	100.0	100.0	100.0
Void Ratio	0.846	0.840	0.837
Diameter, in	2.42	2.46	2.50
Height, in	5.01	4.82	4.65
Cell, psi	45.4	52.4	66.3
BP, psi	38.4	38.4	38.5
	Effective Stresses At:		
Strain, %	5.0	5.0	5.0
Deviator ksf	9.222	11.912	14.459
Excess PP	0.000	0.000	0.000
Sigma 1	10.225	13.922	18.465
Sigma 3	1.002	2.010	4.006
P, ksf	5.613	7.966	11.236
Q, ksf	4.611	5.956	7.230
Stress Ratio	10.202	6.928	4.609
Rate in/min	0.0250	0.0250	0.0250

Total C	2.4	Effective C	
Total Phi	27.4	Effective Phi	

Job No.: 060-2059 **Date:** 11/29/2010

Client: GeoForensics BY:DC

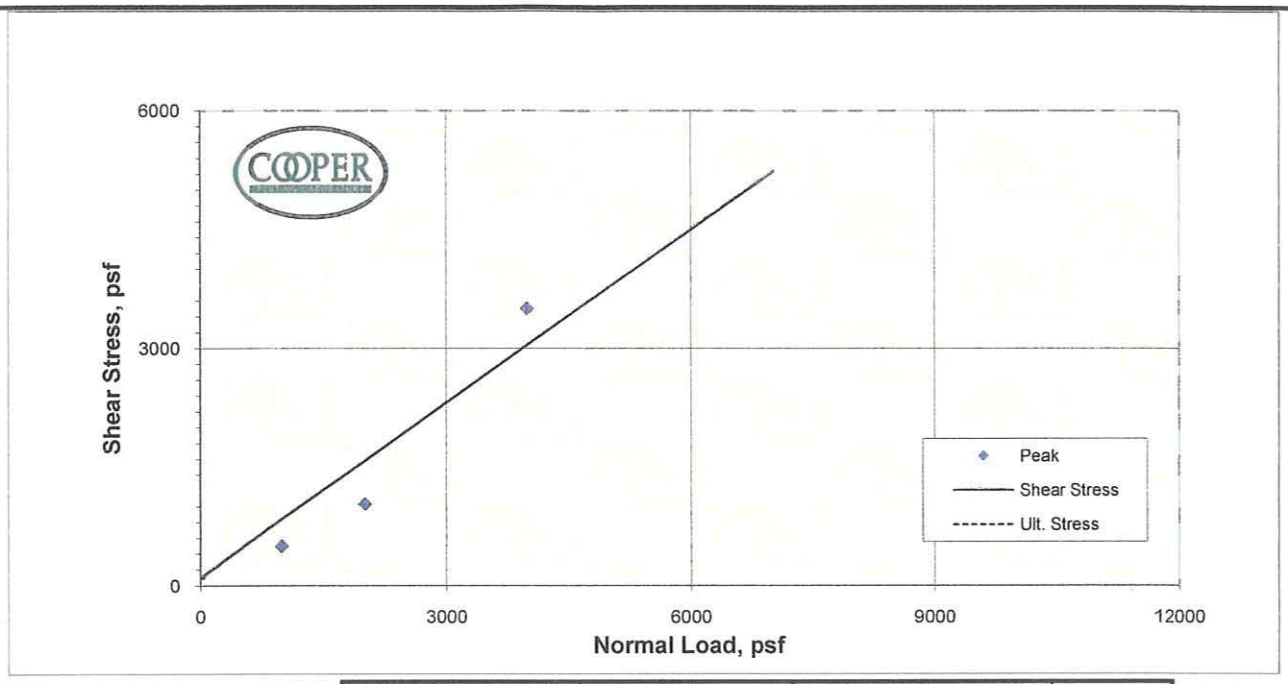
Project: Twin Oaks Subdivision - 210121

Sample: 1-1 @ 3.5' Olive Yellow Claystone (Weathered)

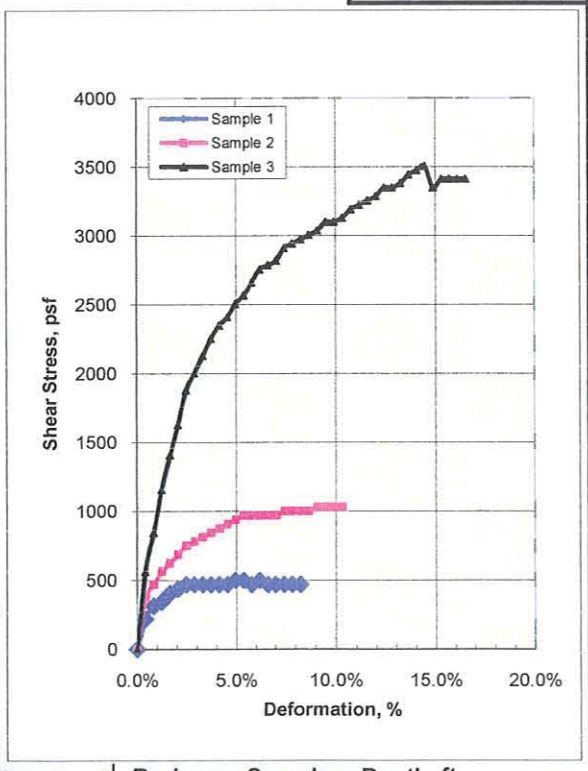
Remarks: ** Staged Test ** Strengths at 5% strain.

Direct Shear

(Consolidated-Undrained)



P. Phi (degrees)	35	Ult. Phi (degrees)	
P. Cohesion (psf)	100	Ult. Cohesion (psf)	



	Sample Data: Initial			
	1	2	3	4
Moisture %	5.4%	5.0%	5.6%	
Dry Dens., pcf	100.9	101.5	107.9	
Void Ratio	0.670	0.661	0.562	
Saturation %	21.9	20.5	26.7	
Diameter	2.42	2.42	2.42	
Height	1.00	1.00	1.00	
	Sample Data: At Test			
Moisture %	17.8%	16.3%	15.0%	
Dry Dens., pcf	113.9	117.2	120.0	
Void Ratio	0.481	0.440	0.405	
Saturation %	100.0	100.0	100.0	
Diameter	2.42	2.42	2.42	
Height	0.886	0.866	0.899	
Normal Stress, psf	1000	2000	4000	
Shear Stress, psf	501	1033	3506	
Strengths picked at Ult. Stress, psf	6.2%	10.3%	14.5%	
Strain Rate, %/min.	1.0	1.0	1.0	

CTL #	060-2059
Client:	GeoForensics
Project	Twin Oaks Subdivision - 210121
Tested By:	MD
Reduced By:	RU
Date:	11/29/2010

Specimen #	Boring:	Sample:	Depth, ft:	Visual Soil Classification
1	8-1		3	Olive Silty SAND (slightly plastic)
2	8-1		3	Olive Silty SAND (slightly plastic)
3	8-1		3	Olive Silty SAND (slightly plastic)

Remarks:

DS-CU A fully undrained condition may not be attained in this test.

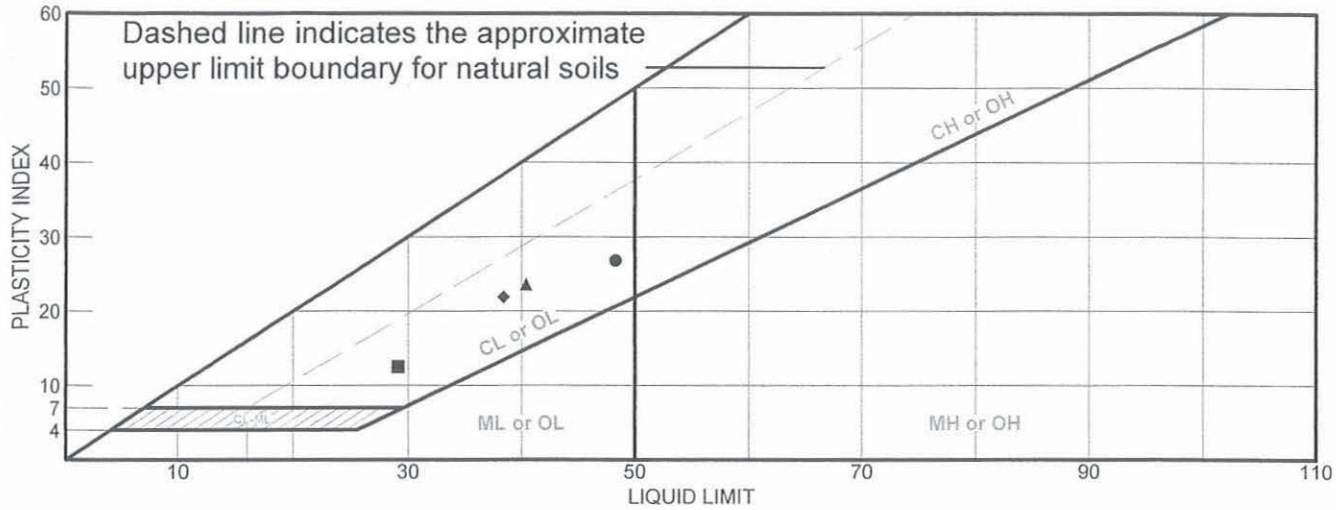
#200 Sieve Wash Analysis
ASTM D 1140

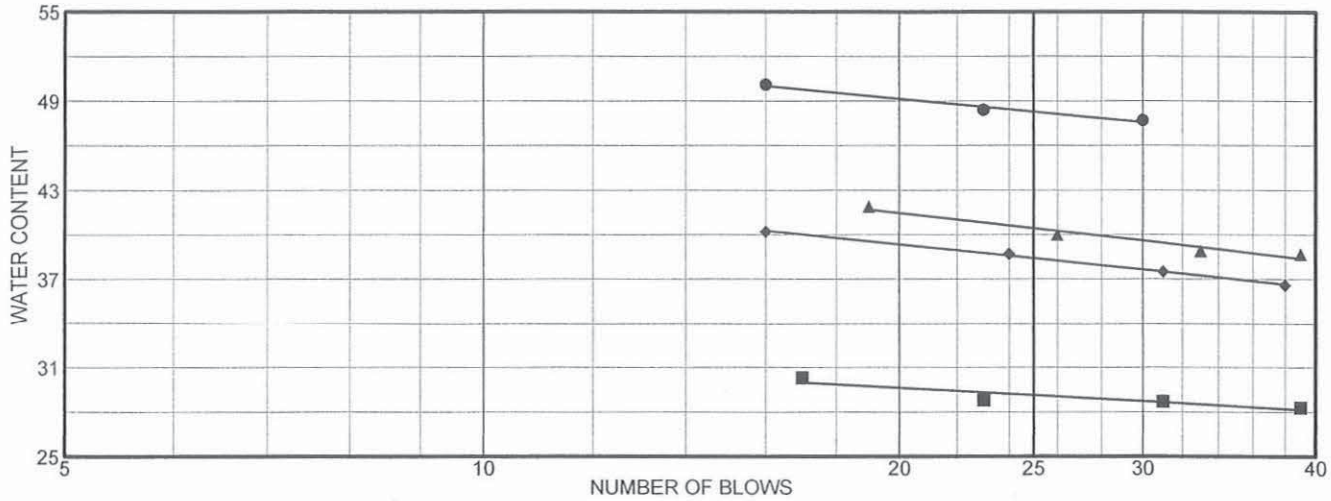
Job No.:	060-2059	**Project No.:**	210121	**Run By:**	MD
Client:	GeoForensics	**Date:**	11/29/2010	**Checked By:**	DC
Project:	Twin Oaks Subdivision				

Boring:	6-1							
Sample:								
Depth, ft.:	3							
Soil Type:	Brown Sandy Lean CLAY							
Wt of Dish & Dry Soil, gm	450.7							
Weight of Dish, gm	165.7							
Weight of Dry Soil, gm	285.0							
Wt. Ret. on #4 Sieve, gm	9.8							
Wt. Ret. on #200 Sieve, gm	132.6							
% Gravel	**3.4**							
% Sand	**43.1**							
% Silt & Clay	**53.5**							

Remarks: As an added benefit to our clients, the gravel fraction may be included in this report. Whether or not it is included is dependent upon both the technician's time available and if there is a significant enough amount of gravel. The gravel is always included in the percent retained on the #200 sieve but may not be weighed separately to determine the percentage, especially if there is only a trace amount, (5% or less).

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Brown Lean CLAY/ Sandy Lean CLAY	48.3	21.5	26.8			
■	Brown Lean Clayey SAND	29.1	16.6	12.5			
▲	Brown Lean Clayey SAND/ Sandy Lean CLAY	40.4	16.8	23.6			
◆	Brown Sandy Lean CLAY	38.4	16.5	21.9			

Project No. 060-2059 **Client:** GeoForensics

Project: Twin Oaks Subdivision - 210121

● **Source:** 3-1 **Elev./Depth:** 4'

■ **Source:** 4-2 **Elev./Depth:** 6'

▲ **Source:** 5-2 **Elev./Depth:** 9'

◆ **Source:** 6-1 **Elev./Depth:** 3'

Remarks:

●

■

▲

◆

LIQUID AND PLASTIC LIMITS TEST REPORT

COOPER TESTING LABORATORY

Figure

GEOFORENSICS INC. Consulting Soil Engineering

561 Pilgrim Dr., Suite D, Foster City, California 94404 Phone: (650) 349-3369 Fax: (650) 571-1878

File: 210121
June 15, 2011

Surrey Farms Estates, LLC
c/o Dodge Construction
851 McGliney Lane
Campbell, CA 95008

Attention: Tom Dodge

Subject: **Surrey Farms Estates**
Twin Oaks Drive
Los Gatos, California
RESPONSE TO PEER REVIEW COMMENTS

Dear Mr. Dodge:

This letter has been prepared to respond to issues raised by the Town of Los Gatos' geotechnical peer review company, AMEC Geomatrix, Inc. in their letter to the Town dated June 3, 2011. The comments from that letter are copied below in **italics**, followed by our response comments.

- **GFI must update Reference 3 per the 2010 CBC, as necessary.**

It is our opinion that the recommendations and opinions expressed in our December 17, 2010 report are consistent with the requirements of the 2010 CBC.

- **GFI must provide logs for Borings 6 and 8.**

See attached logs of borings for 6 and 8.

- **GFI should clarify their report with respect to the potential debris flow hazard and appropriate mitigation, if any.**

On page 4 of our report, we noted that our review of historic aerial photographs suggested that the head of the drainage swale which crosses the subject property was more steeply inclined and could be the source of shallow soil slips which could potentially become debris flows. However, evidence of active erosion, soil slips, or debris flow deposition was not observed within the drainage swale or in any of the photos. On page 12 of our report, we stated that:

"*If residential structures are to be built proximate to the drainage swale, then it may be n3cessary to mitigate the potential for damage by either constructing a catchment basin across the sale near the southern side of the property, or alternatively providing deflection berms or walls proximate to the residences. Our office will need to evaluate any proposed residential development on lots spanning across the swale (i.e. Lot 8 and 9).*"

- **GFI should update their recommendations for the roadway sections (Page 10) using laboratory test results, rather than assumed R-Values.**

We have tested a sample of the near surface soils (sandy clay) and submitted them for laboratory testing. Attached is a copy of the test results indicating a measured R-value of 36. This would indicate that the pavement section may be reduced from 3 inches of AC over 10 inches of AB, to 3" of AC over 6 inches of AB. However, as the soils are likely to vary across the site, it is likely that portions of the pavement subgrade will need additional baserock (e.g. in the existing swale areas). Representatives from our office will need to be present during rough grading of the street pavements to identify any locations where the thicker pavement section will need to be used.

We trust that the above responses, combined with the attached figures, adequately resolve the issues raised by the review consultants.

Should you have any questions please contact the undersigned.

Respectfully Submitted;
GeoForensics, Inc.

REGISTERED PROFESSIONAL ENGINEER
Daniel F. Dyckman
No. 002145
Geotechnical
STATE OF CALIFORNIA

Daniel F. Dyckman, PE, GE
Senior Geotechnical Engineer, GE 2145

cc: 4 to addressee

LOG OF BORING

DEPTH (ft)	SAMPLE NUMBER	SAMPLE LOC.	BLOW COUNTS (12 inches)	MATERIAL DESCRIPTION	DRY DENSITY (pcf)	MOISTURE CONTENT (%)
				silty SAND with some fine gravels; brown; slightly moist (SM)		
	6-1		26	silty sandy CLAY with some fine gravel; dark brown; slightly moist; very stiff (CL)	-	-
5						
10	6-2		43	silty CLAY with sand pockets and silty gravelly SAND (conglomerate); red brown and green brown; slightly moist; hard/dense (CL/SM)	-	11.1
15				grades to		
	6-3		53	silty SAND; dark brown; slightly moist to moist; very dense (SM)	-	14.1
20				Bottom of Boring 17.5 feet		
25						
30						

No ground water encountered
Bottom of Boring at 17.5 feet
Drilled on 11/15/10

Logged by: BA
Mobile B-24 Drilling Rig
140 Pound Hammer

Mod. Cal Sampler
SPT Sampler

GEOFORENSICS, INC.
561 Pilgrim Dr., Suite D, Foster City, CA 94404
Tel: (650) 349-3369 Fax: (650) 571-1878

Figure A6 - Log of Boring 6

LOG OF BORING

DEPTH (ft)	SAMPLE NUMBER	SAMPLE LOC.	BLOW COUNTS (12 inches)	MATERIAL DESCRIPTION	DRY DENSITY (pcf)	MOISTURE CONTENT (%)
				silty SAND; brown slight moist (SM)		
	8-1		42	silty SAND with some fine gravels; light brown with red brown; slightly moist; medium dense (SM)	-	-
5						
	8-2		23	silty sandy CLAY with fine gravels; light brown and green brown; slightly moist; very stiff (CL)	-	22.2
10				more silty and sandy with depth		
	8-3		19	silty sandy CLAY with pockets of sand; tan brown and green brown; slightly moist; very stiff (CL)	-	20.0
15						
				Bottom of boring at 14.5 feet		
20						
25						
30						

No ground water encountered
Bottom of Boring at 14.5 feet
Drilled on 11/15/10

Logged by: BA
Mobile B-24 Drilling Rig
140 Pound Hammer

Mod. Cal Sampler
SPT Sampler

GEOFORENSICS, INC.
561 Pilgrim Dr., Suite D, Foster City, CA 94404
Tel: (650) 349-3369 Fax: (650) 571-1878

Figure A8 - Log of Boring 8

12/20/10

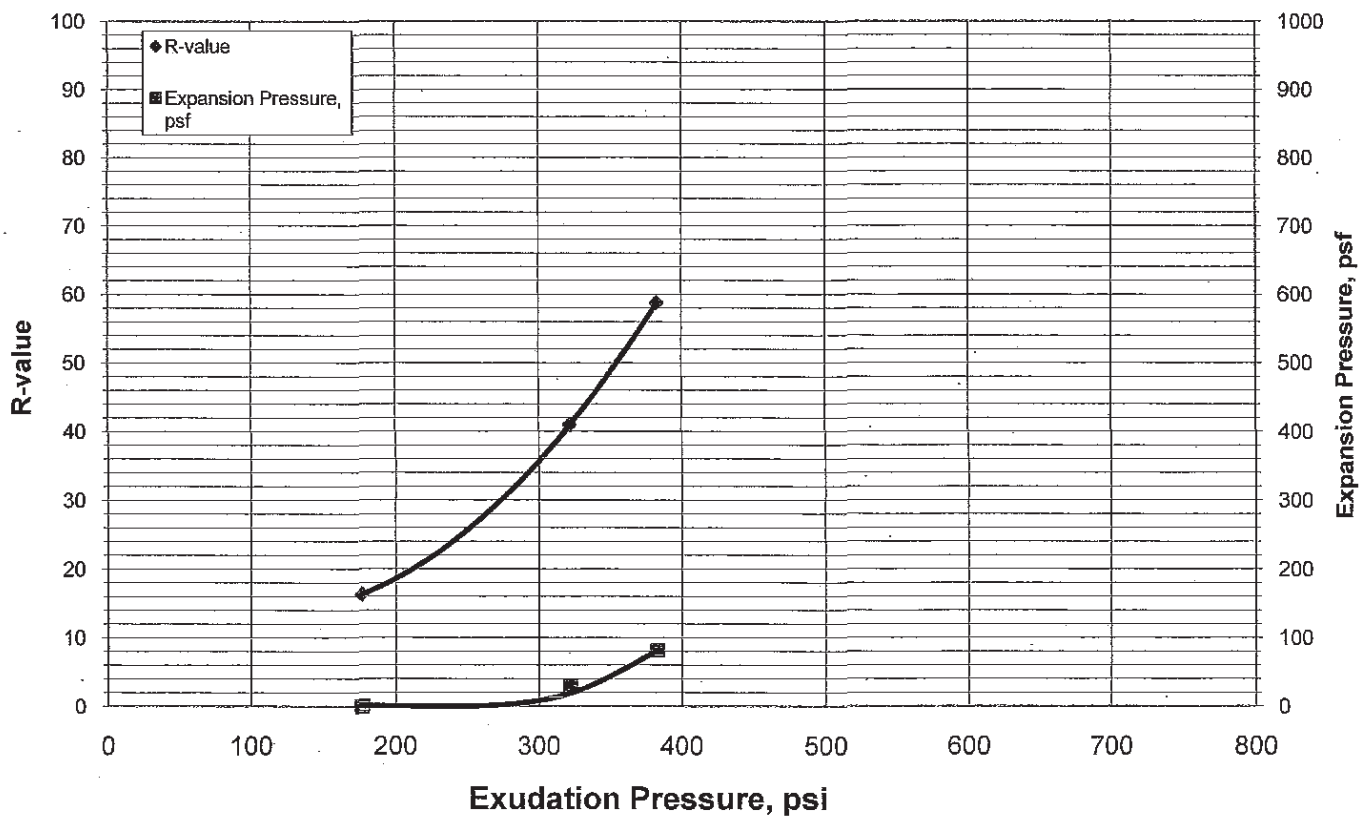
COOPER TESTING LABORATORY

R-value Test Report (Caltrans 301)

Job No.:	060-2063	**Date:**	12/20/10	**Initial Moisture,**	12.3%
Client:	GeoForensics	**Tested**	MD	**R-value by Stabilometer**	**36**
Project:	Twin Oaks - 210121	**Reduced**	RU		
Sample	Bulk #1	**Checked**	DC	**Expansion Pressure**	**5** psf
Soil Type:	Brown Sandy CLAY				

Specimen Number	A	B	C	D
Exudation Pressure, psi	177	322	383	
Prepared Weight, grams	1200	1200	1200	
Final Water Added, grams/cc	55	30	20	
Weight of Soil & Mold, grams	3192	3139	3182	
Weight of Mold, grams	2118	2107	2106	
Height After Compaction, in.	2.54	2.38	2.5	
Moisture Content, %	17.4	15.1	14.2	
Dry Density, pcf	109.0	114.1	114.2	
Expansion Pressure, psf	0.0	30.1	81.7	
Stabilometer @ 1000				
Stabilometer @ 2000	122	70	45	
Turns Displacement	4.1	4.06	4.48	
R-value	16	41	59	

Remarks:



June 3, 2011

Project 0084491030

Mr. John Gaylord
Town of Los Gatos
Parks and Public Works
41 Miles Avenue
Los Gatos, California 95031

Subject: **Peer Review – Geotechnical Investigation Report and Plans**
Surrey Farms Estates
Twin Oaks Drive
Los Gatos, California

REFERENCES:

1. Plans: Architectural, Sheets CS, A-1, and A-2, by Paragon Design Group, Inc., undated, Surrey Farms Estates, Lot Subdivision, Twin Oaks Drive, Los Gatos, California.
2. Plans: Civil, Sheets 1- 6, by Westfall Engineers, Inc., dated April 2011, Surrey Farms Estates, Twin Oaks Drive, Los Gatos, California.
3. GeoForensics, Inc. (GFI), December 17, 2010, Geotechnical Investigation, Proposed New Subdivision, Twin Oaks Drive, Los Gatos, California, 22 pages.

Dear Mr. Gaylord:

At your request, AMEC Geomatrix, Inc. (AMEC) has performed a review of References 1, 2 and 3. Reference 1 is the architectural plans of the proposed subdivisin, Reference 2 is the subdivision civil plans, and Reference 3 is a design-level geotechnical investigation report for the proposed project. Other architectural, civil, or structural plans for the proposed project were not submitted to us for review.

This letter is based on our review of the references, a review of pertinent published and unpublished reports and maps, and a site reconnaissance. This letter also presents the findings of our review.

COMMENTS

The plans (References 1 and 2) indicate that the planned project consists of the subdivision of a 17.553-acre property into 10 parcels for single-family residential development and 1 open space parcel. The property is roughly rectangularly shaped and will be accessed by a public road cul-de-sac (Street A) off Twin Oaks Drive. A planned public road will connect Street A to the existing Brooke Acres Drive. A planned private road with turnaround (Street B) off Street A will assess 5 planned parcels and the open space. Planned infrastructure and conceptual feasible building sites and access driveways are shown on the Plans (References 1 and 2). The tentative building sites and access driveways are located to avoid steep slopes. The planned subdivision will be served by the existing public sanitary sewer system.

AMEC Geomatrix, Inc.
2101 Webster Street, 12th Floor
Oakland, California
USA 94612-3066
Tel (510) 663-4100
Fax (510) 663-4141
www.amecgeomatrixinc.com

AMEC Geomatrix

Reference 2 plans indicate that the estimated grading volumes for the subdivision only are 4864 cubic yards of cut and 4155 cubic yards of fill, with 749 cubic yards of import required. Estimated maximum cut heights are 8 feet and estimated maximum fill depths are 10 feet.

The property is located east of downtown Los Gatos along the base of the foothills of the Santa Cruz Mountains. The property includes north- and west-facing steep hill slopes transitioning to more gentle slopes in the western portion of the property. Overall relief on the property is approximately 235 feet. A north-northwest drainage swale is located in the western portion of the property.

McLaughlin and others (2001) indicate that the eastern, hilly two thirds of the property are underlain by Tertiary Temblor Sandstone and some Tertiary Monterey Shale. The western one third is underlain by Quaternary older alluvial fan deposits. The property is not located in a zone of potential earthquake-induced liquefaction on the Seismic Hazards Zones Map of the Los Gatos Quadrangle (CGS, 2002), but the eastern two thirds is located in a zone of potential earthquake induced landsliding. Reference 3 presents the results of the required screening analysis for potential earthquake-induced landsliding per the Guidelines in DMG Special Publication 117, and concluded that the property slopes are stable under static conditions and stable, but may be subject to minor displacement (less than approximately 15 centimeters), under seismic loading conditions.

The property is located between traces of the potentially active Shannon fault zone, with the closest trace located approximately 1,100 feet from the property. Therefore, the potential for fault ground rupture on the property is considered to be very low. However, the property will be subjected to very strong to violent ground shaking from a future large earthquake on the nearby San Andreas fault zone, or on one of the other major active faults in the region.

Reference 3 cites the 2007 (page 9) CBC for seismic design criteria. The 2010 CBC applies to the project; the seismic design parameters provided in the report must be updated, as necessary.

Subsurface conditions were explored by eight borings reasonably distributed across the property, drilled to depths between 11.5 and 19.5 feet below the ground surface. The logs of Borings 6 and 8 were not included in the report provided to AMEC. The text and boring logs are inconsistent when identifying the interpreted geologic units encountered in the boring logs (residual soil, colluvium, older alluvial fan deposits, and bedrock). In general, the boring logs encountered between 2.5 and 8 feet of surficial deposits underlain by weathered Quaternary Santa Clara Formation bedrock. In Borings 5 and 8 no bedrock was encountered. Groundwater was reportedly only encountered in Boring 6 at a depth of approximately16 feet below the ground surface on November 15, 2010. Boring 6 is located in the lower part of the swale that crosses the property.

Laboratory testing of samples of surficial materials and claystone bedrock reported in Reference 3 indicates that the surficial deposits have a low to moderate plasticity and low to moderate expansion potential, and the claystone bedrock has moderate plasticity and moderate

expansion potential. Strength testing indicates that the surficial deposits have moderately high strength parameters, and the bedrock has high strength parameters.

CONCLUSIONS

Reference 3 concludes that the planned development of the property is controlled by the presence of moderately expansive soils and bedrock, locally hard bedrock, a drainage swale, and steep slopes, to which we would add earthquake ground shaking.

Reference 3 (page 8) concludes that "A potential debris flow hazard associated with the drainage swale crossing the lower portion of the property can be mitigated..." However, the potential debris flow hazard is not previously discussed or established in the report. This seems inconsistent with the subsequent discussion of the drainage swale (page 8), in which only surface water flows from the swale are discussed.

Reference 3 concludes that the planned development of the property is feasible provided the recommendations in the geotechnical investigation report are incorporated into the project plans and construction, and we concur. Reference 3 adequately established that the planned 10 development parcels has a feasible building site and access.

RECOMMENDATIONS

- GFI must update Reference 3 per the 2010 CBC, as necessary.
- GFI must provide logs for Borings 6 and 8.
- GFI should clarify their report with respect to the potential debris flow hazard and appropriate mitigation, if any.
- GFI should update their recommendation for the roadway sections (Page 10) using laboratory test results, rather than assumed R-values.

CLOSURE

We hope this provides you with the information you require at this time. Please call if you have any questions. Supplemental review of this project by AMEC is required.

Sincerely yours,
AMEC Geomatrix, Inc.

Robert H. Wright, PhD, PG, CEG 962
Senior Engineering Geologist
Direct Tel.: (510) 663-4187
Direct Fax: (510) 663-4141
E-mail: bob.wright@amec.com

Michael L. Traubenik, PE,GE
Principal Engineer
Direct Tel.: (510) 663-4221
Direct Fax: (510) 663-4141
E-mail: mike.traubenik@amec.com

RHW/MT
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October 24, 2011

Project 0084491030

Ms. Trang Tu-Nguyen
Town of Los Gatos
Parks and Public Works
41 Miles Avenue
Los Gatos, California 95031

Subject: **Peer Review – Geotechnical Investigation Report and Plans**
Surrey Farms Estates
Twin Oaks Drive
Los Gatos, California

REFERENCES:

1. Plans: Architectural, Sheets CS, A-1, and A-2, by Paragon Design Group, Inc., undated, Surrey Farms Estates, Lot Subdivision, Twin Oaks Drive, Los Gatos, California.

2. Plans: Civil, Sheets 1- 6, by Westfall Engineers, Inc., dated April 2011, Surrey Farms Estates, Twin Oaks Drive, Los Gatos, California.

3. GeoForensics, Inc. (GFI), December 17, 2010, Geotechnical Investigation, Proposed New Subdivision, Twin Oaks Drive, Los Gatos, California, 22 pages.

4. AMEC Geomatrix, Inc., June 3, 2011, Peer Review – Geotechnical Investigation Report and Plans, Surrey Farms Estates, Twin Oaks Drive, Los Gatos, California, 3 pages.

5. GeoForensics, Inc. (GFI), June 15, 2011, Response to Peer Review Comments, Surry Farms Estates, Twin Oaks Drive, Los Gatos, California, 2 pages.

Dear Ms. Tu-Nguyen:

At your request, AMEC Geomatrix, Inc. (AMEC) has performed a review of Reference 5. We previously reviewed References 1, 2 and 3 and provided our review comments in Reference 4. Reference 5 provides responses to the comments in Reference 4. Reference 1 is the architectural plans of the proposed subdivision, Reference 2 is the subdivision civil plans, and Reference 3 is the design-level geotechnical investigation report for the proposed project. Other architectural, civil, or structural plans for the proposed project were not submitted to us for review.

This letter is based on our review of Reference 5, and presents the findings of our review.

COMMENTS

Reference 5 adequately addresses the comments in Reference 4.

AMEC Environment & Infrastructure
2101 Webster Street, 12th Floor
Oakland, California 94612-3066
USA
Tel (510) 663-4100
Fax (510) 663-4141
amec.com

RECOMMENDATIONS

GFI should review the geotechnical aspects of final project plans for conformance with the recommendations in References 3 and 5 and submit a plan review letter to the Town prior to issuance of the permit(s).

GFI should provide observation and testing, as appropriate, of the geotechnical aspects of the project during construction and submit a final letter to the Town prior to project final.

CLOSURE

We hope this provides you with the information you require at this time. Please call if you have any questions. No further review of this project by AMEC is required.

Sincerely yours,
AMEC Geomatrix, Inc.

Robert H. Wright, PhD, PG, CEG 962
Senior Engineering Geologist
Direct Tel.: (510) 663-4187
Direct Fax: (510) 663-4141
E-mail: bob.wright@amec.com

RHW/LDU
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BALANCE HYDROLOGICS, Inc.

Memo

To: Rodger Griffin, Paragon Design Group, Inc.

From: Adam Rianda, Ed Ballman, Dan Dyckman

Date: July 29, 2014

Subject: Stormwater Basin Stability, Surrey Farm project, City of Los Gatos

Thank you for contacting Balance Hydrologics regarding your interest in evaluating the stability of the northern stormwater basin of the Surrey Farm project. Balance has worked with Geo Forensics to further review the basin design and to assess the stability during a major seismic event.

Based on the review performed by Balance Hydrologics, we have the following observations:

- *Duration of ponding*. The northern stormwater basin, referred to as Basin B in the Balance Hydrologics letter report, was designed following the Santa Clara Valley Urban Runoff Pollution Prevention Program C.3 Guidance Manual, which suggest a 48-hour drawdown time for the design water quality volume. The drawdown time is the time required for a stormwater basin to drain and return to the maximum storage capacity. The application of the 48-hour drawdown criteria limits the ponding duration of the water quality volume and therefore reduces the probability of ponding in the basin during a seismic event.

  With a floor elevation of 409 feet and top of bank elevation of 414 feet, the pond has a maximum depth of 5 feet with a storage capacity of 0.57 acre-feet (24,800 ft^3). Based upon the HEC-HMS modeling efforts previously completed, the 100-year water surface elevation (WSE) in the basin is 413 feet, however, it is important to note the duration of the peak WSE. The WSE stays constant at 413 feet for less than 10-minutes and stays above 412 feet for approximately 1.25 hours. The probability of a major seismic event occurring during this peak ponding elevation is miniscule.

- *Depth of ponding and freeboard.* At the peak WSE the stormwater basin maintains 1 foot of freeboard which is the standard per the Santa Clara County Drainage Manual guidelines, but as previously stated, the peak WSE only holds constant for approximately 10 minutes. The average ponding depth in the basin resulting from the 100-year event is 411 feet. At a WSE of 411 feet, the 0.12 acre-feet of ponded water is 2 feet deep with 3 feet of freeboard. Given the aforementioned volume and depth within the basin, it would take a significant seismic event to generate a 3-foot tall wave capable of overtopping the bank. If such an event were to occur, the volume of water that would overtop would be relatively diminutive.

Based on the review performed by GeoForensics, we have the following observations:

- *Soil stability.* We have reviewed the proposed construction of a low lying berm which will act to temporarily retain storm water runoff from heavy storms. It is our understanding that this berm will be constructed of compacted native soil materials available on-site, and the finished slopes will be planted to limit erosion. Based upon the proposed design, it is our opinion that the dam slopes will not be subject to failure during a major earthquake as a result of slope stability, nor due to overtopping due to seiche. Hence the presence of these retention berms do not pose a threat to the downslope properties.

- *Overtopping.* Should the retention ponds be at design capacity during a major earthquake, then it is possible that the dam could be overtopped by a seiche wave generated by the ground accelerations. After this wave of water has escaped from the empoundment, the nature of the flows downslope will be controlled by the topography of the ground, the quantity of water flow, and the presence/absence/location of flow impediments such as vegetation, fences, etc.

APPENDIX E

C.3 DATA FORM
(NOVEMBER 13, 2014)

INFILTRATION/HARVESTING AND USE FEASIBILITY SCREENING WORKSHEET
(OCTOBER 2014)

INFILTRATION FEASIBILITY WORKSHEET
(OCTOBER 14, 2014)

BY
HMH ENGINEERS

REVIEW OF PROJECT SUBMITTALS FOR COMPLIANCE WITH STORMWATER REQUIREMENTS
(JULY 27, 2012 AND SEPTEMBER 14, 2012)

BY
EISENBERG, OLIVIERI & ASSOCIATES

Santa Clara Valley
Urban Runoff
Pollution Prevention Program

PROVISION C.3 DATA FORM

Which Projects Must Comply with Stormwater Requirements?[1]

All projects that create and/or replace **10,000 sq. ft.** or more of impervious surface on the project site must fill out this worksheet and submit it with the development project application.

All restaurants, auto service facilities, retail gasoline outlets, and uncovered parking lot projects (stand-alone or part of another development project, including the top uncovered portion of parking structures) that create and/or replace **5,000 sq. ft.** or more of impervious surface on the project site must also fill out this worksheet.

Interior remodeling projects, routine maintenance or repair projects such as re-roofing and re-paving, are **NOT** required to complete this worksheet.

[1]**Small projects** that create and/or replace **2,500 sq. ft. but less than 10,000 sq. ft.** of impervious surface, and **single family detached homes that create and/or replace 2,500 sq. ft. or more** of impervious surface and are subject to approval and/or permits, must implement at least one of the six specified Low Impact Development (LID) Site Design measure, as of Dec. 1, 2012 (per MRP Provision C3ii). **Obtain Small Projects worksheet and Fact Sheets from Public Works staff. This worksheet is not required.**

What is an Impervious Surface?

An impervious surface is a surface covering or pavement that prevents the land's natural ability to absorb and infiltrate rainfall/stormwater. Impervious surfaces include, but are not limited to rooftops, walkways, paved patios, driveways, parking lots, storage areas, impervious concrete and asphalt, and any other continuous watertight pavement or covering. Pervious pavement, underlain with pervious soil or pervious storage material (e.g., drain rock), that infiltrates rainfall at a rate equal to or greater than surrounding unpaved areas OR that stores and infiltrates the water quality design volume specified in Provision C.3.d of the Municipal Regional Stormwater Permit (MRP), is not considered an impervious surface.

1. Project Information

Project Name: Surrey Farm Estates **APN #** 532-16-006

Project Address: Twin Oaks Drive, Los Gatos, CA

Cross Streets: Longmeadow Drive

Applicant/Developer Name: Surrey Farms Estates, LLC

Project Phase(s): 1 **of** 1 **Engineer:** HMH Engineers

Project Type (Check all that apply): ☒ New Development ☐ Redevelopment

☒ Residential ☐ Commercial ☐ Industrial ☐ Mixed Use ☐ Streets/ Roads

☐ Institutional ☐ Restaurant ☐ Uncovered Parking ☐ Retail Gas Outlet

☐ Auto Service (SIC code) (5013-5014, 5541, 7532-7534, 7536-7539) ☐ Other

Project Description: Ten-lot single-family residential development on 17.9 acres

Are new streets proposed as part of this development? ☒ Yes ☐ No

Project Watershed/Receiving Water (creek, river or bay): Ross Creek / Guadalupe River

2. Project Size

a. Total Site Area: _____ acre	b. Total Site Area Disturbed: 2.89 acre (including clearing, grading, or excavating)			
	Existing Area (ft^2)	Proposed Area (ft^2)		Total Post-Project Area (ft^2)
		Replaced	New	
Impervious Area				
Roof (not Green Roof)	0	0	43,600	43,600
Parking	0	0	21,655	21,655
Sidewalks and Streets	0	0	48,417	48,417
Other (e.g. tennis court)	0	0	12,300	12,300
c. Total Impervious Area	0	0	125,972	125,972
d. Total new and replaced impervious area		125,972		
Pervious Area				
Landscaping	0		638,637	638,637
Pervious Paving	0			
Other (e.g. Green Roof)	0			
e. Total Pervious Area	764,609		638,637	638,637
f. Percent Replacement of Impervious Area in Redevelopment Projects (Replaced Total Impervious Area ÷ Existing Total Impervious Area) x 100% = 0 %				

3. State Construction General Permit Applicability:

a. Is #2.b. equal to 1 acre or more?

- ☒ Yes, applicant must obtain coverage under the State Construction General Permit (i.e., file a Notice of Intent and prepare a Stormwater Pollution Prevention Plan) (see www.swrcb.ca.gov/water_issues/programs/stormwater/construction.shtml for details).
- ☐ No, applicant does not need coverage under the State Construction General Permit.

4. MRP Provision C.3 Applicability:

a. Is #2.d. equal to **10,000** sq. ft. or more, or **5,000** sq. ft. or more for restaurants, auto service facilities, retail gas outlets, and uncovered parking?

- ☒ Yes, C.3. source control, site design and Low Impact Design (LID) types of treatment requirements apply. (MRP C3c LID section, effective Dec 1, 2011)
- ☐ No, C.3. source control and site design measures are encouraged.

b. Is #2.f. equal to 50% or more?

- ☐ Yes, C.3. source control, site design and Low Impact Design (LID) types of treatment requirements apply to entire site. (MRP C3c LID section, effective Dec 1, 2011)
- ☒ No, C.3. requirements only apply to impervious area created and/or replaced.

5. Hydromodification Management (HM) Applicability:

a. Does project create and/or replace one acre or more of impervious surface AND is the total post-project impervious area greater than the pre-project (existing) impervious area?

☒ Yes (continue) ☐ No – exempt from HM, go to page 3

b. Is the project located in an area of HM applicability (green area) on the HM Applicability Map? (www.scvurppp-w2k.com/hmp_maps.htm)

☒ Yes, project must implement HM requirements ☐ No – exempt from HM

6. Selection of Specific Stormwater Control Measures:

Site Design Measures

- [x] Minimize land disturbed
- [x] Minimize impervious surfaces
- [x] Minimum-impact street or parking lot design
- [ ] Cluster structures/ pavement
- [x] Direct runoff to vegetated areas
- [x] Disconnected downspouts/direct roof runoff to vegetated areas
- [ ] Pervious pavement and/or permeable surface
- [ ] Green roof
- [ ] Microdetention in landscape
- [ ] Other self-treating area
- [ ] Self-retaining area
- [ ] Rainwater harvesting and use (e.g., rain barrel, cistern connected to roof drains) [1]
- [x] Preserved open space: 4.93 ac. or sq. ft .(circle one)
- [ ] Protected riparian and wetland areas/buffers (Setback from top of bank: ____ ft.)
- [ ] Other ____

Source Control Measures

- [ ] Alternative building materials
- [ ] Wash area/racks, drain to sanitary sewer[2]
- [ ] Covered dumpster area, drain to sanitary sewer[2]
- [x] Sanitary sewer connection or accessible cleanout for swimming pool/spa/fountain[2]
- [x] Beneficial landscaping (minimize irrigation, runoff, pesticides and fertilizers; promotes treatment)
- [ ] Outdoor material storage protection
- [ ] Covers, drains for loading docks, maintenance bays, fueling areas
- [x] Maintenance (pavement sweeping, catch basin cleaning, good housekeeping)
- [x] Storm drain labeling
- [ ] Fire Sprinkler/Hydrant/AC condenser discharge test, water to landscape
- [ ] Other ____

Treatment Systems

- [ ] None (all impervious surface drains to self-retaining areas)

LID Treatment

- [ ] Rainwater harvest and use (e.g., cistern or rain barrel sized for C.3.d treatment)
- [ ] Infiltration basin or trench
- [ ] Subsurface infiltration system (e.g. infiltration galleries, exfiltration basin or trench)

Biotreatment [3]

- [x] Bioretention area
- [ ] Flow-through planter
- [ ] Tree box with bioretention soils
- [ ] Other ____

Other Treatment Methods

- [ ] Proprietary tree box filter[4]
- [ ] Media filter (sand, compost, or proprietary media)[4]
- [ ] Vegetated filter strip[5]
- [ ] Dry detention basin[5]
- [ ] Other ____

Flow Duration Controls for Hydromodification Management (HM)

- [x] Detention basin
- [ ] Underground tank or vault
- [x] Bioretention with outlet control
- [ ] Other ____

[1] Optional site design measure; does not have to be sized to comply with Provision C.3.d treatment requirements.
[2] Subject to sanitary sewer authority requirements.
[3] Biotreatment measures are allowed only with completed feasibility analysis showing that infiltration and rainwater harvest and use are infeasible.
[4] These treatment measures are only allowed if the project qualifies as a "Special Project".
[5] These treatment measures are only allowed as part of a multi-step treatment process.

7. Treatment System Sizing for Projects with Treatment Requirements

Indicate the hydraulic sizing criteria used and provide the calculated design flow or volume:

Treatment System Component	Hydraulic Sizing Criteria Used[3]	Design Flow or Volume (cfs or cu.ft.)
Detention Basin/Bioretention	1b	7,117 cu. ft.

[3]Key: 1a: Volume – WEF Method
1b: Volume – CASQA BMP Handbook Method
2a: Flow – Factored Flood Flow Method
2b: Flow – CASQA BMP Handbook Method
2c: Flow – Uniform Intensity Method
3: Combination Flow and Volume Design Basis

8. Alternative Certification: Was the treatment system sizing and design reviewed by a qualified third-party professional that is not a member of the project team or agency staff?

☒ Yes ☐ No Name of Reviewer Jill Bicknell

9. Operation & Maintenance Information

A. Property Owner's Name Tom Dodge, Surrey Farm Estates, LLC

B. Responsible Party for Stormwater Treatment/Hydromodification Control O&M:

a. Name: Tom Dodge, Surrey Farm Estates, LLC

b. Address: 401 N. Carmelina Avenue, Los Angeles, CA 90049

c. Phone/E-mail: (408) 559-0200 / (408) 891-2451

Note: Inspection is required within 45 days of installation of treatment measures and/or HM controls.

This section to be completed by Municipal staff.

O&M Responsibility Mechanism

Indicate how responsibility for O&M is assured. Check all that apply:

☐ O&M Agreement

☐ Other mechanism that assigns responsibility (describe below):

Reviewed:

Community Development Department

Planning Division: _____

Building Division: _____

Public Works Department

Engineering: _____

Other (Specify): _____

Return form to: _____

Data entry performed by: _____

Infiltration/Harvesting and Use Feasibility Screening Worksheet

Apply these screening criteria for C.3 Regulated Projects required to implement Provision C.3 stormwater treatment requirements. See the Glossary (Attachment 1) for definitions of terms marked with an asterisk (*). Contact municipal staff to determine whether the project meets Special Project* criteria. If the project meets Special Project criteria, it may receive LID treatment reduction credits.*

1. Applicant Info

Site Address: Twin Oaks Drive, Los Gatos, CA APN: 532-16-006

Applicant Name: Surrey Farms Estates, LLC Phone No.: (408) 559-0200 / (408) 891-2451

Mailing Address: 401 N. Carmelina Avenue, Los Angeles, CA 90049

2. Feasibility Screening for Infiltration

Do site soils either (a) have a saturated hydraulic conductivity* (Ksat) that will NOT allow infiltration of 80% of the annual runoff (that is, the Ksat is LESS than 1.6 inches/hour), or, if the Ksat rate is not available, (b) consist of Type C or D soils?[1]

☐ Yes (continue) ☒ No – complete the Infiltration Feasibility Worksheet. If infiltration of the C.3.d amount of runoff is found to be feasible, there is no need to complete the rest of this screening worksheet.

3. Recycled Water Use

Check the box if the project is installing and using a recycled water plumbing system for non-potable water use.

☐ The project is installing a recycled water plumbing system, and installation of a second non-potable water system for harvested rainwater is impractical, and considered infeasible due to cost considerations. Skip to Section 6.

4. Calculate the Potential Rainwater Capture Area* for Screening of Harvesting and Use

Complete this section for the entire project area. If rainwater harvesting and use is infeasible for the entire site, and the project includes one or more buildings that each have an individual roof area of 10,000 sq. ft. or more, then complete Sections 4 and 5 of this form for each of these buildings.

4.1 Table 1 for (check one): ☐ The whole project ☐ Area of 1 building roof (10,000 sq.ft. min.)

Table 1: Calculation of the Potential Rainwater Capture Area*

The Potential Rainwater Capture Area may consist of either the entire project area or one building with a roof area of 10,000 sq. ft. or more.

	1	2	3	4
	Pre-Project Impervious surface[2] (sq.ft.), if applicable	Proposed Impervious Surface[2] (IS), in sq. ft.		Post-project landscaping (sq.ft.), if applicable
		Replaced[3] IS	Created[4] IS	
a. Enter the totals for the area to be evaluated:				
b. Sum of replaced and created impervious surface:	N/A			N/A
c. Area of existing impervious surface that will NOT be replaced by the project.		N/A		N/A

[1] Base this response on the site-specific soil report, if available. If this is not available, consult soil hydraulic conductivity maps in Attachment 3.
[2], Enter the total of all impervious surfaces, including the building footprint, driveway(s), patio(s), impervious deck(s), unroofed porch(es), uncovered parking lot (including top deck of parking structure), impervious trails, miscellaneous paving or structures, and off-lot impervious surface (new, contiguous impervious surface created from road projects, including sidewalks and/or bike lanes built as part of new street). Impervious surfaces do NOT include vegetated roofs or pervious pavement that stores and infiltrates rainfall at a rate equal to immediately surrounding, unpaved landscaped areas, or that stores and infiltrates the C.3.d amount of runoff*.
[3] "Replaced" means that the project will install impervious surface where existing impervious surface is removed.
[4] "Created" means the project will install new impervious surface where there is currently no impervious surface.
* For definitions, see Glossary (Attachment 1).

4.2 Answer this question ONLY if you are completing this section for the entire project area. If existing impervious surface will be replaced by the project, does the area to be replaced equal 50% or more of the existing area of impervious surface? *(Refer to Table 1, Row "a". Is the area in Column 2 > 50% of Column 1?)*

- ☐ Yes, C.3. stormwater treatment requirements apply to areas of impervious surface that will remain in place as well as the area created and/or replaced. This is known as the 50% rule.
- ☐ No, C.3. requirements apply only to the impervious area created and/or replaced.

4.3 Enter the square footage of the Potential Rainwater Capture Area*. If you are evaluating only the roof area of a building, or you answered "no" to Question 4.2, this amount is from Row "b" in Table 1. If you answered "yes" to Question 4.2, this amount is the sum of Rows "b" and "c" in Table 1.:

_____ square feet.

4.4 Convert the measurement of the Potential Rainwater Capture Area* from square feet to acres (divide the amount in Item 4.3 by 43,560):

_____ acres.

5. Feasibility Screening for Rainwater Harvesting and Use

5.1 Use of harvested rainwater for landscape irrigation:

Is the onsite landscaping LESS than 2.5 times the size of the Potential Rainwater Capture Area* (Item 4.3)? (Note that the landscape area(s) would have to be contiguous and within the same Drainage Management Area to use harvested rainwater for irrigation via gravity flow.)

☐ Yes (continue) ☐ No – Direct runoff from impervious areas to self-retaining areas* OR refer to Table 11 and the curves in Appendix F of the LID Feasibility Report to evaluate feasibility of harvesting and using the C.3.d amount of runoff for irrigation.

5.2 Use of harvested rainwater for toilet flushing or non-potable industrial use:

a. Residential Projects: Proposed number of dwelling units:_____

Calculate the dwelling units per impervious acre by dividing the number of dwelling units by the acres of the Potential Rainwater Capture Area* in Item 4.4. Enter the result here:

_____)

Is the number of dwelling units per impervious acre LESS than 100 (assuming 2.7 occupants/unit)?

☐ Yes (continue) ☐ No – complete the Harvest/Use Feasibility Worksheet.

b. Commercial/Industrial Projects: Proposed interior floor area:_____ (sq. ft.)

Calculate the proposed interior floor area (sq.ft.) per acre of impervious surface by *dividing the interior floor area (sq.ft.) by the acres of the Potential Rainwater Capture Area* in Item 4.4. Enter the result here:*

_____

Is the square footage of the interior floor space per impervious acre LESS than 70,000 sq. ft.?

☐ Yes (continue) ☐ No – complete the Harvest/Use Feasibility Worksheet

c. School Projects: Proposed interior floor area:_____ (sq. ft.)

Calculate the proposed interior floor area per acre of impervious surface by *dividing the interior floor area (sq.ft.) by the acres of the Potential Rainwater Capture Area* in Item 4.4 . Enter the result here:*

_____.

Is the square footage of the interior floor space per impervious acre LESS than 21,000 sq. ft.?

☐ Yes (continue) ☐ No – complete the Harvest/Use Feasibility Worksheet

* For definitions, see Glossary (Attachment 1).

d. Mixed Commercial and Residential Use Projects

- ☐ Evaluate the residential toilet flushing demand based on the dwelling units per impervious acre for the residential portion of the project, following the instructions in Item 5.2.a, except you will use a prorated acreage of impervious surface, based on the percentage of the project dedicated to residential use.
- ☐ Evaluate the commercial toilet flushing demand per impervious acre for the commercial portion of the project, following the instructions in Item 5.2.a, except you will use a prorated acreage of impervious surface, based on the percentage of the project dedicated to commercial use.

e. Industrial Projects: Estimated non-potable water demand (gal/day): _____

Is the non-potable demand LESS than 2,400 gal/day per acre of the Potential Rainwater Capture Area?

☐ Yes (continue) ☐ No – refer to the curves in Appendix F of the LID Feasibility Report to evaluate feasibility of harvesting and using the C.3.d amount of runoff for industrial use.

6. Use of Biotreatment

If only the "Yes" boxes were checked for all questions in Sections 2 and 5, or the project will have a recycled water system for non-potable use (Section 3), then the applicant may use appropriately designed bioretention facilities for compliance with C.3 treatment requirements. The applicant is encouraged to maximize infiltration of stormwater if site conditions allow.

7. Results of Screening Analysis

Based on this screening analysis, the following steps will be taken for the project (check all that apply):

- ☐ Implement biotreatment measures (such as an appropriately designed bioretention area).
- ☐ Conduct further analysis of infiltration feasibility by completing the Infiltration Feasibility Worksheet.
- ☐ Conduct further analysis of rainwater harvesting and use (check one):
  - ☐ Complete the Rainwater Harvesting and Use Feasibility Worksheet for:
    - ☐ The entire project
    - ☐ Individual building(s), if applicable, describe:_____
  - ☐ Evaluate the feasibility of harvesting and using the C.3.d amount of runoff for irrigation, based on Table 11 and the curves in Appendix F of the LID Feasibility Report
  - ☐ Evaluate the feasibility of harvesting and using the C.3.d amount of runoff for non-potable industrial use, based on the curves in Appendix F of the LID Feasibility Report.

* For definitions, see Glossary (Attachment 1).

Infiltration Feasibility Worksheet

Municipal Regional Stormwater Permit (MRP)
Stormwater Controls for Development Projects

Complete this worksheet for **C.3 Regulated Projects*** *for which the soil hydraulic conductivity (Ksat) exceeds 1.6. Use this checklist to determine the feasibility of treating the* **C.3.d *amount of runoff**** *with infiltration. Where it is infeasible to treat the C.3.d amount of runoff* with infiltration or rainwater harvesting and use, stormwater may be treated with* **biotreatment*** *measures. See Glossary (Attachment 1) for definitions of terms marked with an asterisk (*).*

1. Enter Project Data.

1.1 Project Name: Surrey Farm Estates

1.2 Project Address: Twin Oaks Drive, Los Gatos

1.3 Applicant/Agent Name: Surrey Farms Estates, LLC / HMH Engineers

1.4 Applicant/Agent Address: 401 N. Carmelina Avenue, Los Angeles, CA 90049 / 1570 Oakland Rd., SJ

1.5 Applicant/Agent Email: trdb1@aol.com Applicant / Agent Phone: (408) 559-0200

2. Evaluate infiltration feasibility.

Check "Yes" or "No" to indicate whether the following conditions apply to the project. If "Yes" is checked for any question, then infiltration is infeasible, and you can continue to Item 3.1 without answering any further questions in Section 2. If all of the answers in Section 2 are "No," then infiltration is feasible, and you may design ***infiltration facilities**** *for the area from which runoff must be treated. Items 2.1 through 2.3 address the feasibility of using* ***infiltration facilities****, as well as the potential need to line bioretention areas.*

		Yes	No
2.1	Would infiltration facilities at this site conflict with the location of existing or proposed underground utilities or easements, or would the siting of infiltration facilities at this site result in their placement on top of underground utilities, or otherwise oriented to underground utilities, such that they would discharge to the utility trench, restrict access, or cause stability concerns? (If yes, attach evidence documenting this condition.)	☐	☑
2.2	Is there a documented concern that there is a potential on the site for soil or groundwater pollutants to be mobilized? (If yes, attach documentation of mobilization concerns.)	☐	☑
2.3	Are geotechnical hazards present, such as steep slopes, areas with landslide potential, soils subject to liquefaction, or would an infiltration facility need to be built less than 10 feet from a building foundation or other improvements subject to undermining by saturated soils? (If yes, attach documentation of geotechnical hazard.)	☐	☑

Respond to Questions 2.4 through 2.8 only if the project proposes to use an **infiltration device***.

2.4	Do local water district or other agency's policies or guidelines regarding the locations where infiltration may occur, the separation from seasonal high groundwater, or setbacks from potential sources of pollution prevent infiltration devices from being implemented at this site? (If yes, attach evidence documenting this condition.)	☐	☑

2.5	Would construction of an infiltration device require that it be located less than 100 feet away from a septic tank, underground storage tank with hazardous materials, or other potential underground source of pollution? (If yes, attach evidence documenting this claim.)	☐	☑

Infiltration Feasibility Worksheet

		Yes	No
2.6	Is there a seasonal high groundwater table or mounded groundwater that would be within 10 feet of the base of an infiltration device* constructed on the site? (If yes, attach documentation of high groundwater.)	☐	☑
2.7	Are there land uses that pose a high threat to water quality – including but not limited to industrial and light industrial activities, high vehicular traffic (i.e., 25,000 or greater average daily traffic on a main roadway or 15,000 or more average daily traffic on any intersecting roadway), automotive repair shops, car washes, fleet storage areas, or nurseries? (If yes, attach evidence documenting this claim.)	☐	☑
2.8	Is there a groundwater production well within 100 feet of the location where an infiltration device would be constructed? (If yes, attach map showing the well.)	☐	☑

3. Results of Feasibility Determination

		Infeasible	Feasible
3.1	Based on the results of the Section 2 feasibility analysis, infiltration is (check one):	☑	☐

→ If "FEASIBLE" is indicated for Item 3.1, then the amount of stormwater requiring treatment must be treated with infiltration (or rainwater harvest and use, if feasible). ***Infiltration facilities**** *may be designed for the area from which runoff must be treated.*

→ If "INFEASIBLE" is checked for item 3.1, then the applicant may use appropriately designed ***biotreatment facilities**** *for compliance with C.3 treatment requirements. The applicant is encouraged to maximize infiltration of stormwater if site conditions allow.*

Mike Campbell, HMH Engineers
Name of Applicant (Print)

Mike Campbell
Name of Applicant (Sign)

10/14/2014
Date

* See Glossary (Attachment 1) for definitions.

Eisenberg, Olivieri & Associates
Environmental and Public Health Engineering

MEMORANDUM

TO: **Trang Tu-Nguyen, Town of Los Gatos**

FROM: **Jill Bicknell, P.E.**

DATE: **July 27, 2012; revised September 14, 2012**

SUBJECT: **Surrey Farm Subdivision, Los Gatos**
Review of Project Submittals for Compliance with Stormwater Requirements

Background

This project was originally reviewed for C.3 compliance on July 27, 2012. Following submittal of the review memorandum, an updated C.3 Data Form and an Infiltration/Harvesting and Use Feasibility Screening Worksheet were submitted by HMH Engineers. This memorandum has been revised based on review of these additional documents. Conclusions and recommendations that are no longer applicable have been deleted, and new information has been underlined.

Project Description

A 10-unit residential subdivision of single family homes is proposed off of Twin Oaks Drive. The project will be constructed on land that is currently undeveloped and consists of developing single family homes, driveways, and two private streets with cul-de-sacs, with about 3 acres of land preserved as open space. The total site area is approximately 16.05 acres; the area of land disturbance during construction will be 2.33 acres. The site is located within the Los Gatos Creek (Guadalupe River) watershed.

I reviewed the following submittals with regard to this project:

- Surrey Farm Estates, Los Gatos, P.D. Site Development Plans, dated 5/21/12;
  - C-1 – Site Plan
  - C-2 – Preliminary Grading and Drainage Plan
  - C-5 – Preliminary Utility Plan
  - C-6 – Preliminary Stormwater Control and Hydromodification Management Plan
  - C-7 – Preliminary Stormwater Control Details and Notes
- Site Plan Exhibit, HMH Engineers, 4/3/12 (shows footprints of proposed single family homes and driveways);
- Bay Area Hydrology Model Project Reports for Basins A and B, HMH Engineers, 4/18/12
- Revised C.3 Data Form, dated 8/6/12.
- Infiltration/Harvesting and Use Feasibility Screening Worksheet (submitted 8/6/12).

EOA, Inc. • 111 W. Evelyn Ave. • Sunnyvale, CA 94086 • Tel: (408) 720-8811 • Fax: (408) 720-8812

I reviewed the project submittals for compliance with the stormwater requirements in the Town of Los Gatos' NPDES Permit[1] and consistency with related ordinances[2]. My findings are presented below:

1. Applicability of NPDES Permit Provision C.3. Requirements

a. Stormwater Treatment Requirements

The C.3. Data Form indicates that there are no existing impervious surfaces on the site, and that the project proposes to create 101,495 square feet (sq. ft.) of new impervious surface. Therefore, since the total amount of impervious surface to be created and/or replaced is greater than the C.3. threshold of 10,000 square feet[3], the C.3. treatment requirements do apply to this project. The low impact development (LID) treatment requirements apply to this project because it is a private C.3 Regulated Project with a development permit application that was deemed complete after December 1, 2009, and it did not receive final discretionary approval before December 1, 2011.[4]

b. Hydromodification Control Requirements

The project will create and replace more than 1 acre of impervious surface, and the project is located in an area of hydromodification management (HM) applicability on the SCVURPPP HM Applicability Map, so the HM requirements do apply to this project[5].

2. Proposed Stormwater Management Measures and Sizing Calculations

a. The C.3 Data Form indicates that six site design measures will be included in the project: 1) minimize land disturbance; 2) minimize impervious surface; 3) minimum impact street design; 4) roof downspouts drain to landscaping; 5) preserved open space; and 6) protect riparian and wetland areas. The site layout does appear to achieve minimal land disturbance, impervious surface and street width. An open space area ("Lot B – Common Area") is indicated on the Site Plan. However, because the drawings are preliminary, the site design measure "roof downspouts drain to landscaping" is not yet shown on the plans. Also, it is unclear from the plans what riparian and wetland areas will be protected.

b. The C.3. Data Form indicates that the project will include four pollutant source control measures: 1) sanitary sewer connection or accessible cleanout for swimming pool/spa/fountain; 2) "beneficial landscaping", i.e., drought tolerant and/or native plants, in order to minimize over-irrigation and the use of pesticides on the landscaping; 3) maintenance (pavement sweeping and catch basin cleaning); and 4) storm drain labeling. All of these source control measures are appropriate, but are not yet shown on the plans.

c. The treatment measures proposed for the project consist of two bioretention areas downstream of flow control basins. The site is divided into two drainage areas and each one drains to a detention basin/bioretention area combination. The bioretention areas are

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[1] California Regional Water Quality Control Board, San Francisco Bay Region, Municipal Regional Stormwater Permit, Order No. R2-2009-0074, revised November 28, 2011, Provision C.3.
[2] Town of Los Gatos Municipal Code, Chapter 12, Article II. Grading Permit, Sec. 12.20.050 Erosion control plan, Chapter 12, Article III. Design Standards, Sec. 12.30.080, Erosion and sediment control, and Chapter 22, Article III. Stormwater Pollution Control, Sec.22.30.035. New development/redevelopment.
[3] California Regional Water Quality Control Board, San Francisco Bay Region, Municipal Regional Stormwater Permit, Order No. R2-2009-0074, adopted October 14, 2009, Provision C.3.b.ii.(3).
[4] Ibid., Provision C.3.c.ii.(2)
[5] Ibid., Provision C.3.g.

properly sized to receive the water quality design storm over a period of 48 hours (drawdown time for the detention basins) at a loading rate of 5 inches per hour. A preliminary design section was provided for the system but no construction details were provided at this time.

d. Because the LID treatment requirements apply to this project, the feasibility of infiltrating or harvesting and using the water quality design volume of runoff must be evaluated before specifying a biotreatment measure such as a bioretention area. The Infiltration/Harvesting and Use Screening Worksheet submitted for the project indicates that infiltration is infeasible, due to Type C and D soils on site, and rainwater harvesting is infeasible due to lack of demand for use of harvested rainwater for indoor toilet flushing. (The use of harvested rainwater for irrigation of landscaping, which may appear feasible on paper, would not be practical; it would be better to require the site design measure of directing roof and driveway runoff to landscaping).

   No information was provided on soil types present on the site. The model runs to size facilities for hydromodification management assumed that pervious areas had Type B soils (possibly to be conservative in sizing the facilities). If infiltration is found to be feasible on site, the bioretention areas may need to be designed as "bioinfiltration" areas, i.e., either with no underdrain, or an underdrain placed above a sufficient depth of drain rock to allow storage and infiltration of the water quality design volume.

e. The hydromodification management control measures proposed for this project are the two flow control basins upstream of the bioretention areas. The flow control basins were sized using the Bay Area Hydrology Model (BAHM) to comply with the HM standards in the Town's stormwater permit[6]. The calculations assumed 100% pervious grassland for the pre-project condition and a build-out condition for post-project, i.e., the build-out condition included the impervious surface of the roof areas and driveways of the proposed homes on the 10 lots, as well as the new roads. It appears that the model was run correctly and the resulting facility sizes appear to meet the HM requirements. The model provides required outlet heights and dimensions, but no details on the design of the outlet structures was provided.

3. Consistency of SWPPP with Local Ordinances

a. Since the disturbed area during construction is greater than 1 acre, the applicant is required to obtain coverage under the State Construction General Permit[7].

b. The Erosion Control Plan and Details were not provided for review for consistency with the Town's stormwater pollution control and erosion and sediment control requirements. The project Stormwater Pollution Prevention Plan (SWPPP) was also not provided for review.

4. Conclusions

a. The site design measures and source control measures identified in the C.3 Data Form are appropriate for the project, and acceptable if they are shown on the plans and/or specified in conditions of approval.

b. The treatment measures selected are appropriate and sized correctly, but their design may need to be adjusted pending the results of the infiltration feasibility analysis, and more details need to be provided.

---

[6] Ibid., Provision C.3.g. and Attachment F.

[7] NPDES General Permit for Storm Water Discharges Associated with Construction Activity, Water Quality Order 2009-0009-DWQ, September 2009 (effective July 1, 2010).

c. The hydromodification management measures are appropriate and sized correctly; however, more details on the outlet structures and the pump station need to be provided.

5. Recommendations

a. The Town should require the applicant to confirm the infeasibility of infiltrating the water quality design volume of runoff by providing information on the infiltration rate of site soils, either through onsite soil testing or using local soils classification maps. The bioretention system design may need to be adjusted as described in Section 2.d. based on the results of the soil testing or analysis. This will not likely affect the surface area (footprint) of the bioretention areas.

b. More details on the design of the bioretention areas and the flow control basins should be provided in the next submittal.

c. The Town should include requirements for the site design and source control measures in conditions of approval, and require them to be shown on plan sheets (as applicable) for this project.

d. Maintenance of stormwater treatment measures and hydromodification management controls will be the responsibility of the property owners. The applicant should provide a maintenance plan for the basins and outlet structures, the bioretention areas and the stormwater pump station, and the Town should establish a mechanism for ensuring maintenance is conducted by the property owners.

APPENDIX F

TRAFFIC STUDY
(FEBRUARY 3, 2015)

BY
HEXAGON TRANSPORTATION CONSULTANTS, INC.

Hexagon Transportation Consultants, Inc.

Memorandum

Date: February 3, 2015

To: Mr. Tom Dodge, Surrey Farm Estates, LLC

From: Gary Black, Brian Jackson

Subject: Traffic Study for the Surrey Farm Estates Development in Los Gatos, CA

Hexagon Transportation Consultants, Inc. has completed a traffic study for the proposed Surrey Farm Estates residential development in Los Gatos, California. The project consists of constructing 10 new single-family homes on a vacant site with access via Twin Oaks Drive. Four of the new homes may have access to Shannon Road via Cerro Vista Court. Emergency only access will be provided via Brooke Acres Drive. We understand that the project size is below the threshold for requiring a traffic study in Los Gatos. However, the project applicant has requested that a traffic study be prepared because of potential neighborhood concerns. Hexagon analyzed traffic conditions based on traffic counts and field observations. Cumulative analysis is taken from the Hillbrook School Environmental Impact Report (EIR).

Scope of Study

This study summarizes the traffic conditions that currently exist and the traffic conditions that would exist with the addition of project traffic. The following roadways were studied:

- Twin Oaks Drive
- Clover Way
- Longmeadow Drive
- Kennedy Road
- Olde Way

Traffic conditions were analyzed throughout the day and with a special focus on the weekday AM and PM peak hours of traffic. The AM peak hour of traffic is generally between 7:00 and 9:00 AM, and the PM peak hour is typically between 4:00 and 6:00 PM. It is during these periods that traffic volumes are highest on an average weekday. The cumulative analysis includes the intersections of Los Gatos Boulevard/Kennedy Road and Edgewood Avenue/Kennedy Road.

Existing Conditions

Hexagon conducted 24-hour tube counts on Longmeadow Drive and Olde Way for a one-week period in May of 2012. AM and PM peak hour turning-movement counts at the Kennedy/Longmeadow and Longmeadow/Clover intersections also were conducted. Existing traffic conditions were observed in the field during the AM and PM peak hours. Based on the count data and field observations, the traffic volume on the study roadway segments is very low, and no traffic issues were observed.

Existing Traffic Volume

Average daily traffic volume on the study roadway segments ranged from approximately 100 vehicles per day (Olde Way) to 500 vehicles per day (Longmeadow Drive). The existing traffic volume on these streets is within the typical range (albeit the lower end of the range) for residential streets in Los Gatos.

Existing Intersection Levels of Service

The intersections of Longmeadow Drive/Kennedy Road and Longmeadow Drive/Clover Way were evaluated using level of service (LOS). Level of service is a qualitative measure of traffic operations, ranging from LOS A (free-flow conditions) to LOS F (congested conditions). Based on existing counts and field observations, both intersections are operating well at LOS A. Sight distance at the intersections is adequate, and no operational issues were observed.

Project Conditions

The magnitude of traffic produced by a new development and the locations where that traffic would appear are estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In determining project trip generation, the magnitude of traffic generated by the project is estimated. As part of the project trip distribution, an estimate is made of the directions to and from which the project trips would travel. In the project trip assignment, the project trips are assigned to specific streets and intersections. These procedures are described below.

Project Trip Generation

Through empirical research, data have been collected that quantify the amount of traffic produced by common land uses. Thus, for the most common land uses there are standard trip generation rates that can be applied to help predict the future traffic increases that would result from a new development. The magnitude of traffic added to the roadway system by a particular development is estimated by multiplying the applicable trip generation rates by the size of the development. The trip generation rates published in the Institute of Transportation Engineers' (ITE) manual entitled *Trip Generation, 9th Edition (*2012) for Single-Family Detached Housing (Land Use 210) were used for this study.

The project proposes to construct 10 new single-family homes on a vacant site. As shown in Table 1, the project is estimated to generate 95 daily vehicle trips with 8 trips occurring during the AM peak hour and 10 trips occurring during the PM peak hour.

Table 1
Project Trip Generation Estimates

Land Use	Size	Daily Rate	Daily Trips	AM Peak Hour				PM Peak Hour			
				Rate	In	Out	Total	Rate	In	Out	Total
Single-Family Detached Housing	10	9.52	95	0.75	2	6	8	1.00	6	4	10

Source: ITE *Trip Generation Manual, 9th Edition (2012), Land Use Code 210.*

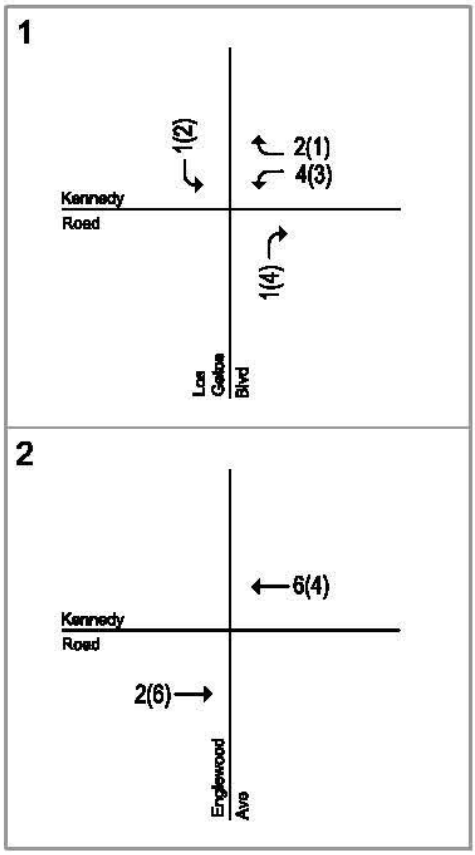
Project Trip Distribution and Assignment

The estimated project trips were assigned to the roadway network based on existing travel patterns within the neighborhood. Based on the layout of the neighborhood roadway network and field observations, Clover Way and Olde Way most likely would not be used by project-generated traffic. Olde Way is narrow, has speed bumps, and does not provide any time savings as a cut-through street. Thus, it is reasonable to assume that all project traffic would use Longmeadow Drive to access the project site to and from Kennedy Road. Figure 1 shows the AM and PM peak hour project trips that would be added to the roadway network.

Project Traffic Volumes

The estimated trips generated by the proposed 10-unit residential development were added to existing volumes to obtain traffic volumes with the project (project conditions). Table 2 shows the increases in traffic volumes on the study roadway segments as a result of the project. As shown in the table, the project would not add a considerable amount of traffic to the study roadway segments. However, since the existing volume of traffic within the neighborhood is low, the new traffic most likely would be noticeable.

The project would add only 10 peak hour vehicle trips to the surrounding roadway network. Once these trips disperse, the number of trips at any one street or intersection would become so small that the traffic increase would not be noticeable outside of the immediate project neighborhood.



LEGEND

XX(XX) = AM(PM) Peak-Hour Trips

Figure 1
Project Trip Assignment

Project Intersection Levels of Service

The results of the level of service analysis show that the study intersections of Longmeadow Drive/Kennedy Road and Longmeadow Drive/Clover Way would continue to operate at LOS A with the project.

Table 2
Traffic Volumes on the Study Roadway Segments

Roadway Segment	Existing Conditions			Project Trips			Project Conditions		
	AM Vol	PM Vol	Daily Vol	AM Trips	PM Trips	Daily Trips	AM Vol	PM Vol	Daily Vol
Kennedy Rd, w/o Longmeadow Dr	267	194	2,639 [1]	8	10	95	275	204	2,734
Kennedy Rd, e/o Longmeadow Dr	149	137	1,637 [1]	0	0	0	149	137	1,637
Longmeadow Dr, n/o Kennedy Rd	118	57	1,002 [1]	8	10	95	126	67	1,097
Longmeadow Dr, btwn Clover & Twin Oaks	35	31	374	8	10	95	43	41	469
Clover Wy, s/o Longmeadow Dr	6	7	74 [1]	0	0	0	6	7	74
Twin Oaks Dr, s/o Longmeadow Dr	26	23	281	8	10	95	34	33	376
Olde Wy, btwn Kennedy Rd & Clover Wy	14	13	108	0	0	0	14	13	108

Notes:
1. Daily volume estimated based on AM and PM peak hour volumes.

Cumulative Plus Project Conditions

In addition to analyzing project impacts to study intersections in the immediate vicinity of the project, the Town requested a study of two additional intersections on Kennedy Drive under cumulative plus project conditions. Hexagon reviewed the data and analysis in the EIR prepared for Hillbrook School. Hillbrook School is located near the project site and is proposing an increase to its enrollment by 99 students. The Hillbrook School EIR calculated traffic volumes on Kennedy Road for background plus project plus pending projects for the AM Peak Hour and the School PM Peak Hour periods. The AM peak hour for the school would coincide with the morning peak hour for the Surrey Farm project. The afternoon school peak hour would not overlap with the afternoon peak hour for the project.

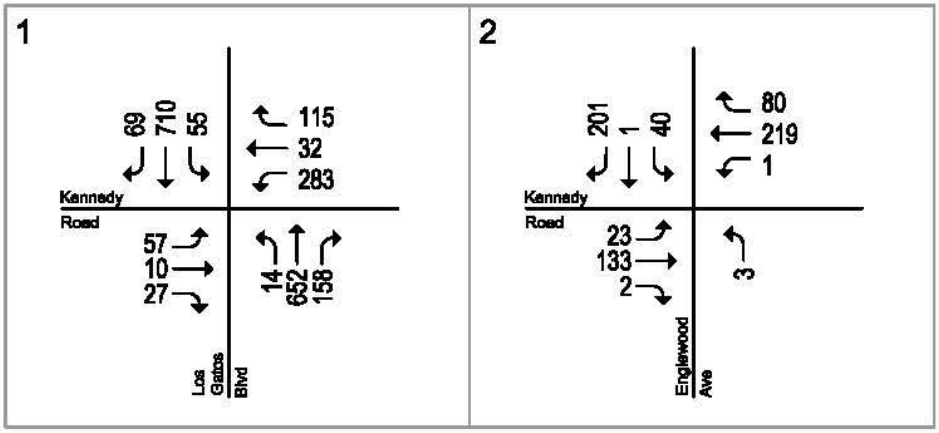
Table 3 shows the increases in traffic volumes on the segment of Kennedy Road west of Longmeadow Drive as a result of the project. It was assumed that all project trips passing through the intersection of Kennedy Road/Longmeadow Drive would continue through to Los Gatos Boulevard. Figure 2 shows cumulative and cumulative plus project traffic volumes at these intersections.

Project Intersection Levels of Service

The project would add only 8 AM peak hour vehicle trips to Kennedy Road, which is not a significant contribution toward cumulative traffic volumes in the area. Based on the Hillbrook School EIR, under cumulative conditions the study intersections of Kennedy Road/Los Gatos Boulevard and Kennedy Road/Englewood Avenue are projected to operate at LOS D and A, respectively. These intersections would not experience decreased levels of service due to the Surrey Farm project traffic.

In the event that separate access is provided for four homes via Cerro Vista Court, up to 4 AM peak hour vehicle trips would be diverted from Kennedy Road to Shannon Road via Cerro Vista Court. Cerro Vista Court currently experiences very low traffic volumes, so an increase in 4 peak hour trips may be noticeable to nearby residents. Shannon Road experiences much higher traffic volume, with approximately 320 westbound and 120 eastbound trips during the AM peak hour. The additional traffic on Shannon Road due to the project would be insignificant and unnoticeable to nearby residents.

Cumulative Conditions - AM



Cumulative Plus Project Conditions - AM

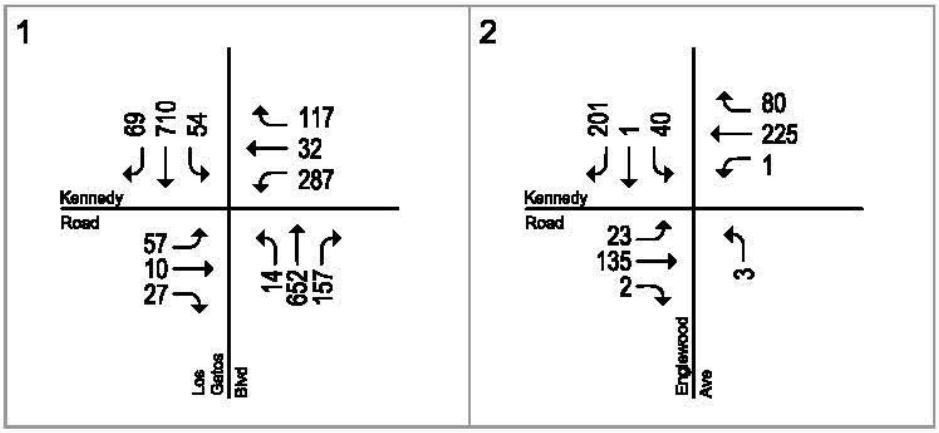


Figure 2
Traffic Volumes at Study Intersections

Table 3
Cumulative Plus Project Traffic Volumes on Kennedy Road

Roadway Segment	Cumulative Conditions		Project Trips		Project Conditions	
	AM Vol	Daily Vol	AM Trips	Daily Trips	AM Vol	Daily Vol
Kennedy Rd, w/o Longmeadow Dr	300	2,828 [1]	8	95	308	2,923

Notes:
1. Daily volume estimated based on cumulative AM and existing PM peak hour volumes.

Site Access and Circulation

Based on the proposed site plan, adequate site access and circulation would be provided. Sight distance The new project street network would be built to meet current design safety standards, and would be designed to fit in well with the existing neighborhood street system.

At the new project street connection with Twin Oaks Drive, Hexagon assumes that a new radius will be constructed at the southwest corner of the intersection. Associated trees and the raised landscape hill will be removed as a result. Compared to the existing driveway, the proposed project street would intersect Twin Oaks Drive perpendicularly, which improves sight distance. The Caltrans required stopping distance on a roadway with a 25 mph speed limit is 200 feet. With the assumed project improvements, sight distance on Twin Oaks Drive at its connection with the new project street would be more than 400 feet in each direction, which is adequate.

Conclusions

- Existing traffic volume on the study roadway segments is low, and no traffic issues were observed in the field.
- Traffic operations in the study area would continue to function adequately with the project.
- The project would result in only a minor traffic increase, but residents in the immediately adjacent neighborhood most likely would notice the increase.
- The project would not make a significant contribution toward existing or cumulative traffic volumes in the area.
- The project would provide adequate site access and circulation.

APPENDIX G

NOISE ASSESSMENT STUDY
(SEPTEMBER 29, 2014)

BY
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NOISE ASSESSMENT STUDY
FOR THE PLANNED

SURREY FARM ESTATES

SINGLE-FAMILY SUBDIVISION

TWIN OAKS DRIVE, LOS GATOS

Prepared by
Jeffrey K. Pack

September 29, 2014
Project No. 46-037

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EXECUTIVE SUMMARY

This report presents the results of a noise assessment study, in compliance with the California Environmental Quality Act (CEQA), for the proposed "Surrey Farm Estates" single-family subdivision off of Twin Oaks Drive in Los Gatos. This study includes an analysis of the existing ambient noise environment at the two proposed entrances to the site, an analysis of the noise impacts to the project and an analysis of the project-generated noise exposure impacts to the neighboring community for evaluations against the standards of the Town of Los Gatos Noise Element of the General Plan and CEQA.

The plans for the project include the subdivision of the existing vacant site into ten single-family lots. The proposal includes the possibility of access alternatives to the site. One is a single access road off of Twin Oaks Drive and the second alternative is a shared access with one road off of Twin Oaks Drive and one off of Cerro Vista Drive.

The following report includes background information on acoustics, noise standards applicable to the project, existing noise exposures at near the site, noise impacts to the project, project-generated noise impacts and conclusions. The results of this study reveal that the noise impacts to the project and the traffic related project-generated noise impacts to the neighbors will be less than significant and will be within the standards of the Town of Los Gatos Noise Element. There will be no significant increases in the noise environments at the residences. Construction noise may generate a significant but short-term noise impact to the residences surrounding the project site. Noise mitigation measures for construction are presented in this this study.

In terms of the CEQA compliance checklist, the project indicates the following:

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

II. Background Information on Acoustics

Noise is defined as unwanted sound. Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure. Sound levels are usually measured and expressed in decibels (dB) with 0 dB corresponding roughly to the threshold of hearing.

Most of the sounds which we hear in our normal environment do not consist of a single frequency, but rather a broad range of frequencies. As humans do not have perfect hearing, environmental sound measuring instruments have an electrical filter built in so that the instrument's detector replicates human hearing. This filter is called the "A-weighting" network and filters out low and very high frequencies. All environmental noise is reported in terms of A-weighted decibels, notated as “dBA”. All sound levels used in this report are A-weighted unless otherwise noted. Table I on page 4 shows the typical human response and noise sources for A-weighted noise levels.

Although the A-weighted noise level may adequately indicate the level of noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a mixture of noise from distant sources that create a relatively steady background noise from which no particular source is identifiable. To describe the time-varying character of environmental noise, the statistical noise descriptors, L_1, L_{10}, L_{50} and L_{90} are commonly used. They are the A-weighted noise levels exceeded for 1%, 10%, 50% and 90% of a stated time period. The continuous equivalent-energy level (L_{eq}) is that level of a steady state noise which has the same sound energy as a time-varying noise. It is often considered the average noise level and is used to calculate the Day-Night Levels (DNL) and the Community Noise Equivalent Levels (CNEL). The Santa Clara Noise Ordinance uses the L_2, L_8, L_{25} and L_{50} descriptors to quantify noise source durations of 1 min./hr., 5 min./hr., 15 min./hr. and 30 min./hr., respectively.

TABLE I

The A-Weighted Decibel Scale, Human Response, and Common Noise Sources

Noise Level, dBA	Human Response	Noise Source
120-150+	Painfully Loud	Sonic Boom (140 dBA)
100-120	Physical Discomfort	Motorcycle at 20 ft. (110 dBA) Nightclub Music (105 dBA)
70-100	Annoying	Diesel Pump at 100 ft. (95 dBA) Freight Train at 50 ft. (90 dBA) Food Blender (90 dBA) Jet Plane at 1000 ft. (85 dBA) Freeway at 50 ft. (80 dBA) Alarm Clock (80 dBA)
50-70	Intrusive	Average Traffic at 100 ft. (70 dBA) Pass. Car, 30 mph @ 25 ft. (65 dBA) Vacuum Cleaner (60 dBA) Suburban Background (55 dBA)
0-50	Quiet	Normal Conversation (50 dBA) Light Traffic at 100 ft. (45 dBA) Refrigerator (45 dBA) Desktop Computer (40 dBA) Whispering (35 dBA) Leaves Rustling (20 dBA) Threshold of Hearing (0 dBA)

In determining the daily level of environmental noise, it is important to account for the difference in response of people 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 very noticeable. Further, most people sleep at night and are very sensitive to noise intrusion. To account for human sensitivity to nighttime noise levels, the Day-Night Level (DNL) noise descriptor was developed. The DNL is also called the L_{dn}. Either is acceptable, however, DNL is more popular worldwide. The DNL divides the 24-hour day into the daytime period of 7:00 a.m. to 10:00 p.m. and the nighttime period of 10:00 p.m. to 7:00 a.m. The nighttime noise levels are penalized by 10 dB to account for the greater sensitivity to noise at night. The Community Noise Equivalent Level (CNEL) is another 24-hour average which includes a 5 dB evening (7:00 p.m. - 10:00 p.m.) penalty and a 10 dB nighttime penalty. Both the DNL and the CNEL average the daytime, evening and nighttime noise levels over a 24-hour period to attain a single digit *noise exposure*. The proper notations for the Day-Night Level and the Community Noise Equivalent Level are dB DNL and dB CNEL, respectively, as they can only be calculated using A-weighted decibels. It is, therefore, considered redundant to notate dB(A) DNL or dB(A) CNEL.

The effects of noise on people can be listed in three general categories:

- subjective effects of annoyance, nuisance, dissatisfaction;
- interference with activities such as speech, sleep, learning, relaxing;
- physiological effects such as startling or hearing loss.

The levels associated with environmental noise, in almost every case, produce effects only in the first two categories. Workers in industrial plants, airports, etc., can experience noise in the last category. Unfortunately, there is, as yet, no completely satisfactory way to measure the subjective effects of noise, or of the corresponding reactions of annoyance and dissatisfaction. This is primarily due to the wide variation in individual thresholds of annoyance and differing individual past experiences with noise.

An important way to determine a person's subjective reaction to a new noise is to compare it to the existing environment to which one has adapted, i.e., the "ambient". In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by the receptors.

With regard to increases in A-weighted noise levels, the Environmental Protection Agency has determined the following relationships that will be helpful in understanding this report.

- Except in carefully controlled laboratory experiments, a change of 1 dB cannot be perceived.
- Outside of the laboratory, a 3 dB change is considered a just-perceptible difference.
- A change in level of at least 5 dB is required before any noticeable change in community response would be expected.
- A 10 dB change is subjectively heard as approximately a doubling in loudness, and would almost certainly cause an adverse change in community response.

The adding or subtracting of sound levels is not simply arithmetic. The sound levels, in decibels, must be converted to Bels, the anti-log's of which are then calculated. The manipulation is then performed (arithmetic addition or subtraction), the logarithm of the sum or difference is calculated. The final number is then multiplied by 10 to convert Bels to decibels. The formula for adding decibels is as follows:

$\text{Sum} = 10\log(10^{SL/10} + 10^{SL/10})$ where, SL is the Sound Level in decibels.

For example, 60 dB + 60 dB = 63 dB, and 60 dB + 50 dB = 60 dB. Two sound sources of the same level are barely noisier than just one of the sources by itself. When one source is 10 dB higher than the other, the less noisy source does not add to the noisier source.

III. Noise Standards, Goals & Policies

A. Town of Los Gatos Noise Element of the General Plan

The noise assessment results presented in the findings were evaluated against the Town of Los Gatos Noise Element of the General Plan standards, Ref. (a), which uses the Day-Night Level (DNL) 24-hour noise descriptor to define acceptable noise exposures for various land-uses. The acceptable goal for single-family residential use is 55 decibels (dB) DNL. The DNL is defined further in Appendix B.

B. California Environmental Quality Act (CEQA)

The project-generated noise exposures were evaluated against the guidelines of the California Environmental Quality Act (CEQA). CEQA does not limit noise levels or noise exposures nor does it quantify noise exposure or noise level increases over the ambient to define noise impacts. CEQA evaluates a project as a significant noise impact if it "...causes a substantial increase in the ambient noise levels...". The quantification of the threshold of significance is left up to the local jurisdiction. The Town of Los Gatos Noise Element does not provide thresholds of significance in the General Plan. Therefore, the following thresholds of significance, based on CEQA case law, shall be applied at the existing residential areas to the west and north of the site. Other residential areas in the vicinity of the project site are too far to be a concern.

These thresholds are:

(a) causing the DNL in existing residential areas to increase by 5 dB or more and remain at or below 55 dB DNL;

(b) causing the DNL in existing residential areas to increase by 3 dB or more and, thereby, exceed 55 dB DNL;

(c) causing the DNL in existing residential areas to increase by 1 dB or more if the current noise exposure exceeds 55 dB DNL.

The current noise exposure at the existing residences adjacent to the site along Twin Oaks Drive is 53 dB DNL. The primary sources of noise in the area are normal neighborhood noises and wildlife. Due to the low volume of local traffic, the traffic noise component is 44 dB DNL. To limit the increase in the noise environment to no more than 3 decibels, the CEQA limit for project-generated noise is 53 dB DNL.

At the home across Cerro Vista Court from the alternative access road, the exiting noise exposure is 52 dB DNL. The traffic component is 38 dB DNL. To limit the increase in the noise environment to no more than 3 decibels, the CEQA limit for project-generated noise is 52 dB DNL.

IV. Acoustical Setting

A. Site, Traffic and Project Descriptions

The planned project site is a vacant parcel located in the eastern foothills of Los Gatos. The site is hilly terrain that slopes generally to the west. The surrounding land uses include single-family residential adjacent to the north, south, east and west. Hillbrook School is also adjacent to the north.

The existing noise environment at the site and in the project vicinity is created partially by traffic on Twin Oaks Drive and on Cerro Vista Court. Twin Oaks Drive at the proposed project access under Alternative 1 carries and existing Average Daily Traffic (ADT) of 281 vehicles. Cerro Vista Court at the proposed project access under Alternative 2 carries an existing ADT of 48 vehicles. The traffic volume data were provided in the Traffic Impact Analysis for the project, Ref. (b).

The planned project includes the subdivision of the existing parcel into 10 lots and the construction of 10 single-family homes. Ingress and egress to the site will be by way of either Twin Oaks Drive (Alternative 1) or both Twin Oaks Drive and Cerro Vista Court (Alternative 2).

The Site Plan, Ref. (c), is shown on Figure 1 on the following page.

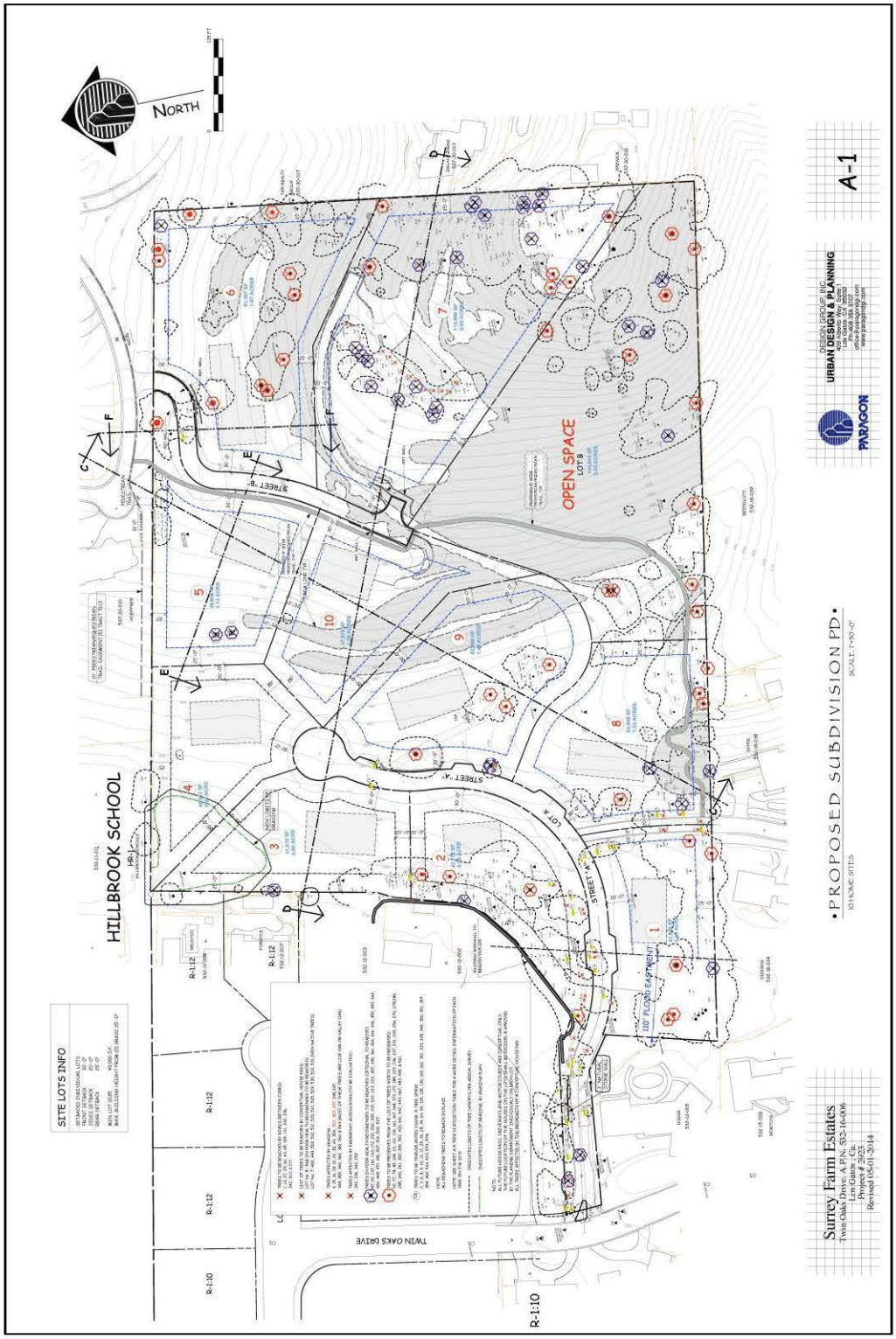

FIGURE 1 – SITE PLAN

V. Existing Noise Environments (Without the Project)

A. Existing Noise Levels

To determine the existing noise environment at the residential receptor locations closest to the two proposed project access drives (most noise impacted locations), continuous recordings of the sound levels were made at two locations. Location 1 was 54 ft. from the centerline of Twin Oaks Drive in the first proposed access drive right-of-way. Location 2 was at the site property line along Cerro Vista Court across the street from the existing residence closest to the second proposed access road. These locations were chosen for security of the sound measuring equipment and to represent the existing noise environment at the residences nearest the project access roads. In addition to the measurements along Twin Oaks Drive and Cerro Vista Court, noise level measurements of activities at Hillbrook School were made for the Hillbrook School expansion project, Ref. (d). The noise measurements of the Hillbrook School activities were made at the property line of the home at 189 Longmeadow Drive, which is immediately adjacent to the northwesterly corner of the project site and adequately represents the potential noise impacts from the school to the project site. The measurement locations are shown on Figure 2, below. The measurements at Twin Oaks Drive and at Cerro Vista Court were made on August 11-12, 2014. The noise measurements of Hillbrook School activities were made September 10-12, 2012. All noise measurements included representative daytime and nighttime hours of the DNL index.

The sound levels were recorded and processed using Larson-Davis Model 812 Precision Integrating Sound Level Meters. The meters yield, by direct readout, a series of descriptors of the sound levels versus time, which include the L_1, L_{10}, L_{50}, and L_{90}, i.e., those levels that are exceeded 1%, 10%, 50%, and 90% of the time. The meters also yield the maximum and minimum levels, and the continuous equivalent-energy levels (L_{eq}), which are used to calculate the DNL. The measured L_{eq}'s are shown in the data tables in Appendix C.

FIGURE 2- NOISE MEASUREMENT LOCATIONS

The L_{eq}'s at measurement Location 1, 54 ft. from the centerline of Twin Oaks Drive, ranged from to 40.3 to 55.9 dBA during the daytime and from 32.7 to 53.5 dBA at night.

The L_{eq}'s at measurement Location 2, 40 ft. from the centerline of Cerro Vista Drive, ranged from 38.1 to 55.5 dBA during the daytime and from 29.3 to 51.8 dBA at night.

The L_{eq}'s on Day 1 of the measurements at the Hillbrook School property line ranged from 37.5 to 59.6 dBA during the daytime and from 32.4 to 49.0dBA at night. The L_{eq}'s on Day 2 of the measurements ranged from 38.4 to 54.9 dBA during the daytime and from 32.5 to 46.8dBA at night.

The highest noise levels occurred during the evening hours of 8:00 to 10:00 PM with the noise levels ranging from 53-55 dBA. This is indicative of cricket noise. Other daytime noise in the Twin Oaks Drive neighborhood was produced by landscaping activities. The higher noise levels along the Hillbrook School property line occurred during the hours of 9:00 – 11:00 AM and 12:00 – 3:00 PM, which is consistent with the student outdoor play periods.

B. Existing Noise Exposures

To calculate the baseline noise exposures at the residential receptors for the determination of project-related noise impacts, the DNL's for the survey locations were calculated by decibel averaging of the L_{eq}'s as they apply to the various time periods of the DNL index. A 10 decibel nighttime weighting factor was applied and the DNL was calculated using the formula shown in Appendix B. The measured L_{eq}'s and DNL calculations are shown in the data tables in Appendix C.

The results of the calculations indicate that the existing noise exposures at measurement Location 1, 54 ft. from the centerline of Twin Oaks Drive, is 53 dB DNL. Of this 53 dB DNL, 44 dB is due to traffic and 52 dB in due to typical neighborhood noise. The neighborhood noise at the planned project site is the same as the measurement location

The existing noise exposure at measurement Location 2, 40 ft. from the centerline of Cerro Vista Court was calculated to be 52 dB DNL. Of this 52 dB DNL, 38 dB is due to traffic and 52 dB is due to typical rural residential background noise.

The existing noise exposure along the north property line closest to Hillbrook School range from 51 to 52 dB DNL. Of the 52 dB DNL on the first day of measurements, 48 dB DNL was due to school activity. Of the 51 dB DNL on the second day of measurements, 46 dB DNL was due to school activity.

VI. Noise Impacts to the Project

Noise exposure impacts to the project will be produced primarily by background traffic with a minor influence of project traffic. The Alternative 1 section, below, analyzes existing + project traffic and Hillbrook School noise impacts to the project under the Alternative 1 scenario. Note that the Hillbrook School noise exposures are the same under both Alternatives.

A. Alternative 1

At the minimum planned building setback of the project to Twin Oaks Drive, 325 ft. from the centerline of the road, the existing traffic noise exposure is 32 dB DNL. The project will add 1 dB to the existing traffic noise exposure The combined traffic noise exposure at the most impacted residence of the project closest to Twin Oaks Drive will be 33 dB DNL It is unknown how much wildlife (primarily cricket) noise will reduce once the project is completed. For the purposes of this study, we are assuming that wildlife noise will remain similar to the current level of 52. Therefore, the total noise exposure at the most impacted project residence near Twin Oaks Drive will be 52 dB DNL.

52 dB DNL (wildlife) + 32 dB DNL (existing traffic) + 25 dB DNL (project traffic) = 52 dB DNL.

The total noise exposure at the project closest to Twin Oaks Drive will be within the 55 dB DNL limit of the Town of Los Gatos Noise Element standards.

At the northerly side of the project along Cerro Vista Court, 40 ft. from the centerline, the existing noise exposure at the impacted planned residence is 52 dB DNL. Existing traffic is 36 dB DNL. There will be no project traffic on Cerro Vista Court under Alternative 1. The project will not add to the existing noise environment at this location. Thus, the noise exposure is within the 55 dB DNL limit of the Town of Los Gatos Noise Element standards.

The existing noise exposures along the north property line closest to Hillbrook School range from 51 to 52 dB DNL during school sessions. Of the 52 dB DNL on the first day of measurements, 48 dB DNL was due to school activity. Of the 51 dB DNL on the second day of measurements, 46 dB DNL was due to school activity. Thus, the noise exposures along the north property line closest to Hillbrook School are within the 55 dB DNL limit of the Town of Los Gatos Noise Element standards.

Impact: Less Than Significant

B. <u>Alternative 2</u>

Under Alternative 2, a portion of the project traffic will use Twin Oaks Drive as a means of accessing the project site and a portion will use Cerro Vista Court. As with Alternative 1, the noise exposure impacts to the project residence closest to Twin Oaks Drive will be a combination of wildlife noise, existing traffic and project traffic (although to a lesser degree). The noise impacts to the most impacted project residence closest to Cerro Vista Court will, likewise, be a combination of wildlife noise, existing traffic and project traffic. The noise impacts to the project from Hillbrook School activities will be the same under both alternatives.

At the minimum planned building setback of the project to Twin Oaks Drive, the existing traffic noise exposure is 32 dB DNL. The project traffic volume of 58 vehicles, which will generate a noise exposure of 23 dB DNL, will add 1 dB to the existing traffic noise exposure. The combined noise exposure at the most impacted residence of the project closest to Twin Oaks Drive will be 33 dB DNL. Therefore, the total noise exposure at the most impacted project residence near Twin Oaks Drive under Alternative 2 will remain at 52 dB DNL.

52 dB DNL (wildlife) + 32 dB DNL (existing traffic) + 23 dB DNL (project traffic) = 52 dB DNL.

The total noise exposure at the project residence closest to Twin Oaks Drive will be within the 55 dB DNL limit of the Town of Los Gatos Noise Element standards. .

At the project property line along Cerro Visa Court, the existing traffic noise exposure is 36 dB DNL. The project traffic volume is expected to be 38 vehicles, which will generate a noise exposure of 35. The project will add 3 dB to the existing traffic noise exposure The combined noise exposure at the most impacted residence of the project closest to Cerro Vista Court will be 39 dB DNL Therefore, the total noise exposure at the most impacted project residence near Cerro Vista Court under Alternative 2 will remain at 52 dB DNL.

52 dB DNL (wildlife) + 36 dB DNL (existing traffic) + 35ldB DNL (project traffic) = 52 dB DNL.

The total noise exposure at the project residence closest to Cero Vista Court will be within the 55 dB DNL limit of the Town of Los Gatos Noise Element standards. .

The existing noise exposure along the north property line closest to Hillbrook School range from 51 to 52 dB DNL. Of the 52 dB DNL on the first day of measurements, 48 dB DNL was due to school activity. Of the 51 dB DNL on the second day of measurements, 46 dB DNL was due to school activity. . Thus, the noise exposures along the north property line closest to Hillbrook School are within the 55 dB DNL limit of the Town of Los Gatos Noise Element standards.

Impact: Less Than Significant

VII. <u>Project-Generated Noise Impacts</u>

The project-generated noise impacts to the surrounding community will be from project traffic and project construction. There are no other potentially significant sources of noise associated with the project that could impact the neighbors Noise sources common in residential communities, such as air-conditioners, swimming pool equipment, dog barking, etc., are prevalent in the area, the noise levels of which are regulated by the Town of Los Gatos Noise Ordinance. Analyses of these types of noises are beyond the scope of this study.

A. <u>Project Traffic – Alternative 1</u>

The existing ambient noise exposure at measurement Location 1, 54 ft. from the centerline of twin Oaks Drive, is 53 dB DNL and is due primarily to normal neighborhood noise and wildlife. The traffic volume on Twin Oaks Drive currently is 281 vehicles per day. The noise exposure due to traffic is 44 dB DNL at 54 ft.

At the property lines of the homes along Twin Oaks Drive, approximately 20 ft. from the centerline, the noise exposure is 54 dB DNL, with 52 dB DNL due to neighborhood and wildlife noise and 50 dB DNL due to traffic.

Changes in the traffic noise exposure due to changes in traffic volume are calculated by the formula:
$\Delta dB = 10\log_{10}(V_1/V_2)$ where, V_1 = new volume and V_2 =original volume.

The project is expected to add 96 vehicles per day to the existing volume of 281 vehicles for a total volume of 377 vehicles per day. The increase in the traffic noise exposure is 1 decibel, which will increase from 50 to 51 dB DNL at the front property lines of the homes along Twin Oaks Drive. The total noise exposure of neighborhood noise and wildlife with the combined traffic noise exposure will be up to 55 dB DNL. Thus, the noise exposures in the area will remain within the 55 dB DNL limit of the Town of Los Gatos Noise Element.

Impact: Less Than Significant.

B. <u>Project Traffic –Alternative 2</u>

With the two access alternative, the 96 vehicles per day generated by the project as a whole, will be split between the Twin Oaks Drive access and the Cerro Vista Court access. The project traffic volume on Twin Oaks Drive under Alternative 2 is expected to be 58 vehicles per day and will generate a noise exposure of 43 dB DNL at 20 ft. from the centerline. The total traffic volume will be 339 vehicles per day. Like Alternative 1, this is a 1 dB increase. The total traffic noise exposure will be 51 dB DNL and will be within the limits of the Town of Los Gatos Noise Element standards. When combined with the background noise exposure of 52 dB DNL, the total noise exposure will be up to 55 dB DNL. The noise exposures will be within the 55 dB DNL limit of the Town of Los Gatos Noise Element standard and the project will result in a 1 decibel increase in the ambient noise levels.

Impact: Less Than Significant

The existing ambient noise exposure at measurement Location 2, 40 ft. from the centerline of Cerro Vista Court, is 52 dB DNL and is due primarily to normal neighborhood noise and wildlife. The traffic volume on Cerro Vista Court currently is 48 vehicles per day. The noise exposure due to traffic is 36 dB DNL at 40 ft.

At the property line of the most impacted home directly across Cerro Vista Court, approximately 10 ft. from the centerline, the noise exposure is 53 dB DNL, with 52 dB DNL due to neighborhood and wildlife noise and 45 dB DNL due to traffic.

The project is expected to add 38 vehicles per day to the existing volume of 48 vehicles for a total volume of 86 vehicles per day. The increase in the traffic noise exposure is 3 decibels, which will increase from 45 dB DNL to 48 dB DNL at the front property line of the home along Cerro Vista Court. The total noise exposure of neighborhood noise and wildlife with the combined traffic noise exposure will be up to 54 dB DNL, with 52 dB DNL due to neighborhood noise and wildlife and 48 dB DNL due to the traffic. Thus, the noise exposures in the area will remain within the 55 dB DNL limit of the Town of Los Gatos Noise Element. The increase in the noise exposure will be 1 decibel.

Impact: Less Than Significant

C. Construction

Short-term construction impacts may be created during construction of the development. Construction equipment generates noise levels in the range of 70 to 90 dBA at a 50 ft. distance from the source, and has a potential to disturb residences to the north, south, east and west. The highest noise levels at the residential property boundaries will be up to approximately 76 to 96 dBA at the residences closest to the project site when heavy equipment operates near the property lines. Hourly average noise levels will range from 74 to 89 dBA L_{eq} with the highest noise levels occurring during grading of the site near the residences. The noise exposures are likely to be up to 80 dB DNL on the noisiest days. Typical noise exposures from construction will be 54-74 dB DNL.

Impact: Significant But Temporary

VIII. Mitigation Measures

A. Impacts to the Project

No noise mitigation required.

B. Project-Generated Impacts

Traffic - No noise mitigation required.

Construction Noise

Mitigation of the construction phase noise at the site can be accomplished by using quiet or "new technology" equipment. The greatest potential for noise abatement of current equipment should be the quieting of exhaust noises by use of improved mufflers. It is recommended that all internal combustion engines used at the project site be equipped with a type of muffler recommended by the vehicle manufacturer. In addition, all equipment should be in good mechanical condition so as to minimize noise created by faulty or poorly maintained engine, drive-train and other components. Construction noise can also be mitigated by the following:

- Utilizing temporary berms or noise barriers, such as lumber or other material stockpiles and construction trailers.
- Stationary equipment, such as compressors and generators, shall be housed in acoustical enclosures and placed as far from sensitive receptors as feasible.
- Utilize “quiet” or “sound suppressed” equipment where the technology exists.
- Use wheeled earth moving equipment rather than track equipment.
- Provide a noise disturbance coordinator with a phone number and email address so that the nearby residents have a contact person is case of a noise problem.
- Adhere to the construction noise requirements contained in the Town of Los Gatos Noise Ordinance. Construction hours are limited to 8:00 AM to 8:00 PM weekdays and 9:00 AM to 7:00 PM weekends and equipment shall emit noise levels no greater than 85 dBA at 25 ft. or noise shall not exceed 85 dBA outside of the site boundary.

- Keep vehicles routes clean and smooth both on site and off site to minimize noise and vibration from vehicles rolling over rough surfaces.

- Nail guns should be used where possible as they are less noisy than manual hammering

VII. Conclusions

In conclusion, the noise impacts to the project from local traffic and activities at Hillbrook School will be within the limits of the Town of Los Gatos Noise Element standards. Noise impacts to the project will be less than significant.

Project-generated noise impacts from traffic on local roadways will be within the limits of the standards and will not significantly add to the existing noise environments in the vicinity of the site. Project-generated traffic noise will be less than significant.

Noise from construction of the homes on the site will create a significant but temporary impact to the existing residences immediately adjacent to the site. Noise mitigation for construction will be required. The recommended measures are described in Section V of this report.

This report presents the results of a noise assessment study for the planned "Surrey Farm Estates" single-family development off of Twin Oaks Drive and Cerro Vista Court is Los Gatos. The study findings are based on field measurements and other data and are correct to the best of our knowledge. However, future changes in site planning, reported traffic volumes, noise regulations or other future changes beyond our control may result in long-range noise levels different than our estimates. If you have any questions or would like an elaboration on this report, please call me.

Sincerely,

EDWARD L. PACK ASSOC., INC.

Jeffrey K. Pack
President

APPENDIX A

References:

(a) Town of Los Gatos 2020 General Plan, Chapter 10, "Noise Element", September, 2010

(b) "Traffic Impact Study Memorandum", Traffic Study for the Surry Farm Estates Development in Los Gatos, CA, by Hexagon Transportation Consultants, Inc., May 30, 2014, with amendments via email to Edward L. Pack Associates, Inc., from Hexagon Transportation Consultants, Inc., September 18, 2014

(c) Site Plan, Surry Farm Estates, by Paragon Design Group, Inc., May 22, 2012

(d) "Noise Assessment Study for the Planned Hillbrook School", by Edward L. Pack Associates, Inc., Project No. 43-035, August 9, 2010

APPENDIX B

Noise Standards, Terminology, Instrumentation,

1. Noise Standards

A. Town of Los Gatos Noise Element Standards

The Noise Element of the General Plan of the Town of Los Gatos 2020, adopted September 2010, specifies noise goals for various land uses.

Land Use	dB DNL	dBA $L_{eq(24)}$
Residential	55	
Commercial		70
Industrial		70
Open Space		
Intensive (developed park)		55
Passive (natural park)		50
Hospital		55
Educational		55

Interior noise exposures for single-family developments are specified to be the same as multi-family developments. This statement asserts coincidence with the standard of the State of California Code of Regulations, Title 24 noise limit of 45 dB DNL for all new housing.

2. Terminology

A. Statistical Noise Levels

Due to the fluctuating character of urban traffic noise, statistical procedures are needed to provide an adequate description of the environment. A series of statistical descriptors have been developed which represent the noise levels exceeded a given percentage of the time. These descriptors are obtained by direct readout of the Sound Level Meters and Noise Analyzers. Some of the statistical levels used to describe community noise are defined as follows:

L_1 - A noise level exceeded for 1% of the time.

L_{10} - A noise level exceeded for 10% of the time, considered to be an "intrusive" level.

L_{50} - The noise level exceeded 50% of the time representing an "average" sound level.

L_{90} - The noise level exceeded 90 % of the time, designated as a "background" noise level.

L_{eq} - The continuous equivalent-energy level is that level of a steady-state noise having the same sound energy as a given time-varying noise. The L_{eq} represents the decibel level of the time-averaged value of sound energy or sound pressure squared and is used to calculate the DNL and CNEL.

B. Day-Night Level (DNL)

Noise levels utilized in the standards are described in terms of the Day-Night Level (DNL). The DNL rating is determined by the cumulative noise exposures occurring over a 24-hour day in terms of A-Weighted sound energy. The 24-hour day is divided into two subperiods for the DNL index, i.e., the daytime period from 7:00 a.m. to 10:00 p.m., and the nighttime period from 10:00 p.m. to 7:00 a.m. A 10 dBA weighting factor is applied (added) to the noise levels occurring during the nighttime period to account for the greater sensitivity of people to noise during these hours. The DNL is calculated from the measured L_{eq} in accordance with the following mathematical formula:

$$DNL = [(L_d+10\log_{10}15) \,\&\, (L_n+10+10\log_{10}9)] - 10\log_{10}24$$

Where:

L_d = L_{eq} for the daytime (7:00 a.m. to 10:00 p.m.)

L_n = L_{eq} for the nighttime (10:00 p.m. to 7:00 a.m.)

24 indicates the 24-hour period

& denotes decibel addition.

C. A-Weighted Sound Level

The decibel measure of the sound level utilizing the "A" weighted network of a sound level meter is referred to as "dBA". The "A" weighting is the accepted standard weighting system used when noise is measured and recorded for the purpose of determining total noise levels and conducting statistical analyses of the environment so that the output correlates well with the response of the human ear.

3. Instrumentation

The on-site field measurement data were acquired by the use of one or more of the precision acoustical instruments shown below. The acoustical instrumentation provides a direct readout of the L exceedance statistical levels including the equivalent-energy level (L_{eq}). Input to the meters was provided by a microphone extended to a height of 5 ft. above the ground. The meter conforms to ANSI S1.4 for Type 1 instruments. The "A" weighting network and the "Fast" response setting of the meter were used in conformance with the applicable ISO and IEC standards. All instrumentation was acoustically calibrated before and after field tests to assure accuracy.

Bruel & Kjaer 2231 Precision Integrating Sound Level Meter
Larson Davis LDL 812 Precision Integrating Sound Level Meter
Larson Davis 2900 Real Time Analyzer

APPENDIX C

Noise Measurement Data and Calculation Tables

DNL CALCULATIONS

CLIENT: GEIER & GEIER
FILE: 46-037
PROJECT: SURREY FARMS SINGLE-FAMILY
DATE: 8/11-12/2014
SOURCE: TWIN OAKS DR./CERRO PLATA DR.

LOCATION 1 Twin Oaks Dr.
Dist. To Source 54 ft.

TIME	Leq	10^Leq/10		
7:00 AM	41.1	12882.5		
8:00 AM	43.3	21379.6		
9:00 AM	44.3	26915.3		
10:00 AM	53.0	199526.2		
11:00 AM	51.2	131825.7		
12:00 PM	42.5	17782.8		
1:00 PM	42.3	16982.4		
2:00 PM	41.6	14454.4		
3:00 PM	44.8	30199.5		
4:00 PM	44.6	28840.3		
5:00 PM	42.0	15848.9		
6:00 PM	43.0	19952.6		
7:00 PM	40.3	10715.2		
8:00 PM	53.9	245470.9		
9:00 PM	55.9	389045.1	SUM=	1181822
10:00 PM	53.5	223872.1	Ld=	60.7
11:00 PM	46.6	45708.8		
12:00 AM	43.0	19952.6		
1:00 AM	42.6	18197.0		
2:00 AM	40.9	12302.7		
3:00 AM	43.2	20893.0		
4:00 AM	34.5	2818.4		
5:00 AM	32.7	1862.1		
6:00 AM	39.7	9332.5	SUM=	354939
			Ln=	55.5

Daytime Level= 60.7
Nighttime Level= 65.5
DNL= 53
24-Hour Leq= 48.1

LOCATION 2 Cerro Vista Ct.
Dist. To Source 40 ft.

TIME		10^Leq/10		
7:00 AM	41.2	13182.6		
8:00 AM	39.6	9120.1		
9:00 AM	43.6	22908.7		
10:00 AM	39.4	8709.6		
11:00 AM	38.4	6918.3		
12:00 PM	47.3	53703.2		
1:00 PM	50.8	120226.4		
2:00 PM	39.2	8317.6		
3:00 PM	41.6	14454.4		
4:00 PM	44.3	26915.3		
5:00 PM	42.4	17378.0		
6:00 PM	44.3	26915.3		
7:00 PM	38.1	6456.5		
8:00 PM	55.1	323593.7		
9:00 PM	55.5	354813.4	SUM=	1013613
10:00 PM	51.8	151356.1	Ld=	60.1
11:00 PM	46.8	47863.0		
12:00 AM	43.6	22908.7		
1:00 AM	41.0	12589.3		
2:00 AM	38.1	6456.5		
3:00 AM	42.6	18197.0		
4:00 AM	29.6	912.0		
5:00 AM	29.3	851.1		
6:00 AM	37.5	5623.4	SUM=	266757
			Ln=	54.3

Daytime Level= 60.1
Nighttime Level= 64.3
DNL= 52
24-Hour Leq= 47.3

APPENDIX H

CALEEMOD OUTPUTS FOR PROPOSED PROJECT AND TWO ACCESS ALTERNATIVE (OCTOBER 2014)

AIRSCREEN MODEL OUTPUT (OCTOBER 2014)

BY
GEIER & GEIER CONSULTING, INC.

Surrey Farms Original Plan

San Francisco Bay Area Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	10.00	Dwelling Unit	1.71	18,000.00	29
Other Asphalt Surfaces	1.18	Acre	1.18	51,400.80	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2016
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Pro□ect Characteristics □

Land Use □de□eloped site acreage for residences

Construction Phase □Grading: 15 days, Construction: 220 days, Pa□ing: 10 days

Off□road E□uipment □Grading: 1 grader, 1 dozer, 2 loader/bac□hoes

Off□road E□uipment □Construction: 1 crane, 2 for□lifts, 1 gen set, 1 loader/bac□hoe, 3 welders

Off□road E□uipment □Pa□ing: 1 cement mi□er, 1 pa□er, 1 pa□ing e□uipment, 2 rollers, 1 loader/bac□hoe

Grading □4250 C□ E□port

□rips and VM□ □531 haul trips

Construction Off□road E□uipment Mitigation □water e□posed surfaces 2□daily

Area Mitigation □natural gas hearths

□able □ame	Column □ame	Default Value	□ew Value
tblConstructionPhase	□umDays	10.00	220.00
tblConstructionPhase	□umDays	6.00	15.00
tblConstructionPhase	PhaseEndDate	10/18/2016	12/15/2015
tblConstructionPhase	PhaseEndDate	11/25/2015	12/15/2015
tblConstructionPhase	PhaseStartDate	12/16/2015	2/11/2015
tblConstructionPhase	PhaseStartDate	1/22/2015	2/11/2015
tblGrading	AcresOfGrading	7.50	3.00
tblGrading	MaterialE□ported	0.00	4,250.00
tblLandUse	LotAcreage	3.25	1.71
tblPro□ectCharacteristics	Operational□ear	2014	2016

2.0 Emissions Summary

2.1 O□erall Construction (Ma□imum Daily Emission)

Unmitigated Construction

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
□ear	lb/day										lb/day					
2015	12.6574	43.1675	29.0161	0.0484	6.9773	1.9997	8.9134	3.5319	1.9255	5.3130	0.0000	4,976.1994	4,976.1994	0.6743	0.0000	4,990.3588
□otal	**12.□□□4**	**43.1□□□**	**2□.01□1**	**0.04□4**	**□.□□□3**	**1.□□□□**	**□.□134**	**3.□31□**	**1.□2□□**	**□.3130**	**0.0000**	**4,□□□.1□□4**	**4,□□□.1□□4**	**0.□□43**	**0.0000**	**4,□□0.3□□□**

Mitigated Construction

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
□ear	lb/day										lb/day					
2015	12.6574	43.1675	29.0161	0.0484	3.5309	1.9997	5.4670	1.6960	1.9255	3.4771	0.0000	4,976.1994	4,976.1994	0.6743	0.0000	4,990.3588
□otal	**12.□□□4**	**43.1□□□**	**2□.01□1**	**0.04□4**	**3.□30□**	**1.□□□□**	**□.4□□0**	**1.□□□0**	**1.□2□□**	**3.4□□1**	**0.0000**	**4,□□□.1□□4**	**4,□□□.1□□4**	**0.□□43**	**0.0000**	**4,□□0.3□□□**

	□O□	NO□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.□	E□haust PM2.□	PM2.□ □otal	Bio- CO2	NBio-CO2	□otal CO2	CH4	N20	CO2e
Percent □eduction	**0.00**	**0.00**	**0.00**	**0.00**	**4□.40**	**0.00**	**3□.□□**	**□1.□□**	**0.00**	**34.□□**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 O□erall Operational

Unmitigated Operational

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Area	21.8720	0.2687	24.6992	7.2700e□ 003		3.3396	3.3396		3.3395	3.3395	344.7124	137.3681	482.0805	0.2536	0.0282	496.1471
Energy	0.0151	0.1288	0.0548	8.2000e□ 004		0.0104	0.0104		0.0104	0.0104		164.4480	164.4480	3.1500e□ 003	3.0100e□ 003	165.4488
Mobile	0.3704	0.7747	3.5118	6.9800e□ 003	0.4778	0.0106	0.4884	0.1278	9.7100e□ 003	0.1375		611.0266	611.0266	0.0255		611.5627
□otal	**22.2□□□**	**1.1□23**	**2□.2□□□**	**0.01□1**	**0.4□□□**	**3.3□0□**	**3.□3□4**	**0.12□□**	**3.3□□□**	**3.4□□4**	**344.□124**	**□12.□42□**	**1,2□□.□□□ 1**	**0.2□23**	**0.0312**	**1,2□3.1□□ □**

Mitigated Operational

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Area	2.0160	9.7900e□ 003	0.8379	4.0000e□ 005		0.0209	0.0209		0.0208	0.0208	0.0000	260.8976	260.8976	6.4900e□ 003	4.7600e□ 003	262.5081
Energy	0.0151	0.1288	0.0548	8.2000e□ 004		0.0104	0.0104		0.0104	0.0104		164.4480	164.4480	3.1500e□ 003	3.0100e□ 003	165.4488
Mobile	0.3704	0.7747	3.5118	6.9800e□ 003	0.4778	0.0106	0.4884	0.1278	9.7100e□ 003	0.1375		611.0266	611.0266	0.0255		611.5627
□otal	**2.401□**	**0.□133**	**4.404□**	**□.□400e-003**	**0.4□□□**	**0.041□**	**0.□1□□**	**0.12□□**	**0.040□**	**0.1□□□**	**0.0000**	**1,03□.3□2 2**	**1,03□.3□2 2**	**0.03□2**	**□.□□00e-003**	**1,03□.□1□ □**

	□O□	NO□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.□	E□haust PM2.□	PM2.□ □otal	Bio- CO2	NBio-CO2	□otal CO2	CH4	N20	CO2e
Percent □eduction	**□□.21**	**22.0□**	**□4.42**	**4□.□□**	**0.00**	**□□.□□**	**□□.4□**	**0.00**	**□□.□□**	**□□.1□**	**100.00**	**-13.□3**	**1□.□□**	**□□.□4**	**□□.10**	**1□.3□**

3.0 Construction Detail

Construction Phase

Phase □umber	Phase □ame	Phase □ype	Start Date	End Date	□um Days □ ee□	□um Days	Phase Description
1	Grading	Grading	1/1/2015	1/21/2015	5	15	
2	□uilding Construction	□uilding Construction	2/11/2015	12/15/2015	5	220	
3	Architectural Coating	Architectural Coating	2/11/2015	12/15/2015	5	220	
4	Pa□ing	Pa□ing	12/16/2015	12/29/2015	5	10	

Acres of □rading (Site Preparation Phase)□0

Acres of □rading (□rading Phase)□3

Acres of Pa□ing□0

□esidential Indoor□3□,4□0□□esidential Outdoor□12,1□0□Non-□esidential Indoor□□□,101□Non-□esidential Outdoor□2□,□00 (Architectural Coating □sqft)

Off□oad Equipment

Phase □ame	Offroad E□uipment □ype	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Pa□ing	Cement and Mortar Mi□ers	1	8.00	9	0.56
□uilding Construction	Generator Sets	1	8.00	84	0.74
□uilding Construction	Cranes	1	8.00	226	0.29
□uilding Construction	For□lifts	2	7.00	89	0.20
Pa□ing	Pa□ers	1	8.00	125	0.42
Pa□ing	□ollers	2	8.00	80	0.38
Grading	□ubber □ired Dozers	1	8.00	255	0.40
□uilding Construction	□ractors/Loaders/□ac□hoes	1	6.00	97	0.37
Grading	□ractors/Loaders/□ac□hoes	2	7.00	97	0.37
Pa□ing	□ractors/Loaders/□ac□hoes	1	8.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Pa□ing	Pa□ing E□uipment	1	8.00	130	0.36
□uilding Construction	□ elders	3	8.00	46	0.45

□rips and □M□

Phase □ame	Offroad E□uipment Count	□ or□er □rip □umber	Vendor □rip □umber	Hauling □rip □umber	□ or□er □rip Length	Vendor □rip Length	Hauling □rip Length	□ or□er Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	4	10.00	0.00	531.00	12.40	7.30	20.00	LD□Mi□	HD□□Mi□	HHD□
□uilding Construction	8	25.00	9.00	0.00	12.40	7.30	20.00	LD□Mi□	HD□□Mi□	HHD□
Pa□ing	6	15.00	0.00	0.00	12.40	7.30	20.00	LD□Mi□	HD□□Mi□	HHD□
Architectural Coating	1	5.00	0.00	0.00	12.40	7.30	20.00	LD□Mi□	HD□□Mi□	HHD□

3.1 Mitigation Measures Construction

□ ater E□posed Area

Clean Pa□ed □oads

3.2 □rading - 201□

Unmitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Fugiti□e Dust					6.2662	0.0000	6.2662	3.3380	0.0000	3.3380			0.0000			0.0000
Off□□oad	2.9656	31.2611	20.2019	0.0206		1.7524	1.7524		1.6122	1.6122		2,164.1012	2,164.1012	0.6461		2,177.6687
□otal	**2.□□□□**	**31.2□11**	**20.201□**	**0.020□**	**□.2□□2**	**1.□□24**	**□.01□□**	**3.33□0**	**1.□122**	**4.□□02**		**2,1□4.1012**	**2,1□4.1012**	**0.□4□1**		**2,1□□.□□□□**

Unmitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Hauling	0.8666	11.8522	8.1812	0.0266	0.6168	0.1829	0.7996	0.1689	0.1682	0.3370		2,711.1800	2,711.1800	0.0227		2,711.6566
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0451	0.0542	0.6329	1.1600e□003	0.0943	8.0000e□004	0.0951	0.0250	7.4000e□004	0.0258		100.9183	100.9183	5.4800e□003		101.0334
□otal	**0.□11□**	**11.□0□4**	**□.□141**	**0.02□□**	**0.□111**	**0.1□3□**	**0.□□4□**	**0.1□3□**	**0.1□□□**	**0.3□2□**		**2,□12.0□□3**	**2,□12.0□□3**	**0.02□2**		**2,□12.□□01**

3.2 □rading - 201□

Mitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Fugiti□e Dust					2.8198	0.0000	2.8198	1.5021	0.0000	1.5021			0.0000			0.0000
Off□□oad	2.9656	31.2611	20.2019	0.0206		1.7524	1.7524		1.6122	1.6122	0.0000	2,164.1012	2,164.1012	0.6461		2,177.6687
□otal	**2.□□□□**	**31.2□11**	**20.201□**	**0.020□**	**2.□1□□**	**1.□□24**	**4.□□22**	**1.□021**	**1.□122**	**3.1143**	**0.0000**	**2,1□4.1012**	**2,1□4.1012**	**0.□4□1**		**2,1□□.□□□□**

Mitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Hauling	0.8666	11.8522	8.1812	0.0266	0.6168	0.1829	0.7996	0.1689	0.1682	0.3370		2,711.1800	2,711.1800	0.0227		2,711.6566
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0451	0.0542	0.6329	1.1600e□003	0.0943	8.0000e□004	0.0951	0.0250	7.4000e□004	0.0258		100.9183	100.9183	5.4800e□003		101.0334
□otal	**0.□11□**	**11.□0□4**	**□.□141**	**0.02□□**	**0.□111**	**0.1□3□**	**0.□□4□**	**0.1□3□**	**0.1□□□**	**0.3□2□**		**2,□12.0□□3**	**2,□12.0□□3**	**0.02□2**		**2,□12.□□01**

3.3 Building Construction - 201□

Unmitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Off□□oad	4.0268	25.8389	17.0465	0.0249		1.7597	1.7597		1.6870	1.6870		2,364.0797	2,364.0797	0.5662		2,375.9701
□otal	**4.02□□**	**2□.□3□□**	**1□.04□□**	**0.024□**		**1.□□□□**	**1.□□□□**		**1.□□□0**	**1.□□□0**		**2,3□4.0□□□**	**2,3□4.0□□□**	**0.□□□2**		**2,3□□.□□01**

Unmitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1142	1.0026	1.1327	2.1500e□003	0.0598	0.0167	0.0766	0.0171	0.0154	0.0325		217.7643	217.7643	1.9300e□003		217.8049
□ or□er	0.1128	0.1355	1.5823	2.9000e□003	0.2358	2.0100e□003	0.2378	0.0625	1.8400e□003	0.0644		252.2957	252.2957	0.0137		252.5836
□otal	**0.22□1**	**1.13□2**	**2.□1□0**	**□.0□00e-003**	**0.2□□□**	**0.01□□**	**0.3143**	**0.0□□□**	**0.01□2**	**0.0□□□**		**4□0.0□00**	**4□0.0□00**	**0.01□□**		**4□0.3□□□**

3.3 Building Construction - 201□

Mitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Off□□oad	4.0268	25.8389	17.0465	0.0249		1.7597	1.7597		1.6870	1.6870	0.0000	2,364.0797	2,364.0797	0.5662		2,375.9701
□otal	**4.02□□**	**2□.□3□□**	**1□.04□□**	**0.024□**		**1.□□□□**	**1.□□□□**		**1.□□□0**	**1.□□□0**	**0.0000**	**2,3□4.0□□□**	**2,3□4.0□□□**	**0.□□□2**		**2,3□□.□□01**

Mitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1142	1.0026	1.1327	2.1500e□003	0.0598	0.0167	0.0766	0.0171	0.0154	0.0325		217.7643	217.7643	1.9300e□003		217.8049
□ or□er	0.1128	0.1355	1.5823	2.9000e□003	0.2358	2.0100e□003	0.2378	0.0625	1.8400e□003	0.0644		252.2957	252.2957	0.0137		252.5836
□otal	**0.22□1**	**1.13□2**	**2.□1□0**	**□.0□00e-003**	**0.2□□□**	**0.01□□**	**0.3143**	**0.0□□□**	**0.01□2**	**0.0□□□**		**4□0.0□00**	**4□0.0□00**	**0.01□□**		**4□0.3□□□**

3.4 Architectural Coating - 201□

Unmitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.9744					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off□□oad	0.4066	2.5703	1.9018	2.9700e□003		0.2209	0.2209		0.2209	0.2209		281.4481	281.4481	0.0367		282.2177
□otal	**□.3□10**	**2.□□03**	**1.□01□**	**2.□□00e-003**		**0.220□**	**0.220□**		**0.220□**	**0.220□**		**2□1.44□1**	**2□1.44□1**	**0.03□□**		**2□2.21□□**

Unmitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0226	0.0271	0.3165	5.8000e□004	0.0472	4.0000e□004	0.0476	0.0125	3.7000e□004	0.0129		50.4591	50.4591	2.7400e□003		50.5167
□otal	**0.022□**	**0.02□1**	**0.31□□**	**□.□000e-004**	**0.04□2**	**4.0000e-004**	**0.04□□**	**0.012□**	**3.□000e-004**	**0.012□**		**□0.4□□1**	**□0.4□□1**	**2.□400e-003**		**□0.□1□□**

3.4 Architectural Coating - 201□

Mitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	7.9744					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off□□oad	0.4066	2.5703	1.9018	2.9700e□003		0.2209	0.2209		0.2209	0.2209	0.0000	281.4481	281.4481	0.0367		282.2177
□otal	**□.3□10**	**2.□□03**	**1.□01□**	**2.□□00e-003**		**0.220□**	**0.220□**		**0.220□**	**0.220□**	**0.0000**	**2□1.44□1**	**2□1.44□1**	**0.03□□**		**2□2.21□□**

Mitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0226	0.0271	0.3165	5.8000e□004	0.0472	4.0000e□004	0.0476	0.0125	3.7000e□004	0.0129		50.4591	50.4591	2.7400e□003		50.5167
□otal	**0.022□**	**0.02□1**	**0.31□□**	**□.□000e-004**	**0.04□2**	**4.0000e-004**	**0.04□□**	**0.012□**	**3.□000e-004**	**0.012□**		**□0.4□□1**	**□0.4□□1**	**2.□400e-003**		**□0.□1□□**

3.□Pa□ing - 201□

Unmitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Off□□oad	1.9443	19.7532	12.2652	0.0176		1.2418	1.2418		1.1437	1.1437		1,823.2763	1,823.2763	0.5345		1,834.5006
Pa□ing	0.3092					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
□otal	**2.2□3□**	**1□.□□32**	**12.2□□2**	**0.01□□**		**1.241□**	**1.241□**		**1.143□**	**1.143□**		**1,□23.2□□3**	**1,□23.2□□3**	**0.□34□**		**1,□34.□00□**

Unmitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0677	0.0813	0.9494	1.7400e□003	0.1415	1.2100e□003	0.1427	0.0375	1.1000e□003	0.0386		151.3774	151.3774	8.2300e□003		151.5501
□otal	**0.0□□□**	**0.0□13**	**0.□4□4**	**1.□400e-003**	**0.141□**	**1.2100e-003**	**0.142□**	**0.03□□**	**1.1000e-003**	**0.03□□**		**1□1.3□□4**	**1□1.3□□4**	**□.2300e-003**		**1□1.□□01**

3.□Pa□ing - 201□

Mitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Off□□oad	1.9443	19.7532	12.2652	0.0176		1.2418	1.2418		1.1437	1.1437	0.0000	1,823.2763	1,823.2763	0.5345		1,834.5006
Pa□ing	0.3092					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
□otal	**2.2□3□**	**1□.□□32**	**12.2□□2**	**0.01□□**		**1.241□**	**1.241□**		**1.143□**	**1.143□**	**0.0000**	**1,□23.2□□3**	**1,□23.2□□3**	**0.□34□**		**1,□34.□00□**

Mitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0677	0.0813	0.9494	1.7400e□003	0.1415	1.2100e□003	0.1427	0.0375	1.1000e□003	0.0386		151.3774	151.3774	8.2300e□003		151.5501
□otal	**0.0□□□**	**0.0□13**	**0.□4□4**	**1.□400e-003**	**0.141□**	**1.2100e-003**	**0.142□**	**0.03□□**	**1.1000e-003**	**0.03□□**		**1□1.3□□4**	**1□1.3□□4**	**□.2300e-003**		**1□1.□□01**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.3704	0.7747	3.5118	6.9800e□003	0.4778	0.0106	0.4884	0.1278	9.7100e□003	0.1375		611.0266	611.0266	0.0255		611.5627
Unmitigated	0.3704	0.7747	3.5118	6.9800e□003	0.4778	0.0106	0.4884	0.1278	9.7100e□003	0.1375		611.0266	611.0266	0.0255		611.5627

4.2 □rip Summary Information

	A□erage Daily □rip □ate			Unmitigated	Mitigated
Land Use	□ ee□day	Saturday	Sunday	Annual VM□	Annual VM□
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	95.70	100.80	87.70	212,713	212,713
□otal	95.70	100.80	87.70	212,713	212,713

4.3 □rip □ype Information

	Miles			□rip □			□rip Purpose □		
Land Use	H□□ or C□□	H□S or C□C	H□O or C□□□	H□□ or C□□	H□S or C□C	H□O or C□□□	Primary	Di□erted	Pass□by
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3

LDA	LD□1	LD□2	MDV	LHD1	LHD2	MHD	HHD	O□US	U□US	MC□	S□US	MH
0.546434	0.062864	0.174629	0.123506	0.034170	0.004889	0.015456	0.023695	0.002073	0.003288	0.006639	0.000690	0.001668

4.0 Energy Detail

Historical Energy Use: □

□.1 Mitigation Measures Energy

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
□aturalGas Mitigated	0.0151	0.1288	0.0548	8.2000e□004		0.0104	0.0104		0.0104	0.0104		164.4480	164.4480	3.1500e□003	3.0100e□003	165.4488
□aturalGas Unmitigated	0.0151	0.1288	0.0548	8.2000e□004		0.0104	0.0104		0.0104	0.0104		164.4480	164.4480	3.1500e□003	3.0100e□003	165.4488

□.2 Energy by Land Use - Natural□as

Unmitigated

	□aturalGas Use	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Land Use	□□□U/yr	lb/day										lb/day					
Single Family Housing	1397.81	0.0151	0.1288	0.0548	8.2000e□004		0.0104	0.0104		0.0104	0.0104		164.4480	164.4480	3.1500e□003	3.0100e□003	165.4488
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
□otal		**0.01□1**	**0.12□□**	**0.0□4□**	**□.2000e-004**		**0.0104**	**0.0104**		**0.0104**	**0.0104**		**1□4.44□0**	**1□4.44□0**	**3.1□00e-003**	**3.0100e-003**	**1□□.44□□**

□.2 Energy by Land Use - Natural□as

Mitigated

	□aturalGas Use	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Land Use	□□□U/yr	lb/day										lb/day					
Single Family Housing	1.39781	0.0151	0.1288	0.0548	8.2000e□004		0.0104	0.0104		0.0104	0.0104		164.4480	164.4480	3.1500e□003	3.0100e□003	165.4488
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
□otal		**0.01□1**	**0.12□□**	**0.0□4□**	**□.2000e-004**		**0.0104**	**0.0104**		**0.0104**	**0.0104**		**1□4.44□0**	**1□4.44□0**	**3.1□00e-003**	**3.0100e-003**	**1□□.44□□**

□.0 Area Detail

□.1 Mitigation Measures Area

Use only □atural Gas Hearths

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.0160	9.7900e□003	0.8379	4.0000e□005		0.0209	0.0209		0.0208	0.0208	0.0000	260.8976	260.8976	6.4900e□003	4.7600e□003	262.5081
Unmitigated	21.8720	0.2687	24.6992	7.2700e□003		3.3396	3.3396		3.3395	3.3395	344.7124	137.3681	482.0805	0.2536	0.0282	496.1471

□.2 Area by SubCategory

Unmitigated

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4807					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.4852					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	19.8799	0.2590	23.8625	7.2300e□003		3.3351	3.3351		3.3350	3.3350	344.7124	135.8824	480.5947	0.2521	0.0282	494.6295
Landscaping	0.0264	9.7900e□003	0.8366	4.0000e□005		4.5100e□003	4.5100e□003		4.5100e□003	4.5100e□003		1.4858	1.4858	1.5100e□003		1.5176
□otal	**21.□□21**	**0.2□□□**	**24.□□□2**	**□.2□00e-003**		**3.33□□**	**3.33□□**		**3.33□□**	**3.33□□**	**344.□124**	**13□.3□□1**	**4□2.0□0□**	**0.2□3□**	**0.02□2**	**4□□.14□1**

□.2 Area by SubCategory

Mitigated

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.4807					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.4852					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0238	0.0000	1.3000e□003	0.0000		0.0164	0.0164		0.0163	0.0163	0.0000	259.4118	259.4118	4.9700e□003	4.7600e□003	260.9905
Landscaping	0.0264	9.7900e□003	0.8366	4.0000e□005		4.5100e□003	4.5100e□003		4.5100e□003	4.5100e□003		1.4858	1.4858	1.5100e□003		1.5176
□otal	**2.01□0**	**□.□□00e-003**	**0.□3□□**	**4.0000e-00□**		**0.020□**	**0.020□**		**0.020□**	**0.020□**	**0.0000**	**2□0.□□□□**	**2□0.□□□□**	**□.4□00e-003**	**4.□□00e-003**	**2□2.□0□1**

□.0 Water Detail

□.1 Mitigation Measures Water

□.0 Waste Detail

□.1 Mitigation Measures Waste

□.0 Operational Offroad

E□uipment □ype	□umber	Hours/Day	Days/□ear	Horse Power	Load Factor	Fuel □ype

10.0 □egetation

Surrey Farms Original Plan

San Francisco Bay Area Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	10.00	Dwelling Unit	1.71	18,000.00	29
Other Asphalt Surfaces	1.18	Acre	1.18	51,400.80	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2016
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Pro□ect Characteristics □

Land Use □de□eloped site acreage for residences

Construction Phase □Grading: 15 days, Construction: 220 days, Pa□ing: 10 days

Off□road E□uipment □Grading: 1 grader, 1 dozer, 2 loader/bac□hoes

Off□road E□uipment □Construction: 1 crane, 2 for□lifts, 1 gen set, 1 loader/bac□hoe, 3 welders

Off□road E□uipment □Pa□ing: 1 cement mi□er, 1 pa□er, 1 pa□ing e□uipment, 2 rollers, 1 loader/bac□hoe

Grading □4250 C□ E□port

□rips and VM□ □531 haul trips

Construction Off□road E□uipment Mitigation □water e□posed surfaces 2□daily

Area Mitigation □natural gas hearths

□able □ame	Column □ame	Default Value	□ew Value
tblConstructionPhase	□umDays	10.00	220.00
tblConstructionPhase	□umDays	6.00	15.00
tblConstructionPhase	PhaseEndDate	10/18/2016	12/15/2015
tblConstructionPhase	PhaseEndDate	11/25/2015	12/15/2015
tblConstructionPhase	PhaseStartDate	12/16/2015	2/11/2015
tblConstructionPhase	PhaseStartDate	1/22/2015	2/11/2015
tblGrading	AcresOfGrading	7.50	3.00
tblGrading	MaterialE□ported	0.00	4,250.00
tblLandUse	LotAcreage	3.25	1.71
tblPro□ectCharacteristics	Operational□ear	2014	2016

2.0 Emissions Summary

2.1 O□erall Construction

Unmitigated Construction

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
□ear	tons/yr										M□/yr					
2015	1.4343	3.6857	2.7335	4.1200e□003	0.0891	0.2407	0.3299	0.0364	0.2309	0.2673	0.0000	356.4895	356.4895	0.0691	0.0000	357.9395
□otal	**1.4343**	**3.□□□□**	**2.□33□**	**4.1200e-003**	**0.0□□1**	**0.240□**	**0.32□□**	**0.03□4**	**0.230□**	**0.2□□3**	**0.0000**	**3□□.4□□□**	**3□□.4□□□**	**0.0□□1**	**0.0000**	**3□□.□3□□**

Mitigated Construction

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
□ear	tons/yr										M□/yr					
2015	1.4343	3.6857	2.7335	4.1200e□003	0.0633	0.2407	0.3040	0.0227	0.2309	0.2535	0.0000	356.4892	356.4892	0.0691	0.0000	357.9392
□otal	**1.4343**	**3.□□□□**	**2.□33□**	**4.1200e-003**	**0.0□33**	**0.240□**	**0.3040**	**0.022□**	**0.230□**	**0.2□3□**	**0.0000**	**3□□.4□□2**	**3□□.4□□2**	**0.0□□1**	**0.0000**	**3□□.□3□2**

	□O□	NO□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.□	E□haust PM2.□	PM2.□ □otal	Bio- CO2	NBio-CO2	□otal CO2	CH4	N20	CO2e
Percent □eduction	**0.00**	**0.00**	**0.00**	**0.00**	**2□.□□**	**0.00**	**□.□4**	**3□.□1**	**0.00**	**□.1□**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 O□erall Operational

Unmitigated Operational

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Area	0.4261	2.0600e□003	0.1725	1.0000e□004		0.0145	0.0145		0.0145	0.0145	1.4664	0.5090	1.9754	3.1000e□003	8.0000e□005	2.0654
Energy	2.7500e□003	0.0235	0.0100	1.5000e□004		1.9000e□003	1.9000e□003		1.9000e□003	1.9000e□003	0.0000	47.4561	47.4561	1.4400e□003	6.9000e□004	47.6997
Mobile	0.0623	0.1421	0.6272	1.1300e□003	0.0791	1.8200e□003	0.0810	0.0212	1.6700e□003	0.0229	0.0000	90.2048	90.2048	3.9800e□003	0.0000	90.2884
□aste						0.0000	0.0000		0.0000	0.0000	2.4724	0.0000	2.4724	0.1461	0.0000	5.5409
□ater						0.0000	0.0000		0.0000	0.0000	0.2067	1.4438	1.6505	0.0213	5.1000e□004	2.2573
□otal	**0.4□12**	**0.1□□□**	**0.□0□□**	**1.3□00e-003**	**0.0□□1**	**0.01□2**	**0.0□□4**	**0.0212**	**0.01□1**	**0.03□3**	**4.14□□**	**13□.□13□**	**143.□□□2**	**0.1□□□**	**1.2□00e-003**	**14□.□□1□**

2.2 O□erall Operational

Mitigated Operational

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Area	0.3612	8.8000e□004	0.0753	0.0000		4.6000e□004	4.6000e□004		4.6000e□004	4.6000e□004	0.0000	0.8614	0.8614	1.4000e□004	1.0000e□005	0.8685
Energy	2.7500e□003	0.0235	0.0100	1.5000e□004		1.9000e□003	1.9000e□003		1.9000e□003	1.9000e□003	0.0000	47.4561	47.4561	1.4400e□003	6.9000e□004	47.6997
Mobile	0.0623	0.1421	0.6272	1.1300e□003	0.0791	1.8200e□003	0.0810	0.0212	1.6700e□003	0.0229	0.0000	90.2048	90.2048	3.9800e□003	0.0000	90.2884
□aste						0.0000	0.0000		0.0000	0.0000	2.4724	0.0000	2.4724	0.1461	0.0000	5.5409
□ater						0.0000	0.0000		0.0000	0.0000	0.2067	1.4438	1.6505	0.0213	5.1000e□004	2.2570
□otal	**0.42□3**	**0.1□□□**	**0.□12□**	**1.2□00e-003**	**0.0□□1**	**4.1□00e-003**	**0.0□33**	**0.0212**	**4.0300e-003**	**0.02□3**	**2.□□□1**	**13□.□□□1**	**142.□4□3**	**0.1□30**	**1.2100e-003**	**14□.□□44**

	□O□	NO□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.□	E□haust PM2.□	PM2.□ □otal	Bio- CO2	NBio-CO2	□otal CO2	CH4	N20	CO2e
Percent □eduction	**13.21**	**0.□0**	**12.00**	**□.2□**	**0.00**	**□□.0□**	**14.42**	**0.00**	**□□.□0**	**3□.□2**	**3□.3□**	**-0.2□**	**0.□□**	**1.□□**	**□.4□**	**0.□1**

3.0 Construction Detail

Construction Phase

Phase □umber	Phase □ame	Phase □ype	Start Date	End Date	□um Days □ ee□	□um Days	Phase Description
1	Grading	Grading	1/1/2015	1/21/2015	5	15	
2	□uilding Construction	□uilding Construction	2/11/2015	12/15/2015	5	220	
3	Architectural Coating	Architectural Coating	2/11/2015	12/15/2015	5	220	
4	Pa□ing	Pa□ing	12/16/2015	12/29/2015	5	10	

Acres of □rading (Site Preparation Phase)□0

Acres of □rading (□rading Phase)□3

Acres of Pa□ing□0

□esidential Indoor□3□,4□0□□esidential Outdoor□12,1□0□Non-□esidential Indoor□□□,101□Non-□esidential Outdoor□2□,□00 (Architectural Coating □sqft)

<u>Off□oad Equipment</u>

Phase □ame	Offroad E□uipment □ype	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Pa□ing	Cement and Mortar Mi□ers	1	8.00	9	0.56
□uilding Construction	Generator Sets	1	8.00	84	0.74
□uilding Construction	Cranes	1	8.00	226	0.29
□uilding Construction	For□lifts	2	7.00	89	0.20
Pa□ing	Pa□ers	1	8.00	125	0.42
Pa□ing	□ollers	2	8.00	80	0.38
Grading	□ubber □ired Dozers	1	8.00	255	0.40
□uilding Construction	□ractors/Loaders/□ac□hoes	1	6.00	97	0.37
Grading	□ractors/Loaders/□ac□hoes	2	7.00	97	0.37
Pa□ing	□ractors/Loaders/□ac□hoes	1	8.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Pa□ing	Pa□ing E□uipment	1	8.00	130	0.36
□uilding Construction	□ elders	3	8.00	46	0.45

□rips and □M□

Phase □ame	Offroad E□uipment Count	□ or□er □rip □umber	Vendor □rip □umber	Hauling □rip □umber	□ or□er □rip Length	Vendor □rip Length	Hauling □rip Length	□ or□er Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	4	10.00	0.00	531.00	12.40	7.30	20.00	LD□Mi□	HD□□Mi□	HHD□
□uilding Construction	8	25.00	9.00	0.00	12.40	7.30	20.00	LD□Mi□	HD□□Mi□	HHD□
Pa□ing	6	15.00	0.00	0.00	12.40	7.30	20.00	LD□Mi□	HD□□Mi□	HHD□
Architectural Coating	1	5.00	0.00	0.00	12.40	7.30	20.00	LD□Mi□	HD□□Mi□	HHD□

3.1 Mitigation Measures Construction

□ ater E□posed Area

Clean Pa□ed □oads

3.2 □rading - 201□

Unmitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Fugiti□e Dust					0.0470	0.0000	0.0470	0.0250	0.0000	0.0250	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off□□oad	0.0222	0.2345	0.1515	1.5000e□ 004		0.0131	0.0131		0.0121	0.0121	0.0000	14.7243	14.7243	4.4000e□ 003	0.0000	14.8166
□otal	**0.0222**	**0.234□**	**0.1□1□**	**1.□000e-004**	**0.04□0**	**0.0131**	**0.0□01**	**0.02□0**	**0.0121**	**0.03□1**	**0.0000**	**14.□243**	**14.□243**	**4.4000e-003**	**0.0000**	**14.□1□□**

Unmitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Hauling	7.1200e□ 003	0.0922	0.0738	2.0000e□ 004	4.4700e□ 003	1.3700e□ 003	5.8500e□ 003	1.2300e□ 003	1.2600e□ 003	2.4900e□ 003	0.0000	18.4285	18.4285	1.6000e□ 004	0.0000	18.4318
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ or□er	3.2000e□ 004	4.6000e□ 004	4.4700e□ 003	1.0000e□ 005	6.8000e□ 004	1.0000e□ 005	6.9000e□ 004	1.8000e□ 004	1.0000e□ 005	1.9000e□ 004	0.0000	0.6393	0.6393	4.0000e□ 005	0.0000	0.6401
□otal	**□.4400e-003**	**0.0□2□**	**0.0□□2**	**2.1000e-004**	**□.1□00e-003**	**1.3□00e-003**	**□.□400e-003**	**1.4100e-003**	**1.2□00e-003**	**2.□□00e-003**	**0.0000**	**1□.0□□□**	**1□.0□□□**	**2.0000e-004**	**0.0000**	**1□.0□1□**

3.2 □rading - 201□

Mitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Fugiti□e Dust					0.0212	0.0000	0.0212	0.0113	0.0000	0.0113	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off□□oad	0.0222	0.2345	0.1515	1.5000e□ 004		0.0131	0.0131		0.0121	0.0121	0.0000	14.7243	14.7243	4.4000e□ 003	0.0000	14.8166
□otal	**0.0222**	**0.234□**	**0.1□1□**	**1.□000e-004**	**0.0212**	**0.0131**	**0.0343**	**0.0113**	**0.0121**	**0.0234**	**0.0000**	**14.□243**	**14.□243**	**4.4000e-003**	**0.0000**	**14.□1□□**

Mitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Hauling	7.1200e□ 003	0.0922	0.0738	2.0000e□ 004	4.4700e□ 003	1.3700e□ 003	5.8500e□ 003	1.2300e□ 003	1.2600e□ 003	2.4900e□ 003	0.0000	18.4285	18.4285	1.6000e□ 004	0.0000	18.4318
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ or□er	3.2000e□ 004	4.6000e□ 004	4.4700e□ 003	1.0000e□ 005	6.8000e□ 004	1.0000e□ 005	6.9000e□ 004	1.8000e□ 004	1.0000e□ 005	1.9000e□ 004	0.0000	0.6393	0.6393	4.0000e□ 005	0.0000	0.6401
□otal	**□.4400e-003**	**0.0□2□**	**0.0□□2**	**2.1000e-004**	**□.1□00e-003**	**1.3□00e-003**	**□.□400e-003**	**1.4100e-003**	**1.2□00e-003**	**2.□□00e-003**	**0.0000**	**1□.0□□□**	**1□.0□□□**	**2.0000e-004**	**0.0000**	**1□.0□1□**

3.3 Building Construction - 201□

Unmitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Off□□oad	0.4430	2.8423	1.8751	2.7400e□003		0.1936	0.1936		0.1856	0.1856	0.0000	235.9123	235.9123	0.0565	0.0000	237.0988
□otal	**0.4430**	**2.□423**	**1.□□□1**	**2.□400e-003**		**0.1□3□**	**0.1□3□**		**0.1□□□**	**0.1□□□**	**0.0000**	**23□.□123**	**23□.□123**	**0.0□□□**	**0.0000**	**23□.0□□□**

Unmitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0142	0.1141	0.1570	2.4000e□004	6.3700e□003	1.8500e□003	8.2200e□003	1.8300e□003	1.7000e□003	3.5300e□003	0.0000	21.6614	21.6614	1.9000e□004	0.0000	21.6655
□ or□er	0.0117	0.0169	0.1639	3.0000e□004	0.0250	2.2000e□004	0.0252	6.6400e□003	2.0000e□004	6.8400e□003	0.0000	23.4404	23.4404	1.3700e□003	0.0000	23.4691
□otal	**0.02□□**	**0.1310**	**0.320□**	**□.4000e-004**	**0.0313**	**2.0□00e-003**	**0.0334**	**□.4□00e-003**	**1.□000e-003**	**0.0104**	**0.0000**	**4□.101□**	**4□.101□**	**1.□□00e-003**	**0.0000**	**4□.134□**

3.3 Building Construction - 201□

Mitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Off□□oad	0.4430	2.8423	1.8751	2.7400e□003		0.1936	0.1936		0.1856	0.1856	0.0000	235.9120	235.9120	0.0565	0.0000	237.0985
□otal	**0.4430**	**2.□423**	**1.□□□1**	**2.□400e-003**		**0.1□3□**	**0.1□3□**		**0.1□□□**	**0.1□□□**	**0.0000**	**23□.□120**	**23□.□120**	**0.0□□□**	**0.0000**	**23□.0□□□**

Mitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0142	0.1141	0.1570	2.4000e□004	6.3700e□003	1.8500e□003	8.2200e□003	1.8300e□003	1.7000e□003	3.5300e□003	0.0000	21.6614	21.6614	1.9000e□004	0.0000	21.6655
□or□er	0.0117	0.0169	0.1639	3.0000e□004	0.0250	2.2000e□004	0.0252	6.6400e□003	2.0000e□004	6.8400e□003	0.0000	23.4404	23.4404	1.3700e□003	0.0000	23.4691
□otal	**0.02□□**	**0.1310**	**0.320□**	**□.4000e-004**	**0.0313**	**2.0□00e-003**	**0.0334**	**□.4□00e-003**	**1.□000e-003**	**0.0104**	**0.0000**	**4□.101□**	**4□.101□**	**1.□□00e-003**	**0.0000**	**4□.134□**

3.4 Architectural Coating - 201□

Unmitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Archit. Coating	0.8772					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off□□oad	0.0447	0.2827	0.2092	3.3000e□004		0.0243	0.0243		0.0243	0.0243	0.0000	28.0858	28.0858	3.6600e□003	0.0000	28.1626
□otal	**0.□21□**	**0.2□2□**	**0.20□2**	**3.3000e-004**		**0.0243**	**0.0243**		**0.0243**	**0.0243**	**0.0000**	**2□.0□□□**	**2□.0□□□**	**3.□□00e-003**	**0.0000**	**2□.1□2□**

Unmitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ or□er	2.3300e□003	3.3700e□003	0.0328	6.0000e□005	4.9900e□003	4.0000e□005	5.0300e□003	1.3300e□003	4.0000e□005	1.3700e□003	0.0000	4.6881	4.6881	2.7000e□004	0.0000	4.6938
□otal	**2.3300e-003**	**3.3□00e-003**	**0.032□**	**□.0000e-00□**	**4.□□00e-003**	**4.0000e-00□**	**□.0300e-003**	**1.3300e-003**	**4.0000e-00□**	**1.3□00e-003**	**0.0000**	**4.□□□1**	**4.□□□1**	**2.□000e-004**	**0.0000**	**4.□□3□**

3.4 Architectural Coating - 201□

Mitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Archit. Coating	0.8772					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off□□oad	0.0447	0.2827	0.2092	3.3000e□004		0.0243	0.0243		0.0243	0.0243	0.0000	28.0858	28.0858	3.6600e□003	0.0000	28.1626
□otal	**0.□21□**	**0.2□2□**	**0.20□2**	**3.3000e-004**		**0.0243**	**0.0243**		**0.0243**	**0.0243**	**0.0000**	**2□.0□□□**	**2□.0□□□**	**3.□□00e-003**	**0.0000**	**2□.1□2□**

Mitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ or□er	2.3300e□003	3.3700e□003	0.0328	6.0000e□005	4.9900e□003	4.0000e□005	5.0300e□003	1.3300e□003	4.0000e□005	1.3700e□003	0.0000	4.6881	4.6881	2.7000e□004	0.0000	4.6938
□otal	**2.3300e-003**	**3.3□00e-003**	**0.032□**	**□.0000e-00□**	**4.□□00e-003**	**4.0000e-00□**	**□.0300e-003**	**1.3300e-003**	**4.0000e-00□**	**1.3□00e-003**	**0.0000**	**4.□□□1**	**4.□□□1**	**2.□000e-004**	**0.0000**	**4.□□3□**

3.□Pa□ing - 201□

Unmitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Off□□oad	9.7200e□003	0.0988	0.0613	9.0000e□005		6.2100e□003	6.2100e□003		5.7200e□003	5.7200e□003	0.0000	8.2702	8.2702	2.4200e□003	0.0000	8.3212
Pa□ing	1.5500e□003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□otal	**0.0113**	**0.0□□□**	**0.0□13**	**□.0000e-00□**		**□.2100e-003**	**□.2100e-003**		**□.□200e-003**	**□.□200e-003**	**0.0000**	**□.2□02**	**□.2□02**	**2.4200e-003**	**0.0000**	**□.3212**

Unmitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□or□er	3.2000e□004	4.6000e□004	4.4700e□003	1.0000e□005	6.8000e□004	1.0000e□005	6.9000e□004	1.8000e□004	1.0000e□005	1.9000e□004	0.0000	0.6393	0.6393	4.0000e□005	0.0000	0.6401
□otal	**3.2000e-004**	**4.□000e-004**	**4.4□00e-003**	**1.0000e-00□**	**□.□000e-004**	**1.0000e-00□**	**□.□000e-004**	**1.□000e-004**	**1.0000e-00□**	**1.□000e-004**	**0.0000**	**0.□3□3**	**0.□3□3**	**4.0000e-00□**	**0.0000**	**0.□401**

3.□Pa□ing - 201□

Mitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Off□□oad	9.7200e□003	0.0988	0.0613	9.0000e□005		6.2100e□003	6.2100e□003		5.7200e□003	5.7200e□003	0.0000	8.2702	8.2702	2.4200e□003	0.0000	8.3211
Pa□ing	1.5500e□003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□otal	**0.0113**	**0.0□□□**	**0.0□13**	**□.0000e-00□**		**□.2100e-003**	**□.2100e-003**		**□.□200e-003**	**□.□200e-003**	**0.0000**	**□.2□02**	**□.2□02**	**2.4200e-003**	**0.0000**	**□.3211**

Mitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□or□er	3.2000e□004	4.6000e□004	4.4700e□003	1.0000e□005	6.8000e□004	1.0000e□005	6.9000e□004	1.8000e□004	1.0000e□005	1.9000e□004	0.0000	0.6393	0.6393	4.0000e□005	0.0000	0.6401
□otal	**3.2000e-004**	**4.□000e-004**	**4.4□00e-003**	**1.0000e-00□**	**□.□000e-004**	**1.0000e-00□**	**□.□000e-004**	**1.□000e-004**	**1.0000e-00□**	**1.□000e-004**	**0.0000**	**0.□3□3**	**0.□3□3**	**4.0000e-00□**	**0.0000**	**0.□401**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Mitigated	0.0623	0.1421	0.6272	1.1300e□003	0.0791	1.8200e□003	0.0810	0.0212	1.6700e□003	0.0229	0.0000	90.2048	90.2048	3.9800e□003	0.0000	90.2884
Unmitigated	0.0623	0.1421	0.6272	1.1300e□003	0.0791	1.8200e□003	0.0810	0.0212	1.6700e□003	0.0229	0.0000	90.2048	90.2048	3.9800e□003	0.0000	90.2884

4.2 □rip Summary Information

	A□erage Daily □rip □ate			Unmitigated	Mitigated
Land Use	□ ee□day	Saturday	Sunday	Annual VM□	Annual VM□
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	95.70	100.80	87.70	212,713	212,713
□otal	95.70	100.80	87.70	212,713	212,713

4.3 □rip □ype Information

	Miles			□rip □			□rip Purpose □		
Land Use	H□□ or C□□	H□S or C□C	H□O or C□□□	H□□ or C□□	H□S or C□C	H□O or C□□□	Primary	Di□erted	Pass□by
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3

LDA	LD□1	LD□2	MDV	LHD1	LHD2	MHD	HHD	O□US	U□US	MC□	S□US	MH
0.546434	0.062864	0.174629	0.123506	0.034170	0.004889	0.015456	0.023695	0.002073	0.003288	0.006639	0.000690	0.001668

4.0 Energy Detail

Historical Energy Use: □

□.1 Mitigation Measures Energy

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	20.2299	20.2299	9.1000e□004	1.9000e□004	20.3078
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	20.2299	20.2299	9.1000e□004	1.9000e□004	20.3078
□aturalGas Mitigated	2.7500e□003	0.0235	0.0100	1.5000e□004		1.9000e□003	1.9000e□003		1.9000e□003	1.9000e□003	0.0000	27.2262	27.2262	5.2000e□004	5.0000e□004	27.3919
□aturalGas Unmitigated	2.7500e□003	0.0235	0.0100	1.5000e□004		1.9000e□003	1.9000e□003		1.9000e□003	1.9000e□003	0.0000	27.2262	27.2262	5.2000e□004	5.0000e□004	27.3919

□.2 Energy by Land Use - Natural□as

Unmitigated

	□aturalGas Use	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Land Use	□□□U/yr	tons/yr										M□/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	510200	2.7500e□003	0.0235	0.0100	1.5000e□004		1.9000e□003	1.9000e□003		1.9000e□003	1.9000e□003	0.0000	27.2262	27.2262	5.2000e□004	5.0000e□004	27.3919
□otal		**2.□□00e-003**	**0.023□**	**0.0100**	**1.□000e-004**		**1.□000e-003**	**1.□000e-003**		**1.□000e-003**	**1.□000e-003**	**0.0000**	**2□.22□2**	**2□.22□2**	**□.2000e-004**	**□.0000e-004**	**2□.3□1□**

Mitigated

	□aturalGas Use	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Land Use	□□□U/yr	tons/yr										M□/yr					
Single Family Housing	510200	2.7500e□003	0.0235	0.0100	1.5000e□004		1.9000e□003	1.9000e□003		1.9000e□003	1.9000e□003	0.0000	27.2262	27.2262	5.2000e□004	5.0000e□004	27.3919
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□otal		**2.□□00e-003**	**0.023□**	**0.0100**	**1.□000e-004**		**1.□000e-003**	**1.□000e-003**		**1.□000e-003**	**1.□000e-003**	**0.0000**	**2□.22□2**	**2□.22□2**	**□.2000e-004**	**□.0000e-004**	**2□.3□1□**

□.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	□otal CO2	CH4	□2O	CO2e
Land Use	□□ h/yr	M□/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	69539.7	20.2299	9.1000e□ 004	1.9000e□ 004	20.3078
□otal		**20.22□□**	**□.1000e-004**	**1.□000e-004**	**20.30□□**

Mitigated

	Electricity Use	□otal CO2	CH4	□2O	CO2e
Land Use	□□ h/yr	M□/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	69539.7	20.2299	9.1000e□ 004	1.9000e□ 004	20.3078
□otal		**20.22□□**	**□.1000e-004**	**1.□000e-004**	**20.30□□**

□.0 Area Detail

□.1 Mitigation Measures Area

Use only □atural Gas Hearths

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Mitigated	0.3612	8.8000e□004	0.0753	0.0000		4.6000e□004	4.6000e□004		4.6000e□004	4.6000e□004	0.0000	0.8614	0.8614	1.4000e□004	1.0000e□005	0.8685
Unmitigated	0.4261	2.0600e□003	0.1725	1.0000e□004		0.0145	0.0145		0.0145	0.0145	1.4664	0.5090	1.9754	3.1000e□003	8.0000e□005	2.0654

□.2 Area by SubCategory

Unmitigated

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
SubCategory	tons/yr										M□/yr					
Architectural Coating	0.0877					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2710					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0650	1.1800e□003	0.0972	9.0000e□005		0.0141	0.0141		0.0141	0.0141	1.4664	0.3877	1.8541	2.9800e□003	8.0000e□005	1.9415
Landscaping	2.3700e□003	8.8000e□004	0.0753	0.0000		4.1000e□004	4.1000e□004		4.1000e□004	4.1000e□004	0.0000	0.1213	0.1213	1.2000e□004	0.0000	0.1239
□otal	**0.42□1**	**2.0□00e-003**	**0.1□2□**	**□.0000e-00□**		**0.014□**	**0.014□**		**0.014□**	**0.014□**	**1.4□□4**	**0.□0□0**	**1.□□□4**	**3.1000e-003**	**□.0000e-00□**	**2.0□□4**

□.2 Area by SubCategory

Mitigated

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
SubCategory	tons/yr										M□/yr					
Architectural Coating	0.0877					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2710					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	7.0000e□005	0.0000	0.0000	0.0000		5.0000e□005	5.0000e□005		5.0000e□005	5.0000e□005	0.0000	0.7401	0.7401	1.0000e□005	1.0000e□005	0.7446
Landscaping	2.3700e□003	8.8000e□004	0.0753	0.0000		4.1000e□004	4.1000e□004		4.1000e□004	4.1000e□004	0.0000	0.1213	0.1213	1.2000e□004	0.0000	0.1239
□otal	**0.3□12**	**□.□000e-004**	**0.0□□3**	**0.0000**		**4.□000e-004**	**4.□000e-004**		**4.□000e-004**	**4.□000e-004**	**0.0000**	**0.□□14**	**0.□□14**	**1.3000e-004**	**1.0000e-00□**	**0.□□□□**

□.0 Water Detail

□.1 Mitigation Measures Water

	□otal CO2	CH4	□2O	CO2e
Category	M□/yr			
Mitigated	1.6505	0.0213	5.1000e□004	2.2570
Unmitigated	1.6505	0.0213	5.1000e□004	2.2573

□.2 Water by Land Use

Unmitigated

	□ndoor/Outdoor Use	□otal CO2	CH4	□2O	CO2e
Land Use	Mgal	M□/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.65154 / 0.410754	1.6505	0.0213	5.1000e□004	2.2573
□otal		**1.□□0□**	**0.0213**	**□.1000e-004**	**2.2□□3**

Mitigated

	□ndoor/Outdoor Use	□otal CO2	CH4	□2O	CO2e
Land Use	Mgal	M□/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.65154 / 0.410754	1.6505	0.0213	5.1000e□004	2.2570
□otal		**1.□□0□**	**0.0213**	**□.1000e-004**	**2.2□□0**

□.0 Waste Detail

□.1 Mitigation Measures Waste

Category/Year

	□otal CO2	CH4	□2O	CO2e
	M□/yr			
Mitigated	2.4724	0.1461	0.0000	5.5409
Unmitigated	2.4724	0.1461	0.0000	5.5409

□.2 Waste by Land Use

Unmitigated

	□ aste Disposed	□otal CO2	CH4	□2O	CO2e
Land Use	tons	M□/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	12.18	2.4724	0.1461	0.0000	5.5409
□otal		**2.4□24**	**0.14□1**	**0.0000**	**□.□40□**

□.2 Waste by Land Use

Mitigated

	□aste Disposed	□otal CO2	CH4	□2O	CO2e
Land Use	tons	M□/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	12.18	2.4724	0.1461	0.0000	5.5409
□otal		**2.4□24**	**0.14□1**	**0.0000**	**□.□40□**

□.0 Operational Offroad

E□uipment □ype	□umber	Hours/Day	Days/□ear	Horse Power	Load Factor	Fuel □ype

10.0 □egetation

Surrey Farms Alt Site

San Francisco Bay Area Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	10.00	Dwelling Unit	1.71	18,000.00	29
Other Asphalt Surfaces	0.77	Acre	0.77	33,541.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2016
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Pro□ect Characteristics □

Land Use □de□eloped site acreage for residences

Construction Phase □Grading: 15 days, Construction: 220 days, Pa□ing: 10 days

Off□road E□uipment □Grading: 1 grader, 1 dozer, 2 loader/bac□hoes

Off□road E□uipment □Construction: 1 crane, 2 for□lifts, 1 gen set, 1 loader/bac□hoe, 3 welders

Off□road E□uipment □Pa□ing: 1 cement mi□er, 1 pa□er, 1 pa□ing e□uipment, 2 rollers, 1 loader/bac□hoe

Grading □5200 C□ E□port

□rips and VM□ □650 haul trips

Construction Off□road E□uipment Mitigation □water e□posed surfaces 2□day

Area Mitigation □□atural Gas Hearths

□able □ame	Column □ame	Default Value	□ew Value
tblConstructionPhase	□umDays	10.00	220.00
tblConstructionPhase	□umDays	6.00	15.00
tblConstructionPhase	PhaseEndDate	10/18/2016	12/15/2015
tblConstructionPhase	PhaseEndDate	11/25/2015	12/15/2015
tblConstructionPhase	PhaseStartDate	12/16/2015	2/11/2015
tblConstructionPhase	PhaseStartDate	1/22/2015	2/11/2015
tblGrading	AcresOfGrading	7.50	3.00
tblGrading	MaterialE□ported	0.00	5,200.00
tblLandUse	LotAcreage	3.25	1.71
tblPro□ectCharacteristics	Operational□ear	2014	2016

2.0 Emissions Summary

2.1 O□erall Construction (Ma□imum Daily Emission)

Unmitigated Construction

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
□ear	lb/day										lb/day					
2015	10.7146	45.8236	30.8495	0.0544	7.1227	1.9954	9.0997	3.5708	1.9215	5.3896	0.0000	5,583.7897	5,583.7897	0.6793	0.0000	5,598.0558
□otal	**10.□14□**	**4□.□23□**	**30.□4□□**	**0.0□44**	**□.122□**	**1.□□□4**	**□.0□□□**	**3.□□0□**	**1.□21□**	**□.3□□□**	**0.0000**	**□,□□3.□□□□**	**□,□□3.□□□□**	**0.□□□3**	**0.0000**	**□,□□□.0□□□**

Mitigated Construction

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
□ear	lb/day										lb/day					
2015	10.7146	45.8236	30.8495	0.0544	3.6723	1.9954	5.6494	1.7343	1.9215	3.5531	0.0000	5,583.7897	5,583.7897	0.6793	0.0000	5,598.0558
□otal	**10.□14□**	**4□.□23□**	**30.□4□□**	**0.0□44**	**3.□□23**	**1.□□□4**	**□.□4□4**	**1.□343**	**1.□21□**	**3.□□31**	**0.0000**	**□,□□3.□□□□**	**□,□□3.□□□□**	**0.□□□3**	**0.0000**	**□,□□□.0□□□**

	□O□	NO□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.□	E□haust PM2.□	PM2.□ □otal	Bio- CO2	NBio-CO2	□otal CO2	CH4	N20	CO2e
Percent □eduction	**0.00**	**0.00**	**0.00**	**0.00**	**4□.44**	**0.00**	**3□.□2**	**□1.43**	**0.00**	**34.0□**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 O□erall Operational

Unmitigated Operational

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Area	21.3764	0.2687	24.6991	7.2700e□003		3.3396	3.3396		3.3395	3.3395	344.7124	137.3680	482.0804	0.2536	0.0282	496.1470
Energy	0.0151	0.1288	0.0548	8.2000e□004		0.0104	0.0104		0.0104	0.0104		164.4480	164.4480	3.1500e□003	3.0100e□003	165.4488
Mobile	0.3704	0.7747	3.5118	6.9800e□003	0.4778	0.0106	0.4884	0.1278	9.7100e□003	0.1375		611.0266	611.0266	0.0255		611.5627
□otal	**21.□□1□**	**1.1□23**	**2□.2□□□**	**0.01□1**	**0.4□□□**	**3.3□0□**	**3.□3□4**	**0.12□□**	**3.3□□□**	**3.4□□4**	**344.□124**	**□12.□42□**	**1,2□□.□□□1**	**0.2□23**	**0.0312**	**1,2□3.1□□□**

Mitigated Operational

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Area	1.5204	9.7900e□003	0.8379	4.0000e□005		0.0209	0.0209		0.0208	0.0208	0.0000	260.8975	260.8975	6.4900e□003	4.7600e□003	262.5080
Energy	0.0151	0.1288	0.0548	8.2000e□004		0.0104	0.0104		0.0104	0.0104		164.4480	164.4480	3.1500e□003	3.0100e□003	165.4488
Mobile	0.3704	0.7747	3.5118	6.9800e□003	0.4778	0.0106	0.4884	0.1278	9.7100e□003	0.1375		611.0266	611.0266	0.0255		611.5627
□otal	**1.□0□□**	**0.□133**	**4.404□**	**□.□400e-003**	**0.4□□□**	**0.041□**	**0.□1□□**	**0.12□□**	**0.040□**	**0.1□□□**	**0.0000**	**1,03□.3□21**	**1,03□.3□21**	**0.03□2**	**□.□□00e-003**	**1,03□.□1□□**

	□O□	NO□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.□	E□haust PM2.□	PM2.□ □otal	Bio- CO2	NBio-CO2	□otal CO2	CH4	N20	CO2e
Percent □eduction	□1.24	22.0□	□4.42	4□.□□	0.00	□□.□□	□□.4□	0.00	□□.□□	□□.1□	100.00	-13.□3	1□.□□	□□.□4	□□.10	1□.3□

3.0 Construction Detail

Construction Phase

Phase □umber	Phase □ame	Phase □ype	Start Date	End Date	□um Days □ ee□	□um Days	Phase Description
1	Grading	Grading	1/1/2015	1/21/2015	5	15	
2	□uilding Construction	□uilding Construction	2/11/2015	12/15/2015	5	220	
3	Architectural Coating	Architectural Coating	2/11/2015	12/15/2015	5	220	
4	Pa□ing	Pa□ing	12/16/2015	12/29/2015	5	10	

Acres of □rading (Site Preparation Phase)□0

Acres of □rading (□rading Phase)□3

Acres of Pa□ing□0

□esidential Indoor□3□,4□0□□esidential Outdoor□12,1□0□Non-□esidential Indoor□□0,312□Non-□esidential Outdoor□1□,□□1 (Architectural Coating □sqft)

Off□oad Equipment

Phase □ame	Offroad E□uipment □ype	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Pa□ing	Cement and Mortar Mi□ers	1	8.00	9	0.56
□uilding Construction	Generator Sets	1	8.00	84	0.74
□uilding Construction	Cranes	1	8.00	226	0.29
□uilding Construction	For□lifts	2	7.00	89	0.20
Pa□ing	Pa□ers	1	8.00	125	0.42
Pa□ing	□ollers	2	8.00	80	0.38
Grading	□ubber □ired Dozers	1	8.00	255	0.40
□uilding Construction	□ractors/Loaders/□ac□hoes	1	6.00	97	0.37
Grading	□ractors/Loaders/□ac□hoes	2	7.00	97	0.37
Pa□ing	□ractors/Loaders/□ac□hoes	1	8.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Pa□ing	Pa□ing E□uipment	1	8.00	130	0.36
□uilding Construction	□ elders	3	8.00	46	0.45

□rips and □M□

Phase □ame	Offroad E□uipment Count	□ or□er □rip □umber	Vendor □rip □umber	Hauling □rip □umber	□ or□er □rip Length	Vendor □rip Length	Hauling □rip Length	□ or□er Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	4	10.00	0.00	650.00	12.40	7.30	20.00	LD□Mi□	HD□□Mi□	HHD□
□uilding Construction	8	18.00	7.00	0.00	12.40	7.30	20.00	LD□Mi□	HD□□Mi□	HHD□
Pa□ing	6	15.00	0.00	0.00	12.40	7.30	20.00	LD□Mi□	HD□□Mi□	HHD□
Architectural Coating	1	4.00	0.00	0.00	12.40	7.30	20.00	LD□Mi□	HD□□Mi□	HHD□

3.1 Mitigation Measures Construction

□ ater E□posed Area

Clean Pa□ed □oads

3.2 □rading - 201□

Unmitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Fugiti□e Dust					6.2734	0.0000	6.2734	3.3391	0.0000	3.3391			0.0000			0.0000
Off□□oad	2.9656	31.2611	20.2019	0.0206		1.7524	1.7524		1.6122	1.6122		2,164.1012	2,164.1012	0.6461		2,177.6687
□otal	**2.□□□□**	**31.2□11**	**20.201□**	**0.020□**	**□.2□34**	**1.□□24**	**□.02□□**	**3.33□1**	**1.□122**	**4.□□13**		**2,1□4.1012**	**2,1□4.1012**	**0.□4□1**		**2,1□□.□□□□**

Unmitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Hauling	1.0609	14.5083	10.0147	0.0326	0.7550	0.2238	0.9788	0.2067	0.2058	0.4126		3,318.7702	3,318.7702	0.0278		3,319.3537
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0451	0.0542	0.6329	1.1600e□003	0.0943	8.0000e□004	0.0951	0.0250	7.4000e□004	0.0258		100.9183	100.9183	5.4800e□003		101.0334
□otal	**1.10□0**	**14.□□2□**	**10.□4□□**	**0.033□**	**0.□4□3**	**0.224□**	**1.0□3□**	**0.231□**	**0.20□□**	**0.43□3**		**3,41□.□□□□**	**3,41□.□□□□**	**0.0333**		**3,420.3□□1**

3.2 □rading - 201□

Mitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Fugiti□e Dust					2.8230	0.0000	2.8230	1.5026	0.0000	1.5026			0.0000			0.0000
Off□□oad	2.9656	31.2611	20.2019	0.0206		1.7524	1.7524		1.6122	1.6122	0.0000	2,164.1012	2,164.1012	0.6461		2,177.6687
□otal	**2.□□□□**	**31.2□11**	**20.201□**	**0.020□**	**2.□230**	**1.□□24**	**4.□□□□**	**1.□02□**	**1.□122**	**3.114□**	**0.0000**	**2,1□4.1012**	**2,1□4.1012**	**0.□4□1**		**2,1□□.□□□□**

Mitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Hauling	1.0609	14.5083	10.0147	0.0326	0.7550	0.2238	0.9788	0.2067	0.2058	0.4126		3,318.7702	3,318.7702	0.0278		3,319.3537
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0451	0.0542	0.6329	1.1600e□003	0.0943	8.0000e□004	0.0951	0.0250	7.4000e□004	0.0258		100.9183	100.9183	5.4800e□003		101.0334
□otal	**1.10□0**	**14.□□2□**	**10.□4□□**	**0.033□**	**0.□4□3**	**0.224□**	**1.0□3□**	**0.231□**	**0.20□□**	**0.43□3**		**3,41□.□□□□**	**3,41□.□□□□**	**0.0333**		**3,420.3□□1**

3.3 Building Construction - 201□

Unmitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Off□□oad	4.0268	25.8389	17.0465	0.0249		1.7597	1.7597		1.6870	1.6870		2,364.0797	2,364.0797	0.5662		2,375.9701
□otal	**4.02□□**	**2□.□3□□**	**1□.04□□**	**0.024□**		**1.□□□□**	**1.□□□□**		**1.□□□0**	**1.□□□0**		**2,3□4.0□□□**	**2,3□4.0□□□**	**0.□□□2**		**2,3□□.□□01**

Unmitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0888	0.7798	0.8810	1.6700e□003	0.0465	0.0130	0.0595	0.0133	0.0120	0.0253		169.3723	169.3723	1.5000e□003		169.4038
□ or□er	0.0812	0.0976	1.1392	2.0900e□003	0.1698	1.4500e□003	0.1712	0.0450	1.3200e□003	0.0463		181.6529	181.6529	9.8700e□003		181.8602
□otal	**0.1□01**	**0.□□□4**	**2.0202**	**3.□□00e-003**	**0.21□3**	**0.014□**	**0.230□**	**0.0□□3**	**0.0133**	**0.0□1□**		**3□1.02□2**	**3□1.02□2**	**0.0114**		**3□1.2□40**

3.3 Building Construction - 201□

Mitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Off□□oad	4.0268	25.8389	17.0465	0.0249		1.7597	1.7597		1.6870	1.6870	0.0000	2,364.0797	2,364.0797	0.5662		2,375.9701
□otal	**4.02□□**	**2□.□3□□**	**1□.04□□**	**0.024□**		**1.□□□□**	**1.□□□□**		**1.□□□0**	**1.□□□0**	**0.0000**	**2,3□4.0□□□**	**2,3□4.0□□□**	**0.□□□2**		**2,3□□.□□01**

Mitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0888	0.7798	0.8810	1.6700e□003	0.0465	0.0130	0.0595	0.0133	0.0120	0.0253		169.3723	169.3723	1.5000e□003		169.4038
□ or□er	0.0812	0.0976	1.1392	2.0900e□003	0.1698	1.4500e□003	0.1712	0.0450	1.3200e□003	0.0463		181.6529	181.6529	9.8700e□003		181.8602
□otal	**0.1□01**	**0.□□□4**	**2.0202**	**3.□□00e-003**	**0.21□3**	**0.014□**	**0.230□**	**0.0□□3**	**0.0133**	**0.0□1□**		**3□1.02□2**	**3□1.02□2**	**0.0114**		**3□1.2□40**

3.4 Architectural Coating - 201□

Unmitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.0931					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off□□oad	0.4066	2.5703	1.9018	2.9700e□003		0.2209	0.2209		0.2209	0.2209		281.4481	281.4481	0.0367		282.2177
□otal	**□.4□□□**	**2.□□03**	**1.□01□**	**2.□□00e-003**		**0.220□**	**0.220□**		**0.220□**	**0.220□**		**2□1.44□1**	**2□1.44□1**	**0.03□□**		**2□2.21□□**

Unmitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0181	0.0217	0.2532	4.6000e□004	0.0377	3.2000e□004	0.0380	0.0100	2.9000e□004	0.0103		40.3673	40.3673	2.1900e□003		40.4134
□otal	**0.01□1**	**0.021□**	**0.2□32**	**4.□000e-004**	**0.03□□**	**3.2000e-004**	**0.03□0**	**0.0100**	**2.□000e-004**	**0.0103**		**40.3□□3**	**40.3□□3**	**2.1□00e-003**		**40.4134**

3.4 Architectural Coating - 201□

Mitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.0931					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off□□oad	0.4066	2.5703	1.9018	2.9700e□003		0.2209	0.2209		0.2209	0.2209	0.0000	281.4481	281.4481	0.0367		282.2177
□otal	**□.4□□□**	**2.□□03**	**1.□01□**	**2.□□00e-003**		**0.220□**	**0.220□**		**0.220□**	**0.220□**	**0.0000**	**2□1.44□1**	**2□1.44□1**	**0.03□□**		**2□2.21□□**

Mitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0181	0.0217	0.2532	4.6000e□004	0.0377	3.2000e□004	0.0380	0.0100	2.9000e□004	0.0103		40.3673	40.3673	2.1900e□003		40.4134
□otal	**0.01□1**	**0.021□**	**0.2□32**	**4.□000e-004**	**0.03□□**	**3.2000e-004**	**0.03□0**	**0.0100**	**2.□000e-004**	**0.0103**		**40.3□□3**	**40.3□□3**	**2.1□00e-003**		**40.4134**

3.□Pa□ing - 201□

Unmitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Off□□oad	1.9443	19.7532	12.2652	0.0176		1.2418	1.2418		1.1437	1.1437		1,823.2763	1,823.2763	0.5345		1,834.5006
Pa□ing	0.2017					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
□otal	**2.14□0**	**1□.□□32**	**12.2□□2**	**0.01□□**		**1.241□**	**1.241□**		**1.143□**	**1.143□**		**1,□23.2□□3**	**1,□23.2□□3**	**0.□34□**		**1,□34.□00□**

Unmitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0677	0.0813	0.9494	1.7400e□003	0.1415	1.2100e□003	0.1427	0.0375	1.1000e□003	0.0386		151.3774	151.3774	8.2300e□003		151.5501
□otal	**0.0□□□**	**0.0□13**	**0.□4□4**	**1.□400e-003**	**0.141□**	**1.2100e-003**	**0.142□**	**0.03□□**	**1.1000e-003**	**0.03□□**		**1□1.3□□4**	**1□1.3□□4**	**□.2300e-003**		**1□1.□□01**

3.□Pa□ing - 201□

Mitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Off□□oad	1.9443	19.7532	12.2652	0.0176		1.2418	1.2418		1.1437	1.1437	0.0000	1,823.2763	1,823.2763	0.5345		1,834.5006
Pa□ing	0.2017					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
□otal	**2.14□0**	**1□.□□32**	**12.2□□2**	**0.01□□**		**1.241□**	**1.241□**		**1.143□**	**1.143□**	**0.0000**	**1,□23.2□□3**	**1,□23.2□□3**	**0.□34□**		**1,□34.□00□**

Mitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
□ or□er	0.0677	0.0813	0.9494	1.7400e□003	0.1415	1.2100e□003	0.1427	0.0375	1.1000e□003	0.0386		151.3774	151.3774	8.2300e□003		151.5501
□otal	**0.0□□□**	**0.0□13**	**0.□4□4**	**1.□400e-003**	**0.141□**	**1.2100e-003**	**0.142□**	**0.03□□**	**1.1000e-003**	**0.03□□**		**1□1.3□□4**	**1□1.3□□4**	**□.2300e-003**		**1□1.□□01**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.3704	0.7747	3.5118	6.9800e□003	0.4778	0.0106	0.4884	0.1278	9.7100e□003	0.1375		611.0266	611.0266	0.0255		611.5627
Unmitigated	0.3704	0.7747	3.5118	6.9800e□003	0.4778	0.0106	0.4884	0.1278	9.7100e□003	0.1375		611.0266	611.0266	0.0255		611.5627

4.2 □rip Summary Information

	A□erage Daily □rip □ate			Unmitigated	Mitigated
Land Use	□ ee□day	Saturday	Sunday	Annual VM□	Annual VM□
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	95.70	100.80	87.70	212,713	212,713
□otal	95.70	100.80	87.70	212,713	212,713

4.3 □rip □ype Information

	Miles			□rip □			□rip Purpose □		
Land Use	H□□ or C□□	H□S or C□C	H□O or C□□□	H□□ or C□□	H□S or C□C	H□O or C□□□	Primary	Di□erted	Pass□by
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3

LDA	LD□1	LD□2	MDV	LHD1	LHD2	MHD	HHD	O□US	U□US	MC□	S□US	MH
0.546434	0.062864	0.174629	0.123506	0.034170	0.004889	0.015456	0.023695	0.002073	0.003288	0.006639	0.000690	0.001668

4.0 Energy Detail

Historical Energy Use: □

□.1 Mitigation Measures Energy

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
□aturalGas Mitigated	0.0151	0.1288	0.0548	8.2000e□004		0.0104	0.0104		0.0104	0.0104		164.4480	164.4480	3.1500e□003	3.0100e□003	165.4488
□aturalGas Unmitigated	0.0151	0.1288	0.0548	8.2000e□004		0.0104	0.0104		0.0104	0.0104		164.4480	164.4480	3.1500e□003	3.0100e□003	165.4488

□.2 Energy by Land Use - Natural□as

Unmitigated

	□aturalGas Use	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Land Use	□□□U/yr	lb/day										lb/day					
Single Family Housing	1397.81	0.0151	0.1288	0.0548	8.2000e□004		0.0104	0.0104		0.0104	0.0104		164.4480	164.4480	3.1500e□003	3.0100e□003	165.4488
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
□otal		**0.01□1**	**0.12□□**	**0.0□4□**	**□.2000e-004**		**0.0104**	**0.0104**		**0.0104**	**0.0104**		**1□4.44□0**	**1□4.44□0**	**3.1□00e-003**	**3.0100e-003**	**1□□.44□□**

□.2 Energy by Land Use - Natural□as

Mitigated

	□aturalGas Use	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Land Use	□□□U/yr	lb/day										lb/day					
Single Family Housing	1.39781	0.0151	0.1288	0.0548	8.2000e□004		0.0104	0.0104		0.0104	0.0104		164.4480	164.4480	3.1500e□003	3.0100e□003	165.4488
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
□otal		**0.01□1**	**0.12□□**	**0.0□4□**	**□.2000e-004**		**0.0104**	**0.0104**		**0.0104**	**0.0104**		**1□4.44□0**	**1□4.44□0**	**3.1□00e-003**	**3.0100e-003**	**1□□.44□□**

□.0 Area Detail

□.1 Mitigation Measures Area

Use only □atural Gas Hearths

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.5204	9.7900e□003	0.8379	4.0000e□005		0.0209	0.0209		0.0208	0.0208	0.0000	260.8975	260.8975	6.4900e□003	4.7600e□003	262.5080
Unmitigated	21.3764	0.2687	24.6991	7.2700e□003		3.3396	3.3396		3.3395	3.3395	344.7124	137.3680	482.0804	0.2536	0.0282	496.1470

□.2 Area by SubCategory

Unmitigated

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3673					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.1030					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	19.8799	0.2590	23.8625	7.2300e□003		3.3351	3.3351		3.3350	3.3350	344.7124	135.8824	480.5947	0.2521	0.0282	494.6295
Landscaping	0.0264	9.7900e□003	0.8366	4.0000e□005		4.5100e□003	4.5100e□003		4.5100e□003	4.5100e□003		1.4857	1.4857	1.5100e□003		1.5175
□otal	**21.3□□4**	**0.2□□□**	**24.□□□1**	**□.2□00e-003**		**3.33□□**	**3.33□□**		**3.33□□**	**3.33□□**	**344.□124**	**13□.3□□0**	**4□2.0□04**	**0.2□3□**	**0.02□2**	**4□□.14□0**

□.2 Area by SubCategory

Mitigated

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3673					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.1030					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0238	0.0000	1.3000e□003	0.0000		0.0164	0.0164		0.0163	0.0163	0.0000	259.4118	259.4118	4.9700e□003	4.7600e□003	260.9905
Landscaping	0.0264	9.7900e□003	0.8366	4.0000e□005		4.5100e□003	4.5100e□003		4.5100e□003	4.5100e□003		1.4857	1.4857	1.5100e□003		1.5175
□otal	**1.□204**	**□.□□00e-003**	**0.□3□□**	**4.0000e-00□**		**0.020□**	**0.020□**		**0.020□**	**0.020□**	**0.0000**	**2□0.□□□□**	**2□0.□□□□**	**□.4□00e-003**	**4.□□00e-003**	**2□2.□0□0**

□.0 Water Detail

□.1 Mitigation Measures Water

□.0 Waste Detail

□.1 Mitigation Measures Waste

□.0 Operational Offroad

E□uipment □ype	□umber	Hours/Day	Days/□ear	Horse Power	Load Factor	Fuel □ype

10.0 □egetation

Surrey Farms Alt Site

San Francisco Bay Area Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	10.00	Dwelling Unit	1.71	18,000.00	29
Other Asphalt Surfaces	0.77	Acre	0.77	33,541.20	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2016
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Pro□ect Characteristics □

Land Use □de□eloped site acreage for residences

Construction Phase □Grading: 15 days, Construction: 220 days, Pa□ing: 10 days

Off□road E□uipment □Grading: 1 grader, 1 dozer, 2 loader/bac□hoes

Off□road E□uipment □Construction: 1 crane, 2 for□lifts, 1 gen set, 1 loader/bac□hoe, 3 welders

Off□road E□uipment □Pa□ing: 1 cement mi□er, 1 pa□er, 1 pa□ing e□uipment, 2 rollers, 1 loader/bac□hoe

Grading □5200 C□ E□port

□rips and VM□ □650 haul trips

Construction Off□road E□uipment Mitigation □water e□posed surfaces 2□day

Area Mitigation □□atural Gas Hearths

□able □ame	Column □ame	Default Value	□ew Value
tblConstructionPhase	□umDays	10.00	220.00
tblConstructionPhase	□umDays	6.00	15.00
tblConstructionPhase	PhaseEndDate	10/18/2016	12/15/2015
tblConstructionPhase	PhaseEndDate	11/25/2015	12/15/2015
tblConstructionPhase	PhaseStartDate	12/16/2015	2/11/2015
tblConstructionPhase	PhaseStartDate	1/22/2015	2/11/2015
tblGrading	AcresOfGrading	7.50	3.00
tblGrading	MaterialE□ported	0.00	5,200.00
tblLandUse	LotAcreage	3.25	1.71
tblPro□ectCharacteristics	Operational□ear	2014	2016

2.0 Emissions Summary

2.1 O□erall Construction

Unmitigated Construction

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
□ear	tons/yr										M□/yr					
2015	1.2215	3.6757	2.6627	4.0100e□003	0.0808	0.2405	0.3213	0.0342	0.2307	0.2649	0.0000	348.3049	348.3049	0.0686	0.0000	349.7455
□otal	**1.221□**	**3.□□□**	**2.□□2□**	**4.0100e-003**	**0.0□0□**	**0.240□**	**0.3213**	**0.0342**	**0.230□**	**0.2□4□**	**0.0000**	**34□.304□**	**34□.304□**	**0.0□□□**	**0.0000**	**34□.□4□□**

Mitigated Construction

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
□ear	tons/yr										M□/yr					
2015	1.2215	3.6757	2.6627	4.0100e□003	0.0549	0.2405	0.2955	0.0204	0.2307	0.2511	0.0000	348.3046	348.3046	0.0686	0.0000	349.7452
□otal	**1.221□**	**3.□□□**	**2.□□2□**	**4.0100e-003**	**0.0□4□**	**0.240□**	**0.2□□□**	**0.0204**	**0.230□**	**0.2□11**	**0.0000**	**34□.304□**	**34□.304□**	**0.0□□□**	**0.0000**	**34□.□4□2**

	□O□	NO□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.□	E□haust PM2.□	PM2.□ □otal	Bio- CO2	NBio-CO2	□otal CO2	CH4	N20	CO2e
Percent □eduction	**0.00**	**0.00**	**0.00**	**0.00**	**32.03**	**0.00**	**□.0□**	**40.30**	**0.00**	**□.20**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 O□erall Operational

Unmitigated Operational

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Area	0.3357	2.0600e□003	0.1725	1.0000e□004		0.0145	0.0145		0.0145	0.0145	1.4664	0.5090	1.9754	3.1000e□003	8.0000e□005	2.0654
Energy	2.7500e□003	0.0235	0.0100	1.5000e□004		1.9000e□003	1.9000e□003		1.9000e□003	1.9000e□003	0.0000	47.4561	47.4561	1.4400e□003	6.9000e□004	47.6997
Mobile	0.0623	0.1421	0.6272	1.1300e□003	0.0791	1.8200e□003	0.0810	0.0212	1.6700e□003	0.0229	0.0000	90.2048	90.2048	3.9800e□003	0.0000	90.2884
□aste						0.0000	0.0000		0.0000	0.0000	2.4724	0.0000	2.4724	0.1461	0.0000	5.5409
□ater						0.0000	0.0000		0.0000	0.0000	0.2067	1.4438	1.6505	0.0213	5.1000e□004	2.2573
□otal	**0.400□**	**0.1□□□**	**0.□0□□**	**1.3□00e-003**	**0.0□□1**	**0.01□2**	**0.0□□4**	**0.0212**	**0.01□1**	**0.03□3**	**4.14□□**	**13□.□13□**	**143.□□□2**	**0.1□□□**	**1.2□00e-003**	**14□.□□1□**

2.2 O□erall Operational

Mitigated Operational

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Area	0.2708	8.8000e□004	0.0753	0.0000		4.6000e□004	4.6000e□004		4.6000e□004	4.6000e□004	0.0000	0.8614	0.8614	1.4000e□004	1.0000e□005	0.8685
Energy	2.7500e□003	0.0235	0.0100	1.5000e□004		1.9000e□003	1.9000e□003		1.9000e□003	1.9000e□003	0.0000	47.4561	47.4561	1.4400e□003	6.9000e□004	47.6997
Mobile	0.0623	0.1421	0.6272	1.1300e□003	0.0791	1.8200e□003	0.0810	0.0212	1.6700e□003	0.0229	0.0000	90.2048	90.2048	3.9800e□003	0.0000	90.2884
□aste						0.0000	0.0000		0.0000	0.0000	2.4724	0.0000	2.4724	0.1461	0.0000	5.5409
□ater						0.0000	0.0000		0.0000	0.0000	0.2067	1.4438	1.6505	0.0213	5.1000e□004	2.2570
□otal	**0.33□□**	**0.1□□□**	**0.□12□**	**1.2□00e-003**	**0.0□□1**	**4.1□00e-003**	**0.0□33**	**0.0212**	**4.0300e-003**	**0.02□3**	**2.□□□1**	**13□.□□□1**	**142.□4□3**	**0.1□30**	**1.2100e-003**	**14□.□□44**

	□O□	NO□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.□	E□haust PM2.□	PM2.□ □otal	Bio- CO2	NBio-CO2	□otal CO2	CH4	N20	CO2e
Percent □eduction	**1□.1□**	**0.□0**	**12.00**	**□.2□**	**0.00**	**□□.0□**	**14.42**	**0.00**	**□□.□0**	**3□.□2**	**3□.3□**	**-0.2□**	**0.□□**	**1.□□**	**□.4□**	**0.□1**

3.0 Construction Detail

Construction Phase

Phase □umber	Phase □ame	Phase □ype	Start Date	End Date	□um Days □ ee□	□um Days	Phase Description
1	Grading	Grading	1/1/2015	1/21/2015	5	15	
2	□uilding Construction	□uilding Construction	2/11/2015	12/15/2015	5	220	
3	Architectural Coating	Architectural Coating	2/11/2015	12/15/2015	5	220	
4	Pa□ing	Pa□ing	12/16/2015	12/29/2015	5	10	

Acres of □rading (Site Preparation Phase)□0

Acres of □rading (□rading Phase)□3

Acres of Pa□ing□0

□esidential Indoor□3□,4□0□□esidential Outdoor□12,1□0□Non-□esidential Indoor□□0,312□Non-□esidential Outdoor□1□,□□1 (Architectural Coating □sqft)

<u>Off□oad Equipment</u>

Phase □ame	Offroad E□uipment □ype	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Pa□ing	Cement and Mortar Mi□ers	1	8.00	9	0.56
□uilding Construction	Generator Sets	1	8.00	84	0.74
□uilding Construction	Cranes	1	8.00	226	0.29
□uilding Construction	For□lifts	2	7.00	89	0.20
Pa□ing	Pa□ers	1	8.00	125	0.42
Pa□ing	□ollers	2	8.00	80	0.38
Grading	□ubber □ired Dozers	1	8.00	255	0.40
□uilding Construction	□ractors/Loaders/□ac□hoes	1	6.00	97	0.37
Grading	□ractors/Loaders/□ac□hoes	2	7.00	97	0.37
Pa□ing	□ractors/Loaders/□ac□hoes	1	8.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Pa□ing	Pa□ing E□uipment	1	8.00	130	0.36
□uilding Construction	□ elders	3	8.00	46	0.45

□rips and □M□

Phase □ame	Offroad E□uipment Count	□ or□er □rip □umber	Vendor □rip □umber	Hauling □rip □umber	□ or□er □rip Length	Vendor □rip Length	Hauling □rip Length	□ or□er Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	4	10.00	0.00	650.00	12.40	7.30	20.00	LD□Mi□	HD□□Mi□	HHD□
□uilding Construction	8	18.00	7.00	0.00	12.40	7.30	20.00	LD□Mi□	HD□□Mi□	HHD□
Pa□ing	6	15.00	0.00	0.00	12.40	7.30	20.00	LD□Mi□	HD□□Mi□	HHD□
Architectural Coating	1	4.00	0.00	0.00	12.40	7.30	20.00	LD□Mi□	HD□□Mi□	HHD□

3.1 Mitigation Measures Construction

□ ater E□posed Area

Clean Pa□ed □oads

3.2 □rading - 201□

Unmitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Fugiti□e Dust					0.0471	0.0000	0.0471	0.0250	0.0000	0.0250	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off□□oad	0.0222	0.2345	0.1515	1.5000e□004		0.0131	0.0131		0.0121	0.0121	0.0000	14.7243	14.7243	4.4000e□003	0.0000	14.8166
□otal	**0.0222**	**0.234□**	**0.1□1□**	**1.□000e-004**	**0.04□1**	**0.0131**	**0.0□02**	**0.02□0**	**0.0121**	**0.03□1**	**0.0000**	**14.□243**	**14.□243**	**4.4000e-003**	**0.0000**	**14.□1□□**

Unmitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Hauling	8.7100e□003	0.1129	0.0903	2.4000e□004	5.4700e□003	1.6800e□003	7.1600e□003	1.5000e□003	1.5500e□003	3.0500e□003	0.0000	22.5585	22.5585	1.9000e□004	0.0000	22.5625
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□or□er	3.2000e□004	4.6000e□004	4.4700e□003	1.0000e□005	6.8000e□004	1.0000e□005	6.9000e□004	1.8000e□004	1.0000e□005	1.9000e□004	0.0000	0.6393	0.6393	4.0000e□005	0.0000	0.6401
□otal	**□.0300e-003**	**0.1134**	**0.0□4□**	**2.□000e-004**	**□.1□00e-003**	**1.□□00e-003**	**□.□□00e-003**	**1.□□00e-003**	**1.□□00e-003**	**3.2400e-003**	**0.0000**	**23.1□□□**	**23.1□□□**	**2.3000e-004**	**0.0000**	**23.202□**

3.2 □rading - 201□

Mitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Fugiti□e Dust					0.0212	0.0000	0.0212	0.0113	0.0000	0.0113	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off□□oad	0.0222	0.2345	0.1515	1.5000e□004		0.0131	0.0131		0.0121	0.0121	0.0000	14.7243	14.7243	4.4000e□003	0.0000	14.8166
□otal	**0.0222**	**0.234□**	**0.1□1□**	**1.□000e-004**	**0.0212**	**0.0131**	**0.0343**	**0.0113**	**0.0121**	**0.0234**	**0.0000**	**14.□243**	**14.□243**	**4.4000e-003**	**0.0000**	**14.□1□□**

Mitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Hauling	8.7100e□003	0.1129	0.0903	2.4000e□004	5.4700e□003	1.6800e□003	7.1600e□003	1.5000e□003	1.5500e□003	3.0500e□003	0.0000	22.5585	22.5585	1.9000e□004	0.0000	22.5625
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□or□er	3.2000e□004	4.6000e□004	4.4700e□003	1.0000e□005	6.8000e□004	1.0000e□005	6.9000e□004	1.8000e□004	1.0000e□005	1.9000e□004	0.0000	0.6393	0.6393	4.0000e□005	0.0000	0.6401
□otal	**□.0300e-003**	**0.1134**	**0.0□4□**	**2.□000e-004**	**□.1□00e-003**	**1.□□00e-003**	**□.□□00e-003**	**1.□□00e-003**	**1.□□00e-003**	**3.2400e-003**	**0.0000**	**23.1□□□**	**23.1□□□**	**2.3000e-004**	**0.0000**	**23.202□**

3.3 Building Construction - 201□

Unmitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Off□□oad	0.4430	2.8423	1.8751	2.7400e□003		0.1936	0.1936		0.1856	0.1856	0.0000	235.9123	235.9123	0.0565	0.0000	237.0988
□otal	**0.4430**	**2.□423**	**1.□□□1**	**2.□400e-003**		**0.1□3□**	**0.1□3□**		**0.1□□□**	**0.1□□□**	**0.0000**	**23□.□123**	**23□.□123**	**0.0□□□**	**0.0000**	**23□.0□□□**

Unmitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0110	0.0887	0.1221	1.8000e□004	4.9600e□003	1.4400e□003	6.3900e□003	1.4200e□003	1.3200e□003	2.7400e□003	0.0000	16.8477	16.8477	1.5000e□004	0.0000	16.8509
□or□er	8.4000e□003	0.0122	0.1180	2.1000e□004	0.0180	1.6000e□004	0.0181	4.7800e□003	1.5000e□004	4.9200e□003	0.0000	16.8771	16.8771	9.8000e□004	0.0000	16.8978
□otal	**0.01□4**	**0.100□**	**0.2401**	**3.□000e-004**	**0.022□**	**1.□000e-003**	**0.024□**	**□.2000e-003**	**1.4□00e-003**	**□.□□00e-003**	**0.0000**	**33.□24□**	**33.□24□**	**1.1300e-003**	**0.0000**	**33.□4□□**

3.3 Building Construction - 201□

Mitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Off□□oad	0.4430	2.8423	1.8751	2.7400e□003		0.1936	0.1936		0.1856	0.1856	0.0000	235.9120	235.9120	0.0565	0.0000	237.0985
□otal	**0.4430**	**2.□423**	**1.□□□1**	**2.□400e-003**		**0.1□3□**	**0.1□3□**		**0.1□□□**	**0.1□□□**	**0.0000**	**23□.□120**	**23□.□120**	**0.0□□□**	**0.0000**	**23□.0□□□**

Mitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0110	0.0887	0.1221	1.8000e□004	4.9600e□003	1.4400e□003	6.3900e□003	1.4200e□003	1.3200e□003	2.7400e□003	0.0000	16.8477	16.8477	1.5000e□004	0.0000	16.8509
□or□er	8.4000e□003	0.0122	0.1180	2.1000e□004	0.0180	1.6000e□004	0.0181	4.7800e□003	1.5000e□004	4.9200e□003	0.0000	16.8771	16.8771	9.8000e□004	0.0000	16.8978
□otal	**0.01□4**	**0.100□**	**0.2401**	**3.□000e-004**	**0.022□**	**1.□000e-003**	**0.024□**	**□.2000e-003**	**1.4□00e-003**	**□.□□00e-003**	**0.0000**	**33.□24□**	**33.□24□**	**1.1300e-003**	**0.0000**	**33.□4□□**

3.4 Architectural Coating - 201□

Unmitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Archit. Coating	0.6702					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off□□oad	0.0447	0.2827	0.2092	3.3000e□004		0.0243	0.0243		0.0243	0.0243	0.0000	28.0858	28.0858	3.6600e□003	0.0000	28.1626
□otal	**0.□1□0**	**0.2□2□**	**0.20□2**	**3.3000e-004**		**0.0243**	**0.0243**		**0.0243**	**0.0243**	**0.0000**	**2□.0□□□**	**2□.0□□□**	**3.□□00e-003**	**0.0000**	**2□.1□2□**

Unmitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ or□er	1.8700e□003	2.7000e□003	0.0262	5.0000e□005	3.9900e□003	4.0000e□005	4.0300e□003	1.0600e□003	3.0000e□005	1.0900e□003	0.0000	3.7505	3.7505	2.2000e□004	0.0000	3.7551
□otal	**1.□□00e-003**	**2.□000e-003**	**0.02□2**	**□.0000e-00□**	**3.□□00e-003**	**4.0000e-00□**	**4.0300e-003**	**1.0□00e-003**	**3.0000e-00□**	**1.0□00e-003**	**0.0000**	**3.□□0□**	**3.□□0□**	**2.2000e-004**	**0.0000**	**3.□□□1**

3.4 Architectural Coating - 201□

Mitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Archit. Coating	0.6702					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off□□oad	0.0447	0.2827	0.2092	3.3000e□004		0.0243	0.0243		0.0243	0.0243	0.0000	28.0858	28.0858	3.6600e□003	0.0000	28.1626
□otal	**0.□1□0**	**0.2□2□**	**0.20□2**	**3.3000e-004**		**0.0243**	**0.0243**		**0.0243**	**0.0243**	**0.0000**	**2□.0□□□**	**2□.0□□□**	**3.□□00e-003**	**0.0000**	**2□.1□2□**

Mitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□ or□er	1.8700e□003	2.7000e□003	0.0262	5.0000e□005	3.9900e□003	4.0000e□005	4.0300e□003	1.0600e□003	3.0000e□005	1.0900e□003	0.0000	3.7505	3.7505	2.2000e□004	0.0000	3.7551
□otal	**1.□□00e-003**	**2.□000e-003**	**0.02□2**	**□.0000e-00□**	**3.□□00e-003**	**4.0000e-00□**	**4.0300e-003**	**1.0□00e-003**	**3.0000e-00□**	**1.0□00e-003**	**0.0000**	**3.□□0□**	**3.□□0□**	**2.2000e-004**	**0.0000**	**3.□□□1**

3.□Pa□ing - 201□

Unmitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Off□□oad	9.7200e□003	0.0988	0.0613	9.0000e□005		6.2100e□003	6.2100e□003		5.7200e□003	5.7200e□003	0.0000	8.2702	8.2702	2.4200e□003	0.0000	8.3212
Pa□ing	1.0100e□003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□otal	**0.010□**	**0.0□□□**	**0.0□13**	**□.0000e-00□**		**□.2100e-003**	**□.2100e-003**		**□.□200e-003**	**□.□200e-003**	**0.0000**	**□.2□02**	**□.2□02**	**2.4200e-003**	**0.0000**	**□.3212**

Unmitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□or□er	3.2000e□004	4.6000e□004	4.4700e□003	1.0000e□005	6.8000e□004	1.0000e□005	6.9000e□004	1.8000e□004	1.0000e□005	1.9000e□004	0.0000	0.6393	0.6393	4.0000e□005	0.0000	0.6401
□otal	**3.2000e-004**	**4.□000e-004**	**4.4□00e-003**	**1.0000e-00□**	**□.□000e-004**	**1.0000e-00□**	**□.□000e-004**	**1.□000e-004**	**1.0000e-00□**	**1.□000e-004**	**0.0000**	**0.□3□3**	**0.□3□3**	**4.0000e-00□**	**0.0000**	**0.□401**

3.□Pa□ing - 201□

Mitigated Construction On-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Off□□oad	9.7200e□003	0.0988	0.0613	9.0000e□005		6.2100e□003	6.2100e□003		5.7200e□003	5.7200e□003	0.0000	8.2702	8.2702	2.4200e□003	0.0000	8.3211
Pa□ing	1.0100e□003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□otal	**0.010□**	**0.0□□□**	**0.0□13**	**□.0000e-00□**		**□.2100e-003**	**□.2100e-003**		**□.□200e-003**	**□.□200e-003**	**0.0000**	**□.2□02**	**□.2□02**	**2.4200e-003**	**0.0000**	**□.3211**

Mitigated Construction Off-Site

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□or□er	3.2000e□004	4.6000e□004	4.4700e□003	1.0000e□005	6.8000e□004	1.0000e□005	6.9000e□004	1.8000e□004	1.0000e□005	1.9000e□004	0.0000	0.6393	0.6393	4.0000e□005	0.0000	0.6401
□otal	**3.2000e-004**	**4.□000e-004**	**4.4□00e-003**	**1.0000e-00□**	**□.□000e-004**	**1.0000e-00□**	**□.□000e-004**	**1.□000e-004**	**1.0000e-00□**	**1.□000e-004**	**0.0000**	**0.□3□3**	**0.□3□3**	**4.0000e-00□**	**0.0000**	**0.□401**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Mitigated	0.0623	0.1421	0.6272	1.1300e□003	0.0791	1.8200e□003	0.0810	0.0212	1.6700e□003	0.0229	0.0000	90.2048	90.2048	3.9800e□003	0.0000	90.2884
Unmitigated	0.0623	0.1421	0.6272	1.1300e□003	0.0791	1.8200e□003	0.0810	0.0212	1.6700e□003	0.0229	0.0000	90.2048	90.2048	3.9800e□003	0.0000	90.2884

4.2 □rip Summary Information

	A□erage Daily □rip □ate			Unmitigated	Mitigated
Land Use	□ ee□day	Saturday	Sunday	Annual VM□	Annual VM□
Other Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	95.70	100.80	87.70	212,713	212,713
□otal	95.70	100.80	87.70	212,713	212,713

4.3 □rip □ype Information

	Miles			□rip □			□rip Purpose □		
Land Use	H□□ or C□□	H□S or C□C	H□O or C□□□	H□□ or C□□	H□S or C□C	H□O or C□□□	Primary	Di□erted	Pass□by
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3

LDA	LD□1	LD□2	MDV	LHD1	LHD2	MHD	HHD	O□US	U□US	MC□	S□US	MH
0.546434	0.062864	0.174629	0.123506	0.034170	0.004889	0.015456	0.023695	0.002073	0.003288	0.006639	0.000690	0.001668

4.0 Energy Detail

Historical Energy Use: □

□.1 Mitigation Measures Energy

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	20.2299	20.2299	9.1000e□004	1.9000e□004	20.3078
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	20.2299	20.2299	9.1000e□004	1.9000e□004	20.3078
□aturalGas Mitigated	2.7500e□003	0.0235	0.0100	1.5000e□004		1.9000e□003	1.9000e□003		1.9000e□003	1.9000e□003	0.0000	27.2262	27.2262	5.2000e□004	5.0000e□004	27.3919
□aturalGas Unmitigated	2.7500e□003	0.0235	0.0100	1.5000e□004		1.9000e□003	1.9000e□003		1.9000e□003	1.9000e□003	0.0000	27.2262	27.2262	5.2000e□004	5.0000e□004	27.3919

□.2 Energy by Land Use - Natural□as

Unmitigated

	□aturalGas Use	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Land Use	□□□U/yr	tons/yr										M□/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	510200	2.7500e□003	0.0235	0.0100	1.5000e□004		1.9000e□003	1.9000e□003		1.9000e□003	1.9000e□003	0.0000	27.2262	27.2262	5.2000e□004	5.0000e□004	27.3919
□otal		**2.□□00e-003**	**0.023□**	**0.0100**	**1.□000e-004**		**1.□000e-003**	**1.□000e-003**		**1.□000e-003**	**1.□000e-003**	**0.0000**	**2□.22□2**	**2□.22□2**	**□.2000e-004**	**□.0000e-004**	**2□.3□1□**

Mitigated

	□aturalGas Use	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Land Use	□□□U/yr	tons/yr										M□/yr					
Single Family Housing	510200	2.7500e□003	0.0235	0.0100	1.5000e□004		1.9000e□003	1.9000e□003		1.9000e□003	1.9000e□003	0.0000	27.2262	27.2262	5.2000e□004	5.0000e□004	27.3919
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
□otal		**2.□□00e-003**	**0.023□**	**0.0100**	**1.□000e-004**		**1.□000e-003**	**1.□000e-003**		**1.□000e-003**	**1.□000e-003**	**0.0000**	**2□.22□2**	**2□.22□2**	**□.2000e-004**	**□.0000e-004**	**2□.3□1□**

□.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	□otal CO2	CH4	□2O	CO2e
Land Use	□□ h/yr	M□/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	69539.7	20.2299	9.1000e□ 004	1.9000e□ 004	20.3078
□otal		**20.22□□**	**□.1000e-004**	**1.□000e-004**	**20.30□□**

Mitigated

	Electricity Use	□otal CO2	CH4	□2O	CO2e
Land Use	□□ h/yr	M□/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	69539.7	20.2299	9.1000e□ 004	1.9000e□ 004	20.3078
□otal		**20.22□□**	**□.1000e-004**	**1.□000e-004**	**20.30□□**

□.0 Area Detail

□.1 Mitigation Measures Area

Use only □atural Gas Hearths

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
Category	tons/yr										M□/yr					
Mitigated	0.2708	8.8000e□004	0.0753	0.0000		4.6000e□004	4.6000e□004		4.6000e□004	4.6000e□004	0.0000	0.8614	0.8614	1.4000e□004	1.0000e□005	0.8685
Unmitigated	0.3357	2.0600e□003	0.1725	1.0000e□004		0.0145	0.0145		0.0145	0.0145	1.4664	0.5090	1.9754	3.1000e□003	8.0000e□005	2.0654

□.2 Area by SubCategory

Unmitigated

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
SubCategory	tons/yr										M□/yr					
Architectural Coating	0.0670					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2013					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0650	1.1800e□003	0.0972	9.0000e□005		0.0141	0.0141		0.0141	0.0141	1.4664	0.3877	1.8541	2.9800e□003	8.0000e□005	1.9415
Landscaping	2.3700e□003	8.8000e□004	0.0753	0.0000		4.1000e□004	4.1000e□004		4.1000e□004	4.1000e□004	0.0000	0.1213	0.1213	1.2000e□004	0.0000	0.1239
□otal	**0.33□□**	**2.0□00e-003**	**0.1□24**	**□.0000e-00□**		**0.014□**	**0.014□**		**0.014□**	**0.014□**	**1.4□□4**	**0.□0□0**	**1.□□□4**	**3.1000e-003**	**□.0000e-00□**	**2.0□□4**

□.2 Area by SubCategory

Mitigated

	□OG	□O□	CO	SO2	Fugiti□e PM10	E□haust PM10	PM10 □otal	Fugiti□e PM2.5	E□haust PM2.5	PM2.5 □otal	□io□CO2	□□io□CO2	□otal CO2	CH4	□2O	CO2e
SubCategory	tons/yr										M□/yr					
Architectural Coating	0.0670					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2013					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	7.0000e□005	0.0000	0.0000	0.0000		5.0000e□005	5.0000e□005		5.0000e□005	5.0000e□005	0.0000	0.7401	0.7401	1.0000e□005	1.0000e□005	0.7446
Landscaping	2.3700e□003	8.8000e□004	0.0753	0.0000		4.1000e□004	4.1000e□004		4.1000e□004	4.1000e□004	0.0000	0.1213	0.1213	1.2000e□004	0.0000	0.1239
□otal	**0.2□0□**	**□.□000e-004**	**0.0□□3**	**0.0000**		**4.□000e-004**	**4.□000e-004**		**4.□000e-004**	**4.□000e-004**	**0.0000**	**0.□□14**	**0.□□14**	**1.3000e-004**	**1.0000e-00□**	**0.□□□□**

□.0 Water Detail

□.1 Mitigation Measures Water

	□otal CO2	CH4	□2O	CO2e
Category	M□/yr			
Mitigated	1.6505	0.0213	5.1000e□004	2.2570
Unmitigated	1.6505	0.0213	5.1000e□004	2.2573

□.2 Water by Land Use

Unmitigated

	□ndoor/Outdoor Use	□otal CO2	CH4	□2O	CO2e
Land Use	Mgal	M□/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.65154 / 0.410754	1.6505	0.0213	5.1000e□004	2.2573
□otal		**1.□□0□**	**0.0213**	**□.1000e-004**	**2.2□□3**

Mitigated

	□ndoor/Outdoor Use	□otal CO2	CH4	□2O	CO2e
Land Use	Mgal	M□/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.65154 / 0.410754	1.6505	0.0213	5.1000e□004	2.2570
□otal		**1.□□0□**	**0.0213**	**□.1000e-004**	**2.2□□0**

□.0 Waste Detail

□.1 Mitigation Measures Waste

Category/Year

	□otal CO2	CH4	□2O	CO2e
	M□/yr			
Mitigated	2.4724	0.1461	0.0000	5.5409
Unmitigated	2.4724	0.1461	0.0000	5.5409

□.2 Waste by Land Use

Unmitigated

	□ aste Disposed	□otal CO2	CH4	□2O	CO2e
Land Use	tons	M□/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	12.18	2.4724	0.1461	0.0000	5.5409
□otal		**2.4□24**	**0.14□1**	**0.0000**	**□.□40□**

□.2 Waste by Land Use

Mitigated

	□aste Disposed	□otal CO2	CH4	□2O	CO2e
Land Use	tons	M□/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	12.18	2.4724	0.1461	0.0000	5.5409
□otal		**2.4□24**	**0.14□1**	**0.0000**	**□.□40□**

□.0 Operational Offroad

E□uipment □ype	□umber	Hours/Day	Days/□ear	Horse Power	Load Factor	Fuel □ype

10.0 □egetation

AERSCREEN 11126 / AERMOD 1135 10/15/14
14:09:01

TITLE: Surrey

********** AREA PARAMETERS **********

SOURCE EMISSION RATE: 0.633E-02 g/s 0.502E-01 lb/hr

AREA EMISSION RATE: 0.974E-07 g/(s-m2) 0.773E-06 lb/(hr-m2)
AREA HEIGHT: 4.57 meters 15.00 feet
AREA SOURCE LONG SIDE: 304.50 meters 999.00 feet
AREA SOURCE SHORT SIDE: 213.36 meters 700.00 feet
INITIAL VERTICAL DIMENSION: 4.57 meters 15.00 feet
RURAL OR URBAN: URBAN
POPULATION: 30000

INITIAL PROBE DISTANCE = 5000. meters 16404. feet

********** BUILDING DOWNWASH PARAMETERS **********

BUILDING DOWNWASH NOT USED FOR NON-POINT SOURCES

********** FLOW SECTOR ANALYSIS **********
25 meter receptor spacing: 1. meters - 5000. meters

MAXIMUM IMPACT RECEPTOR

Zo SECTOR	SURFACE ROUGHNESS	1-HR CONC (ug/m3)	RADIAL (deg)	DIST (m)	TEMPORAL PERIOD
1*	1.000	1.816	30	175.0	WIN

* = worst case diagonal

********** MAKEMET METEOROLOGY PARAMETERS **********

MIN/MAX TEMPERATURE: 249.8 / 310.9 (K)

MINIMUM WIND SPEED: 2.0 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: AERMET SEASONAL TABLES

DOMINANT SURFACE PROFILE: Urban
DOMINANT CLIMATE TYPE: Average Moisture
DOMINANT SEASON: Winter

ALBEDO: 0.35
BOWEN RATIO: 1.50
ROUGHNESS LENGTH: 1.000 (meters)

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

```
 YR MO DY JDY HR
 -- -- -- --- --
 10 01 01   1 01

   H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
-18.63  0.174 -9.000  0.020 -999.  167.     21.6 1.000   1.50   0.35    2.00

   HT  REF TA     HT
- - - - - - - - - - -
  10.0   249.8    2.0
```

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

```
 YR MO DY JDY HR
 -- -- -- --- --
 10 01 01   1 01

   H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
-18.63  0.174 -9.000  0.020 -999.  167.     21.6 1.000   1.50   0.35    2.00

   HT  REF TA     HT
- - - - - - - - - - -
```

10.0 249.8 2.0

********** AERSCREEN AUTOMATED DISTANCES **********
OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)
0.99	1.218	2525.00	0.5768E-01
25.00	1.333	2550.00	0.5695E-01
50.00	1.441	2575.00	0.5623E-01
75.00	1.537	2600.00	0.5553E-01
100.00	1.624	2625.00	0.5485E-01
125.00	1.702	2650.00	0.5419E-01
150.00	1.773	2675.00	0.5354E-01
175.00	1.816	2700.00	0.5291E-01
200.00	1.589	2725.00	0.5229E-01
225.00	1.375	2750.00	0.5169E-01
250.00	1.186	2775.00	0.5111E-01
275.00	1.039	2800.00	0.5053E-01
300.00	0.9252	2825.00	0.4997E-01
325.00	0.8353	2850.00	0.4942E-01
350.00	0.7634	2875.00	0.4889E-01
375.00	0.7026	2900.00	0.4837E-01
400.00	0.6495	2925.00	0.4786E-01
425.00	0.6025	2950.00	0.4736E-01
450.00	0.5612	2975.00	0.4687E-01
475.00	0.5243	3000.00	0.4639E-01
500.00	0.4914	3025.00	0.4593E-01
525.00	0.4617	3050.00	0.4547E-01
550.00	0.4350	3075.00	0.4502E-01
575.00	0.4111	3100.00	0.4459E-01
600.00	0.3890	3125.00	0.4416E-01
625.00	0.3689	3150.00	0.4374E-01
650.00	0.3507	3174.99	0.4333E-01
675.00	0.3338	3199.99	0.4293E-01
700.00	0.3183	3225.00	0.4254E-01
725.00	0.3040	3250.00	0.4216E-01
750.00	0.2909	3275.01	0.4179E-01
775.00	0.2788	3300.00	0.4142E-01
800.00	0.2673	3325.00	0.4106E-01
825.00	0.2566	3350.00	0.4071E-01
850.00	0.2467	3375.00	0.4037E-01

875.00	0.2374	3400.00	0.4003E-01
900.00	0.2287	3425.00	0.3970E-01
925.00	0.2207	3450.00	0.3938E-01
950.00	0.2130	3475.00	0.3906E-01
975.00	0.2058	3500.00	0.3875E-01
1000.00	0.1990	3525.00	0.3845E-01
1025.00	0.1925	3550.00	0.3815E-01
1050.00	0.1864	3575.00	0.3786E-01
1075.00	0.1807	3600.00	0.3757E-01
1100.00	0.1752	3625.00	0.3729E-01
1125.00	0.1700	3650.00	0.3702E-01
1150.00	0.1651	3675.00	0.3675E-01
1175.00	0.1605	3700.00	0.3648E-01
1200.00	0.1560	3725.00	0.3622E-01
1225.00	0.1518	3750.00	0.3597E-01
1250.00	0.1477	3775.00	0.3596E-01
1275.00	0.1438	3800.00	0.3571E-01
1300.00	0.1401	3825.00	0.3546E-01
1325.00	0.1366	3850.00	0.3522E-01
1350.00	0.1332	3875.00	0.3498E-01
1375.00	0.1300	3900.00	0.3475E-01
1400.00	0.1269	3925.00	0.3453E-01
1425.00	0.1240	3950.00	0.3430E-01
1450.00	0.1211	3975.00	0.3408E-01
1475.00	0.1183	4000.00	0.3387E-01
1500.00	0.1157	4025.00	0.3365E-01
1525.00	0.1132	4050.00	0.3345E-01
1550.00	0.1107	4075.00	0.3324E-01
1575.00	0.1084	4100.00	0.3304E-01
1600.00	0.1061	4125.00	0.3284E-01
1625.00	0.1039	4150.00	0.3265E-01
1650.00	0.1018	4175.00	0.3246E-01
1675.00	0.9972E-01	4200.00	0.3227E-01
1700.00	0.9774E-01	4225.00	0.3208E-01
1725.00	0.9584E-01	4250.00	0.3190E-01
1750.00	0.9400E-01	4275.00	0.3172E-01
1775.00	0.9222E-01	4300.00	0.3155E-01
1800.00	0.9049E-01	4325.00	0.3137E-01
1825.00	0.8883E-01	4350.00	0.3120E-01
1850.00	0.8721E-01	4375.00	0.3104E-01
1875.00	0.8565E-01	4400.00	0.3087E-01
1900.00	0.8414E-01	4425.00	0.3071E-01
1924.99	0.8268E-01	4450.00	0.3055E-01
1950.00	0.8126E-01	4475.00	0.3039E-01
1975.00	0.7988E-01	4500.00	0.3024E-01
2000.00	0.7854E-01	4525.00	0.3008E-01
2025.00	0.7724E-01	4550.00	0.2993E-01
2050.00	0.7599E-01	4575.00	0.2979E-01
2075.00	0.7477E-01	4600.00	0.2964E-01

2100.00	0.7359E-01	4625.00	0.2950E-01
2125.00	0.7244E-01	4650.00	0.2935E-01
2150.00	0.7132E-01	4675.00	0.2921E-01
2175.00	0.7023E-01	4700.00	0.2908E-01
2200.00	0.6918E-01	4725.00	0.2894E-01
2225.00	0.6814E-01	4750.00	0.2881E-01
2250.00	0.6714E-01	4775.00	0.2868E-01
2275.00	0.6616E-01	4800.00	0.2855E-01
2300.00	0.6521E-01	4825.00	0.2842E-01
2325.00	0.6429E-01	4850.00	0.2829E-01
2350.00	0.6339E-01	4875.00	0.2817E-01
2375.00	0.6251E-01	4900.00	0.2804E-01
2400.00	0.6165E-01	4925.00	0.2792E-01
2425.00	0.6082E-01	4950.00	0.2780E-01
2450.00	0.6000E-01	4975.00	0.2768E-01
2475.00	0.5921E-01	5000.00	0.2757E-01
2500.00	0.5843E-01		

********** AERSCREEN MAXIMUM IMPACT SUMMARY **********

3-hour, 8-hour, and 24-hour scaled
concentrations are equal to the 1-hour concentration as referenced in
SCREENING PROCEDURES FOR ESTIMATING THE AIR QUALITY
IMPACT OF STATIONARY SOURCES, REVISED (Section 4.5.4)
Report number EPA-454/R-92-019
http://www.epa.gov/scram001/guidance_permit.htm
under Screening Guidance

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
FLAT TERRAIN	1.819	1.819	1.819	1.819	N/A

DISTANCE FROM SOURCE 176.00 meters

IMPACT AT THE AMBIENT BOUNDARY	1.218	1.218	1.218	1.218	N/A

DISTANCE FROM SOURCE 0.99 meters

APPENDIX I

CULTURAL RESOURCES STUDY
(AUGUST 8, 2012)

BY
HOLMAN & ASSOCIATES

holman & ASSOCIATES
Archaeological Consultants
"SINCE THE BEGINNING"
3615 FOLSOM ST. SAN FRANCISCO, CALIFORNIA 94110 415/550-7286

Valerie Geier
Geier & Geier Consulting
P.O. Box 5054
Berkeley, CA 94705

January 25, 2013

Dear Ms. Geier:

RE: CULTURAL RESOURCE STUDY OF THE PROPOSED SURREY FARM ESTATES PROJECT, 170 TWIN OAKS DRIVE, LOS GATOS, SANTA CLARA COUNTY, CALIFORNIA

At your request I have completed an archaeological literature review and field inspection for cultural resources at the above referenced project area located in Los Gatos. No evidence of significant historic archaeological resources and no prehistoric site indicators were seen during the field inspection nor were recorded at the Northwest Information Center (NWIC) located in Rohnert Park, California. This report is a summary of information gained to date.

PROJECT DESCRIPTION

The proposed project area consists of a 17.9 acre irregularly shaped parcel of land located at the end of a dirt road behind the house located at 170 Twin Oaks Drive in Los Gatos. Located on the Los Gatos U.S.G.S. map, the borders of the property are housing on the west bordering Twin Oaks, and open hillside on the north, south and east. Currently the parcel is made up of a small flat (enclosed equestrian ring) on the western edge and open sloping hillside climbing to the south and east; at the time of my field visit (July, 2012) the hillside was covered by dry grasses, small oaks and what appears to be remnants of an orchard. According to historic photographs supplied by your office which were shot in the 1950s, the property has been open grassland with little historic land alteration. The western border of the property which borders the houses was once the location of an ephemeral drainage which ran from south to north; mature trees are found bordering the area which is defined by a fire break currently. Plans call for the development of 10 building lots to be accessed by the road at 170 Twin Oaks.

ARCHIVAL RESEARCH

An archaeological literature review was conducted by this author in person at the NWIC on July 13, 2012. There are no recorded historic and/or prehistoric archaeological sites inside the

project borders, nor within a quarter mile of it. There have been no previous archaeological field inspections of the project area, and only two within 1000 feet of it; both of these had negative findings.

FIELD INSPECTION

A visual inspection of the project area was conducted on July 19th, 2012 by this author by walking 30 foot transects over the open hillsides and closer transects of the entire lower western edge of the property, including the equestrian ring and proposed road access which will run through the area from Twin Oaks Drive. Soils throughout the hillside area are comprised of hard packed clay with large basalt and quartzite cobbles. The western edge of the property is comprised of a silty gray clay loam containing fine gravels; it is apparent that this edge of the property contained a seasonal drainage, collecting waters from the hillsides to the east and south.

FINDINGS/RECOMMENDATIONS

No evidence of significant historical archaeological materials and no evidence of prehistoric use and/or habitation of the area was seen during the field inspection. It is the opinion of this author that the property has a low potential for containing buried prehistoric resources–the hillsides (the majority of the property) are too steep to have supported Native American camps or villages, and no evidence of such was seen on the small portion of the property along its western edge where they might have been located in prehistoric times.

This report does not recommend mechanical subsurface presence/absence testing for prehistoric resources and does not recommend archaeological monitoring of future construction related earthmoving. There remains a small possibility that buried prehistoric resources could be found along the western edge of the property or along the proposed access road. In the event that any of the materials described below are found during construction, it is recommended that work be halted within 30 feet of the discovery until a qualified archaeologist has been retained to inspect the discovery. In the event that potentially significant archaeological deposits (eligible for the California Register of Historic Resources (CRHR)) are discovered, it will be the responsibility of the project archaeologist to present the City of Los Gatos with a plan for evaluation of the resources through limited hand excavation.

If evaluative testing determines that a deposit is present which is eligible for the CRHR, the project sponsor will be responsible for presenting the City of Los Gatos with a plan for mitigation of impacts before any additional earthmoving is allowed inside the zone of archaeological sensitivity. Mitigation can take the form of additional hand excavation to retrieve and analyze significant archaeological materials, coupled with additional monitoring of earthmoving inside the zone of archaeological sensitivity.

Archaeological site indicators typical to this part of Los Gatos include darker than surrounding soils of a friable nature, evidence of fire (ash, charcoal, fire affected earth or rock),

concentrations of rock, bone or fresh water shellfish, and artifacts of these materials. In addition archaeological sites (villages and camp sites) often contain both human and animal burials. In th event that human remains are discovered, it is the responsibility of the project sponsor to contact the County Coroner's Office and the Native American Heritage Commission (NAHC). The NAHC is responsible for identifying a Most Likely Descendant (MLD) to represent tribal interests regarding the method of exposure and removal of human remains and associated grave goods and for recommending a place of reburial for these materials.

Sincerely,

Miley Paul Holman
Holman & Associates

SURREY FARM ESTATES
170 TWIN OAKS DRIVE
LOS GATOS, SANTA CLARA COUNTY, CALIFORNIA

LOS GATOS U.S.G.S. MAP