

Oak Creek Park

Draft EIR

SCH # 2019110250



Kimley»Horn

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1 Executive Summary

This Draft Environmental Impact Report (EIR) has been prepared by the City of Scotts Valley for the Oak Creek Park project (the project or proposed project). The City of Scotts Valley is the “public agency which has the principal responsibility for carrying out or approving the project,” and as such is the “Lead Agency” under the California Environmental Quality Act (CEQA), as defined in CEQA Guidelines Section 15367. CEQA requires the Lead Agency to consider the information contained in the EIR prior to taking any discretionary action. This EIR is intended to serve as an informational document to be considered by the City and other permitting agencies during deliberations on the project.

This Executive Summary summarizes the requirements of the CEQA Statute and Guidelines, provides an overview of the project and alternatives, outlines the potential impacts of the project and the recommended mitigation measures, and discloses areas of controversy and issues to be resolved.

1.1 Project and Decision Overview

1.1.1 Project Location

The project site is located on a 3.56-acre site at the intersection of Glen Canyon and Mt. Hermon Road in the City of Scotts Valley. See [Figure 1-1: Project Location](#).

1.1.2 Project Description

As shown in [Figure 3-1: Site Plan](#), the project is a mixed-use commercial and residential development. Project land uses include eight three-bedroom townhomes on Lot 1, and 24,973 sf. of commercial (e.g. retail and office) and 44 apartments (74,100 sf) on Lot 2.

In addition to certification of a Final EIR, the project requires the following City approvals:

- General Plan Amendment to change the existing land use designation on Lot 1 from Commercial-Service (CS) to Medium High Residential/Planned Development
- Zone Change on Lot 1 CS to Medium High Residential/Planned Development (R-M-8)
- Planned Development
- Minor Land Division
- Use Permit
- Design Review

1.1.3 CEQA Evaluation Process

This environmental impact report (EIR) has been prepared to evaluate environmental impacts that may result from implementation of the project. The California Environmental Quality Act (CEQA) requires the Lead Agency with discretionary authority over the project to consider the

information contained in the EIR prior to taking any discretionary action. This EIR provides information to the Lead Agency and other public agencies, the public, and decision makers regarding the environmental impacts from the project. The purpose of the public review of the EIR is to evaluate the adequacy of the environmental analysis in terms of compliance with CEQA.

The City has the authority to take discretionary actions relating to development of the project and may conditionally approve or deny the project permit. This EIR evaluates and mitigates the impacts associated with the project. The EIR also discloses growth-inducing impacts; impacts found not to be significant; and significant cumulative impacts of past, present, and reasonably anticipated future projects.

1.1.4 Project Applicant Objectives

The applicant has identified the following key project objectives:

1. Provide a balanced mix of residential and commercial uses that integrate into the existing urban setting and provide a safe and attractive environment for living and working.
2. Create a high-quality mixed-use development that is visually and aesthetically compatible with adjacent land uses.
3. Expand and improve the City's housing supply by developing high-quality housing in a portion of a City-designated "Opportunity Sites."
4. Provide affordable and market-rate housing consistent with the City of Scotts Valley General Plan Housing Element goals and policies.
5. Provide a mix of residential and commercial uses that achieves a financially feasible project.
6. Provide commercial uses that provide net financial benefits to the City of Scotts Valley.
7. Provide a project that balances housing with job-creating uses.
8. Develop a project that supports the success of the commercial uses through careful site planning and infrastructure design.
9. Develop vacant and underutilized land in an urban area.
10. Locate commercial and residential uses where such uses can take advantage of existing infrastructure and utilities.
11. Provide and improve pedestrian connections within the project and across adjacent arterial streets to facilitate pedestrian activity between neighborhoods and within the development.

1.2 Summary of Impacts and Mitigation Measures

This section summarizes the impacts of the project, which are presented in detail in this EIR. The primary purpose of an EIR is to identify any significant effects of a project, as proposed.

Knowledge of the significant impacts from the project guides the identification of mitigation measures and of alternatives that would reduce these impacts.

There are no significant impacts that cannot be mitigated to a less than significant level. Table ES-1: Summary of Significant Impacts of the Project provides a summary of the significant impacts of the project. The mitigation measures associated with each impact are to be implemented by the project applicant to reduce the environmental impacts to a less than significant level, where possible. In accordance with CEQA, the impacts are classified as follows:

- Significant and unavoidable impacts
- Significant impacts that can be reduced to less than significant with mitigation

Table ES-1: Summary of Significant Impacts of the Project

Impact	Impact Significance	Mitigation
Aesthetics		
Impact AES-1: Substantially alter the visual character of the project site and surrounding area.	Less than Significant	None required
Impact AES-2: Introduce new light and glare to the project site and project area.	No Impact	None required
Impact AES-3: Contribute to cumulatively considerable aesthetic impacts.	Less than Significant	None required
Air Quality		
Impact AQ-1: Conflict with implementation of MBARD Air Quality Plan	Less than Significant	None required.
Impact AQ-2: Future construction activities would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants.	Less than Significant with Mitigation	MM AQ-2.1: Reduce Fugitive Dust
Impact AQ-3: Future long-term operation would generate dust and exhaust emissions of criteria pollutants.	Less than Significant	None required.
Impact AQ-4: Increase carbon monoxide concentrations above State and federal standards.	Less than Significant	None required.
Impact AQ-5: Increase exposure to TACs	Less than Significant	None required.

Impact	Impact Significance	Mitigation
Impact AQ-6: Contribute to cumulatively considerable air quality impacts.	Less than Significant with Mitigation	MM AQ-2.1: Reduce Fugitive Dust
Biological Resources		
Impact BIO-1: Cause a direct or indirect adverse effect on special-status invertebrate species.	Less than Significant with Mitigation	MM-BIO-1.1: Focused Plant Surveys
Impact BIO-2: Cause a direct or indirect adverse effect on native trees and associated nesting bird sites.	Less than Significant with Mitigation	MM-BIO-2.1: Avoid Nesting Birds
Impact BIO-3: Contribute to cumulatively considerable effects on biological resources.	Less than Significant with Mitigation	MM-BIO-1.1: Focused Plant Surveys MM-BIO-2.1: Avoid Nesting Birds
Cultural Resources		
Impact CR-1: Cause a substantial adverse change to a known archeological resource.	Less than significant	None required
Impact CR-2: Inadvertently disturb human remains.	Less than significant	None required
Impact CR-3: Contribute to cumulatively considerable effects on cultural resources.	Less than significant	None required
Geology & Soils		
Impact GEO-1: Directly or indirectly cause expose people or structures to potential substantial adverse effects, including the risk of loss, or injury, or death involving: i) 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? Refer to Division of Mines and Geology Special Publication 42. ii) Strong seismic ground shaking iii) Landslides	Less than Significant	None required.
Impact GEO-2: Result in substantial soil erosion or the loss of topsoil.	Less than Significant	None required.
Impact GEO-3: Be located on a geologic unit or soil that is unstable,	Less than Significant with Mitigation	MM GEO 3.1: Implement geotechnical report recommendations

Impact	Impact Significance	Mitigation
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.		
Impact GEO-4: Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property	Less than Significant with Mitigation	MM GEO 3.1: Implement geotechnical report recommendations
Impact GEO-5: Result in soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.	No Impact	None required.
Impact GEO-6: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	Less than Significant	None required.
Impact GEO-7: Contribute to cumulatively considerable effects on geology and soils.	Less than Significant	None required.
Greenhouse Gas Emissions		
Impact GHG-1: Contribute to cumulatively considerable effects on construction-related greenhouse gas emissions.	Less than Significant	None required
Impact GHG-2: Contribute to cumulatively considerable effects on long-term operations-related greenhouse gas emissions.	Less than Significant	None required
Impact GHG-3: Conflict with plan, policy, or regulation adopted for the purpose of reducing greenhouse gas emissions.	Less than Significant	None required
Hydrology & Water Quality		
Impact HYD-1: Contribute to the depletion of local groundwater supplies or interfere with groundwater recharge.	Less than Significant	None required

Impact	Impact Significance	Mitigation
Impact HYD-2: Increase stormwater runoff due to the increase in impervious surfaces.	Less than Significant	None required
Impact HYD-3: Substantially alter drainage patterns on- or off-site that would result in the storm water transport of pollutants, bacteria, salts, and sediment into downstream facilities.	Less than Significant	None required
Impact HYD-4: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	Less than Significant	None required
Impact HYD-5: Contribute to cumulatively considerable effects on hydrology and water quality.	Less than Significant	None required
Land Use & Planning		
Impact LU-1: Substantially conflict with an applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect	Less than significant	None required
Impact LU-2: Contribute to cumulatively considerable land use impacts	Less than significant	None required
Noise & Vibration		
Impact N-1: Cause a temporary or periodic increase in ambient noise levels during construction that would substantially disturb sensitive receptors.	Less than Significant with Mitigation	MM N-1.1: Construction Noise Reduction
Impact N-2: Temporarily generate excessive groundborne vibration or groundborne noise.	Less than Significant	None required
Impact N-3: Result in a substantial permanent increase in ambient noise levels	Less than Significant	None required
Impact N-4: Contribute to cumulatively considerable noise impacts.	Less than Significant with Mitigation	MM N-1.1: Construction Noise Reduction

Impact	Impact Significance	Mitigation
Public Services, Utilities & Service Systems		
Impact PSU-1: Introduce in a new service population requiring the construction of new or altered police or fire facilities.	Less than Significant	None required
Impact PSU-2: Require construction of new or expanded educational facilities.	Less than Significant	None required
Impact PSU-3: Require new or expanded water treatment facilities.	Less than Significant	None required
Impact PSU-4: Require the construction or expansion of new wastewater treatment facilities.	Less than Significant	None required
Impact PSU-5: Require the construction or expansion of stormwater drainage facilities.	Less than Significant	None required
Impact PSU-6: Require the construction or expansion of electric power, natural gas, or telecommunications.	Less than Significant	None required
Impact PSU-7: Generate solid waste that would exceed the capacity of area landfills.	Less than Significant	None required
Impact PSU-8: Contribute to cumulatively considerable public services, utilities, and service system impacts.	Less than Significant	None required
Transportation		
Impact TR-1: Exceed VMT Thresholds	Less than significant	None required
Impact TR-2: Substantially increase hazards due to a design feature or incompatible use.	Less than Significant with Mitigation	MM TR-2.1: Mt. Hermon Road Project Site Access

1.2.1 Cumulative Impacts

Under the CEQA Guidelines, “a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the environmental impact report (“EIR”) together with other projects causing related impacts.” (14 Cal Code Regs §15130(a)(1)). This EIR uses a “list of past, present, and probable future projects producing related or cumulative impacts.” (14 Cal Code Regs §15130(b)(1)(A)). Reasonably foreseeable projects that could

contribute to the cumulative effects scenario are listed in the Cumulative Impacts chapter of this EIR.

The cumulative analysis concludes that the impacts of the project, when combined with impacts from past, present, and reasonable future projects would create impacts that would be considered cumulatively significant for transportation and circulation, consistent with findings in the Scotts Valley Town Center EIR (2008).

1.2.2 Growth-Inducing Effects

Section 15126.2(d) of the CEQA Guidelines provides the following guidance regarding growth-inducing impacts: a project is identified as growth inducing if it “could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.” Potential growth inducing components of the project would relate to labor requirements for construction, as well as conversion of land from industrial to residential uses. Employment would be unlikely to induce growth in the area.

1.2.3 Significant Irreversible Commitment of Resources

Section 15126.2(c) of the CEQA Guidelines defines an irreversible impact as an impact that uses nonrenewable resources during the initial and continued phases of the project. Irreversible impacts can also result from permanent loss of habitat, damage caused by environmental accidents associated with project construction, or operational resource use.

Build-out of the project would commit nonrenewable resources during project construction and ongoing utility services during project operations. During project operations, oil, gas, and other nonrenewable resources would be consumed. Therefore, an irreversible commitment of nonrenewable resources would occur as a result of long-term project operations. Compliance with all applicable building codes, policies and goals, and the mitigation measures identified in this EIR would ensure that all natural resources are conserved to the maximum extent possible.

1.3 Areas of Controversy

Pursuant to CEQA Guidelines Section 15132(b)(2), areas of controversy and issues to be resolved that are known to the City or were raised during the scoping process for the EIR include:

- Compliance with access, and vegetation clearance and suppression needs (to be addressed by the Scotts Valley Fire District).
- Compliance with AB 52 consultation for tribal cultural resources.
- Compliance with PG&E regarding easements and facilities located on or near the project site.
- Water supply (to be addressed by the Scotts Valley Water District).

1.4 Issues to be Resolved

Section 15123(b)(3) of the CEQA Guidelines requires the summary section of an EIR to identify any "issues to be resolved including the choice among alternatives and how to mitigate significant effects."

The following major issues will be resolved by the City of Scotts Valley in its decision process:

- Determine whether the EIR adequately describes the environmental impacts of the project;
- Choose among alternatives;
- Determine whether the recommended mitigation measures should be adopted or modified; and
- Determine whether additional mitigation measures need to be applied to the project.

1.5 Summary of Alternatives Analysis

Section 15126.6 of the CEQA Guidelines states that an EIR must address "a range of reasonable alternatives to the 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."

Based on the project objectives and impact analysis, several alternatives were considered as summarized below and discussed in detail in the Alternatives chapter of this EIR.

1.5.1 Alternatives Eliminated from Further Consideration

Existing Zoning Alternative

The City considered an analysis of an alternative that would comprise approvals necessary for the redevelopment of the developed portion of the project site pursuant to its current Commercial Services (C-S) zoning district. Such a development would not be substantially different from the project as multiple-family residential units are a permitted use as long as they are located either above the ground-level commercial use or at ground level at the rear of a commercial space on sites designated as "Opportunity Sites" in the Housing Element, which applies to this project site.

This alternative was eliminated from further consideration because it would be too similar to the project and would not reduce or eliminate identified significant impacts.

1.5.2 Alternatives Considered

Alternatives that would avoid or substantially lessen any of the significant effects of the project and that would feasibly attain most of the basic project objectives are discussed below. Each alternative is discussed with respect to its relationship to the project's objectives. Each alternative, if implemented, would be required to comply with all of the applicant-proposed

measures and the mitigation measures described for the project to ensure that the alternative impact conclusions presented below would be achieved.

No Project Alternative

Consideration of the No Project Alternative is required by Section 15126.6(e) of the CEQA Guidelines. The analysis of the No Project Alternative must discuss the existing conditions at the time the Notice of Preparation was published, as well as: “what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services” [CEQA Guidelines Section 15126.6 (e)(2)]. The requirements also specify as the proposal of some other project, this ‘no project’ consequence should be discussed” [CEQA Guidelines Section 15126.6 (e)(3)(B)].

Under the No Project Alternative, construction and operation of project would not occur. The baseline environmental conditions for the No Project Alternative are the same as for the project. The baseline conditions would continue to occur into the future, undisturbed, in the absence of project-related construction activities, unless other development occurred on the project site.

The objectives of the project would remain unfulfilled under the No Project Alternative.

Alternative A: Reduced Residential Development

Description

The C-S zoning designation allows mixed use commercial/residential uses by right (principal permitted use) as long as multiple-family dwellings are located either above the ground-level commercial use or at ground level at the rear of a commercial space on sites designated in the Housing Element.

Under the Reduced Residential Development Alternative, the General Plan land use designations for Lot 1 would be amended from Commercial Service to Residential Medium. Consistent with the General Plan Amendment, Lot 1 would be rezoned from C-S (Commercial Service) to R-1-10 (Residential: Medium Density).

The land use classification amendment and re-zoning would allow future residential development on the project site, but at a lower density. The Residential Medium designation allows between two and five dwelling units per gross acre and the R-1-10 zoning would require a minimum lot size of 10,000 sf. This would result in approximately four residential units on Lot 1 (instead of the eight proposed), and 48 units total or four less than proposed.

The commercial space would remain the same (24,973 sf). The entirety of the project site would be still be developed, resulting in similar ground disturbances and similar on-site circulation and parking.

Consistency with Project Objectives

This alternative would meet most of the project objectives. This alternative would still provide a mix of residential and commercial uses and it would still provide affordable and market-rate housing, albeit fewer units. It would also result in the development of a vacant and underutilized site in the City where existing infrastructure and utilities exist.

Comparative Analysis of Environmental Impacts

Construction and most operational impacts from this alternative would be similar to the project. No new or substantially greater or lesser impacts would occur as a result of this alternative.

Construction related impacts associated with air quality, greenhouse gas emissions, and noise would not change significantly as compared to the proposed project. Impacts to biological resources and geology would be similar to the proposed project as the same amount of area would be disturbed and any construction will be required to adhere to the final geotechnical report and construction codes. VMT would be less, although not significant.

Given the small change in the number of residential units (46 as compared to 52 units), there would be no appreciable change in public services, utilities, and service systems as compared to the proposed project.

In conclusion, impacts associated with this alternative would largely be the same and no impacts would be reduced to less than significant, as compared to the proposed project.

Alternative B: Previous Oak Creek Park Mixed-Use Planned Development

Description

This Alternative B considers the previous Oak Creek Mixed-Use Planned Development that was reviewed in 2008 by the Planning Commission who recommended approval to the City Council. However, due to a potential legal challenge, the public hearing was continued to a date uncertain and the City Council did not consider the proposed development. . The application included a Planned Development, land division, and design review to create 13 lots (Parcel B, C and 10 townhouse lots within Parcel D). Parcels B and C was proposed to include two one-story commercial buildings totaling 24,500 sf. Parcel D was proposed to include 10 three-story townhomes, one of which would have been constructed as an affordable unit. Site access was proposed to be similar to the proposed project. A Mitigated Negative Declaration (MND) was prepared for the project and found significant impacts to: aesthetics, air quality, biological resources, geology, hazards, hydrology and water quality, noise, public services, and traffic, all of which could be mitigated to a less than significant level.

Consistency with Project Objectives

This alternative would not meet a number of project applicant objectives. It would not provide a balanced mix of residential and commercial uses. It would not expand and improve the City's

housing supply by developing high-quality housing in a portion of a City-designated “Opportunity Sites,” as described in the City’s 2015-2023 Housing Element. Furthermore, this alternative would not provide a project that balances housing with job-creating uses.

Given the substantially reduced number of residential units that could be constructed this alternative would not likely meet the project applicant’s objective to provide a mix of residential and commercial uses that achieves a financially feasible project. Although regional demand for housing is high, this alternative, if financially feasible, could require development of units at an elevated price point to recover costs associated with development costs.

Furthermore, this would not meet the project applicant’s objectives to create a high-quality mixed-use development that is visually and aesthetically compatible with adjacent land uses. It would not expand and improve the City’s housing supply by developing high-quality housing in a portion of a City-designated “Opportunity Sites.” And finally, it would not provide affordable and market-rate housing consistent with the City of Scotts Valley General Plan Housing Element goals and policies.

Comparative Analysis of Environmental Impacts

Construction and most operational impacts from this alternative would be similar to the project. No new or substantially greater or lesser impacts would occur as a result of this alternative.

Construction related impacts associated with air quality, greenhouse gas emissions, and noise would not change significantly as compared to the proposed project. Impacts to biological resources and geology would be similar to the proposed project as the same amount of area would be disturbed and any construction will be required to adhere to the final geotechnical report and construction codes. VMT would be less, although not significant.

The project would use less water and generate less waste, but would be well within the service provider’s ability to serve the project site. Because there would be fewer residential units (10 as compared to 52 units), the level of police and emergency services would likely be less. However, as neither would require additional personal or the construction of new public facilities, there would be no appreciable difference in the level of impacts and no new mitigation would be required.

In conclusion, impacts associated with this alternative would largely be the same and no impacts would be reduced to less than significant, as compared to the proposed project.

1.5.3 Comparison of Alternatives and Environmentally Superior Alternative

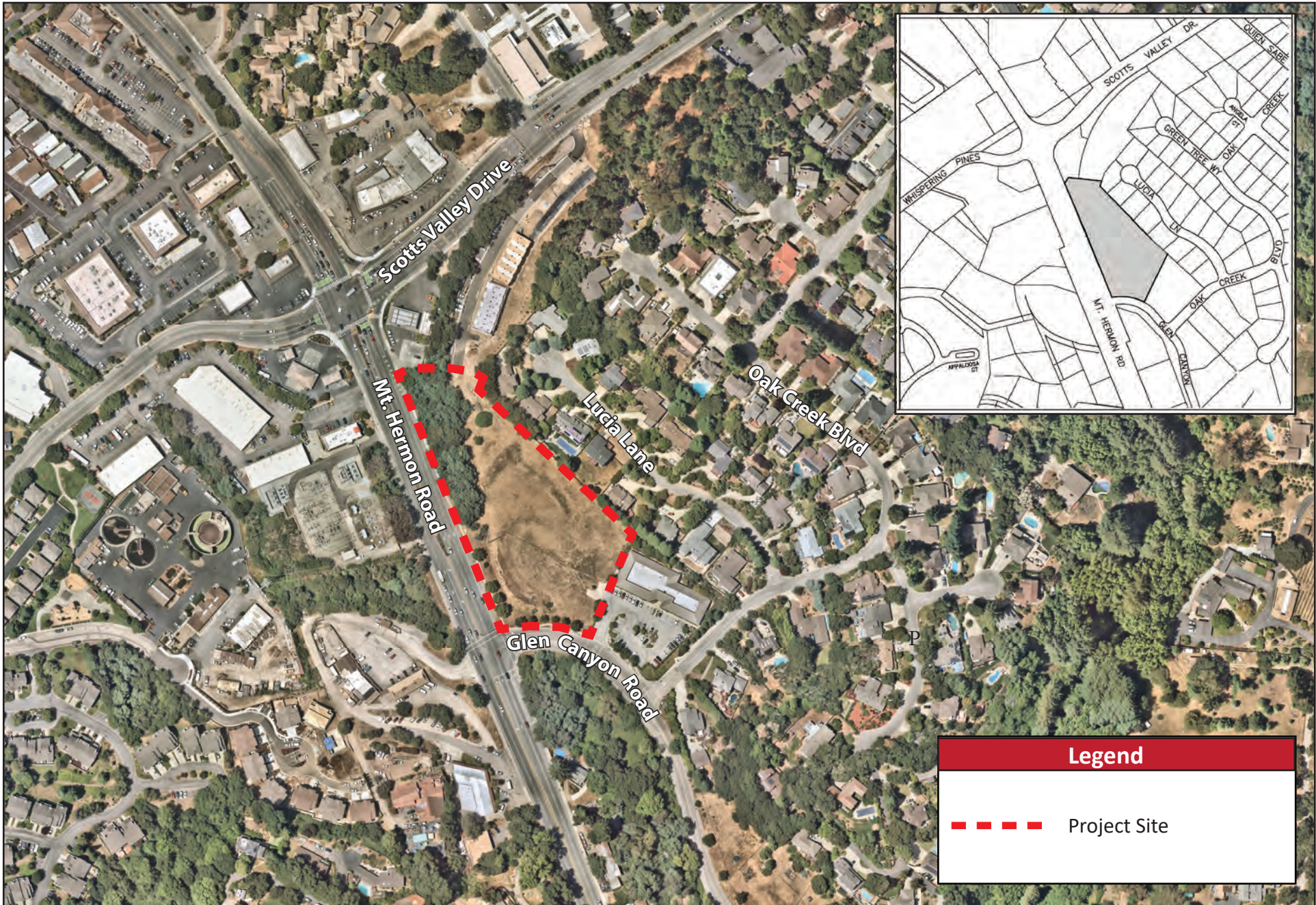
Table ES-2: Comparison of Significant Impacts: Project and Alternatives, shows the significant impacts of the project. For each significant impact identified, the table provides a comparison of the relative impact under the No Project Alternative, and Alternatives A, B and C.

Table ES-2: Comparison of Significant Impacts: Project and Alternatives

Impact	Project	No Project Alternative	Alternative A: Reduced Residential Development	Alternative B: Previous Oak Creek Park Mixed-Use Planned Development
Impact AQ-2: Future construction activities would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants	LTSM	NI	LTSM ↓	LTSM ↓
Impact AQ-6: Contribute to cumulatively considerable air quality impacts.	LTSM	NI	LTSM ↓	LTSM ↓
Impact BIO-1: Cause a direct or indirect adverse effect on special-status invertebrate species.	LTSM	NI	LTSM ↓	LTSM
Impact BIO-2: Cause a direct or indirect adverse effect on native trees and associated nesting bird sites.	LTSM	NI	LTSM	LTSM
Impact BIO-3: Contribute to cumulatively considerable effects on biological resources.	LTSM	NI	LTSM	LTSM
Impact GEO-3: 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.	LTSM	NI	LTSM	LTSM
Impact GEO-4: Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property	LTSM	NI	LTSM	LTSM
Impact N-1: Cause a temporary or periodic	LTSM	NI	LTSM	LTSM

Impact	Project	No Project Alternative	Alternative A: Reduced Residential Development	Alternative B: Previous Oak Creek Park Mixed-Use Planned Development
increase in ambient noise levels during construction that would substantially disturb sensitive receptors.				
Impact N-4: Contribute to cumulatively considerable noise impacts.	LTSM	NI	LTSM ↓	LTSM ↑
Impact TR-2: Substantially increase hazards due to a design feature or incompatible use.	LTSM	NI	LTSM	LTSM
LTS = Less than Significant LTSM = Less than Significant with Identified Mitigation Measures NI = No Impact SI = Significant Impact SU = Significant and Unavoidable Impact with Identified Mitigation Measures ↑ = Impact of Greater Severity than Under the Proposed Project ↓ = Impact with Lesser Severity than Under the Proposed Project				

Pursuant to the CEQA Guidelines, Alternative B: Previous Oak Creek Park Mixed-Use Planned Development is the Environmentally Superior Alternative. This alternative would slightly, although not significantly reduce construction-related impacts to air quality and noise. In addition, it would generate fewer peak-hour vehicular trips, and as result reduce VMT, as compared to the proposed project. However, Alternative B would not reduce the level of impact to such a degree that would alter the significance of any impact.



Source: Thacher & Thompson Architects, 2019; Nearmap, 2019

Figure 1-1: Project Location

Oak Creek Park
Draft EIR



Not to scale

2 Introduction

This Environmental Impact Report (EIR) has been prepared to evaluate environmental impacts associated with the Oak Creek Park mixed-use development project (the project) in Scotts Valley, CA as submitted by Granum Partners (applicant).

The City of Scotts Valley is the public agency with the principal responsibility for approving the project, and as such is the Lead Agency for this project under the California Environmental Quality Act of 1970 (CEQA) as defined in CEQA Guidelines Section 15367. CEQA requires the Lead Agency to consider the information contained in the EIR prior to taking any discretionary action. This EIR is intended to serve as an informational document to be considered by the City of Scotts Valley and other permitting agencies during their respective processing of permits for the project.

The City of Scotts Valley has determined that the project would have a potentially significant impact on the environment. As a result, this EIR has been prepared in accordance with CEQA, as amended (Public Resources Code [PRC] Section 21000, et seq.), and the State CEQA Guidelines for Implementation of CEQA (California Code of Regulations [CCR], Title 14, Section 15000 et seq.). This EIR also complies with the procedures established by the City for implementation of CEQA.

2.1 Purpose and Intended Uses of the EIR

This EIR has been prepared to evaluate environmental impacts that may result from implementation of the project.

The City of Scotts Valley has the authority to take discretionary actions relating to development of the project and may conditionally approve or deny it. This EIR evaluates and mitigates the potential impacts associated with the project. The EIR also discloses growth-inducing impacts; impacts found not to be significant; and significant cumulative impacts of the project in combination with past, present, and reasonably foreseeable future projects.

This EIR will serve as a Project EIR pursuant to the Guidelines for the California Environmental Quality Act (State CEQA Guidelines) (CCR Title 14, Chapter 3, Sections 15000-15387), Sections 15161 and 15168(a)(2), respectively. According to Section 15161 of the State CEQA Guidelines, a Project EIR is appropriate for specific development projects in which information is available for all phases of the project, including planning, construction, and operation.

CEQA requires the Lead Agency to consider the information contained in the EIR prior to taking any discretionary action. This EIR provides information to the Lead Agency and other public agencies, the general public, and decision makers regarding the potential environmental impacts from the construction and operation of the project. The purpose of the public review of the EIR is to evaluate the adequacy of the environmental analysis in terms of compliance with

CEQA. Section 15151 of the CEQA Guidelines states the following regarding standards from which adequacy is judged:

An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among experts. The courts have not looked for perfection but for adequacy, completeness, and a good faith effort at full disclosure.

Under CEQA, “The purpose of an environmental impact report is to identify the significant effects on the environment of a project, to identify alternatives to the project, and to indicate the manner in which those significant effects can be mitigated or avoided” (PRC Section 21002.1[a]). An EIR is the most comprehensive form of environmental documentation identified in CEQA and the CEQA Guidelines and provides the information needed to assess the environmental consequences of a project. EIRs are intended to provide an objective, factually supported, full-disclosure analysis of the environmental consequences associated with a project that has the potential to result in significant, adverse environmental impacts.

As required by State CEQA Guidelines Section 15128, this EIR identifies the effects of the project determined to be significant. Some environmental resources were determined to have no impact as a result of the project and are described in Chapter 21, Other CEQA Considerations.

2.2 Overview of Project

As shown in [Figure 3-1: Site Plan](#), the project is a mixed-use commercial and residential development. Project land uses include eight three-bedroom townhomes on Lot 1, and 24,973 sf. of commercial (e.g. retail and office) and 44 apartments (74,100 sf) on Lot 2.

2.3 Purpose and Need for Project

The project site is currently vacant. In 1991, the City approved a three-lot subdivision to build three commercial buildings, however, the project was never constructed. In 1997, the City approved the Oak Creek Park Business Center to create three lots and build three commercial buildings (two 2-story buildings and one 1-story building), subject to mitigation measures. The one-story building was built at 3600 Glen Canyon Road. The approved two 2-story buildings (approx. 48,000 square feet) were not built.

In 2007 as part of the City’s updated General Plan Housing Element, the City rezoned the project site from Professional-Commercial to Service-Commercial with high density residential permitted as part of a mixed-use project. The Housing Element identified then, as does the

current 2015-2023 Housing Element, this parcel as allowing multi-family housing as a permitted use and is considered an “Opportunity Site” for affordable housing.

In 2008, the Planning Commission recommended to the City Council for approval the Oak Creek Mixed-Use Planned Development project to create 13 lots and build two one-story commercial buildings (24,500 sf.) and a three-story, 10-unit townhouse building. However, due to a potential legal challenge, the public hearing was continued to a date uncertain and the City Council did not consider the proposed development.

2.4 Public Involvement

CEQA requires the lead agency to provide the public with a full disclosure of the expected environmental consequences of the project and with an opportunity to provide comments. In accordance with CEQA, the process for public participation in the decision-making takes place through the following steps:

Notice of Preparation (NOP) and Scoping. The City of Scotts Valley published an NOP of an EIR on November 8, 2019. The public comment period closed on December 9, 2019 (see [Appendix A: Notice of Preparation and Comment Letters](#)).

Comments on Draft EIR. The public comment period on the project extend from **October 11, 2021 to November 30, 2021**. Written comments may be sent to the City of Scotts Valley at the address below. Comments must be received no later than 5:00 p.m. upon the last day of the comment period.

Susie Pineda, Contract Planner
City of Scotts Valley Planning Department
One Civic Center Drive
Scotts Valley, CA 95066
E-mail: spineda@m-group.us
Phone: (408) 340-5642 x119

2.5 Required Permits and Approvals

Table 2-1: Permits or Other Actions Required for Project, lists the anticipated federal, State, and local permits and authorizations required for the project.

Table 2-1: Permits or Other Actions Required for Project

Agency	Permit or Regulatory Requirement
Local and Regional	
City of Scotts Valley	<ul style="list-style-type: none"> ▪ General Plan Amendment to change the existing land use designation on proposed Lot 1 from Commercial-Service (CS) to Medium High Residential/Planned Development ▪ Zone Change on Lot 1 CS to Medium High Residential/Planned Development (R-M-8) ▪ Planned Development ▪ Minor Land Division ▪ Use Permit ▪ Design Review

2.6 Reader’s Guide to the EIR

2.6.1 Incorporation by Reference

As permitted in Section 15150 of the State CEQA Guidelines, an EIR may reference all or portions of another document that is a matter of public record or is generally available to the public. If information from these documents has been incorporated by reference, the EIR briefly summarizes this information in the appropriate sections of this EIR, describes the relationship between the incorporated information and the EIR, and identifies how the public may obtain and review these documents.

Some of the information provided in this EIR is based on the following documents:

- Project application materials and technical reports and data
- City of Scotts Valley General Plan
- City of Scotts Valley Municipal Code
- Scotts Valley Water District 2015 Urban Water Management Plan

Copies of project-related documents and the City’s General Plan are available on the City’s website at:

<https://www.scottsvalley.org/212/Planning-Department>

The City’s ordinances are available at the MuniCode website:

https://www.municode.com/library/ca/scotts_valley/codes/code_of_ordinances.

Copies can also be viewed, upon request, at the Scotts Valley Department of Planning in Scotts Valley (address provided under the Introduction section above).

2.7 EIR Organization

Pursuant to State CEQA Guidelines, Section 15120(c), this EIR contains the information and analysis required by Sections 15122 through 15131. Each of the required elements is covered in one of the EIR chapters and appendices, organized as follows.

Executive Summary. A summary description of the project, the alternatives, their respective environmental impacts and the Environmentally Superior Alternative.

Introduction. A discussion of the background, purpose and need for the project, briefly describing the project, and outlining the public agency use of the EIR.

Project Description. Detailed description of the project.

Environmental Analysis: A comprehensive analysis and assessment of impacts and mitigation measures for the project. This section is divided into an Environmental Assessment Methodology section describing analysis approach for the project, followed by a Cumulative Impacts section, which details the cumulative project scenario. The remainder of the Environmental Analysis portion of the document is divided into main sections for each environmental issue areas (e.g., Air Quality, Biological Resources, etc.) that contain the environmental settings and impacts of the project. Each environmental issue area includes a separate analysis of cumulative impacts.

Alternatives. A description of the alternatives evaluation process, as well as a description of alternatives considered but eliminated from further analysis and the rationale thereof. This section also includes an analysis and assessment of impacts for alternatives retained, including the No Project Alternative.

Other CEQA Considerations. A discussion of growth-inducing effects, long-term implications of the project, and significant environmental effects which cannot be avoided if the project is implemented.

EIR Preparers and Organizations Consulted

Appendices

The appendices are available only in electronic format, posted on the City of Scotts Valley's web site at: http://www.scottsvalley.org/planning/current_projects.html.

3 Project Description

3.1 Introduction

The project is a mixed-use commercial and residential development on a 3.56-acre site at the intersection of Glen Canyon and Mt. Hermon Road. Project land uses include 24,973 sf. of commercial (e.g. retail and office) eight townhomes, and 44 apartments. The project involves a minor land division, General Plan amendment, and zoning change (for Lot 1). Figures illustrating the project design are shown at the end of this chapter and are referenced herein.

3.2 Project Objectives

Section 15124 of the CEQA Guidelines requires that a clearly written statement of objectives be presented in an EIR to help lead agencies develop a reasonable range of alternatives, and to aid the decision makers in preparing findings of significant effects or a statement of overriding considerations, as necessary.

The following objectives have been identified by the project applicant for the project:

1. Provide a balanced mix of residential and commercial uses that integrate into the existing urban setting and provide a safe and attractive environment for living and working.
2. Create a high-quality mixed-use development that is visually and aesthetically compatible with adjacent land uses.
3. Expand and improve the City's housing supply by developing high-quality housing in a portion of a City-designated "Opportunity Sites."
4. Provide affordable and market-rate housing consistent with the City of Scotts Valley General Plan Housing Element goals and policies.
5. Provide a mix of residential and commercial uses that achieves a financially feasible project.
6. Provide commercial uses that provide net financial benefits to the City of Scotts Valley.
7. Provide a project that balances housing with job-creating uses.
8. Develop a project that supports the success of the commercial uses through careful site planning and infrastructure design.
9. Develop vacant and underutilized land in an urban area.
10. Locate commercial and residential uses where such uses can take advantage of existing infrastructure and utilities.
11. Provide and improve pedestrian connections within the project and across adjacent arterial streets to facilitate pedestrian activity between neighborhoods and within the development.

3.3 Site Description

3.3.1 Site Characteristics

Regional Location

Project Location

The project site (APN: 022-162-76) is located in the City of Scotts Valley, at the northeast intersection of Glen Canyon Road and Mt. Hermon Road. See [Figure 1-1, Project Location](#).

Site History

The project site is currently vacant. In 1991, the City approved a three-lot subdivision to build three commercial buildings, however, the project was never constructed. In 1997, the City approved the Oak Creek Park Business Center to create three lots and build three commercial buildings (two 2-story buildings and one 1-story building), subject to mitigation measures. The one-story building was built at 3600 Glen Canyon Road. The approved two 2-story buildings (approx. 48,000 square feet) were not built.

In 2008, the Planning Commission recommended to the City Council for approval the Oak Creek Mixed-Use Planned Development project to create 13 lots and build two one-story commercial buildings (24,500 sf.) and a three-story, 10-unit townhouse building. However, due to a potential legal challenge, the public hearing was continued to a date uncertain and the City Council did not consider the proposed development.

Existing Setting

The project site is vacant and supports annual grassland, a small patch of coastal prairie, coast live oak tree groves, a poison oak thicket, and non-native tree groves (acacias and other landscape trees). An overhead electrical transmission line extends generally east to west over the southern portion of the site and includes a steel monopole adjacent to Mt. Hermon Road.

Surrounding Land Uses

Surrounding land uses include commercial to the west, south and east, and single-family residential to the north.

3.3.2 Existing General Plan Land Use Designations and Zoning

General Plan Designation

The project site has a General Plan designation of Service Commercial (C-S). Land uses permitted under the C-S designation allow retail stores and shops, food and motel/hotel establishments, services such as printing shops and electrical repair shops, heating and ventilating shops. Very high density mixed use residential is permitted, providing adjacent uses are compatible and the residential use is secondary to the retail use.

The C-S land use designation allows mixed use commercial/residential uses by right (principal permitted use) as long as multiple-family dwellings are located either above the ground-level commercial use or at ground level at the rear of a commercial space on sites designated in the Housing Element.

Zoning

The project site is currently zoned Service Commercial (C-S). This district is designed to create and maintain areas accommodating city-wide and regional service that may be inappropriate in neighborhood or pedestrian-oriented shopping areas and which generally require automotive access for customer convenience, servicing of vehicles or equipment, loading or unloading, or parking of commercial service vehicles.

Permitted uses in the C-S district include:

- Retail establishments
- Banks
- Business and personal service establishments
- Emergency shelters (≤25 occupants)
- Medical, professional and general business offices
- Radio and television broadcast studios (excluding transmission towers)
- Accessory structures and uses located on the same site with a permitted use which are customarily incidental to the permitted use
- Multiple-family dwellings located either above the ground-level commercial use or at ground level at the rear of a commercial space on sites designated in the Housing Element
- Day care centers

3.4 Project Components

As shown in [Figure 3-1: Site Plan](#), the project consists of two separate lot each with two buildings. Buildings C and D are on Lot 1 and Buildings A and B are on Lot 2. Details of the buildings are provided in [Table 3-1: Building Area by Use \(sf.\)](#). The total building area of the four buildings is 146,981 sf. Lot 1 would be approximately one-acre (45,250 sf). Lot 2 would be approximately 110,100 sf. Conceptual renderings of the project are shown in [Figures 3-2a-c: Conceptual Rendering\(s\)](#).

Table 3-1: Building Area by Use (sf.)

Use	Lot 1	Lot 2	Total
Gross Building Area	21,448	125,533	146,981
Commercial	0	24,973	24,973
Residential	17,608	55,055	72,633
Parking Garage	3,840	45,505	49,345
Open Space Total	776	8,454	9,230
Per Dwelling	97.0	192.1	177.5
Net Private Open Space	776	2,976	3,752
Per Dwelling	97.0	67.6	72.2
Net Common Open Space	0	5,478	5,478
Per Dwelling	0	105.3	105.3

Source: Thacher & Thompson, 2019

3.4.1 Lot 1

Townhouse Style Apartments

The rezoned Lot 1 would contain eight town home style three-bedroom apartments and is proposed for re-designation of zoning and general plan designations from Service Commercial (C-S) to Medium High Residential density of 6-9 units/acre. Lot 1 would be slightly more than one acre (45,250 sf.) and would conform to the City’s density standard of 6-9 units per acre for the R-M-6 Medium High-Density residential zoning district.

The eight apartments would be located into two separate buildings each containing four units. The proposed maximum height of Buildings C and D is 33 feet 10 inches. Building elevations are shown in [Figure 3-3: Buildings C and D Elevations](#). Floor plans are shown in [Figure 3-4: Buildings C and D Floor Plans](#).

Façade treatments include a sloped standing seam metal roof, painted gutters, wood balcony railings, painted shingle siding, painted fiberglass windows and doors, and painted stucco chimneys..

3.4.2 Lot 2

Lot 2 consists of two buildings with surface and garage parking. Building elevations are shown in [Figure 3-5: Building A Elevations](#) and [Figure 3-6: Building B Elevations](#).

Commercial

Lot 2 proposes 24,841 sf of commercial would be located on the Glen Canyon Road street frontage in Building B (9,910 sf) and on the ground floor of Building A (14,931 sf). Surface

parking and 12-foot wide sidewalks would separate the two buildings, creating a “main street” commercial core.

Residential

Residential uses proposed includes a mix of apartments (4 studios, 18 one bedroom, and 22 two bedrooms) for a total of 44 units on two levels. The studio and one-bedroom apartment sizes range from 712 sf to 906 sf, and the two- and three-bedroom units range from 1,184 sf to 2,172 sf. Residential floor plans are shown in [Figure 3-7: Building A 3rd and 4th Levels](#).

The project would be required to meet the City's inclusionary housing requirements for affordable housing. Per Municipal code section 14.01.040.C.2 (a), fifteen percent of the units would be designated for affordable housing.

Façade treatments for both Buildings A & B include painted wood and sheet metal parapet, painted stucco siding, aluminum storefront windows and doors, and a sloped standing seam metal roof.

3.5 Planned Development Modifications

The project will be developed as a Planned Development (PD) per Chapter 17.38 of the City's Municipal Code. Planned Development (PD) districts must be combined with a base zoning district, and they are to be individually designed to meet the needs of the property, taking into account topography, vegetation, and other development constraints. PD districts allow for increased flexibility up to the maximum allowable density. Development must be undertaken pursuant to a “general development plan,” which is adopted by the City Council as part of any planned development zoning ordinance (Section 17.38.020).

PD modifications include the following:

3.5.1 Open Space

Private open space would be comprised of townhouse decks on Lot 1 (776 sf total; 97 sf/unit) and apartment patios and balconies on Lot 2 (2,976 sf total; 68 sf/unit). Lot 2 would also include common open space in the form of a terrace and a roof top (5,478 sf total; 105 sf/unit).

3.6 Landscape Design

The project site is currently vacant and supports annual grassland, a small patch of coastal prairie grass, coast live oak tree groves, a poison oak thicket, and non-native tree groves (acacias and other trees). Site development would require the removal of all trees growing within the central portions of the project site. This includes six coast live oaks, one Ponderosa pine and a group of acacia trees. In addition, six immature ash trees and four sycamore trees growing adjacent to the existing sidewalks may have to be removed. The landscape plans call for a tree replacement ratio of 3:1, for a total of 21 replacement trees. In total, the landscape plan calls for the planting of 136 trees throughout the project site.

As shown in [Figure 3-8: Landscape Plan](#), the project would incorporate new trees, shrubs, perennials and groundcovers throughout the site, with denser concentrations of landscaping along the northern boundary (adjacent to existing residential) and fronting Glen Canyon and Mt. Hermon roads.

To mitigate impacts to the coastal prairie grass, a portion would be salvaged and transplanted to an open space area on the project site.

3.7 Site Access, Circulation, and Parking

As shown in [Figure 3-1: Site Plan](#), vehicular access to the project site would be from a new driveway on Mt. Hermon Road (right-in / right-out only) and existing driveway on Glen Canyon Road.

Pedestrian access to the project site is available along Glen Canyon Road and Mt. Hermon Road. Sidewalks would be constructed on the project site and would connect with the existing sidewalks along Glen Canyon Road and Mt. Hermon Road.

The project has been designed to accommodate 208 parking spaces. Buildings C and D (townhomes) have in-unit garages on the first floor that accommodate one parking spaces per unit. Building A consists of 21 commercial and 101 residential parking spaces, three of which will be handicap accessible. Surface parking is also provided between Buildings A and B and north of the townhomes.

3.8 Grading and Infrastructure

3.8.1 Grading

The property slopes upward from Mt. Hermon and Glen Canyon roads north and east to the rear yards of single-family homes on Lucia Lane. Earthwork would include grading and contouring to accommodate drainage and elevation requirements.

Regrading of Lot 2 would result in elevation contours changing from approximately 505 feet (above mean sea level) along the southern boundary from Glen Canyon Road to approximately 523 feet along the northern boundary (rear yards of single-family homes on Lucia Lane).

Regrading of Lot 1 would result in elevation contours changing from approximately 511 feet along Mt. Hermon Road to approximately 544 feet along the northern boundary (rear yards of single-family homes on Lucia Lane).

The project would require the cut of 5,687 cubic yards of soil, and the fill of 7,686 cubic yards of soil; for a net import of 1,999 cubic yards. See [Figure 3-9: Grading Plan](#). Because the import of hardscape materials the project would be approximately 1,500 to 1,700 cubic yards, only several hundred yards of fill would need to be imported.

3.8.2 Wet Utilities

As shown in [Figure 3-10: Utilities Plan](#), domestic water for the project site would be accessed from an existing 10-inch main on the adjacent property at 3600 Glen Canyon Road.

The project would utilize an existing 8-inch sanitary sewer main that extends along Mt. Hermon Road and an 8-inch sanitary sewer main on the adjacent property at 3600 Glen Canyon Road. As part of the project two new sanitary sewer laterals would connect with existing sanitary sewer mains. One new proposed 4-inch sanitary sewer lateral would connect with the existing 8-inch sewer main on the adjacent property at 3600 Glen Canyon Road and one new proposed 4-inch sanitary sewer lateral would connect with the existing 8-inch sewer main on Mt. Hermon Road.

3.8.3 Stormwater

The project site is currently undeveloped, allowing sheet flow across its entirety. No watercourses cross the site and there are no ponds or wetlands. Municipal storm drains exist along Mt Hermon Road to the west and along Glen Canyon Road to the south. An existing man-made swale extends along the northern side of the existing sidewalk on Mt. Hermon Road, and would be retained as part of the project.

The project site is currently a vacant lot and therefore all stormwater falling onto the project site either infiltrates into the soil or flows into the City's storm drain system. Pursuant to the RWQCB requirements, the project applicant has prepared a Stormwater Control Plan (C2G / Civil Consultants Group, 7/30/19).

Stormwater from buildings (54,685 sf., 35%), driveways/surface parking (40,470 sf, 26%), and sidewalks and patios/terraces (11,759, 8%) would be treated on site. As shown in [Figure 3-11: Stormwater Control Plan](#), stormwater in the residential area would be directed to a series of flow-through planters which step down from north to south, parallel to Mt Hermon Rd (see SCM #1). These planters are designed to provide treatment, retention, and detention of stormwater runoff from the residential portion of the project, along with the site areas associated with the residential improvements.

SCM #2, shown on [Figure 3-11: Stormwater Control Plan](#), provides treatment, retention, and detention for stormwater runoff from the mixed-use and commercial portions of the project. SCM #2 is a stacked underground storage chamber system designed to provide treatment of runoff by infiltration. This system would retain and detain runoff as required by the City of Scotts Valley.

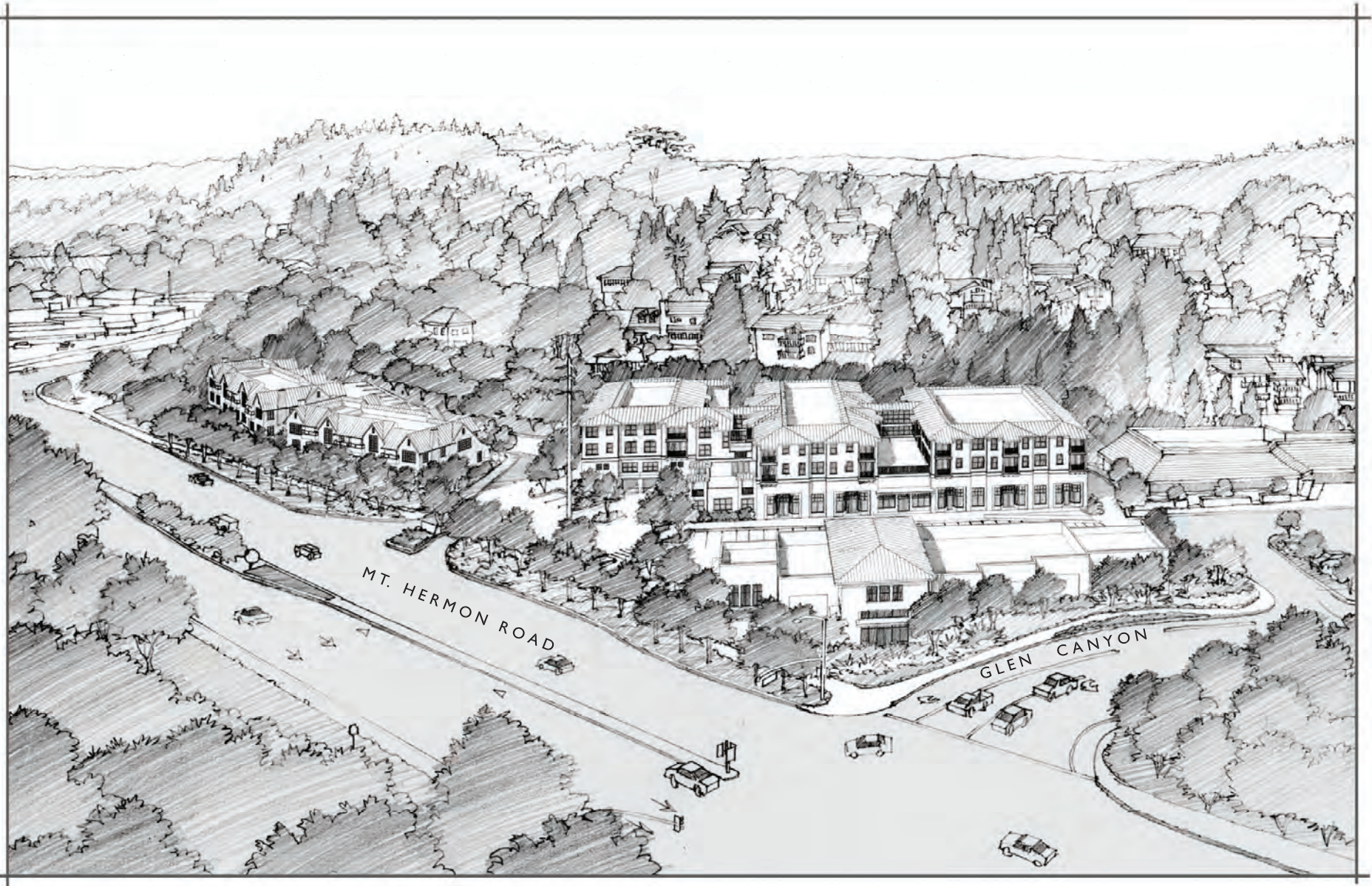
3.9 Project Approvals

In addition to certification of the EIR, the project would require the following City approvals:

- General Plan Amendment to change the existing land use designation on Lot 1 from Commercial-Service (CS) to Medium High Residential/Planned Development (R-M-6)

- Zone Change on Lot 1 CS to Medium High Residential/Planned Development (R-H/PD)
- Planned Development
- Minor Land Division
- Use Permit
- Design Review

Figure 3-12 : Existing and Proposed General Plan Amendment illustrates the General Plan amendments that would be implemented as part of project approval. Figure 3-13: Existing and Proposed Zoning Designation illustrates the zoning designation changes that would be implemented as part of project approval



Source: Thatcher & Thompson Architects, 2019

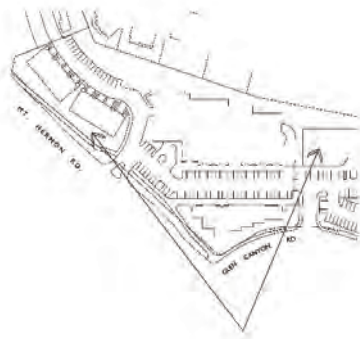
Figure 3-2a: Conceptual Rendering – Aerial View

Oak Creek Park
Draft EIR



Not to scale

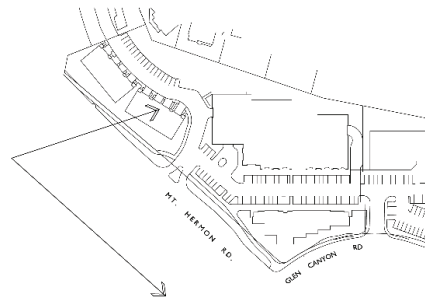
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Source: Thatcher & Thompson Architects, 2019

Figure 3-2b: Conceptual Rendering –View Looking Northwest on Mt. Hermon Road

Oak Creek Park
Draft EIR



Source: Thacher & Thompson Architects, 2019

Figure 3-2c: Conceptual Rendering – View Looking Southeast on Mt. Hermon Road

Oak Creek Park
Draft EIR



North Elevation



Townhouse Building D

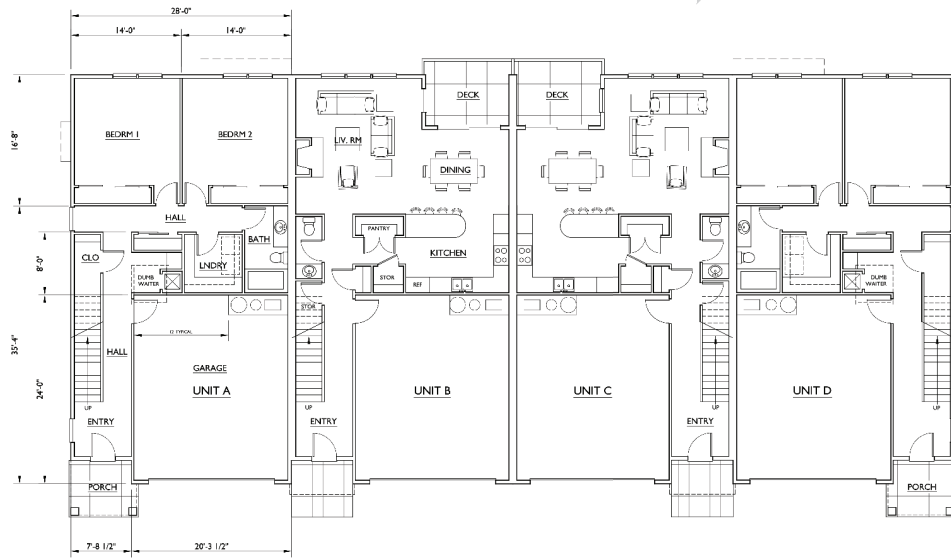
Townhouse Building C

South Elevation

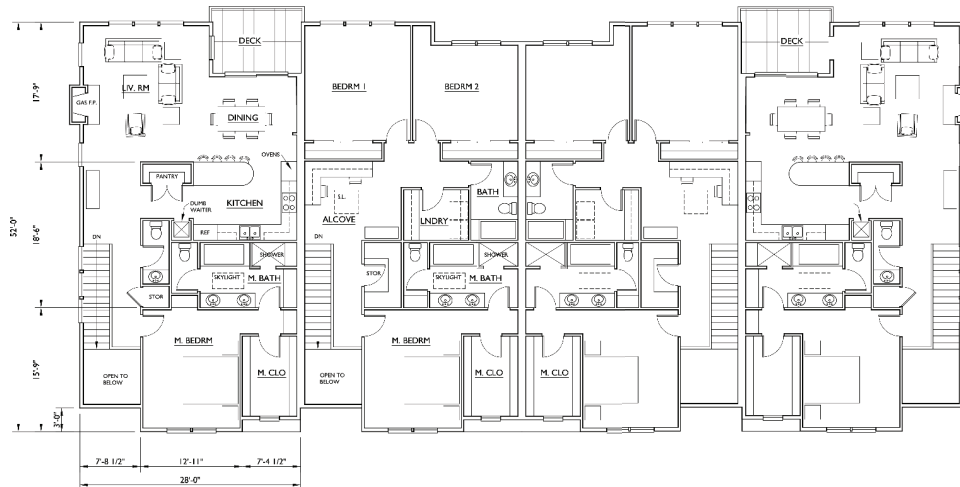
Source: Thacher & Thompson Architects, 2019

Figure 3-3: Buildings C and D Elevations

Oak Creek Park
Draft EIR



Townhouse First Floor



Townhouse Second Floor

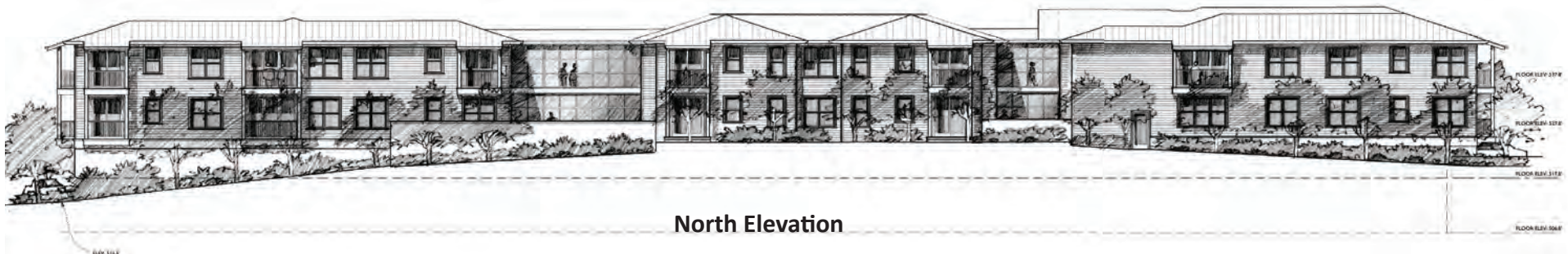
Source: Thacher & Thompson Architects, 2019

Figure 3-4: Buildings C and D Floor Plans

Oak Creek Park
Draft EIR



South Elevation



North Elevation

Source: Thacher & Thompson Architects, 2019

Figure 3-5: Building A Elevations

Oak Creek Park
Draft EIR



Not to scale



North Elevation



South Elevation

Source: Thacher & Thompson Architects, 2019

Figure 3-6: Building B Elevations

Oak Creek Park
Draft EIR



Not to scale

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Source: Thacher & Thompson Architects, 2019

Figure 3-7: Building A 3rd and 4th Levels

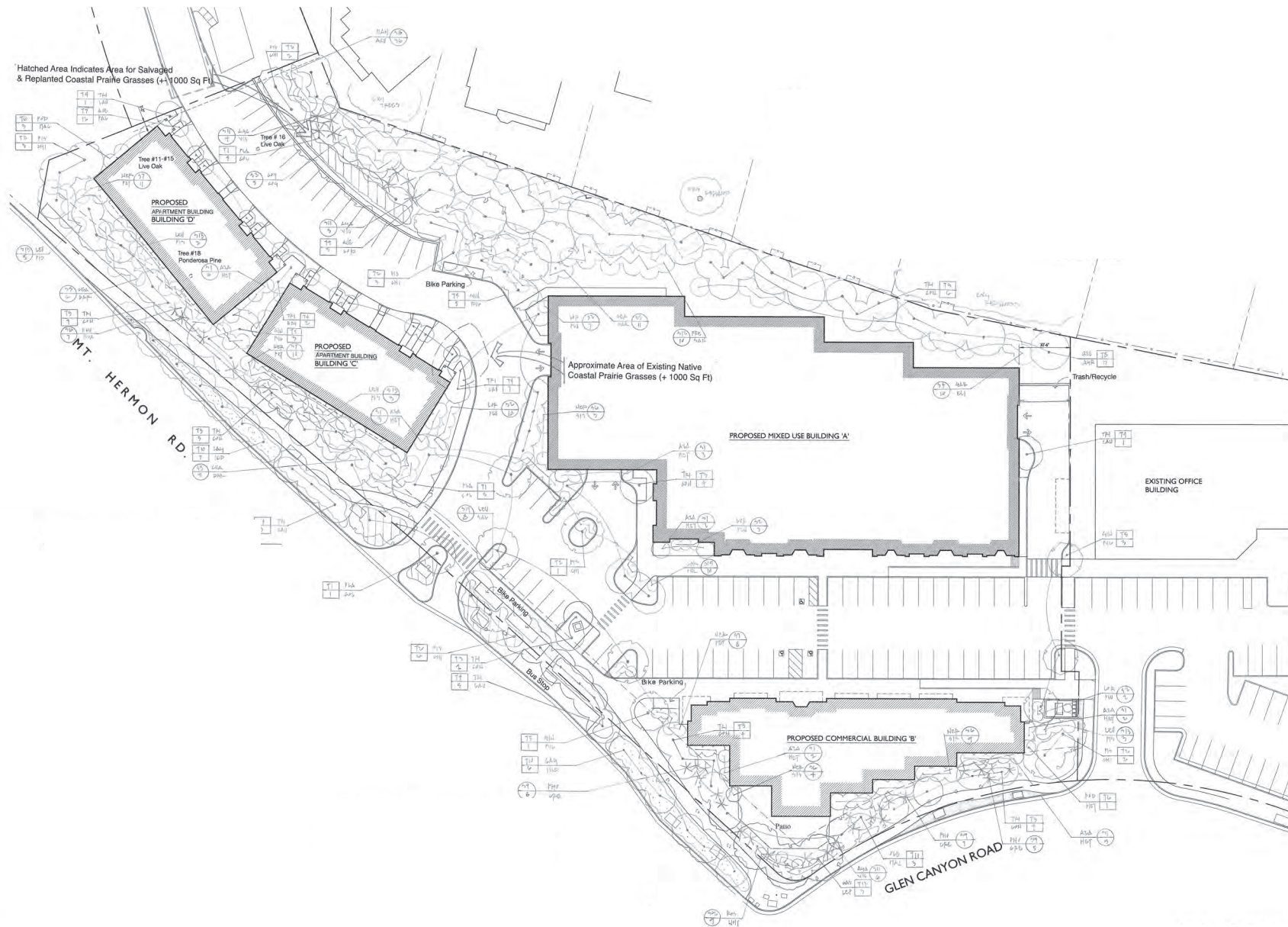
Oak Creek Park
Draft EIR



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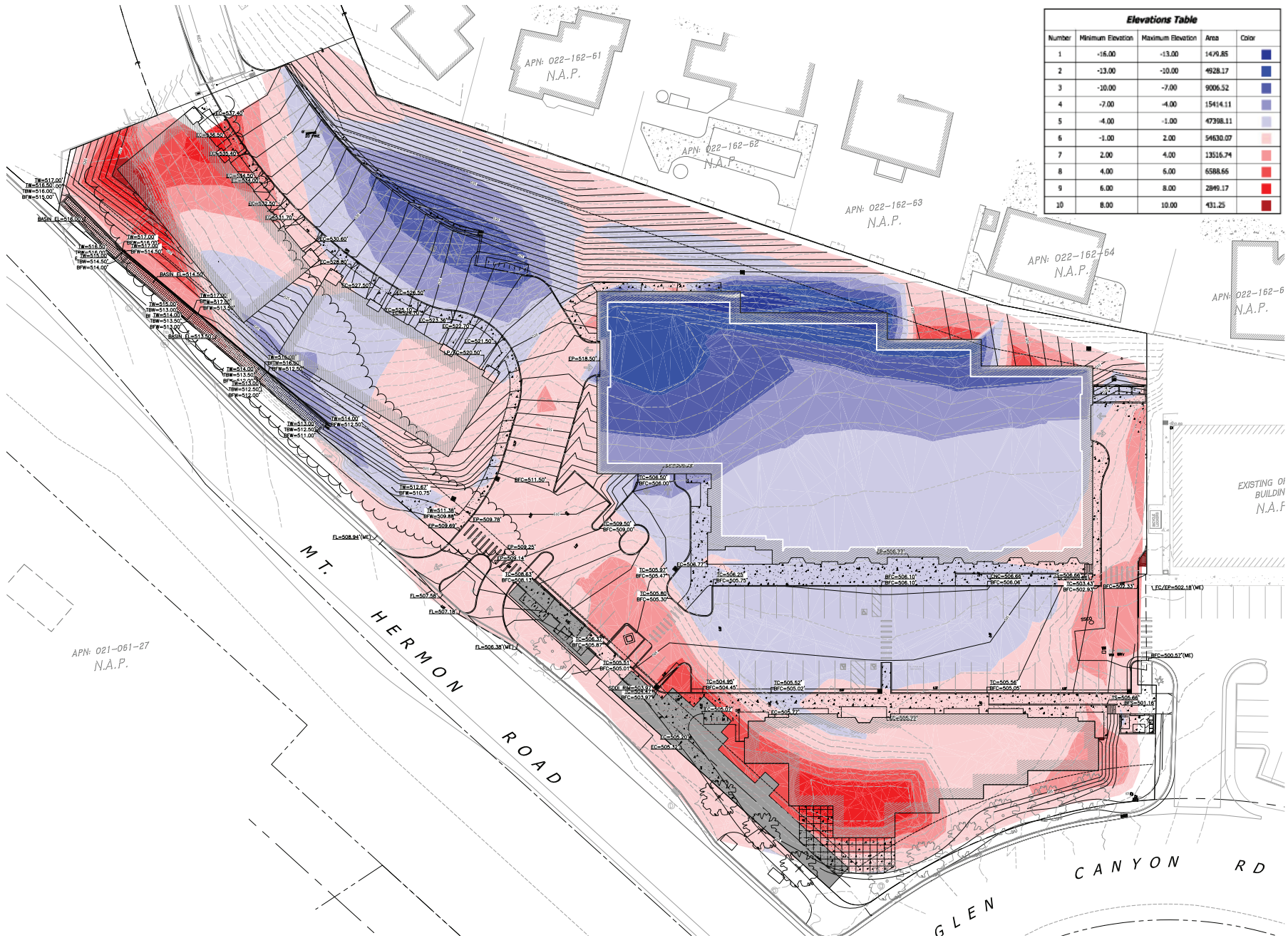
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Source: Thacher & Thompson Architects, 2019; Ellen Cooper, 2019

Figure 3-8: Landscape Plan

Oak Creek Park
Draft EIR



Elevations Table				
Number	Minimum Elevation	Maximum Elevation	Area	Color
1	-16.00	-13.00	1479.85	Blue
2	-13.00	-10.00	4928.17	Dark Blue
3	-10.00	-7.00	9006.52	Light Blue
4	-7.00	-4.00	15114.11	Very Light Blue
5	-4.00	-1.00	47398.11	Lightest Blue
6	-1.00	2.00	54630.07	Lightest Blue
7	2.00	4.00	13516.74	Lightest Blue
8	4.00	6.00	6588.66	Lightest Blue
9	6.00	8.00	2849.17	Lightest Blue
10	8.00	10.00	431.25	Lightest Blue

Source: C2G Civil Consultants Group, Inc, 2019

Figure 3-9: Grading Plan

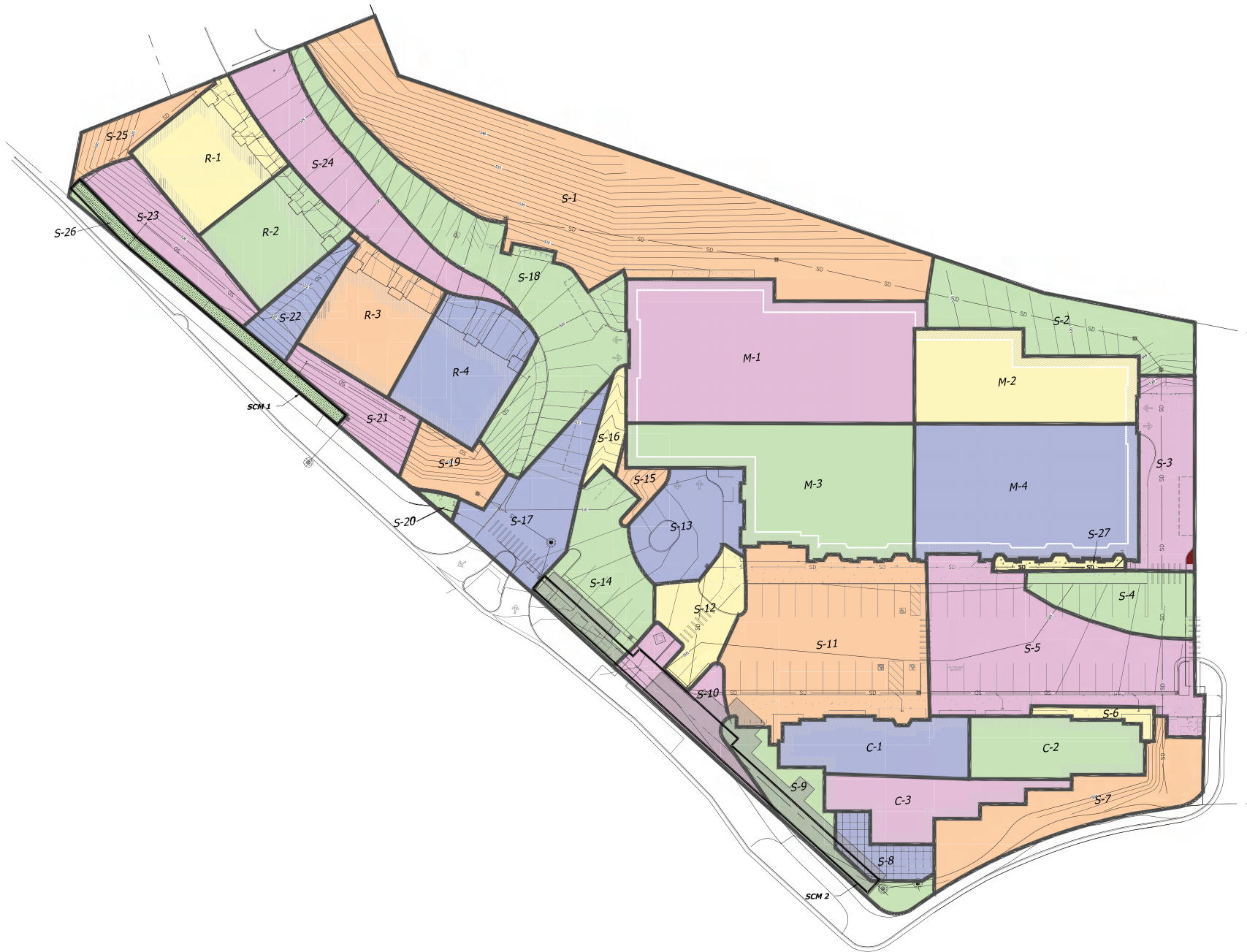
Oak Creek Park
Draft EIR



Not to scale

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Source: C2G Civil Consultants Group, Inc, 2019

Figure 3-11: Stormwater Control Plan

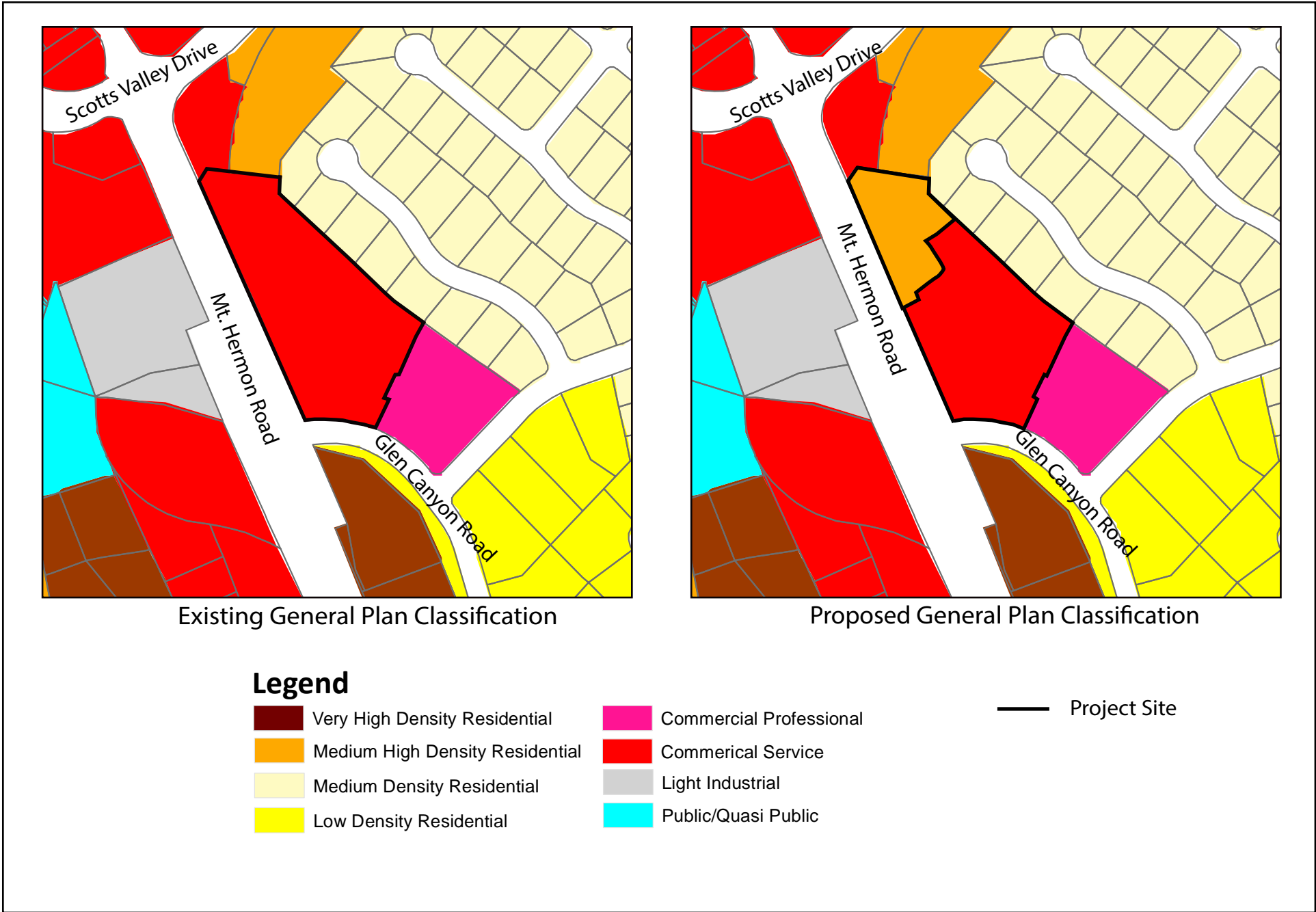
Oak Creek Park
Draft EIR



Not to scale

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Expect More. Experience Better.



Source: City of Scotts Valley, 2017

Figure 3-12: Existing and Proposed General Plan Amendment

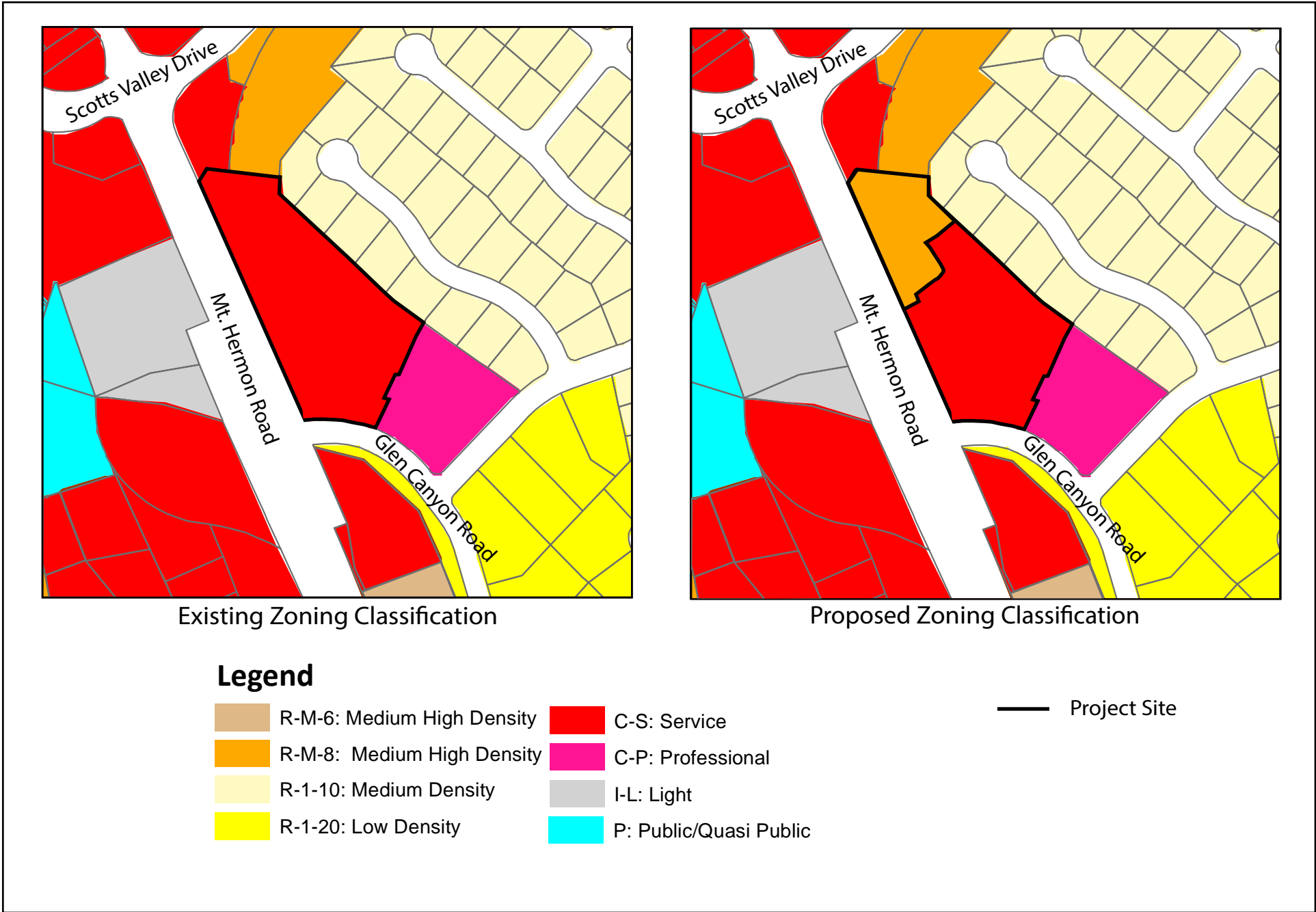
Oak Creek Park
Draft EIR



Not to scale



Expect More. Experience Better.



Source: City of Scotts Valley, 2017

Figure 3-13: Existing and Proposed Zoning

Oak Creek Park
Draft EIR



Not to scale

4 Introduction to Environmental Analysis

4.1 Environmental Assessment Methodology

The environmental resource analysis below (by chapter) describes the environmental impacts that would result from the project, as described in Chapter 3. This analysis considers the comments submitted during the scoping process (see [Appendix A: Notice of Preparation and Comment Letters](#)).

4.1.1 Methodology

The methodology used to determine potential impacts consists of three key components, summarized below.

Environmental Setting. The environmental setting describes existing conditions in the project site that may change as a result of the construction and operation of the project. Pursuant to CEQA Guidelines (Section 15125(a)), the environmental setting used for the impact analysis reflects the conditions at the time of the issuance of the Notice of Preparation.

Applicable Regulations, Plans, and Standards. Each issue area includes a description of current public policies, regulations, programs, and standards that apply to the project.

Environmental Impacts and Mitigation. This section evaluates the environmental impacts (including cumulative) of the project based on predetermined, specific significance criteria. In determining the significance of impacts, the assessment considers the ability of existing regulations and other public agency requirements to reduce potential impacts. If an adverse impact is potentially significant despite existing regulations and requirements, mitigation measures are proposed to reduce or avoid the impact, where feasible. Mitigation measures are required only for significant adverse impacts. Once impacts and mitigation measures, as applicable, are presented, the “level of significance after mitigation” is determined.

4.1.2 Impact Significance

While the criteria for determining whether an impact is significant are unique to each issue area, a uniform classification of impacts is used in this EIR. Each impact is categorized based on the following definitions:

- **Unavoidable significant impact;** cannot be mitigated to a level that is less than significant.
- **Significant impact;** can be mitigated to a level that is less than significant through implementation of recommended mitigation measures.
- **Adverse impact;** but less than significant, so mitigation is not normally recommended.
- **Beneficial impact;** mitigation is not required.
- **No impact**

4.1.3 Mitigation Measures

Where potentially significant impacts are identified, mitigation measures are identified. Each mitigation measure defines the specific requirements to reduce impacts and defines the timeframe, responsible party, and the mitigation monitoring requirement, if applicable.

4.1.4 Mitigation Monitoring

Public Resources Code Section 21081.6 establishes two distinct requirements for agencies involved in the CEQA process. Subdivisions (a) and (b) of the section relate to mitigation monitoring and reporting, and the obligation to mitigate significant effects where possible. Pursuant to subdivision (a), whenever a public agency completes an EIR and makes a finding pursuant to Section 21081(a) of the Public Resources Code taking responsibility for mitigation identified in the EIR, the agency must adopt a program of monitoring or reporting which will ensure that mitigation measures are complied with during implementation of the project.

4.2 Effects Not Found to be Significant

Pursuant to the CEQA Guidelines §15128, “An 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.” This chapter of the Draft EIR describes the resource areas which were found not to pose any potentially significant effects.

Based on the scope of the project, comment letters in response to the NOP, site visits, review of project applicant materials and technical reports, and additional background research on the construction and operational features of the project, the following resource topics were found to not have impacts that would be considered potentially significant. These topics, therefore, are not subject to further detailed analysis in the EIR.

4.2.1 Agricultural and Forestry Resources

The project site is not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance by the State Farmland Mapping and Monitoring Program (FMMP). It is designated as Urban and Built-Up Land (DOC, 2016). No Williamson Act contract applies to the project site. The project site does not currently comprise agricultural or forestry uses, and it is designated for Commercial Service uses pursuant to the City of Scotts Valley General Plan and Zoning Ordinance. There would be no impact to agricultural and forestry resources.

4.2.2 Energy

Energy consumption associated with construction of the project would be temporary and short-term. Project design and operation would comply with State Building Energy Efficiency Standards, appliance efficiency regulations, and green building standards. Additionally, the project includes other design features such as EV charging stations, “cool” roofs, efficient lighting, and natural ventilation and lighting.

The project would be required to be built to City and State energy efficiency standards. The project would be required to comply with existing regulations, including applicable measures from the City's General Plan, or would be directly affected by the outcomes (vehicle trips and energy consumption would be less carbon intensive due to statewide compliance with future low carbon fuel standard amendments and increasingly stringent Renewable Portfolio Standards).

As such, the project would not conflict with any other state-level regulations pertaining to energy. The project would reduce single-occupancy traffic trips and include design features to improve energy efficiency. Therefore, the project would comply with existing State energy standards and would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. There would be no impact to energy.

4.2.3 Hazards and Hazardous Materials

The project site is not located within two miles of a public airport or public use airport, or within the vicinity of a private airstrip. General Plan Safety Element Figure S-6 "Evacuation Routes" shows Mt. Hermon Road as a primary evacuation route in the City's Emergency Response Plan. However, the addition of the project would not change the function of Mt. Hermon Road as a primary evacuation route. The project site is surrounded by existing and proposed urbanized areas, and as such is not at risk from wildland fires.

Regarding on-site hazards, the project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. A regulatory database search of the Department of Toxic Substances Control (DTSC)'s Envirostor website and the State Water Resources Control Board's geotracker website were performed to identify hazardous material regulated facilities in the project area and no active cases were identified.

The project's residential uses may involve use and storage of some materials that are considered hazardous, although these materials are typically limited to everyday use solvents, paints, chemicals used for cleaning and building maintenance, and landscaping supplies. These materials would not be substantially different from household chemicals and solvents already in use throughout the City. Similarly, the project's commercial uses would involve storage and use of similarly limited quantities of hazardous materials—such as cleaners, toners, correction fluid, paints, lubricants, cleaners, pesticides and other maintenance materials. Storage and use of such materials would be managed through implementation of a Hazardous Materials Business Plan (HMBP), as required by state and federal regulations.

The project is located within one-quarter mile of the Scotts Valley Middle School, approximately 800 feet northeast of the project site. However, project construction and operation would not involve the emission of hazardous materials.

Based on the above findings, there would be no impacts from hazards or hazardous materials.

4.2.4 Mineral Resources

The project site is not located in a mapped area of “Resource Zone Undetermined” (1994 General Plan Conservation and Open Space Element, Figure OS 4, “Mineral Resource Zones”). The project site is not used for any mining or quarrying activity, thus there would be no impact to mineral resources.

4.2.5 Population and Housing

The project would result in a relatively small increase in population (138 persons¹) that is well within the land use buildout capacity projections identified within the City of Scotts Valley General Plan (1994) as well as the Association of Monterey Bay Area Government’s 2018 Regional Growth Forecast for the City of Scotts Valley population of 12,418 by 2040. Therefore, there would be no impact.

4.2.6 Tribal Cultural Resources

Section 21080.3.1(b) of the California Public Resources Code (AB 52) requires a lead agency formally notify a California Native American tribe that is traditionally and culturally affiliated within the geographic area of the discretionary project when formally requested.

As of this writing, no California Native American tribes traditionally and culturally affiliated with the Santa Cruz County region have formally requested a consultation with the City of Scotts Valley (as Lead Agency under CEQA) regarding Tribal Cultural Resources. As a result, no Tribal Cultural Resources are known to occur in or near the project area.

No California Native American tribes traditionally and culturally affiliated with the Santa Cruz County region have formally requested a consultation with the City of Scotts Valley. Therefore, no impact to the significance of a Tribal Cultural Resource is anticipated and no mitigation is required.

4.2.7 Wildfire

The California Department of Forestry and Fire Protection (CAL FIRE) has mapped the relative wildfire risk in areas of large population by intersecting residential housing density with proximate fire threat according to three risk levels, namely Moderate, High, and Very High. Wildfires are large-scale brush and grass fires in undeveloped areas. The project is within an urbanized area and not within a Very-High Fire Hazard Severity Zone as mapped by CALFIRE. Therefore, there would be no impact.

¹ Per <https://www.census.gov/quickfacts/scottsvillecitycalifornia>

4.3 Cumulative Impacts

4.3.1 CEQA Requirements

Under the CEQA Guidelines, “a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the environmental impact report (“EIR”) together with other projects causing related impacts.” 14 Cal Code Regs §15130(a)(1). CEQA Pub. Res. Code §21000 et seq., an EIR must discuss cumulative impacts if the incremental effect of a project, combined with the effects of other projects is “cumulatively considerable.” 14 Cal Code Regs §15130(a). Such incremental effects are to be “viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.” 14 Cal Code Regs §15164(b)(1). Together, these projects comprise the cumulative scenario which forms the basis of the cumulative impact analysis.

Cumulative impacts analysis should highlight past actions that are closely related either in time or location to the project being considered, catalogue past projects and discuss how they have harmed the environment and discuss past actions even if they were undertaken by another agency or another person. Both the severity of impacts and the likelihood of their occurrence are to be reflected in the discussion, “but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion of cumulative impacts shall be guided by standards of practicality and reasonableness, and shall focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact.” 14 Cal Code Regs §15130(b).

The analysis must be in sufficient detail to be useful to the decision maker in deciding whether, or how, to alter the program to lessen cumulative impacts. Significant adverse impacts of the cumulative projects would be required to be reduced, avoided or minimized through the application and implementation of mitigation measures. The net effect of these mitigation measures is assumed to be a general lessening of the potential for a contribution to cumulative impacts.

There are two commonly used approaches, or methodologies, for establishing the cumulative impact setting or scenario. One approach is to use a “list of past, present, and probable future projects producing related or cumulative impacts.” 14 Cal Code Regs §15130(b)(1)(A). The other is to use a “summary of projects contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact.” 14 Cal Code Regs §15130(b)(1)(B).

This EIR uses the list-based approach to provide a tangible understanding and context for analyzing the potential cumulative effects of a project. Based on the most current list maintained by the City, cumulative projects would result in approximately 675 residential units, 270,000 square feet of commercial retail space, 5,000 square feet of office space, a fire station,

and 250 hotel rooms. General plans and other planning documents were used as additional reference points in establishing the cumulative scenario for the analysis.

Cumulative Impact Analysis Methodology

The area within which a cumulative effect can occur varies by resource. For example, air quality impacts generally affect a large area (such as the regional Air Basin), while traffic impacts are typically more localized. For this reason, the geographic scope for the analysis of cumulative impacts is identified for each resource area in the following chapters.

The analysis of cumulative effects considers several variables, including geographic (spatial) limits, time (temporal) limits, and the characteristics of the resource being evaluated. The geographic scope of each analysis is based on the topography surrounding the project and the natural boundaries of the resource affected, rather than jurisdictional boundaries. The geographic scope of cumulative effects will often extend beyond the scope of the direct effects, but not beyond the scope of the direct and indirect effects of the project.

In addition, each project has its own implementation schedule, which may or may not coincide or overlap with the project's schedule. This is a consideration for short-term impacts from the project. However, to be conservative, the cumulative analysis assumes that all projects in the cumulative scenario are built and operating during the operating lifetime of the project and residential development on the project site that may result from the project.

5 Aesthetics

5.1 Introduction

This section describes effects on aesthetics that would be caused by implementation of the project. Information used to prepare this section came from the following resources:

- Project application and related materials
- The study area, also known as the viewshed, is defined as the area from which the project would be seen both on and immediately surrounding the project site. The current condition and quality of aesthetic resources within the study area were used as the baseline against which to compare potential aesthetic impacts of the project.
- The approach used to evaluate the existing aesthetics conditions consisted of the following steps:
 - Reviewing the project application including site plans and elevations, landscape plans, etc.;
 - Establishing several representative key viewpoints and photographing the project site from those viewpoints; and
 - Conducting detailed field analyses of the project site and surroundings from the representative KVPs.

5.2 Determination of Existing Visual Quality

Key viewpoints are selected to be representative of the most critical locations from which the project would be seen from public viewpoints. They are selected based on their usefulness in evaluating existing landscapes and impacts on aesthetics with various levels of viewer sensitivity, in different landscape types and terrain, and from various vantage points. Locations typically considered for the establishment of key viewpoints include those: 1) Along major or significant travel corridors, 2) Along local roads, 3) Along recreational access off-highway vehicle roads and trails, 4) At key vista points, 5) From publicly accessible vantage points within designated wilderness or other protected areas, and 6) From public locations that provide good examples of the existing landscape context and viewing conditions. Private viewpoints are not addressed, consistent with CEQA threshes holds of significance, as described below.

When analyzing existing aesthetic conditions, the elements of visual quality, viewer concern, visibility, number of viewers, and duration of view are considered. These parameters are then factored into an overall rating of viewer sensitivity.

Visual Quality. Visual quality is an expression of the visual impression or appeal of a given landscape (e.g., landforms, rock forms, water features, vegetative patterns, and cultural features). Visual quality is rated from low to high. Landscapes rated low are often dominated by visually discordant human alterations. Landscapes rated high generally are memorable because of the way the individual landscape features combine in a coherent and harmonious visual

pattern. Also, those landscapes are typically free from discordant human alterations, so they retain their visual integrity.

Viewer Concern. Viewer concern addresses the level of interest or concern (from low to high) of viewers regarding an area's aesthetic values and the potential for visible change to the landscape. Viewer concern is closely associated with viewers' expectations for a given viewshed (i.e., an area of land visible from a fixed vantage point) and reflects the importance placed on the human perceptions of the intrinsic beauty and visual interest of the existing landscape characteristics. Official statements of public values and goals and adopted local public policy pertaining to aesthetics or visual resources also reflect viewers' expectations regarding a visual setting and are given weight in determining levels of viewer concern.

Land uses associated with designated parks, monuments, and wilderness areas; scenic highways and corridors; recreational areas; conservation areas; and residential areas are generally considered to have high viewer concern. However, existing landscape character may temper viewer concern on some State and locally designated scenic highways and corridors though, in general, people driving for pleasure or engaged in recreational activities tend to have high viewer concern.

Travelers on other highways and roads, including those in rural or agricultural areas, may have moderate or high viewer concern depending on viewer expectations as conditioned by regional and local landscape conditions in these areas.

Commercial uses and their occupants, including business parks and hotels, typically have low-to-moderate viewer concern, although some commercial developments have specific requirements related to visual quality, with respect to landscaping, building height limitations, building design, and prohibition.

Industrial uses and their occupants typically have the lowest viewer concern because employees generally work in utilitarian surroundings with relatively low visual value. However, some areas of lower visual quality and degraded visual character may contain views of substantially higher visual quality or interest to the public.

Visibility. Visibility is a measure of how well an object can be seen. Visibility depends on the angle or direction of views; viewing distance; extent of visual screening; and topographical relationships between the object and existing homes, streets, or parks. Visibility takes into consideration all obstructions that may be in the sightline including landforms, trees and other vegetation, buildings, transmission poles or towers, general air quality conditions such as haze, and general weather conditions such as fog.

Number of Viewers. Number of viewers is a measure of the number of viewers per day who would have a view of a project and can range from low to high. The types of viewers can include residents, motorists and recreationists.

Duration of View. Duration of view is the amount of time to view a project site or a visual resource. For example, a high or extended view of a project site is one experienced in two minutes or more. In contrast, a low or brief duration of view is available in a short amount of time — generally less than 10 seconds.

Viewer Exposure. Viewer exposure is a function of three elements previously listed: visibility; number of viewers; and duration of view. Viewer exposure can range from low to high. A partially obscured and brief background view for a few motorists represents low viewer exposure, and an unobstructed foreground view from many residences represents a high viewer exposure.

Visual Sensitivity. Visual sensitivity is derived from three elements previously listed: visual quality; viewer concern; and viewer exposure and is a concluding assessment of an existing landscape's susceptibility to an adverse visual outcome. A landscape with a high degree of visual sensitivity is able to accommodate only a lower degree of adverse visual change without resulting in a significant aesthetic impact. A landscape with a low degree of visual sensitivity is able to accommodate a higher degree of adverse visual change before exhibiting a significant aesthetic impact. Visual sensitivity can range from low to high.

5.3 Scoping Issues Addressed

During the scoping period for the project, no written comments by agencies and the public regarding aesthetics were received.

5.4 Environmental Setting

This section presents information on aesthetic conditions in the project site and surrounding area. The current condition and quality of aesthetic resources was used as the baseline against which to compare potential impacts of residential development on the project site accommodated by the project.

5.4.1 Regional Landscape

Open space areas offer significant scenic value in and around the City of Scotts Valley. The generally flat valleys along Carbonera Creek, its west branch tributaries, and the Camp Evers tributary form a pocket in the Santa Cruz mountains within which most of the local urbanization has occurred. Hillsides immediately adjacent to these valleys have offered notable views from residential developments along Tabor Drive, Monteville, Granite Creek, Navarra Drive and Whispering Pines, and forested ridgetops that have remained largely undeveloped and have not been logged are a focal point of scenic views. State Highway 17, which climbs from Santa Cruz in the south into Scotts Valley, does not provide views of the project site. Winding roads through steep redwood forested canyons border the city, including Granite Creek Road, Vine Hill Road, and Bean Creek Road.

5.4.2 Project Site

The project site is vacant and includes annual grassland, a small patch of coastal prairie grass, coast live oak tree groves, a poison oak thicket, and non-native tree groves (acacias and other trees). This includes six coast live oaks, one Ponderosa pine and a group of acacia trees. In addition, six immature ash trees and four sycamore trees growing adjacent to the existing sidewalks.

Surrounding land uses include commercial uses that are one-story buildings to the west, south, and east, and single-family residential uses to the north.

Visual quality from this location is considered to be high based on the area being adjacent to Mt. Hermon Road to the west. For this reason, viewer concern, viewer exposure, and visual sensitivity are also considered to be high.

5.4.3 Key Viewpoints

As shown in [Figure 5-1: Key View Point Locations](#) and [Figures 5-2a to 5-2d](#), the key public viewpoints (KVPs), as required by CEQA, were selected based on the overall potential for the project site to be within the public viewshed from each KVP.

KVP 1 – Southeast view from Mt. Hermon and Scotts Valley Drive

Views from Mt. Hermon and Scotts Valley Drive include the mature vegetation (e.g. group of acacia trees) located on the project site, along Mt. Hermon Road. The viewshed consists of a four-lane arterial road, landscaped median and tall tree bordering north side of Mt. Hermon Road and various commercial uses set back from the road frontage.

KVP 2 – Northeast view from Mt. Hermon and Glen Canyon Road

This view includes mature vegetation located on the project site along Mt. Hermon and single-family homes and mature trees in the background.

KVP 3 – Northwest view from 3600 Glen Canyon Road

This view includes Glen Canyon Road and an access road to an existing office building and the project site. It also shows a major electrical transmission line and steel utility pole.

KVP 4 – Southwest view from Lucia Lane

This view from Lucia Lane and between two single-family residents shows the project site, Mt. Hermon Road, and mostly tree-story multi-family residential buildings and the rising hillside in the background.

5.5 Applicable Regulations, Plans, and Standards

5.5.1 State

There are no officially state designated scenic highways in the County of Santa Cruz; however, Highway 17 is listed as an eligible state scenic highway (Caltrans, 2015). The project site is located more than a mile from Highway 17 and is not viewable from Highway 17.

5.5.2 Local

The following City documents that give design policies or guidelines for new construction in the City. These documents are: 1) 1994 General Plan, 2) Zoning Ordinance, 3) 1995 Mt. Hermon Road Downtown Design Guidelines, and 4) Commercial and Industrial Design Review Guidelines. A summary of these documents are described below:

Scotts Valley General Plan

The following goals, policies and/actions from the Scotts Valley General Plan will avoid or help reduce impacts associated with the project:

- CP-173 The City shall require appropriate landscaping and/or barrier screening in all new projects to screen off objectionable views along roads, streets and highways.
- Housing 2.3 Ensure that residential projects are of high quality and thoughtful design through the implementation of architectural and design standards and design review.
- Housing 4.3 Require that all residential developments be thoughtfully integrated into the natural environment, including woodlands, hillsides, view sheds, wetlands, and other features in the natural terrain.
- OSP-385 The city shall protect the visual resources of Scotts Valley by requiring that new development be integrated into the natural setting.
- OSA-387 The Design Review Board shall give attention to compatibility of site planning and design with the overall scenic quality of Scotts Valley, especially through siting of development and street improvements, and landscaping and sign control restrictions. This shall be noted in the Design Review Board's Guidelines.
- OSA-388 The Design Review Board shall critically review visual resource areas designated on the Scenic Viewsheds and Corridors Map (Figure OS-1) in which development is permitted for landscaping, building design and siting to enhance the scenic value of the area. The viewshed and scenic corridors map shall be made a part of the Design Review Board's Guidelines.
- LA-43 Lighting of commercial areas shall be carefully controlled to the extent necessary for security, safety and identification without interfering with adjoining land uses. Lighting shall be directed away from public rights-of-way and adjacent

residential land uses. Include these requirements in the Design Review Guidelines.

The subject property is located in a mapped area for scenic resources in the General Plan Conservation & Open Space Element Figure OS-1, "Viewsheds and Scenic Corridors". Traveling westbound and eastbound on Mt. Hermon Road, there are two "important vistas" located near the Mt. Hermon Road/Glen Canyon Road intersection. This section of Mt. Hermon Road is considered one of the gateways into the City, and City policies call for special design features.

The General Plan calls for extra attention in reviewing the site, building, signage, and landscaping design for projects located in designated scenic areas. Open Space & Conservation Element Policy OSP-385 calls for protecting visual resources by requiring new development to be integrated with the natural setting. Open Space & Conservation Element Actions OSA-386 through OSA-388 encourage new development to enhance the overall scenic quality of the City.

Zoning Ordinance

New construction in the C-S zoning district requires Design Review approval. There are eight standards for Design Review in section 17.50.030D.1.-8 of the Zoning Ordinance. The standards include siting of buildings compared to other buildings in the immediate neighborhood, building mass and proportion, exterior colors and materials, signage, landscaping, parking areas, ingress/egress and site circulation, and fences.

Where residential development is proposed on lots with a slope greater than 10%, they are subject to the development standards as described in Chapter 17.40 HR Hillside Residential Combining District. The HR district is designed to provide for an orderly, harmonious development of the foothills and mountains, resulting in a minimum amount of disturbance of the natural slope; to encourage and provide incentives for excellence in design principles and engineering techniques; and to provide for a variety of dwelling types where consolidation of parcels and unified development are most appropriate.

Mt. Hermon Road Downtown Design Guidelines

The purpose of the Mt. Hermon Road Downtown Design Guidelines is to establish way to unify the Mt. Hermon Road commercial core, create an area inviting to shoppers, protect the natural and man-made features, and accentuate the urban forest theme of the City. The Guidelines include design suggestions to achieve the above goals. The design topics range from access, architectural features, landscaping, public art, and signs and lighting.

Commercial and Industrial Design Review Guidelines

The purpose of the Commercial and Industrial Design Review Guidelines is to assure that the City's goals and objectives and scenic forest theme are implemented whenever possible. Some goals of the General Plan are to create a park-like community characterized by high quality development, safe and easy pedestrian-bicycle-vehicular access, extensive landscaping, and attractive streetscapes where existing trees and topographic features are incorporated into the project design. Design topics include unifying elements, site planning, Concern for pedestrians,

parking, lighting, trash enclosures, building bulk-finish-texture-color, roof lines, mechanical equipment, landscaping, fencing, and signs.

5.6 Environmental Impacts and Mitigation Measures

5.6.1 Significance Criteria

The following significance criteria for aesthetics were derived from the Environmental Checklist in CEQA Guidelines Appendix G. These significance criteria have been amended or supplemented, as appropriate, to address lead agency requirements and the full range of potential impacts related to this project.

An impact of the project would be considered significant and would require mitigation if it would meet one of the following criteria.

- Cause a substantial adverse effect on a scenic vista.
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings with a State scenic highway.
- Substantially degrade the existing visual character or quality of public views of the site and its surroundings. (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?)
- Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.

Also given consideration are a number of General Plan goals, policies, or designations that are designed to reduce aesthetic impacts. Conflicts with such laws, ordinances, regulations, and standards can constitute evidence of a significant aesthetic impact. Lastly, a significant aesthetic impact could occur if the project's incremental aesthetic impact would be cumulatively considerable.

Impact Assessment Methodology

To determine potential impacts, the impact significance criteria identified above were applied to construction and operation of the project. Impacts are identified as being either short-term or long-term in nature. They are numbered under each impact significance criterion, as are applicable mitigation measures. In addition, the following definitions are used:

An adverse aesthetic (visual) impact occurs within public view when: (1) an action perceptibly changes existing features of the physical environment so that they no longer appear to be characteristic of the subject locality or region; (2) an action introduces new features to the physical environment that are perceptibly uncharacteristic of the region and/or locale; or (3) aesthetic features of the landscape become less visible (e.g., partially or totally blocked from view) or are removed. Changes that seem uncharacteristic are those that appear out of place, discordant, or distracting. The degree of the aesthetic impact depends upon how noticeable the

adverse change may be. The noticeability of an aesthetic impact is a function of project features, context, and viewing conditions (e.g., angle of view, distance, primary viewing directions, and duration of view).

The specific factors considered in determining impacts on aesthetics included the following factors:

1. An understanding of the overall visual sensitivity of the project site;
2. The resulting contrast of the potential facilities or activities with existing landscape characteristics;
3. The degree to which the project would dominate the view of the observer;
4. The extent to which project would block views of higher value landscape features; and,
5. An understanding of the overall visual change that would occur in the landscape as a result of development on the project site.

5.6.2 Summary of No and/or Beneficial Impacts

The project site is not located within an area designated as having or being within a scenic vista, and therefore there would be no impact. Similarly, the project site is not located within the viewshed of a state-designated scenic highway, and therefore there would be no impact.

5.6.3 Impacts of the Project

Impact AES-1: Substantially alter the visual character of the project site and surrounding area.

The project site is located in an existing urban setting consisting of commercial and residential buildings that are one to three stories. Mt. Hermon Road is a four-lane arterial road that fronts the project site. Simulated renderings of the project from public viewpoints are shown in [Figures 5-2a to 5-2d](#).

The built form along Mt. Hermon Road adjacent to the project site is generally set back from the street frontage and includes a variety of one- and two-story commercial buildings, surface parking lots, vacant lots and landscaping.

The proposed townhomes on Lot 1 and commercial building (Building B) on Lot 2 would be set back a minimum of 20 feet from Mt. Hermon Road and Glen Canyon Road and includes landscaping to help soften their appearance. Building B incorporates a tower element as a strong visual roof feature fronting Mt. Hermon Road and is consistent in scale and height with the one-story office building to the east. The parking lot (located between Buildings A and B) will have landscaping and most of the parking spaces will be screened by buildings or will be set back from Mt. Hermon Road to minimize street views of parked cars.

Building A would be a mixed-use residential and commercial building with two residential levels over two levels of parking/commercial uses. To help reduce mass and height, the existing hillside would be graded so that a portion of the parking structure would be below grade.

Overall, the project is generally consistent with the City's building heights requirements for the respective zoning on each lot.

The project would visually contrast with existing development along this portion of Mt. Hermon Road which is relatively undeveloped with surface parking and one story buildings, and vacant and open space areas. Further north on Mt. Hermon Road (past Scotts Valley Drive), the built form is more developed with paved parking lots and one-story commercial buildings, typical of a suburban streetscape.

The building architecture includes sloped rooflines and are articulated with varied forms, patterns, and massing. Building materials would consist of painted wood, stucco, exposed concrete, stone veneer, standing seam metal roofs, and aluminum and fiberglass windows. The building walls and roof lines are well-articulated, which break-up the massing of the building. The exterior materials, colors, and finishing details are appropriate for the "important vista" designation.

As shown in [Figures 5-2a to 5-2d](#), the site and building design, quality exterior materials, and landscaping would integrate with the project area as an infill project. Given the fact that the project site is located within an existing urban setting, the project would not result in a dominant visual change or a new contrast of open space and developed areas compared to existing conditions along Mt. Hermon Road. Furthermore, the fact that the project site will have a minimal amount of surface parking can be considered a positive visual attribute.

Furthermore, as part of the review process for a Planned Development permit, the project's design will be reviewed by the City's Planning Commission to ensure that building materials and colors complement the surrounding visual character, and no bright or contrasting colors would be used. As described in section 17.50.030 – Design review procedures, the project has been reviewed for a wide variety of design issues including: 1) Siting of structures on the property, 2) Materials, colors, proportion, mass and detail, 3) Signage, 4) Landscaping, 5) Parking, 6) Site access, and 7) Building height and access to sunlight.

The overall site planning and architecture is well-designed and appropriate for the "important vista" location. Given the project site's location on a sloping hillside, and the fact that grading would integrate a portion of the largest building into the hillside, the project would not result in buildings that would substantially alter the visual character from public viewpoints from the surrounding area. The new structures would not block views of any significant visual resources.

Therefore, the project would result in a less-than-significant impact to the visual character of the project site and surrounding public viewshed. Impacts would be less than significant, and no mitigation measures are required.

Impact AES-2: Introduce new light and glare to the project site and project area.

The project would result in a greater intensity of uses due to an increased number of structures (residential units and commercial uses) that is typical of an urban density development.

As part of Planned Development requirements per section 17.39.110 of the City Municipal Code, a lighting plan is required for the use and development of a planned development. Per the Lighting Illumination Plan submitted by the project applicant, exterior project lighting would consist of wall- and pole-mounted fixtures around the perimeters of buildings, all streets, and in parking areas on the project site. Per General Plan Policy LA-43, lighting of commercial areas shall be carefully controlled to the extent necessary for security, safety and identification without interfering with adjoining land uses. Lighting shall be directed away from public rights-of-way and adjacent residential land uses. All exterior light fixtures proposed would be “dark sky-friendly” and would be downward facing. Light intensity from these fixtures would be most intense at the pole with a maximum lumen of 4.0 and dissipate to near zero lumens along the perimeter of the project site.

Because light fixtures would be downward facing and illumination from the project would dissipate near zero lumens at the edge of the project site, the project would not introduce a new significant sources of light and glare to the project area and there impacts would be less than significant.

5.6.4 Cumulative Impact Analysis

The geographic context for the analysis of cumulative aesthetic impacts includes areas with views of the project site, as well as the visual character of the wider City of Scotts Valley.

Impact AES-3: Contribute to cumulatively considerable aesthetic impacts.

Almost all of the past, present, and reasonably foreseeable future projects are located beyond the immediate project site vicinity. The project would result in a conversion from the vacant and partially natural landscape to a more man-made, built aesthetic character from existing conditions, but would be a low contrast from the visual character of adjacent commercial and residential buildings. The project would be visible from Mt. Hermon Road, but combined with other existing and planned projects would not result in significant cumulative aesthetic impacts. impacts would be less than significant.

5.6.5 Level of Significance after Mitigation

Table 5 1: Summary of Impacts and Mitigation Measures – Aesthetics summarizes the environmental impacts, significance determinations, and mitigation measures for the project with regard to aesthetics.

Table 5-1: Summary of Impacts and Mitigation Measures – Aesthetics

Impact	Impact Significance	Mitigation
Impact AES-1: Substantially alter the visual character of the project site and surrounding area.	Less than Significant	None required
Impact AES-2: Introduce new light and glare to the project site and project area.	No Impact	None required
Impact AES-3: Contribute to cumulatively considerable aesthetic impacts.	Less than Significant	None required

5.7 References

California Department of Transportation (Caltrans), 2019. Scenic Highways. Available at: <https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways>, accessed November 7, 2019.



Source: Nearmap, 2019

Figure 5-1: Key View Point Locations

Oak Creek Park
Draft EIR



Existing



Proposed

Source: Thatcher & Thompson Architects, 2019

Figure 5-2a: Key View Point 1 - Southeast View from Mt. Hermon and Scotts Valley Drive

Oak Creek Park
Draft EIR



Existing



Proposed

Source: Thacher & Thompson Architects, 2019

Figure 5-2b: Key View Point 2 - Northeast View from Mt. Hermon and Glen Canyon Road



Existing



Proposed

Source: Thatcher & Thompson Architects, 2019

Figure 5-2c: Key View Point 3 - Northwest View from 3600 Glen Canyon Road

Oak Creek Park
Draft EIR



Existing



Proposed

Source: Thacher & Thompson Architects, 2019

Figure 5-2d: Key View Point 4 - Southwest View from Lucia Lane

Oak Creek Park
Draft EIR

6 Air Quality

6.1 Introduction

This section describes effects on air quality from residential development pursuant to the project. Information used to prepare this section came from the following resources:

- Project application and related materials
- California Emissions Estimator Model (CalEEMod) projections (see [Appendix B: CalEEMod Air Quality Analysis](#))
- California Air Resource Board (CARB)
- State Office of Environmental Health Hazard Assessment (OEHHA)
- California Environmental Quality Act (CEQA) Air Quality Guidelines
- Monterey Bay Unified Air Resources District (MBARD), CEQA Air Quality Guidelines

6.2 Scoping Issues Addressed

During the scoping period for the project, no written comments by agencies and the public regarding air quality were received.

6.3 Environmental Setting

This section presents information on air quality conditions in the project site vicinity. The Regional Setting provides information on the baseline conditions in the region. The Project Setting defines the project study area and describes baseline conditions for air quality within.

6.3.1 Climate and Topography

The project site is located within the North Central Coast Air Basin (NCCAB), which includes Monterey County, San Benito County, and Santa Cruz County, comprising an area of approximately 5,159 square miles along the central California coast. The Monterey Bay Air Resources District (MBARD) (formerly the Monterey Unified Air Pollution Control District) is responsible for local control and monitoring of criteria air pollutants throughout the NCCAB.

Climate, or the average weather condition, affects air quality in several ways. Wind patterns can remove or add air pollutants emitted by stationary or mobile sources. Inversion, a condition where warm air traps cooler air underneath it, can hold pollutants near the ground by limiting upward mixing (dilution). Topography also affects the local climate, as valleys often trap emissions by limiting lateral dispersal.

Winds originating in the San Francisco Bay Area Air Basin often transport pollutants into the NCCAB, where surface winds move the pollutants to the eastern part of the NCCAB. For

instance, the transport of ozone precursor emissions from San Francisco Bay Area Air Basin through the Santa Clara valley/San Benito River valley plays a dominant role in ozone concentrations measured in San Benito County (MBARD, 2013).

The transport of pollutants can often cause exceedances of air quality standards in the NCCAB. In Santa Cruz County, coastal mountains exert strong influence on atmospheric circulation and result in generally good air quality, although small inland valleys, such as Scotts Valley, with low mountains on two sides have poorer circulation than at the coast. The City of Scotts Valley has a generally mild climate, with temperature averages in the low 70s (Fahrenheit) for highs and the middle 40s for lows. Precipitation averages approximately 14.2 inches per year (1981 to 2010).

The regulatory section below discusses the various buffer zones around sources of air pollution sufficient to avoid adverse health and nuisance impacts on nearby receptors.

6.3.2 Air Pollutants of Primary Concern

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state laws. These regulated air pollutants are known as “criteria air pollutants” and are categorized into primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxide (NO_x), sulfur dioxide (SO₂), coarse particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), and lead are primary air pollutants. Of these, CO, NO_x, SO₂, PM₁₀, and PM_{2.5} are criteria pollutants. ROG and NO_x are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Sources and health effects commonly associated with criteria pollutants are summarized in [Table 6-1: Air Contaminants and Associated Public Health Concerns](#).

Table 6-1: Air Contaminants and Associated Public Health Concerns

Pollutant	Major Man-Made Sources	Human Health Effects
Particulate Matter (PM ₁₀ and PM _{2.5})	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; asthma; chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility.
Ozone (O ₃)	Formed by a chemical reaction between reactive organic gases/volatile organic compounds (ROG or VOC) ¹ and nitrogen oxides (NO _x) in the presence of sunlight. Motor vehicle exhaust industrial emissions, gasoline storage and transport, solvents, paints and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing, and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield.

Pollutant	Major Man-Made Sources	Human Health Effects
Sulfur Dioxide (SO ₂)	A colorless gas formed when fuel containing sulfur is burned and when gasoline is extracted from oil. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron and steel. Damages crops and natural vegetation. Impairs visibility. Precursor to acid rain.
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO ₂)	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Sources include motor vehicles, electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone. Contributes to global warming and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.
Lead (Pb)	Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been motor vehicles (such as cars and trucks) and industrial sources. Due to the phase out of leaded gasoline, metals processing is the major source of lead emissions to the air today. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.	Exposure to lead occurs mainly through inhalation of air and ingestion of lead in food, water, soil, or dust. It accumulates in the blood, bones, and soft tissues and can adversely affect the kidneys, liver, nervous system, and other organs. Excessive exposure to lead may cause neurological impairments such as seizures, mental retardation, and behavioral disorders. Even at low doses, lead exposure is associated with damage to the nervous systems of fetuses and young children, resulting in learning deficits and lowered IQ.

¹ Volatile Organic Compounds (VOCs or Reactive Organic Gases [ROG]) are hydrocarbons/organic gases that are formed solely of hydrogen and carbon. There are several subsets of organic gases including ROG and VOCs. Both ROG and VOCs are emitted from the incomplete combustion of hydrocarbons or other carbon-based fuels. The major sources of hydrocarbons are combustion engine exhaust, oil refineries, and oil-fueled power plants; other common sources are petroleum fuels, solvents, dry cleaning solutions, and paint (via evaporation).

Source: California Air Pollution Control Officers Association (CAPCOA), *Health Effects*, capcoa.org/health-effects/, accessed November 25, 2020.

Ozone, or smog, is not emitted directly into the environment, but is formed in the atmosphere by complex chemical reactions between ROG and NO_x in the presence of sunlight. The main sources of NO_x and ROG, often referred to as ozone precursors, are combustion processes (including motor vehicle engines) the evaporation of solvents, paints, and fuels, and biogenic sources. Automobiles are the single largest source of ozone precursors in the Basin. Tailpipe emissions of ROG are highest during cold starts, hard acceleration, stop-and-go conditions, and

slow speeds. They decline as speeds increase up to about 50 miles per hour (mph), then increase again at high speeds and high engine loads. ROG emissions associated with evaporation of unburned fuel depend on vehicle and ambient temperature cycles. Nitrogen oxide emissions exhibit a different curve; emissions decrease as the vehicle approaches 30 mph and then begin to increase with increasing speeds.

Toxic Air Contaminants

Toxic air contaminants (TACs) are airborne substances that can cause short-term (acute) or long-term (chronic or carcinogenic, i.e., cancer causing) adverse human health effects (i.e., injury or illness). TACs include both organic and inorganic chemical substances. They may be emitted from a variety of common sources including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. The current California list of TACs includes more than 200 compounds, including particulate emissions from diesel-fueled engines.

CARB identified diesel particulate matter (DPM) as a toxic air contaminant. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mixture of particles and gases produced when an engine burns diesel fuel. DPM is a concern because it causes lung cancer; many compounds found in diesel exhaust are carcinogenic. DPM includes the particle-phase constituents in diesel exhaust. The chemical composition and particle sizes of DPM vary between different engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), fuel formulations (high/low sulfur fuel), and the year of the engine. Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause coughs, headaches, light-headedness, and nausea.

Ambient Air Quality

Local air districts and CARB monitor ambient air quality to ensure that air quality standards are met, and if they are not met, to also develop strategies to meet the standards. [Table 6-2: Current National and State Ambient Air Quality Standards](#) shows the federal and State standards for a number of pollutants.

Table 6-2: Current National and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary Standards		California Standard	
		Concentration	Attainment Status	Concentration	Attainment Status
Ozone	1-Hour	---	N/A ⁵	0.09 ppm	N
	8-Hour	0.070 ppm	N ⁴	0.070 ppm	N ⁹
Carbon Monoxide	8-Hour	9.0 ppm	A ⁶	9.0 ppm	A
	1-Hour	35.0 ppm	A	20.0 ppm	A
Nitrogen Dioxide	Annual	0.053 ppm	A	0.030 ppm	---
	1-Hour	0.10 ppm ¹¹	U	0.18 ppm	A
Sulfur Dioxide	Annual	0.03 ppm	A	NA	---
	24-Hour	0.14 ppm	A	0.04 ppm	A
	1-Hour	0.075 ppm	A	0.25 ppm	A
PM ₁₀	Annual	NA	---	20 µg/m ³	N ⁷
	24-Hour	150 µg/m ³	U	50 µg/m ³	N
PM _{2.5}	Annual	12 µg/m ³	N	12 µg/m ³	N ⁷
	24-Hour	35 µg/m ³	U/A	NA	---
Sulfates	24- Hour	25 µg/m ³	A	NA	---
Lead	30-Day Average	NA	A	1.5 µg/m ³	---
	Calendar Quarter	1.5 µg/m ³	A	NA	---
	Rolling 3-Month Average	0.15 µg/m ³	---	NA	---
Hydrogen Sulfide	1 Hour	NA	---	0.03 ppm (0.15 µg/m ³)	U
Vinyl Chloride	24 Hour	NA	---	0.01 ppm (26 µg/m ³)	---
Visibility Reducing Particles ⁸	8 Hour (10:00 to 18:00 PST)	---	---	---	U

A = attainment; N = nonattainment; U = unclassified; N/A = not applicable or no applicable standard; ppm = parts per million; µg/m³ = micrograms per cubic meter; mg/m³ = milligrams per cubic meter; – = not indicated or no information available.

- California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter - PM₁₀, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are 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 CARB determines would occur less than once per year on the average. The Lake Tahoe CO standard is 6.0 ppm, a level one-half the national standard and two-thirds the state standard.
- National standards shown are the "primary standards" designed to protect public health. National standards other than for ozone, particulates and those based on annual averages 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 3-year average of the 4th highest daily concentrations is 0.070 ppm (70 ppb) or less. The 24-hour PM₁₀ standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 µg/m³. The 24-hour PM_{2.5} standard is attained when the 3-year average of 98th percentiles is less than 35 µg/m³. Except for the national particulate standards, annual standards are

Pollutant	Averaging Time	Federal Primary Standards		California Standard	
		Concentration	Attainment Status	Concentration	Attainment Status

- met if the annual average falls below the standard at every site. The national annual particulate standard for PM10 is met if the 3-year average falls below the standard at every site. The annual PM_{2.5} standard is met if the 3-year average of annual averages spatially-averaged across officially designed clusters of sites falls below the standard.
- National air quality standards are set by the EPA at levels determined to be protective of public health with an adequate margin of safety.
 - On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm. An area will meet the standard if the fourth-highest maximum daily 8-hour ozone concentration per year, averaged over three years, is equal to or less than 0.070 ppm. EPA will make recommendations on attainment designations by October 1, 2016, and issue final designations October 1, 2017. Nonattainment areas will have until 2020 to late 2037 to meet the health standard, with attainment dates varying based on the ozone level in the area.
 - The national 1-hour ozone standard was revoked by U.S. EPA on June 15, 2005.
 - In April 1998, the Bay Area was redesignated to attainment for the national 8-hour carbon monoxide standard.
 - In June 2002, CARB established new annual standards for PM_{2.5} and PM₁₀.
 - Statewide VRP Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.
 - The 8-hour CA ozone standard was approved by the Air Resources Board on April 28, 2005 and became effective on May 17, 2006.
 - On January 9, 2013, EPA issued a final rule to determine that the Bay Area attains the 24-hour PM_{2.5} national standard. This EPA rule suspends key SIP requirements as long as monitoring data continues to show that the Bay Area attains the standard. Despite this EPA action, the Bay Area will continue to be designated as “nonattainment” for the national 24-hour PM_{2.5} standard until such time as the Air District submits a “redesignation request” and a “maintenance plan” to EPA, and EPA approves the proposed redesignation.
 - To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100ppm (effective January 22, 2010). The US Environmental Protection Agency (EPA) expects to make a designation for the Bay Area by the end of 2017.
 - On June 2, 2010, the U.S. EPA established a new 1-hour SO₂ standard, effective August 23, 2010, which is based on the 3-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 SO₂ NAAQS however must continue to be used until one year following U.S. EPA initial designations of the new 1-hour SO₂ NAAQS.
 - 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.
 - National lead standard, rolling 3-month average: final rule signed October 15, 2008. Final designations effective December 31, 2011.
 - In December 2012, EPA strengthened the annual PM_{2.5} National Ambient Air Quality Standards (NAAQS) from 15.0 to 12.0 micrograms per cubic meter (µg/m³). In December 2014, EPA 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.

CARB monitors ambient air quality at approximately 250 air monitoring stations across the state. Air quality monitoring stations measure pollutant ground-level concentrations (typically, 10 feet above ground level). Depending on whether the standards are met or exceeded, the local air basin is classified as in “attainment” or “non-attainment.” Some areas are unclassified, which means no monitoring data are available. Unclassified areas are considered to be in attainment.

Ambient air quality is monitored at seven MBARD-operated monitoring stations located in Salinas, Hollister, Carmel Valley, Santa Cruz, Scotts Valley, Watsonville, and Davenport. In addition, the National Park Service operates a station at the Pinnacles National Monument and an industry consortium operates a station in King City. **Table 6-3: Ambient Air Quality Data** summarizes the representative annual air quality data for the project site vicinity over the past three years. The nearest monitoring station to the project site is the Santa Cruz monitoring station (approximately 4.3 miles to the southeast).

Table 6-3: Ambient Air Quality Data

Pollutant	2016	2017	2018
Ozone (ppm), Worst 1-Hour	0.064	0.082	0.075
Number of days of State exceedances (>0.09 ppm)	0	0	0
Ozone (ppm), 8-Hour Average	0.057	0.0745	0.061
Number of days of State exceedances (>0.07 ppm)	0	1	0
Number of days of Federal exceedances (>0.07 ppm)	0	1	0
Carbon Monoxide (ppm), Highest 8-Hour Average	NA	NA	NA
Number of days of above State or Federal standard (>9.0 ppm)	NA	NA	NA
Particulate Matter <2.5 microns, µg/m³, Worst 24 Hours	12.7	47.3	92.0
Number of days above Federal standard (>65 µg/m ³)	0	2	9

ppm = parts per million; µg/m³ = micrograms per cubic meter
 Measurements taken at the Santa Cruz Monitoring Station located at 2544 Soquel Avenue, Santa Cruz, California 95062 (CARB# 44200).
 Source: All pollutant measurements are from the CARB Aerometric Data Analysis and Management system database (arb.ca.gov/adam).

Given that the NCCAB is designated as non-attainment for State standards for ozone and PM₁₀, these are the primary pollutants of concern for the NCCAB.

6.3.3 Sensitive Receptors

Sensitive populations are more susceptible to the effects of air pollution than the general population. Sensitive receptors in proximity to localized sources of toxics 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.

The project site is located in an urban area in City of Scotts Valley. The surrounding land uses are predominantly commercial, with some residences to the west. The eastern boundary of the site is Winchester Boulevard. Table 6-4: Sensitive Receptors lists the distances and locations of nearby sensitive receptors, which primarily include single- family residences.

Table 6-4: Sensitive Receptors

Receptor Description	Distance and Direction from the Project Site
Single-family residential community	25 feet north
The Evolving Door Halfway House	480 feet southwest
Scotts Valley Middle School	730 feet north
Hocus Pocus Park	815 feet west
Camp Evers Fishing Park	970 feet south
The Hilton	0.30 miles south
Valley Vineyard Church	0.40 miles north
Spring Lakes	0.40 miles north
Scotts Valley Branch Library	0.45 miles north

6.4 Applicable Regulations, Plans, and Standards

This analysis has been prepared pursuant to California Environmental Quality Act of 1970 and associated Guidelines (Public Resources Code 21000 *et seq.* and California Code of Regulations, Title 14, Chapter 3 sections 15000 – 15387) and in accordance with local, State and federal laws, including those administered by MBARD, CARB, and U.S. EPA. The principal air quality regulatory mechanisms include the following:

- Federal Clean Air Act (FCAA), in particular, the 1990 amendments;
- California Clean Air Act (CCAA);
- California Health and Safety Code (H&SC), in particular, Chapter 3.5 (Toxic Air Contaminants) (H&SC Section 39650 *et. seq.*) and Part 6 (Air Toxics “Hot Spots” Information and Assessment) (H&SC Section 44300 *et. seq.*).
- MBARD’s Rules and Regulations and air quality planning documents:
 - Rule 400 (Visible Emissions), Rule 402 (Nuisance), Rule 425 (Use of Cutback Asphalt)
 - 2017 Triennial Plan Revision - Adopted March 2017 to update the 2008 Air Quality Management Plan
 - 2008 Air Quality Management Plan - Adopted August 2008 for achieving the 2006 California ozone standard

- 2007 Federal Maintenance Plan - Adopted May 2007 for maintaining the 1997 federal ozone standard
- 2005 Particulate Matter Plan - Adopted December 2005 for particulate matter made in response to Senate Bill 656.
- 2008 MBARD California Environmental Quality Act Air Quality Guidelines most recently revised February 2008.

6.4.1 Federal and State

The federal and State governments have been empowered by the federal and State Clean Air Acts to regulate the emission of airborne pollutants and have established ambient air quality standards for the protection of public health. U.S. EPA is the federal agency designated to administer air quality regulation, while CARB is the State equivalent in California. Local control in air quality management is provided by CARB through county-level or regional (multi-county) air pollution control districts (APCDs). CARB establishes air quality standards and is responsible for control of mobile emission sources, while the local APCDs are responsible for enforcing standards and regulating stationary sources. CARB has established 14 air basins statewide.

Federal Clean Air Act

U.S. EPA is charged with implementing national air quality programs. The agency's air quality mandates are drawn primarily from the federal Clean Air Act (CAA). The CAA was passed in 1963 by the U.S. Congress and has been amended several times. The 1970 CAA amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including non-attainment requirements for areas not meeting NAAQS and the Prevention of Significant Deterioration program. The 1990 CAA amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the U.S. The CAA allows states to adopt more stringent standards or to include other pollutants.

National Ambient Air Quality Standards

The federal CAA requires U.S. EPA to establish primary and secondary NAAQS for a number of criteria air pollutants. The air pollutants for which standards have been established are considered the most prevalent air pollutants that are known to be hazardous to human health. NAAQS have been established for the following pollutants: ozone (O₃), CO, SO₂, PM₁₀, PM_{2.5}, and lead (Pb).

Title III of the Federal CAA

As discussed above, hazardous air pollutants (HAPs) are the air contaminants identified by U.S. EPA as known or suspected to cause cancer, other serious illnesses, birth defects, or death. The federal CAA requires U.S. EPA to set standards for these pollutants and reduce emissions of controlled chemicals. Specifically, Title III of the CAA requires U.S. EPA to promulgate National Emissions Standards for Hazardous Air Pollutants (NESHAP) for certain categories of sources

that emit one or more pollutants that are identified as HAPs. The federal CAA also requires U.S. EPA to set standards to control emissions of HAPs through mobile source control programs. These include programs that reformulated gasoline, national low emissions vehicle standards, Tier 2 motor vehicle emission standards, gasoline sulfur control requirements, and heavy-duty engine standards.

HAPs tend to be localized and are found in relatively low concentrations in ambient air. However, they can result in adverse chronic health effects if exposure to low concentrations occurs for long periods. Many HAPs originate from human activities, such as fuel combustion and solvent use. Emission standards may differ between “major sources” and “area sources” of the HAPs/TACs.

Under the federal CAA, major sources are defined as stationary sources with the potential to emit more than 10 tons per year (tpy) of any one HAP or more than 25 tpy of any combination of HAPs; all other sources are considered area sources. Mobile source air toxics (MSATs) are a subset of the 188 HAPs. Of the 21 HAPs identified by U.S. EPA as MSATs, a priority list of six priority HAPs were identified that include diesel exhaust, benzene, formaldehyde, acetaldehyde, acrolein, and 1, 3-butadiene.

While vehicle miles traveled in the United States are expected to increase by 45 percent over the period 2010 to 2050, a combined reduction of 91 percent in the total annual emissions for the priority MSAT is projected for the same time period.²

California Clean Air Act

The California Clean Air Act (CCAA), which was approved in 1988, requires that each local air district prepare and maintain an Air Quality Management Plan (AQMP) to achieve compliance with CAAQS. These AQMPs also serve as the basis for the preparation of the SIP for meeting federal clean air standards for the State of California. CARB administers California’s air quality policy. The California Ambient Air Quality Standards (CAAQS) were established in 1969 pursuant to the Mulford-Carrell Act. These standards, included with the NAAQS in **Table 6-2: Current National and State Ambient Air Quality Standards**, are generally more stringent and apply to more pollutants than the NAAQS. In addition to the criteria pollutants, CAAQS have been established for visibility reducing particulates, hydrogen sulfide, and sulfates.

Like the EPA, CARB also designates areas within California as either attainment or nonattainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as nonattainment for a pollutant if air quality data shows that a state standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events such as wildfires, volcanoes, etc. are not considered violations of a State standard, and are not used as

² Federal Highway Administration, 2016. Updated. *Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents*.

a basis for designating areas as nonattainment. The applicable State standards are summarized in [Table 6-2: Current National and State Ambient Air Quality Standards](#).

California Ambient Air Quality Standards

The CCAA requires CARB to establish CAAQS. Similar to the NAAQS, CAAQS have been established for the following pollutants: ozone (O₃), CO, NO₂, SO₂, PM₁₀, PM_{2.5}, lead (Pb), vinyl chloride (H₂C=CHCl), hydrogen sulfide (H₂S), sulfates (SO₄²⁻), and visibility-reducing particulates. In most cases, CAAQS are more stringent than NAAQS. The CCAA specifies that local air districts should focus particular attention on reducing the emissions from transportation and area-wide emission sources, and provides districts with the authority to regulate indirect sources.

Tanner Air Toxics Act and Air Toxics Hot Spots Information and Assessment Act

TACs, referred to as HAPS by the federal CAA, in California are primarily regulated through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588) (Hot Spots Act). As discussed above, HAPs/TACs are a broad class of compounds known to cause morbidity or mortality (cancer risk). HAPs/TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State and federal levels.

AB 1807 sets forth a formal procedure for CARB to designate substances as TACs. Research, public participation, and scientific peer review are necessary before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and adopted U.S. EPA's list of HAPs as TACs. In 1998, DPM was added to CARB's list of TACs. Once a TAC is identified, CARB adopts an Airborne Toxic Control Measure for sources that emit that particular TAC. If a safe threshold exists at which no toxic effect occurs from a substance, the control measure must reduce exposure below that threshold. If no safe threshold exists, the measure must incorporate Best Available Control Technology (BACT) to minimize emissions.

The Hot Spots Act requires for existing facilities that emit toxic substances above a specified level to prepare a toxic emissions inventory and a risk assessment if the emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures.

Diesel Exhaust and Diesel Particulate Matter

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about two-thirds of the cancer risk from TACs (based on the statewide average). According to CARB, diesel exhaust is a complex mixture of gases, vapors, and fine particles. This mixture makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by CARB, and are listed as carcinogens either under State Proposition 65 or under the Federal Hazardous Air Pollutants programs.

CARB reports that recent air pollution studies have shown an association between diesel

exhaust and other cancer-causing toxic air contaminants emitted from vehicles and the overall cancer risk from TACs in California.

Particulate matter emitted from diesel-fueled engines (DPM) was found to compose much of that risk. CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy duty diesel trucks that represent the bulk of DPM emissions from California highways. These regulations include the solid waste collection vehicle (SWCV) rule, in-use public and utility fleets, and the heavy-duty diesel truck and bus regulations. In 2011, CARB approved the latest regulation to reduce emissions of DPM and nitrogen oxides from existing on-road heavy-duty diesel fueled vehicles.

The regulation requires affected vehicles to meet specific performance requirements between 2012 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or the equivalent by 2023. These requirements are phased in over the compliance period and depend on the model year of the vehicle. With implementation of CARB's Risk Reduction Plan, DPM concentrations are expected to be reduced by 85 percent in 2020 from the estimated year-2000 level.³ As emissions are reduced, risks associated with exposure to emissions also are expected to be reduced.

CARB Air Quality and Land Use Handbook

In April 2005, CARB released the final version of its *Air Quality and Land Use Handbook: A Community Health Perspective*. This guidance document is intended to encourage local land use agencies to consider the risks from air pollution before they approve the siting of sensitive land uses (e.g., residences) near sources of air pollution, particularly sources of TACs (e.g., freeway and high traffic roads, commercial distribution centers, rail yards, ports, refineries, dry cleaners, gasoline stations and industrial facilities).

These advisory recommendations include general setbacks or buffers from air pollution sources. Unlike industrial or stationary sources of air pollution, however, the siting of new sensitive land use does not require air quality permits or approval by air districts, and as noted above, the CARB handbook provides guidance only, rather than binding regulations.

CAPCOA Health Risk Assessments for Proposed Land Use Projects

The California Air Pollution Control Officer's Association (CAPCOA) is a consortium of air district managers throughout California that provide guidance material to address air quality issues in the State. As a follow up to CARB's 2005 *Air Quality and Land Use Handbook*, CAPCOA prepared the *Health Risk Assessments for Proposed Land Use Projects*. This guidance document was released to ensure that the health risk of projects be identified, assessed, and avoid or

³ CARB. 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. <https://www.arb.ca.gov/diesel/documents/rrpFinal.pdf>

mitigated, if feasible, through the CEQA process. The CAPCOA guidance document provides recommended methodologies for evaluating health risk impacts for development projects.

6.4.2 Regional

MBARD regulates air quality in NCCAB, and is responsible for attainment planning related to criteria air pollutants, as well as for district rule development and enforcement. The district also reviews air quality analyses prepared for CEQA assessments, and published the *CEQA Air Quality Guidelines* document (last revised February 2016) for use in evaluation of air quality impacts.

The purpose of these guidelines is to assist in the review and evaluation of air quality impacts from projects that are subject to CEQA. These guidelines are an advisory document intended to provide lead agencies, consultants, and project proponents with uniform procedures for assessing potential air quality impacts and preparing the air quality section of environmental documents. These guidelines are also intended to help these entities anticipate areas of concern from MBARD in its role as a CEQA lead, commenting and/or responsible agency for air quality.

Air Quality Management Plan

In accordance with CCAA, MBARD has developed the *2012 Air Quality Management Plan for the Monterey Bay Region* (2012 AQMP). The 2012 AQMP is a transitional plan shifting focus of MBARD's efforts from achieving the 1-hour component of the State ozone AAQS to achieving the 8-hour ozone requirement. The plan includes an updated air quality trends analysis, which reflects both the 1- and 8-hour standards, as well as an updated emission inventory, which includes the latest information on stationary, area and mobile emission sources.

In March 2017, MBARD adopted the *2012-2015 Triennial Plan Revision*, which assesses and updates elements of the 2012 AQMP, including the air quality trends analysis, emission inventory, and mobile source programs. The 2017 AQMP Revision only addresses attainment of the State ozone standard. In 2012, EPA designated the NCCAB as in attainment of the current national 8-hour ozone standard of 0.075 ppm⁴.

The following MBARD rules would limit emissions of air pollutants from construction and operation of residential development pursuant to the project:

⁴ On October 1, 2015, U.S. EPA adopted a new 8-hour ozone standard of 0.070 ppm. However, U.S. EPA has not yet reviewed recent NCCAB emissions to determine attainment with the current 0.070 ppm standard. Therefore, this attainment status is based upon U.S. EPA's prior 0.075 ppm standard.

- *Rule 400 (Visible Emissions)* – Discharge of visible air pollutant emissions into the atmosphere from any emission source for a period or periods aggregating more than 3 minutes in any 1 hour, as observed using an appropriate test method, is prohibited.
- *Rule 402 (Nuisances)* - No person shall discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or which endanger the comfort, repose, health, or safety of any such persons or the public; or which cause, or have a natural tendency to cause, injury or damage to business or property.
- *Rule 425 (Use of Cutback Asphalt)* – The use of cutback asphalt (asphalt cement that has been blended with petroleum solvents) is restricted.
- *Rule 426 (Architectural Coatings)* – This rule limits the emissions of ROGs from the use of architectural coatings.

6.5 Environmental Impacts and Mitigation Measures

6.5.1 Significance Criteria

The following significance criteria for air quality were derived from MBARD’s 2008 CEQA Air Quality Guidelines (MBARD, 2008) and are summarized in [Table 6-5: MBARD Significance Thresholds for Construction and Operational Emissions](#).

Table 6-5: MBARD Significance Thresholds for Construction and Operational Emissions

Criteria Air Pollutants and Precursors (Regional)	Construction-Related	Operational-Related
	Average Daily Emissions (pounds/day)	Average Daily Emission (pounds/day)
Fugitive Particulate Matter (PM ₁₀) ¹	82	82 ²
VOC	--	137
Nitrogen Oxides (NO _x), as NO ₂	--	137
Local CO	--	LOS at intersection/road segment degrades from D or better to E or F or V/C ratio at intersection/road segment at LOS E or F increases by 0.05 or more or delay at intersection at LOS E or F increases by 10 seconds or more or reserve capacity at unsignalized intersection at LOS E or F decreases by 50 or more. 550 ³
Sulfur Oxides (SO _x), as SO ₂	--	150

¹ Examples: 1) Construction site with minimal earthmoving exceeding 8.1 acres per day, 2) Construction site with earthmoving (grading, excavation) exceeding 2.2 acres per day.
² The District's 82 lb./day operational phase threshold of significance applies only to onsite emissions and project-related exceedances along unpaved roads. These impacts are generally less than significant. On large development projects, almost all travel is on paved roads (0% unpaved), and entrained road dust from vehicular travel can exceed the significance threshold. Please contact the Air District to discuss estimating emissions from vehicular travel on paved roads. District approved dispersion modeling can be used to refute (or validate) a determination of significance if modeling shows that emissions would not cause or substantially contribute to an exceedance of State and national AAQS.
³ Modeling should be undertaken to determine if the project would cause or substantially contribute (550 lb./day) to exceedance of CO AAQS. If not, the project would not have a significant impact.

Source: MBARD, 2008.

Short-term construction emission thresholds, as stated in the MBARD 2008 *CEQA Air Quality Guidelines*, involve identifying the level of construction activity that could result in significant temporary impacts if not mitigated. Construction activities (e.g., excavation, grading, on-site vehicles) that directly exceed MBARD criterion for PM₁₀ would have a significant impact on local air quality when they are located nearby and upwind of sensitive receptors (MBARD, 2008). Regarding ozone, construction projects using typical equipment that temporarily emits ozone precursors are accommodated in the emission inventories of State and federally required air quality management plans and would not have a significant impact on ozone concentrations (MBARD, 2008).

If construction-related activities exceed the PM₁₀ threshold of 82 pounds, the project would be characterized as contributing substantially to existing violations of CAAQS for PM₁₀. In addition to the tabulated thresholds, a project may also have significant adverse impacts on air quality if the project individually or cumulatively results in any of the following:

- Construct with or obstruct implementation of applicable MBARD air quality management plans, polices, or regulations.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.
- Exposure of sensitive receptors to substantial pollutant concentrations.
- Result in other emissions (such as those leading to odors adversely affecting a substantial number of people).

The criteria for assessing cumulative impacts on localized air quality (i.e., CO, PM₁₀) are identical to those for individual project operation. The criteria for determining a project's cumulative impact on regional ozone levels depends on consistency with the applicable air quality management plan. Consistency with the MBARD Air Quality Management Plan (AQMP) does not mean that a project would not have a significant project-specific adverse air quality impact. However, inconsistency with the MBARD AQMP is considered a significant cumulative adverse air quality impact.

MBARD guidelines state that odor impacts would be significant if the project would result in the emission of substantial concentrations of pollutants that produce objectionable odors, causing injury, nuisance, or annoyance to a considerable number of persons, or endangering the comfort, health, or safety of the public. If construction or operation of the project would emit pollutants associated with odors in substantial amounts, the analysis should assess the impact on existing or reasonably foreseeable sensitive receptors.

A project would conflict with or obstruct implementation of the 2008 MBARD AQMP and 2012 *Triennial Plan Revision* (2012 AQMP Revision) if it is inconsistent with the plan's growth assumptions, in terms of population, employment, or regional growth in VMT. These population forecasts were developed, in part, using data obtained from local jurisdictions regarding projected land uses and population projections identified in community plans. Projects that result in an increase in population that is inconsistent with local community plans would be considered inconsistent with MBARD's AQMP.

Impact Assessment Methodology

The analysis of air quality impacts conforms to the methodologies recommended in the MBARD's *CEQA Air Quality Guidelines*. The handbook includes thresholds for emissions associated with both construction and operation of projects.

Construction Emissions

The regional construction emissions associated with potential residential development on the project site which would be accommodated by the project were calculated using CalEEMod with default inputs for the type and size of proposed land uses, including the types and number

of pieces of equipment that would be used on-site during each construction phase and off-site vehicle trips that would result from construction activities on the project site. CalEEMod is a computer model developed by the South Coast Air Quality Management District to estimate air pollutant and greenhouse gas (GHG) emissions from land use development projects, and is based on parameters that include the duration of construction activity, area of disturbance, and anticipated equipment use during construction.

The construction activities associated with residential development pursuant to the project would generate diesel emissions and dust. Construction equipment that would generate criteria air pollutants includes excavators, graders, dump trucks, and loaders. It is assumed that this type of equipment would be used during both grading/demolition and construction. It is also assumed that all of the construction equipment used would be diesel-powered.

Complete results from CalEEMod and assumptions can be found in [Appendix B: CalEEMod Air Quality Analysis](#).

Operational Emissions

Operational emissions associated with potential on-site development were also estimated using CalEEMod. Operational emissions would comprise mobile source emissions, emissions associated with energy consumption, and area source emissions. Mobile source emissions are generated by the increase in motor vehicle trips to and from the project site associated with operation of a project. Emissions attributed to energy use include electricity and natural gas consumption for space and water heating and cooling. Area source emissions are generated by, for example, landscape maintenance equipment, consumer products, and architectural coatings.

Toxic Air Contaminants

MBARD provides guidance for evaluating potential impacts from TACs in its *CEQA Air Quality Guidelines* document. As noted therein, construction equipment or processes could result in significant impacts if emissions at any sensitive receptor would exceed the threshold that is based on the best available data or may result in a cancer risk greater than one incident per 100,000 population.

CARB recommends evaluating potential impacts to sensitive receptors within 1,000 feet of a project site (CARB, 2005). Operational equipment or processes would not result in significant air quality impacts if they would comply with MBARD Rule 1000, which applies to any source that requires a permit to construct or operate pursuant to District Regulation II and has the potential to emit carcinogenic or non-carcinogenic TACs. The rule also requires sources of carcinogenic TACs to install best available control technology and reduce cancer risk to less than one incident per 100,000 population.

Consistent with MBARD recommendations, human health risks from TACs are analyzed based on the presence of mobile equipment that would generate DPM during construction and

operation of the project, as well as on the proximity of the nearest sensitive receptors that could be exposed to such.

CO Hotspots. Based on MBARD CEQA Air Quality Guidelines, a significant CO hotspot impact may occur at:

- Intersections or road segments that operate at LOS D or better that would operate at LOS E or F with project-generated traffic, or
- Intersections that operate at LOS E or F where delay would increase by 10 seconds or more with project-generated traffic.

Where intersections may operate under conditions that could result in a CO hotspot, a significant impact would occur where existing or reasonably foreseeable sensitive receptors would be exposed to the CO hotspot.

6.5.2 Summary of No and/or Beneficial Impacts

Exposure to Odorous Emissions

The occurrence and severity of odor impacts depends on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the receptors. While offensive odors rarely cause physical harm, they can still be unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and regulatory agencies. Projects with the potential to frequently expose members of the public to objectionable odors would be deemed to violate the MBARD standards.

MBARD enforces permit and nuisance rules to control odorous emissions from stationary sources. For instance, MBARD Rule 402 (Nuisances) prohibits the discharge of air contaminants or other materials that cause injury, detriment, nuisance, or annoyance to any considerable numbers of persons. Given these regulations, and the fact that there are no odorous emissions existing or proposed on or near the project site, there would be no impact.

6.5.3 Impacts of the Project

Impact AQ-1: Conflict with MBARD Air Quality Plan.

The MBARD's 2008 CEQA Air Quality Guidelines provides criteria for determining cumulative impacts and consistency. The CEQA Air Quality Guidelines note that a project which is inconsistent with an Air Quality Plan would have a significant cumulative impact on regional air quality. As discussed above, the project is consistent with the Air Quality Management Plan for the Monterey Bay Region. In addition, the project's construction and operation emissions would not exceed MBARD thresholds as noted below. The NCCAB is currently in non-attainment for State ozone and PM₁₀ standards which represents an existing cumulatively significant impact within the NCCAB. Ozone precursors include reactive organic gases (ROG)

and NO_x. The project would not exceed quantitative thresholds for either of these ozone precursors. Similarly, PM₁₀ thresholds also would not be exceeded for construction or operation of the project. Therefore, the project would not make a considerable contribution to this existing, cumulatively significant impact. Impacts would be less than significant.

Impact AQ-2: Future construction activities would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants.

Construction emissions would include the generation of fugitive dust, on-site generation of construction equipment exhaust emissions, and the off-site generation of mobile source emissions related to construction traffic. Short-term air quality impacts are predicted to occur during grading, and construction operations associated with implementation of the project. Emissions produced during grading and construction activities would cease following completion of the development.

Construction for the project would begin summer 2020 and last approximately 14 months. Construction activities would include demolition, site preparation, grading, paving, building construction, and architectural coating. The project would require approximately 260 tons of demolition for the existing asphalt and concrete walkways on the site

The resulting total cut and fill of soils for the project site is estimated to be approximately 5,900 cubic yards (cy) of cut and 7,900 cy of fill. This would result in approximately 1,500 cy of hardscape import and 500 cy of soil import.

Construction equipment includes excavators, rubber-tired dozers, graders, scrapers, trenchers, tractors, and pavers. Exhaust emission factors for typical diesel-powered heavy equipment are based on the California Emissions Estimator Model (CalEEMod) program defaults. Variables factored into estimating the total construction emissions include the level of activity, length of weather conditions, number of construction personnel, and the amount of materials to be transported on- or off-site.

Maximum daily emissions for each year of construction has been quantified based upon the phase durations and equipment types. The analysis of daily construction emissions has been prepared utilizing the California Emissions Estimator Model (CalEEMod). Refer to [Appendix B, CalEEMod Air Quality Analysis](#), for the CalEEMod outputs and results. [Table 6-6: Project Daily Construction Emissions](#), presents the anticipated daily construction emissions. Fugitive dust from grading/demolition and construction on the project site would be short-term. Dust larger than ten microns generated by such activities usually becomes more of a local nuisance than a serious health problem. Of particular health concern is the amount of PM₁₀ generated as a part of fugitive dust emissions.

[Particulate Matter](#)

MBARD CEQA Guidelines state that construction activities (e.g., excavation, grading, on-site vehicles) that emit 82 pounds per day or more of PM₁₀ would have a significant impact on local

air quality when they are located nearby and upwind of sensitive receptors. Based on this emissions threshold, construction activity occurring on more than 2.2 acres per day may result in significant PM₁₀ emissions (MBARD, 2015).

As shown in **Table 6-6: Project Daily Construction Emissions**, construction emissions associated with the development of the project would not exceed the 82 lb./day threshold of significance for PM₁₀.

Table 6-6: Project Daily Construction Emissions

Emissions Source	Pollutant (pounds/day)					
	ROG	NO _x	CO	SO ₂	PM ₁₀ Total	PM _{2.5} Total
2020	4.17	42.50	22.43	0.04	10.06	6.31
2021	48.87	20.43	20.08	0.04	1.72	1.12
Threshold	---	---	---	---	82	---
Exceed Threshold	NA	NA	NA	NA	No	NA

Notes:

1. The reduction/credits for construction emission mitigations are based on mitigation included in CalEEMod and as typically required by the MBARD (Basic Control Measures). The mitigation includes the following: replace ground cover on disturbed areas quickly, water exposed surfaces twice daily, and proper loading/unloading of mobile and other construction equipment.

Source: CalEEMod v. 2016.3.2 and **Appendix B: CalEEMod Air Quality Analysis**.

However, based on the proximity of sensitive receptors to the project site, implementation of the following mitigation measures would be required to ensure potential impacts are reduced to a less-than-significant level for all construction activities on the project site.

Mitigation for Impact AQ-2

MM AQ-2.1 Reduce Fugitive Dust

To reduce fugitive dust emissions, and the applicant shall require the following measures to be included as part of construction grading and building plans:

- Limit grading to 8.1 acres per day, and grading and excavation to 2.2 acres per day.
- Water graded/excavated areas and active unpaved roadways, unpaved staging areas, and unpaved parking areas at least twice daily or apply non-toxic chemical soil stabilization materials per manufacturer’s recommendations. Frequency should be based on the type of operations, soil and wind exposure.
- Prohibit all grading activities during periods of high wind (more than 15 mph).
- Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days).

- All disturbed soil areas not subject to revegetation shall be stabilized using approved chemical soil binders, jute netting, or gravel for temporary roads and any other methods approved in advance by MBARD.
- Exposed ground areas that are planned to be reworked for durations longer than 1 month after initial grading shall be sown with a fast germinating, non-invasive grass seed and watered until vegetation is established.
- Plant vegetative ground cover in disturbed areas as soon as possible.
- Use street sweepers, water trucks, or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the project site. Reclaimed (non-potable) water should be used whenever possible;
- Spray dirt stock pile areas daily as needed.
- Place gravel on all roadways and driveways as soon as possible after grading. In addition, construct building pads as soon as possible after grading unless seeding, soil binders, or frequent water application are used.
- Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.
- All trucks hauling dirt, sand, soil, or other loose materials shall be covered or shall maintain at least 2 feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with California Vehicle Code Section 23114.
- Unpaved road travel shall be limited to the extent possible, for example, by limiting the travel to and from unpaved areas, by coordinating movement between work areas rather than to central staging areas, and by busing workers where feasible.
- Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the project site, and inspect vehicle tires to ensure they are free of soil prior to carry-out to paved roadways.
- Sweep streets at the end of each day, or as needed, if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water shall be used where feasible.

Operation Impacts

Impact AQ-3: Future long-term operation would generate dust and exhaust emissions of criteria pollutants.

Operational emissions for mixed-use developments are typically generated from mobile sources (burning of fossil fuels in cars); energy sources (cooling, heating, and cooking); and area sources (landscape equipment and household products). **Table 6-7: Project Buildout Operational Emissions** and shows that the project's maximum emissions would not exceed MBARD operational thresholds.

Table 6-7: Project Buildout Operational Emissions

Emission Source	Pollutants (pounds/day)					
	ROG	NO _x	CO	PM ₁₀	PM _{2.5}	SO _x
Area	1.98	0.05	4.32	0.02	0.02	0.0002
Energy	0.03	0.26	0.13	0.02	0.02	0.0017
Mobile	2.98	8.65	28.45	4.80	1.33	0.0572
Emissions Total	5.00	8.96	32.90	4.85	1.38	0.0591
MBARD Threshold	137	137	550	82	55	150
Are Thresholds Exceeded?	No	No	No	No	No	No
Notes: Area source emissions include natural gas fuel combustion, landscape fuel combustion, consumer products, architectural coatings, and hearth fuel combustion (i.e., wood stoves, wood fireplaces, natural gas fireplace/stoves).						

Source: CalEEMod v. 2016.3.2 and Appendix B: CalEEMod Air Quality Analysis.

Mobile Source Emissions

Mobile sources are emissions from motor vehicles, including tailpipe and evaporative emissions. Depending upon the pollutant being discussed, the potential air quality impact may be of either regional or local concern. For example, ROG, NO_x, PM₁₀, and PM_{2.5} are all pollutants of regional concern (NO_x and ROG react with sunlight to form O₃ [photochemical smog], and wind currents readily transport PM₁₀ and PM_{2.5}). However, CO tends to be a localized pollutant, dispersing rapidly at the source.

Project-generated vehicle emissions have been estimated using CalEEMod. As described in **Chapter 15: Transportation & Circulation**, the project would result in a total of 1,678 net daily trips per day. The net project emissions generated by vehicle traffic associated with the project would not exceed established MBARD regional thresholds.

Energy Source Emissions

Energy source emissions would be generated as a result of electricity and natural gas (non-hearth) usage associated with the project. The primary use of electricity and natural gas by the project would be for space heating and cooling, water heating, ventilation, lighting, appliances,

and electronics. Electric-power generating plants are distributed throughout the Basin, and their emissions contribute to the total regional pollutant burden. The net project emissions generated by electricity and natural gas usage associated with the project would not exceed established MBARD regional thresholds.

Area Source Emissions

Area source emissions are generally a function of land use (e.g., number of single-family residential units), activity (e.g., fuel use per residential unit), and emission factor (e.g., mass of pollutant emitted per fuel usage). These include the following:

- **Hearth fuel combustion.** This source includes wood stoves, wood fireplaces, and natural gas-fired stoves.
- **Landscape fuel combustion.** This source includes exhaust and evaporative emissions from landscaping equipment including lawnmowers, rototillers, shredders/grinders, trimmers, chain saws, and hedge trimmers, used in residential and commercial applications.
- **Consumer products.** This source category comprises a wide range of products including air fresheners, automotive products, household cleaners, and personal care products.
- **Architectural coatings.** This source includes ROG emissions resulting from the evaporation of solvents contained in paints, varnishes, primers, and other surface coatings, from residential and nonresidential structures.

Therefore, impacts of dust, criteria air pollutants, and toxic air contaminants generated by long-term operation of residential development pursuant to the project would be less than significant. Additionally, approval of a future Planned Development application would prohibit the use of wood-burning fireplaces and require the use of low-emitting architectural coatings to further reduce air quality impacts.

Impact AQ-4: Increase carbon monoxide concentrations above State and federal standards.

Carbon Monoxide Hotspots

Local air quality is a major concern along roadways. CO is a primary pollutant, and unlike ozone, is directly emitted from a variety of sources. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of its impacts upon the local air quality. Areas of vehicle congestion have the potential to create “pockets” of CO called “hot spots.” These pockets have the potential to exceed the 1-hour CAAQS of 20 parts per million (ppm) and/or the 8-hour CAAQS of 9 ppm.

To identify CO hotspots, MBARD criterion recommends performing a CO hotspot analysis when

- Intersections or road segments that operate at LOS D or better that would operate at LOS E or F with the project's traffic,
- Intersections or road segments that operate at LOS E or F where the volume-to-capacity (V/C) ratio would increase 0.05 or more with the project's traffic,
- Intersections that operate at LOS E or F where delay would increase by 10 seconds or more with the project's traffic,
- Unsignalized intersections which operate at LOS E or F where the reserve capacity would decrease by 50 or more with the project's traffic. This criterion is based on the turning movement with the worst reserve capacity, or
- Project would generate substantial heavy duty truck traffic or generate substantial traffic along urban street canyons or near a major stationary source of CO.

According to the traffic analysis prepared for the project, the project would generate a net of 1,678 daily trips. Existing Mount Hermon Road intersections operate at a LOS B (Glen Canyon Road) and LOS D (Scotts Valley Drive). The Glen Canyon Road intersection would remain unchanged with the project; however, Scotts Valley Drive would decrease in the cumulative scenario to LOS E (with and without project). The project traffic would cause control delay to increase from 63.9 seconds per vehicle to 66.5 seconds per vehicle (a 2.6 second increase) during the a.m. peak hour. According to the traffic analysis the traffic improvement identified would be coordinated signal with other signals along Mt. Hermon Road. This would improve operations to LOS D or better in the a.m. and p.m. peak hours. Therefore, the project would not increase traffic volumes at local intersections to cause the LOS of the intersection or roadway segment to deteriorate. The project would not generate a significant number of vehicle trips on Mt Hermon Road and effects related to CO concentrations would be less than significant. As described in [Chapter 15: Transportation and Circulation](#), implementation of the project would result in an intersection LOS change at one of the adjacent study intersections. However, because City regulations require a fair-share impact mitigation fee, impacts would be less than significant. Therefore, impacts related to carbon monoxide would be less than significant.

Parking Structure Hotspots

Carbon Monoxide concentrations are a function of vehicle idling time, meteorological conditions, and traffic flow. Therefore, parking structures (and particularly subterranean parking structures) tend to be of concern regarding CO hotspots, as they are enclosed spaces with frequent cars operating in cold start mode. The parking garage would include approximately 122 parking spaces. The project would be required to comply with the ventilation requirements of the International Mechanical Code (Section 404 [Enclosed Parking Garages]), which requires that mechanical ventilation systems for enclosed parking garages operate automatically by means of carbon monoxide detectors in conjunction with nitrogen dioxide detectors. Section 404.2 requires a minimum air flow rate of 0.05 cubic feet per second

per square foot and the system shall be capable of producing a ventilation airflow rate of 0.75 cubic per second per square foot of floor plan area. Parking structure CO hotspots impacts would be less than significant.

Impact AQ-5: Increase exposure to TACs.

No major existing stationary or area sources of TACs were identified on the project site. However, the existing gas station located approximately 100 feet north of the project site is considered a gasoline dispensing facility (GDF) by MBARD. A GDF is a facility that stores and/or dispenses gasoline and any facility with a capacity greater than 250 gallons must have a permit through the air district.⁵ CARB has developed a number of Air Toxic Control Measures (ATCMs) to reduce air toxics. Most gasoline stations are now required by the In-Station Diagnostic (ISD) Program to have monitoring equipment to help owners more rapidly determine when nozzles, hoses, and pumps need to be repaired. The future on-site sensitive receptors would not be exposed to TACs from the GDF as long as the facility remains in compliance with all permits.

Construction equipment and associated heavy-duty truck traffic generates diesel exhaust which is a known TAC. Diesel exhaust from construction equipment operating at the site poses a health risk to nearby sensitive receptors. However, the use of diesel-powered construction equipment would be episodic and would occur in various phases throughout the project site. Additionally, construction activities would limit idling to no more than five minutes, which would further reduce nearby sensitive receptors' exposure to temporary and variable DPM emissions. Furthermore, even during the most intense year of construction, emissions of DPM would be generated from different locations on the project site rather than in a single location because different types of construction activities (e.g., site preparation and building construction) would not occur at the same place at the same time. California Office of Environmental Health Hazard Assessment has not identified short-term health effects from DPM. Construction is temporary and would be transient throughout the site (i.e., move from location to location) and would not generate emissions in a fixed location for extended periods of time. For these reasons, DPM generated by Project construction activities would not expose sensitive receptors to substantial amounts of air toxics and the project would result in a less than significant impact. Therefore, impacts associated with construction activities would be no impact.

The project includes a general plan land use designation and zone change to allow for accommodate future mixed-use development on the project site. The residential and commercial uses are not considered a TAC source of potential concern. As a result, the project would not result in increased exposure of sensitive land uses to localized concentrations of

⁵ MBARD, *Gasoline Dispensing Facility*, 2020. <https://www.mbard.org/gasoline-dispensing-facility>

TACs that would exceed MBARD's recommended significance thresholds. Impacts would be adverse, but less than significant.

6.5.4 Cumulative Impact Analysis

The geographical area for cumulative air emission impacts is the NCCAB, which includes Santa Cruz County.

Impact AQ-6: Contribute to cumulatively considerable air quality impacts.

MBARD updated the regional *Air Quality Management Plan* in 2008. The plan includes current air quality data, revises the emission inventory and emission forecasts, proves an analysis of emission reductions needed to meet and maintain State ozone standards, and includes adoption of five stationary source controls to achieve emission reductions. In developing the emission forecasts, the plan accounts for population growth for cities and counties located within the Basin.

The mixed-use development pursuant to the project, as well as past, present, and reasonably foreseeable future, projects would comply with MBARD rules and requirements, and implement all feasible mitigation measures. Adherence to MBARD rules and regulations would alleviate potential impacts related to cumulative conditions. Construction emissions associated with the project would not result in a cumulatively considerable contribution to significant cumulative air quality impacts.

The MBARD has not established separate significance thresholds for cumulative operational emissions. The nature of air emissions is largely a cumulative impact. As a result, no single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. The MBARD developed the operational thresholds of significance based on the level above which a project's individual emissions would result in a cumulatively considerable contribution to the Basin's existing air quality conditions. Therefore, a project that exceeds the BAAQMD operational thresholds would also be a cumulatively considerable contribution to a significant cumulative impact.

As shown in [Table 6-7: Project Buildout Operational Emissions](#), the project's operational emissions would not exceed MBARD thresholds. As a result, operational emissions associated with the project would not result in a cumulatively considerable contribution to significant cumulative air quality impacts.

Additionally, the traffic analysis included vehicular trips from all present and future projects in the project vicinity. Therefore, CO hot spot concentrations calculated at these intersections include the cumulative traffic effect. No significant cumulative CO impacts would occur.

With conditions of approval identified in **Chapter 3: Project Description**, and compliance with MBARD rules and requirements, the cumulative impacts of the project would be less than significant.

6.5.5 Level of Significance after Mitigation

Table 6-8: Summary of Impacts and Mitigation Measures - Air Quality summarizes the air quality impacts, significance determinations, and mitigation measures for the development pursuant to the project.

Table 6-8: Summary of Impacts and Mitigation Measures - Air Quality

Impact	Impact Significance	Mitigation
Impact AQ-1: Conflict with implementation of MBARD Air Quality Plan	Less than Significant	None required.
Impact AQ-2: Future construction activities would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants.	Less than Significant with Mitigation	MM AQ-2.1: Reduce Fugitive Dust
Impact AQ-3: Future long-term operation would generate dust and exhaust emissions of criteria pollutants.	Less than Significant	None required.
Impact AQ-4: Increase carbon monoxide concentrations above State and federal standards.	Less than Significant	None required.
Impact AQ-5: Increase exposure to TACs	Less than Significant	None required.
Impact AQ-6: Contribute to cumulatively considerable air quality impacts.	Less than Significant with Mitigation	MM AQ-2.1: Reduce Fugitive Dust

6.6 References

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7 Biological Resources

7.1 Introduction

This section describes effects on biological resources that would be caused by potential residential development pursuant to the project. The following discussion addresses existing environmental conditions in the affected area, identifies and analyzes environmental impacts, and recommends measures to reduce or avoid adverse impacts anticipated from project construction and operation. In addition, existing laws and regulations relevant to biological resources are described. In some cases, compliance with these existing laws and regulations would serve to reduce or avoid certain impacts that might otherwise occur with implementation of the project. All graphics for this section are presented at the end of the section.

Information used to prepare this section came from the following resources:

- Aerial photography.
- Project application and related materials.
- Biotic Resources Group. 2017. Biotic Report. Report prepared for Oak Creek Park Development. (See [Appendix C-a](#))
- Biotic Resources Group. 2018. RE: Oak Creek/Glen Canyon Road Development: Results of Supplemental Plant Survey. (See [Appendix C-b](#))
- Biotic Resources Group. 2019. RE: Oak Creek/Glen Canyon Road Development: Results of 2019 Supplemental Plant Survey. (See [Appendix C-c](#))
- Hamb, Maureen. 2018. Tree Resources Evaluation Project Impact Analysis. Report prepared for Oak Creek Park. (See [Appendix C-d](#))

A botanical survey of the project site was conducted by Biotic Resources Group to supplement information in the Oak Creek Development Biotic Report (prepared in December 2017) and the plant survey conducted in 2018. A site visit was conducted on May 27, 2019 by Biotic Resources Group to assess the vegetation and to determine any changes in site conditions from the 2017 and 2018 surveys.

7.2 Scoping Issues Addressed

During the scoping period for the project, no written comments were received regarding biological resources.

7.3 Environmental Setting

This section presents information on biological resources conditions in the project area. The current condition and quality of biological resources was used as the baseline against which to assess impacts of the project.

7.3.1 Regional Setting

The project site is located on the Felton USGS quadrangle within the San Francisco Bay Area sub region of the California Floristic Province (Baldwin, 2012). This region of California is characterized by a Mediterranean climate, which is mild, wet winters and warm, dry summers. The diverse topography of the region results in diverse vegetation types and wildlife habitats, from wet redwood forest to dry oak/pine woodland and chaparral. Intermittent and perennial flowing creeks also traverse the region; creeks in the vicinity of the project site include tributaries to Bean Creek (to the north) and Carbonera Creek (to the south).

The project site is located in a region that supports the plant and animal habitat types: Coast Live Oak Tree Grove, Non-native Tree Groves, Annual Grassland, Coastal Prairie, and Poison Oak Thicket.

A search of the National Resource Conservation Service [NRCS] Web Soil Survey identified the following soil types in the project site vicinity: Danville loam, 2 to 9 percent slopes (125); Elder sandy loam, 9 to 15 percent loam (131), and Pfeiffer gravelly sandy loam, 20 to 50 percent slopes (160). Approximately 80 percent of the project site comprises of Danville loam, 10 percent of Elder sandy loam, and 10 percent of Pfeiffer gravelly sandy loam (NRCS, 2020).

7.3.2 Baseline Data Collection

Literature Search and Review of Existing Data

The assessment of biological resources began with a review of available documents and species and habitat data provided by the applicant, U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), and other agencies. Biological resource data sources included, but were not limited to, the following:

- A search of the CDFW California Natural Diversity Database (CNDDDB) to determine special-status plants, wildlife, and vegetation communities that have been documented within the vicinity of the project site.
- Aerial photographs, Santa Cruz County Geographic Information Systems (GIS) data, United States Geological Survey (USGS) topographic maps.
- Previously prepared reports and regional planning documents (general plan policies, Habitat Conservation Plans [HCPs], Environmental Impact Reports [EIRs], and published scientific literature).
- The applicant's technical reports and data (including vegetation mapping and special-status species locations and survey data).

7.3.3 Vegetation Communities

Literature Search

To assess the potential occurrence of special-status biotic resources, two electronic databases were accessed to determine recorded occurrences of sensitive plant communities and sensitive species. Information was obtained from the California Native Plant Society's (CNPS) Electronic Inventory (2017) and California Department of Fish & Wildlife (CDFW) RareFind database (CDFW, 2017) for the Felton USGS quadrangle and eight surrounding quadrangles. To assess the potential occurrence of sandhills vegetation/habitat, the County soil survey (NRCS Web Soil Survey) was accessed to document mapped soil types. The *Interim-Programmatic Habitat Conservation Plan for the Endangered Mt. Hermon June Beetle and Ben Lomond Spineflower* (IPHCP) (USFWS, June 2011) and the Santa Cruz County GIS data base were also reviewed relative to mapped sandhills habitat. A previous survey documenting the location of plant community types and special-status plant species was reviewed (Arnold, 2007a and 2007b).

Botanical Surveys

Site surveys were made on November 30, 2017; March, April, and May 2018; and May 27, 2019 by Kathleen Lyons, plant ecologist with Biotic Resources Group. All plant species observed were recorded and identified. Species observed are listed in the narrative section of this report. Plant nomenclature follows *The Jepson Manual Vascular Plants of California* (2012). *An Annotated Checklist of the Vascular Plants of Santa Cruz County, California* (CNPS, 2013) was also reviewed.

Biotic Habitats

Vegetation mapping of the property was conducted from review of aerial photos, a topographic map, review of previous vegetation type maps, and field observations. The major plant communities within the project site were identified during the field surveys and based on the classification system developed by *California Terrestrial Natural Communities* (California Department of Fish and Game, 2003 and 2010), *A Manual of California Vegetation* (Sawyer and Keeler-Wolf 1995), the Sandhill Conservation and Management Plan (McGraw, 2004), and the *Interim-Programmatic Habitat Conservation Plan for the Endangered Mt. Hermon June Beetle and Ben Lomond Spineflower* (USFWS, June 2011). Modifications to the classification system's nomenclature were made, as necessary, to accurately describe the site's resources. A previously-prepared vegetation map prepared by Arnold (2007) was updated based on 2015 site surveys. The extent of vegetation types on the 3.6-acre property is shown on [Figure 7-1: Vegetation Map](#).

Each vegetation type, its California vegetation code, and state ranking (rarity), and its affinity to sandhills are listed in [Table 7-1: Vegetation Types](#).

Table 7-1: Vegetation Types

CaCode ¹	Vegetation Type	Plant Association	State Ranking ²
71.060.02	Coast Live Oak Tree Grove	Coast Live Oak/Acacia- California Blackberry	S4 ³
None	Non-native Tree Groves	Acacia – London Plane	None
44.150.00	Annual Grassland	Wild oat/ Fescue/ Filaree – English Plantain	None
41.050.05	Coastal Prairie	California Oat grass/Purple Needlegrass – English Plantain	S3
37.940.07	Poison Oak Thicket	Poison Oak/California Aster	S4

Notes:

1. California vegetation code as per CDFG/CNDDDB (2010).
 2. Vegetation types are ranked between S1 and S5. For vegetation types with ranks of S1-S3, all associations within the type are considered to be highly imperiled.
 3. Ponderosa pine on inland sandhills is high priority in CNDDDB.
- Source: Biotic Resources Group, 2017.

Coast Live Oak Tree Groves. The property supports a small grove of coast live oak (*Quercus agrifolia*) trees. At the project site, the grove is located within the acacia-dominated vegetation that parallels Mt. Hermon Road and extends outward into the annual grassland.

Annual Grassland. The majority of the property supports annual grassland. The grassland abuts the oak tree groves and non-native tree grove. Plant cover is co-dominated by annual grasses, such as wild oat (*Avena fatua*), soft chess (*Bromus hordeaceus*), farmers foxtail (*Hordeum murinum ssp. leporinum*), and rattlesnake grass (*Briza maxima*). Other herbaceous species include English plantain (*Plantago lanceolata*), filaree (*Erodium sp.*), cut leaf geranium (*Geranium dissectum*), dandelion (*Taraxacum officinale*), cat’s ear (*Hypochaeris spp.*), bristly ox-tongue (*Picris echioides*), vetch (*Vicia sp.*), Mediterranean clover (*Trifolium angustifolium*), scarlet pimpernel (*Anagallis arvensis*), wild lettuce (*Lactuca sp.*), and wild radish (*Raphanus sativa*). Native herbaceous species were also observed and limited to scattered California poppy (*Eschscholzia californica*). Some shrubs are scattered in the grassland, such as coyote brush (*Baccharis pilularis*) and pyracantha (*Pyracantha sp.*). Stands of non-native jubata grass (*Cortaderia jubata*), are also present. The man-made detention basin supports annual grassland. The central low area was found to support plants typical of seasonally wet areas, such as spreading rush (*Juncus patens*), and curly dock (*Rumex crispus*).

Coastal Prairie. A small patch of coastal prairie (approximately 1,000 square feet) was observed on the west-central portion of the site. The prairie is characterized by the presence of California oatgrass (*Danthonia californica*), a native perennial bunchgrass. The small prairie patch was also observed to support lesser amounts of purple needlegrass (*Stipa pulchra*), another native

perennial bunchgrass. Other plant species similar to the surrounding annual grassland were also observed and include non-native English plantain, Mediterranean clover, cat's ear, and bird's foot trefoil (*Lotus corniculatus*).

Poison Oak Thicket. A thicket of poison oak (*Toxicodendron diversilobum*) was observed near the northern property line. This thicket supports a dense patch of poison oak, a native shrub. California aster (*Symphyotrichum chilense*) was also observed in the project area.

Special-Status Plant Species

Plant species of concern include those listed by either the federal or State resource agencies, as well as those identified as rare by CNPS (List 1B). The search of the CNPS and CNDDDB inventories for the Felton and eight surrounding quadrangles identified the special-status plant species with potential to occur in the project area. This evaluation included a review of the habitat requirements for each species, the presence of specialized microhabitats required for such species within the project site, field observations, and review of previous reports.

The field survey was sufficient to determine presence or absence of special-status woody, perennial species and the presence or absence of specialized microhabitats required by several special-status species (i.e., Zayante sandhills, coastal prairie/grassland, limestone outcrops, pine forest, rocky outcrops, or serpentine substrate); however, spring blooming species were not detectable. A small patch of coastal prairie was found in the project area.

Although there are no records of any special status species occurring on site or in the immediate vicinity, the prairie area and the mesic conditions in the bottom of the detention basin may provide suitable habitat for Congdon's tarplant, a special status species.

A list of the special-status plant species observed for on in the project area is provided in [Appendix C-a](#).

7.3.4 Wildlife

To determine the potential occurrence of special-status wildlife species, the CDFW RareFind database (CDFW, 2015) for the Felton and Laurel USGS quadrangles was searched. Common native wildlife expected to inhabit the project site include those that are able to forage in relatively small, fragmented habitat areas not connected to other native habitat areas, and those which can tolerate high human presence in the surrounding developed areas.

Native wildlife that may occasionally utilize the project site include western fence lizard (*Sceloporus occidentalis*), rock dove (*Columba livia*), Anna's hummingbird (*Calypte anna*), Pacific-slope flycatcher (*Empidonax difficilis*), western scrub-jay (*Aphelocoma californica*), American robin (*Turdus migratorius*), and Botta's pocket gopher (*Thomomys bottae*).

Wildlife Surveys

Reconnaissance surveys of the project site were conducted by Ms. Dana Bland, wildlife biologist, on November 30, 2017 and no special-status wildlife species were observed.

Special-Status Wildlife and Invertebrate Species

Special-status wildlife species include those listed, proposed or candidate species by either the Federal or the State resource agencies, as well as those identified as State species of special concern. In addition, all raptor nests are protected by Fish and Game Code, and all migratory bird nests are protected by the Federal Migratory Bird Treaty Act. A list of special-status wildlife species evaluated for their potential presence in the project area is provided in [Appendix C-a](#).

There are no special status wildlife species that are known to occur or may occur within the project area. Arnold surveyed the project site on September 15, 2017 for the Mt. Hermon June beetle, but it was found absent on the project site. Nesting birds may also occur throughout the habitats on the project site. There is no suitable habitat for the remaining special-status wildlife species.

7.3.5 Jurisdictional Waters

Literature Search

The Felton USGS topographic map and the Santa Cruz County Geographic Information System (GIS) were reviewed to discern the presence of any mapped watercourses or waterbodies on the project site. The USFWS National Wetlands Inventory “wetland mapper” was also accessed for any mapped wetland features.

Survey and Delineation of Wetlands and Other Waters of the U.S.

During the site surveys by Biotic Resources Group, field evidence of watercourses or wetland features were sought. Such evidence would include stream flow, a discernable bed and bank, or evidence of ponded water. A focused delineation of Waters of the U.S. was not conducted.

No evidence of any water courses or wetland features were found on the project site. The detention basin was considered a man-made feature and not subject to regulation.

7.4 Applicable Regulations, Plans, and Standards

7.4.1 Federal

Federal Endangered Species Act

The Federal Endangered Species Act (ESA) provisions protect federally listed threatened and endangered species and their habitats from unlawful take and ensure that federal actions do not jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. Under the ESA, “take” is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct.” The U.S. Fish & Wildlife Service’s (USFWS) regulations define harm to mean “an act which actually kills or injures wildlife.” Such an act “may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering” (50 CFR § 17.3).

Critical habitat is defined in Section 3(5)(A) of the ESA as “(i) the specific areas within the geographical area occupied by the species on which are found those physical or biological features (I) essential to the conservation of the species, and (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species upon a determination by the Secretary of Commerce or the Secretary of the Interior (Secretary) that such areas are essential for the conservation of the species.”

The effects analyses for designated critical habitat must consider the role of the critical habitat in both the continued survival and the eventual recovery (i.e., the conservation) of the species in question, consistent with the recent Ninth Circuit judicial opinion, *Gifford Pinchot Task Force v. United States Fish and Wildlife Service*.

Activities that may result in “take” of individuals are regulated by the USFWS. The USFWS produced an updated list of candidate species December 6, 2007 (72 FR 69034). Candidate species are not afforded any legal protection under ESA; however, candidate species typically receive special attention from Federal and State agencies during the environmental review process.

Migratory Bird Treaty Act

Raptors (e.g., eagles, hawks, and owls) and their nests are protected under both Federal and State regulations. The Federal Migratory Bird Treaty Act (MBTA) prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary. This act encompasses whole birds, parts of birds, and bird nests and eggs.

Regulated Habitats

Areas meeting the regulatory definition of “Waters of the U.S.” (Jurisdictional Waters) are subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE) under provisions of Section 404 of the Clean Water Act (1972) and Section 10 of the Rivers and Harbors Act (1899). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as “Waters of the U.S.,” tributaries of waters otherwise defined as “Waters of the U.S.,” the territorial seas, and wetlands (termed Special Aquatic Sites) adjacent to “Waters of the U.S.” (33 CFR, Part 328, Section 328.3).

Construction activities within jurisdictional waters are regulated by the USACE. The placement of fill into such waters must comply with permit requirements of the USACE. No USACE permit would be effective in the absence of State water quality certification pursuant to Section 401 of the Clean Water Act. As a part of the permit process, the USACE works directly with the USFWS to assess potential project impacts on biological resources.

7.4.2 State

California Endangered Species Act

Provisions of California Endangered Species Act (CESA) protect State-listed Threatened and Endangered species. CDFW regulates activities that may result in “take” of individuals (“take” means “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill”). Habitat degradation or modification is not expressly included in the definition of “take” under the California Fish and Wildlife Code. Additionally, the California Fish and Wildlife Code contains lists of vertebrate species designated as “fully protected” (California Fish & Game Code §§ 3511 [birds], 4700 [mammals], 5050 [reptiles and amphibians], 5515 [fish]). Such species may not be taken or possessed, without an exemption issued by CDFW.

In addition to federal and State-listed species, the CDFW also has produced a list of Species of Special Concern to serve as a “watch list.” Species on this list are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Species of Special Concern may receive special attention during environmental review under CEQA, but they do not have statutory protection.

Birds of prey are protected in California under the State Fish and Wildlife Code. Section 3503.5 states it is “unlawful to take, possess, or destroy any birds of prey (in the order Falconiformes or Strigiformes) 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-related 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 “take” by the CDFW.

Under Sections 3503 and 3503.5 of the State Fish and Wildlife Code, activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory nongame bird as designated in the Migratory Bird Treaty Act, or the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or non-game birds protected by the Migratory Bird Treaty Act, or the taking of any non-game bird pursuant to Fish and Wildlife Code Section 3800 are prohibited.

Proposed revisions to Sections 3503 and 3503.5 to clarify the regulations and make them more consistent with the MBTA were posted on August 14, 2015 by the CDFW; one of the revisions removes language regarding nest abandonment caused by projects, to be consistent with MBTA and because it is difficult to determine reasons for nest abandonment at any one site (CDFW 2015).

Regulated Habitats

The State Water Resources Control Board is the State agency (together with the Regional Water Quality Control Boards [RWQCB]) charged with implementing water quality certification in California. The project falls under the jurisdiction of the Central Coast Region of the RWQCB.

The CDFW potentially extends the definition of stream to include “intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams (USGS), 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” (CDFW, 1994).

Activities that result in the diversion or obstruction of the natural flow of a stream; or which substantially change its bed, channel, or bank; or which utilize any materials (including vegetation) from the streambed, may require that the project applicant enter into a Streambed Alteration Agreement with the CDFW.

7.4.3 Local

Interim-Programmatic Habitat Conservation Plan

The *Interim Programmatic Habitat Conservation Plan for the Endangered Mt. Hermon June Beetle and Ben Lomond Spineflower* (IPHCP) was prepared because numerous private landowners in the City of Scotts Valley and the County of Santa Cruz expressed interest in applying for a permit from USFWS for incidental take of the federally endangered MHJB. The landowners have projects on sites likely to be occupied by both MHJB and Ben Lomond spineflower. USFWS has recommended that the City and County together apply for incidental take permits and develop a regional programmatic HCP for the sandhills. The HCP would streamline local, State, and federal permitting processes.

Consequently, USFWS, the City, and the County developed the IPHCP for MHJB and Ben Lomond spineflower for small development projects in areas with existing, dense residential development. The 2011 IPHCP was to be in effect for five years following the issuance of the requested incidental take permits. The IPHCP is only applicable to parcels currently zoned for residential use by the County or City, that are less than or equal to 1.5 acres in size, and that would result in development not exceeding 15,000 square feet (0.34 acres). Therefore, the IPHCP does not apply to the project site.

Scotts Valley General Plan

The following goals, policies and/actions from the Scotts Valley General Plan will avoid or help reduce impacts associated with the project:

- OSP-318 New development proposed in, or adjacent to, areas containing native plant communities shall be carefully planned and provide for the conservation and maintenance of those plants.
- OSP-325 Environmentally sensitive habitat areas and rare or endangered animal species shall be preserved.
- OSP-379 Site planning for development in the City shall protect and enhance the natural environment.

Scotts Valley Tree Protection Regulations

The City of Scotts Valley Zoning Ordinance Section 17.44.080 regulates the removal of protected trees. Section 17.44.080 includes tree protection regulations. Protected trees are defined as:

- Any tree having a main stem or trunk at least 8 inches or greater diameter at breast height (DBH) (25 inches in circumference), located in a hillside residential zone where the slope within 20 feet of where the tree is located exceeds 20 percent;
- Any single-trunk oak tree with a main stem or trunk at least 8 inches DBH (25-inch circumference), or any multi-trunk oak tree with an individual trunk over 4 inches DBH (12-inch circumference);
- Any street tree (defined as any tree within five feet of a public or private street or right of way), regardless of size;
- Any single-trunk tree with a 13-inch or greater DBH (40-inch circumference);
- Any multi-trunk tree with any trunk greater than or equal to 8-inch DBH (25-inch circumference);
- Any tree, regardless of size, required to be planted or preserved as part of a permit approved by the Planning Department, Planning Commission or City Council, or required as a replacement tree for a removed tree; or
- Any Heritage Tree, defined as a tree identified, because of unique quality and/or size, as among the most significant and noteworthy in the city and formally designated by the City Council.

Standard conditions of project approval require the project applicant to implement all measures contained within an arborists report for the protection of existing trees to remain, including but not limited to the required procedures and sequence, required tree replacement, tree preservation and protection, and appraised value of preserved trees in the arborist report.

7.4.4 Other Applicable Regulations, Plans, and Standards

California Native Plant Society Rare Plant Program

The mission of the CNPS Rare Plant Program is to develop current, accurate information on the distribution, ecology, and conservation status of California's rare and endangered plants, and to use this information to promote science-based plant conservation in California. Once a species has been identified as being of potential conservation concern, it is put through an extensive review process. Once a species has gone through the review process, information on all aspects of the species (listing status, habitat, distribution, threats, etc.) are entered into the online CNPS Inventory. The program currently recognizes more than 2,300 plant taxa (species, subspecies and varieties) as rare or endangered in California (CNPS List, 2015).

Vascular plants listed as rare or endangered by the CNPS, but which might not have designated status under State endangered species legislation, are defined as follows:

List 1A – Plants considered by the CNPS to be extinct in California

List 1B – Plants rare, threatened, or endangered in California and elsewhere

List 2 – Plants rare, threatened, or endangered in California, but more numerous elsewhere

List 3 – Plants about which we need more information – a review list

List 4 – Plants of limited distribution – a watch list

In addition to the list designations above, the CNPS adds a Threat Rank as an extension added onto the CNPS List and designates the level of endangerment by a 1 to 3 ranking, with 1 being the most endangered and 3 being the least endangered and are described as follows:

0.1 – Seriously threatened in California (high degree/immediacy of threat)

0.2 – Fairly threatened in California (moderate degree/immediacy of threat)

0.3 – Not very threatened in California (low degree/immediacy of threats or no current threats known)

7.5 Environmental Impacts and Mitigation Measures

7.5.1 Significance Criteria

The following significance criteria for biological resources were derived from the Environmental Checklist in CEQA Guidelines Appendix G. These significance criteria have been amended or supplemented, as appropriate, to address lead agency requirements and the full range of potential impacts related to this project.

An impact of the project would be considered significant and would require mitigation if it would meet one of the following criteria.

- 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 CDFW or USFWS.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS.
- Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to marshes, vernal pools, 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 ordinances.
- Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Communities Conservation Plan (NCCP), or other approved local, regional, or state HCP.

7.5.2 Summary of No and/or Beneficial Impacts

Riparian Habitat or Other Sensitive Natural Community

The 2019 plant surveys concluded that all plant species observed on the project site consist of common native and non-native plant species and conditions similar to those found in the surveys conducted in 2017 and 2018. Furthermore, the biological communities observed were not considered sensitive natural communities or riparian habitat. Thus, construction and operation of the project would not cause an adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS, and therefore there would be no impact.

Habitat Conservation Plan

As stated above, the IPHCP is only applicable, to parcels currently zoned for residential use by the County or City, that are less than or equal to 1.5 acres in size, and that would result in development not exceeding 15,000 square feet (0.34 acres). Because the IPHCP is not applicable to the project site there would be no impacts associated with conflicts with an existing HCP.

Wetlands

As confirmed by Biotic Resources Group, there are no jurisdictional creeks or watercourses or other wetland features on the project site. The detention basin is considered a man-made feature and not subject to regulation. Because the project site has no watercourses within the jurisdiction of either the RWQCB or the USACE, there would be no impact to wetlands.

Wildlife Movement Corridors

The project site is undeveloped consisting of grassland and clusters of acacia and oak trees along the perimeter. No special status bird species have been identified nor are expected to occur in the future on the project site. The project site does not contain any stream channels that provide migratory fish habitat. The project site is not known to, or expected to be part of or contain regionally important terrestrial movement corridors that connect to regional open space areas. Therefore, there would be no impacts to wildlife movement corridors.

7.5.3 Impacts of the Project

Impact BIO-1: Cause a direct or indirect adverse effect on special-status species.

Special-Status Plant Species

A site visit was conducted on May 27, 2019 by Biotic Resources Group to assess the vegetation and to determine any changes in site conditions from the 2017 and 2018 surveys. Plant species observed on the property consisted of common native and non-native species and conditions similar to that previously identified in the 2017 and 2018 surveys. A small patch of coastal prairie was found on the project site, which could provide potential habitat for special status plant species, such as Congdon's tarplant.

To mitigate impacts to the coastal prairie grass, a portion would be salvaged and transplanted to an open space area on the project site. The small patch of coastal prairie would be relocated from east of the proposed Building C to the northwest corner of the project site as shown in [Figure 3-8: Landscape Plan](#). Implementation of [MM BIO-1.1](#) and [MM BIO-1.2](#) would reduce the potential impact to the coastal prairie grass to a less than significant level by transplanting the native grasses to a suitable protected area on the project site.

Special-Status Wildlife, Nesting Birds, and Invertebrate Species

There are no special status wildlife species that are known to occur or may occur within the project area. As part of the previous Oak Creek Park Mixed-Use project, in August 2002, Dr. Richard Arnold conducted an entomological habitat assessment on this property and prepared a report concluding that the project site does not have the characteristics (i.e. Zayante Sands and associated native plant communities) necessary to support neither the Mt. Hermon June beetle (*Polyphylla barbata*) nor the Zayante band winged grasshopper (*Trimerotropis infantis*). A project referral was sent to U.S. Fish & Wildlife Service (USFWS, which is the federal agency that regulates permit requirements for the take of protected species) and no response was received. An update letter was prepared by Dr. Arnold in September of 2017 confirming that habitat conditions on the project site have not changed during the past 15 years since the previous study and he did not observe any individuals of the MHJB (See [Appendix C](#)).

The project site was also surveyed by Biotic Resources Group (See [Appendix C](#)) to evaluate any potential project impacts to sensitive biotic resources, including habitats, plants, or wildlife species. Sensitive resources found on the site were limited to oak tree groves and coastal prairie. Although this habitat is considered sensitive and imperiled by CDFW, the patch on the subject property is a small (~1,000 sf), remnant patch surrounded by non-native grassland. Regardless, the prairie may provide habitat for special status plant species, pending the results of a spring season plant survey. The mesic conditions in the bottom on the detention basin may provide suitable habitat for Congdon's tarplant, a special status species.

As shown in the Landscape Plan / Revegetation Plan prepared for the project (Ellen Cooper Landscape Architect, revision 9-20-19), this patch of coastal prairie shall be salvaged and transplanted to the northwest corner of the project site, just north of the proposed surface

parking lot. This effort will be executed under the supervision of the Biotic Resources Group. Project approvals will incorporate a condition of approval to ensure compliance. Implementation of this design feature will reduce impacts to less than significant and no mitigation is required.

According to the Biotic Report, there is no suitable habitat for roosting bats (e.g., no crevices in the few oak trees) and no woodrat houses or signs of any were observed during the November 2017 survey. It is unlikely that there is enough forage for woodrats to colonize this non-native tree grove. It is also unlikely that bats would roost in the acacia trees, which provide no cover for bats, even for foliage roosting bats. Also, the site has limited forage for bats. As such, the Biotic Report concluded that no bats or woodrats would be impacted by the project.

Nesting birds (protected by MBTA) may also occur in the tree groves on the project site. If nesting birds are present during demolition or construction activities, active nests may be destroyed resulting in the injury or death of eggs or nestlings. Given that the project would include the removal of trees currently located on the project site, there is a potential nesting birds may be harmed during these activities. This impact would be reduced to a less-than-significant level with implementation of **MM BIO-2.1**.

Mitigation for Impact BIO-1.1

MM BIO-1.1 Focused Plant Surveys

At least one year prior to issuance to grading permits, and/or any clearing, grading, or excavation work on the project site, the project applicant shall have a qualified biologist conduct a spring season plant survey, with a focus on the coastal prairie and the bottom of the detention basin. The survey shall ascertain whether the site supports any special status plant species. The survey findings shall be subject to review by the City of Scotts Valley. If no special status species are found, no additional actions are required. If special status species are found on site, the applicant shall confer with regulating agencies (i.e., City, CDFW, and/or USFWS) on measures to avoid, minimize, or compensate for the impact. A mitigation plan shall be prepared and implemented that outlines provides preservation, salvage, or presents other compensation for the impact, such that impacts are reduced to a less than significant level.

Impact BIO-2: Cause a direct or indirect adverse effect on native trees and associated nesting bird sites.

Direct impacts to trees would occur through removal and during project construction. Indirect impacts to trees include disturbance to trees from grading and construction activities that may affect trees or their roots directly from mechanical damage or indirectly due to alterations in soil structure, drainage, microbiology, etc., and tree removal for clearance of land for construction and grading.

The project would result in the removal of trees, including a large group of acacia trees, six Coast live oaks, and one Ponderosa pine. In addition, six immature ash trees and four sycamore trees growing behind the existing sidewalk may also require removal because these trees may be in conflict with the sidewalk and landscaping proposed for the development. All six Coast live oaks and one Ponderosa pine on the project site are proposed to be removed are protected. The group of acacia trees to be removed are not protected by Scotts Valley ordinances. **Table 7 2: Tree Inventory** lists the trees included in the survey area and those proposed for removal.

Table 7-2: Tree Inventory

Species	Trees Identified in Arborist Report	Trees Proposed for Removal
Ash	6	6
Sycamore	4	4
Coast Live Oak	6	6
Group of Acacia	At least 200	At least 200
Ponderosa Pine	1	1

Source: Maureen Hamb, 2018

The loss of trees regulated by the City’s Tree Protection Regulations would require a Tree Removal Permit from the City processed concurrently with the other requested entitlements. Pursuant to the Tree Protection Regulations, the Tree Removal Permit, inclusive of Planning Commission approval for removal of Heritage Trees, if required, would be obtained and submitted to Scotts Valley Building Department prior to approval of Improvement Plans, issuance of grading permits, and/or any clearing, grading, or excavation work on the project site.

Per the City’s Tree Protection Regulations, the applicant would be required to provide for the planting of two trees for each “protected” tree removed (2:1 ratio). Because the project would remove seven protected trees, a minimum of 14 trees would be required to be replanted. As shown in **Figure 7-2: Landscape Plan**, the project would replace the protected trees at a 3:1 ratio for a total of 21 trees, or seven tree more than required the City’s Tree Protection Regulations. In total, 136 trees will be planted, as shown in **Figure 7-2: Landscape Plan**.

Because the project would exceed the tree replacement requirements as defined in the City’s Tree Protection Regulations per Section 17.44.080 of the City of Scotts Valley Zoning Ordinance, impacts from tree removal would be less than significant.

Tree and vegetation removal may also affect nesting birds. The Biotic Report concluded that nesting birds (protected by the MBTA) may occur within the project site (Biotic Resources Group, 2017). Removal of trees or understory vegetation has the potential to harm nesting

birds. This impact would be reduced to a less-than-significant level with implementation of **MM BIO-2**.

MM BIO-2.1 Avoid Nesting Birds

The applicant shall schedule tree removal to occur between September 1 and March 1 of any given year, which is outside the bird nesting season for Central California Coast to avoid impacting nesting birds, if present. Because this tree grove is adjacent to very busy roadways, it would be difficult to detect nesting birds by listening for their vocalizations; the dense acacia vegetation also makes it difficult to ascertain visually if any small bird nests such as hummingbirds are present. Therefore, this measure to avoid impacts to nesting birds, is the only practical method to avoid disturbance or destruction of active bird nests, if any are present.

7.5.4 Cumulative Impact Analysis

The geographic extent for the analysis of cumulative impacts related to biological resources includes the Santa Cruz County region, which contains suitable and occupied habitat of Mt. Hermon June Beetle, Zayante Band-winged Grasshopper, Santa Cruz kangaroo rat, Bonny Doon (silver leaf) manzanita, Ben Lomond spineflower, nesting birds, and native trees. This area may also support core, critical, or unique populations essential to recovery and long-term survival of these species.

Impact BIO-3: Contribute to cumulatively considerable effects on biological resources.

As described above, the project would result in the removal of a small patch of coastal prairie on the project site that could provide potential habitat for special status species. To mitigate impacts to the coastal prairie grass, a portion would be salvaged and transplanted to an open space area on the project site. Implementation of **MM BIO-1.1**, **MM BIO-1.2** would reduce the project's contribution to less-than-cumulatively considerable.

Regarding the effects of tree removal or construction near preserved trees, as stated above, the project would result in a loss of a group of acacia trees and seven protected trees, which would be mitigated by replanting at a 3:1 ratio, fulfilling the City's tree replanting requirement of 2:1 ratio for protected trees. Past, present, and reasonably foreseeable future projects within the City of Scotts Valley are also required to adhere to the provisions of the Tree Protection Ordinance. Therefore, cumulative impacts to native trees would be less than significant. The project's impacts to nesting birds would be reduced through adherence to **MM BIO-2.1**. Although past, present, and reasonably foreseeable future projects may result in impacts to nesting birds, such impacts would be site-specific and could be mitigated through adherence to similar standard mitigation. As such, cumulative impacts would be less than significant.

7.5.5 Level of Significance after Mitigation

Table 7 3: Summary of Impacts and Mitigation Measures – Biological Resources summarizes the environmental impacts, significance determinations, and mitigation measures for the project with regard to biological resources.

Table 7-3: Summary of Impacts and Mitigation Measures – Biological Resources

Impact	Impact Significance	Mitigation
Impact BIO-1: Cause a direct or indirect adverse effect on special-status invertebrate species.	Less than Significant with Mitigation	MM-BIO-1.1: Focused Plant Surveys
Impact BIO-2: Cause a direct or indirect adverse effect on native trees and associated nesting bird sites.	Less than Significant with Mitigation	MM-BIO-2.1: Avoid Nesting Birds
Impact BIO-3: Contribute to cumulatively considerable effects on biological resources.	Less than Significant with Mitigation	MM-BIO-1.1: Focused Plant Surveys MM-BIO-2.1: Avoid Nesting Birds

7.6 References

Biotic Resources Group. 2017. Biotic Report. Report prepared for Oak Creek Park Development.

Biotic Resources Group. 2018. RE: Oak Creek/Glen Canyon Road Development: Results of Supplemental Plant Survey.

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Calflora. 2009. Calflora: Information on California plants for education, research and conservation. Available at: <http://www.calflora.org>

CDFW (California Department of Fish and Wildlife). 2009. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Communities. Available at: http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/Protocols_for_Surveying_and_Evaluating_Impacts.pdf

_____. 2000. Guidelines for Assessing the Effects of Projects on Rare, Threatened, and Endangered Plants and Natural Communities. Available at: <http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/guideplt.pdf>.

- _____. 2015. Notice of proposed rulemaking: Nesting regulations (Section 681, Title 14, CCR). <https://www.wildlife.ca.gov/Notices/Regulations/Nesting-Birds>
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- CNPS (California Native Plant Society). 2017. Inventory of Rare and Endangered Plants (online edition, v7-09d). Available at: <http://www.cnps.org/inventory>
- _____. 2008. CNPS Policy – The use of herbicide in situations where native vegetation may be affected. Available at: http://www.cnps.org/cnps/conservation/pdf/Herbicide_policy.pdf
- _____. 2001. CNPS Botanical Survey Guidelines. Available at: http://www.cnps.org/cnps/rareplants/pdf/cnps_survey_guidelines.pdf
- Natural Resources Conservation Service (NRCS). 2019. Soil Survey of Santa Cruz County, California. Available at: <http://www.ca.nrcs.usda.gov/mlra02/stacruz/index.html>



Source: Biotic Resources Group, 2017

Figure 7-1: Vegetation Map

Oak Creek Park
Draft EIR

8 Cultural Resources

8.1 Introduction

This section describes effects on cultural resources that could be caused by implementation of the project. The following discussion addresses existing environmental conditions in the project area, identifies and analyzes environmental impacts, and recommends measures to reduce or avoid adverse impacts anticipated from project construction, and operation. In addition, existing laws and regulations relevant to cultural and paleontological resources are described. In some cases, compliance with these existing laws and regulations would serve to reduce or avoid certain impacts that might otherwise occur with implementation of the project.

8.1.1 Cultural Resources Methodology

This section is based upon, and summarizes, the following resources:

- Cultural Resource Evaluation for the Oak Creek Business Center Parcel, Archaeological Resource Management, 1989.
- Extended Phase I Archaeological Assessment, Albion, February 2020.
- City of Scotts Valley, *General Plan*, 1994.

8.1.2 Scoping Issues Addressed

During the scoping period for the project, no written comments by agencies and the public regarding cultural resources were received.

8.2 Environmental Setting

This section presents information on cultural resources conditions in the project site and vicinity. The current condition and quality of cultural resources are used as the baseline against which to compare impacts of the project.

8.2.1 Historical Resources

The project site is vacant and does not contain any historic resources.

8.2.2 Ethnographic Setting

The Ohlone Indians inhabited the San Francisco Bay region from the Golden Gate south to Monterrey since at least A.D. 500, and the earlier radiocarbon dates of pre-Ohlone natives reach 12,000 years before present (B.P.). The Ohlone were hunter-gatherers who settled in semi-sedentary villages organized in basic tribelets consisting of 100 to 250 members. Each tribelet was an autonomous unit with three or more permanent villages, as well as smaller villages in close proximity. Acorns were a primary food source, and other important resources included plant foods, land animals, and the marine sources of the Monterey Bay (such as

salmon and steelhead). Shellfish processing sites were established above shores where abalone, mussels, clams, and tide pool resources were gathered.

The Ohlone were also semi-agricultural. They pruned and seeded some plants seasonally, stored acorns (and other foods) for later consumption, and burned woodland grassbelts to increase animal production.

8.2.3 Prehistoric Setting

An archaeological sensitivity map was prepared by the City as part of the 1994 General Plan to help guide development planning. There are two zones of primary concern, the low sensitivity zone and the high and moderate sensitivity zone. Archaeological sites dating from prerecorded history are known to have existed based on survey records of the regional site survey at Sonoma State University from a ground reconnaissance of 95 percent of the City completed in 1977 for the wastewater facilities plan and reports prepared for the City (City of Scotts Valley, 1994). As shown in Figure 8-1: Archaeological Sensitivity Map, the project site is located within a high and moderate sensitivity zone, which are zones generally found in more level areas. Low sensitivity zones are generally found in the upland portions of the City, away from fresh water.

8.3 Applicable Regulations, Plans, and Standards

8.3.1 Federal

National Register of Historic Places Eligibility

The National Historic Preservation Act of 1966 (as amended through 2000) authorizes the National Register of Historic Places (NRHP), a program for the preservation of historic properties (“cultural resources”) throughout the Nation. The eligibility of a resource for NRHP listing is determined by evaluating the resource using criteria defined in 36 CFR 60.4 as follows:

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, association, and:

- That are associated with events that have made a significant contribution to the broad patterns of our history;
- That are associated with the lives of persons significant in our past;
- That embody the distinctive characteristics of a type, period, or method of construction;
- That represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or,
- That have yielded, or may be likely to yield, information important to prehistory or history.

Unless a site is of exceptional importance, it is not eligible for listing in the NRHP until 50 years after it was constructed.

All properties change over time. Therefore, it is not necessary for a property to retain all its historic physical features or characteristics in order to be eligible for listing on the NRHP. The property must, however, retain enough integrity to enable it to convey its historic identity; in other words, to be recognizable to a historical contemporary. The National Register recognizes seven aspects or qualities that, in various combinations, define integrity:

Location – the place where the historic property was constructed or the place where the historic event occurred.

Design – the combination of elements that create the form, plan, space, structure, and style of a property.

Setting – the physical environment of a historic property.

Materials – the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.

Workmanship – the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.

Feeling – a property’s expression of the aesthetic or historic sense of a particular period of time.

Association – the direct link between an important historic event or person and a historic property (National Park Service, 1990).

To retain historic integrity a property will always possess several, and usually most, of these aspects. In order to properly assess integrity, however, significance (why, where, and when a property is important) must first be fully established. Therefore, the issues of significance and integrity must always be considered together when evaluating a historic property.

8.3.2 State

CEQA, Archaeological Resources

CEQA and the CEQA Guidelines contain specific standards for determining the significance of impacts to archaeological sites (PRC §21083.2; 14 CCR §15064.5(c)). If the lead agency determines that the project may have a significant effect on unique archaeological resources, the EIR must address those archaeological resources (PRC §21083.2(a)). A “unique archaeological resource” is defined as an “archaeological artifact, object, or site” that, without merely adding to the current body of knowledge:

Contains information needed to answer important scientific research questions and in which there is a demonstrable public interest;

Has a special or particular quality such as being the oldest of its type or the best available example of its type; or

Is directly associated with a scientifically recognized important prehistoric or historic event or person. (PRC §21083.2(g)).

Under CEQA, significant impacts on non-unique archaeological resources need not be addressed in an EIR. (PRC §21083.2(a), (h)).

The limitations in PRC §21083.2 relating to unique archaeological resources do not apply to archaeological sites that qualify as “historical resources.” (PRC §21083.2(l)). If a lead agency finds that an archaeological site is a historical resource, impact assessment is governed by PRC §21084.1, which provides standards for identification of historical resources (14 CCR §15064.5(c)(2). See §§13.58, 20.94-20.98). The CEQA Guidelines also provide that public agencies should seek to avoid effects that could damage a "historical resource of an archaeological nature" when it is feasible to do so (14 CCR §15126.4(b)(3)).

CEQA, Historic Resources

CEQA and the CEQA Guidelines contain specific standards for determining the significance of impacts on “historical resources” (PRC §21084.1, 14 CCR §15064.5). A resource listed in the California Register of Historical Resources, or determined by the State Historical Resources Commission to be eligible for listing in the Register, must be treated as an “historical resource” for purposes of CEQA. PRC §21084.1; 14 CCR §15064.5(a)(1). A resource designated as historically significant in a local register of historical resources, or identified as significant in an approved historical resources survey, is presumed to be significant. The presumption of significance may be overcome if the agency concludes, based on a preponderance of the evidence, that the site is not historically or culturally significant (PRC §21084.1; 14 CCR §15064.5(a)(2)).

A lead agency may also find that a site that does not meet any of these criteria should be treated as a historical resource under CEQA (PRC §21084.1; 14 CCR §15064.5(a)(4)). A lead agency may find that “any object, building, structure, site, area, place, record, or manuscript” is historically significant or significant in the “cultural annals of California” provided that its determination is “supported by substantial evidence in light of the whole record” (14 CCR §15064.5(a)(3)). The guidelines also note that a resource ordinarily should be considered historically significant if it meets the criteria for listing on the California Register of Historical Resources (14 CCR §15064.5(a)(3)).

8.3.3 Local

Scotts Valley General Plan

The following goals, policies and/actions from the Scotts Valley General Plan will avoid or help reduce impacts associated with the project:

- OPS-398 The archaeological sensitivity zone map shall be used, along with other appropriate data, to evaluate whether archaeological resources are threatened by proposed development projects.

- OSA-399 All proposed development within high and moderate sensitivity zones shall be required to produce an archaeological field reconnaissance and report for approval by the Cultural Resource Preservation Commission.
- OSA-400 Through the permit process, new development which could adversely affect archaeological resources shall be required to provide mitigation measures that avoid or substantially reduce the significant environmental effect prior to project approval.

Scotts Valley Municipal Code

Section 17.44.130 – Cultural Resource Preservation identifies "cultural resources" and "cultural resource sites" as unique, nonrenewable, irreplaceable and significant areas containing evidence of past human activity; and that such sites constitute a precious prehistoric and historic heritage, which is (or is in danger of) rapidly disappearing as a result of public and private land development and/or modification activities. It is the policy of the city to preserve and protect these resources because of their cultural, educational and scientific values; and to recognize that these resources are rightfully the legacy of future generations.

In the event bones or other human remains or artifacts clearly associated with a human interment are discovered, specific procedures are identified in the ordinance that require notification to the City and Santa Cruz County sheriff coroner and cessation of ground-disturbance activity. Should the discovery be of potential importance to living Native Americans, a representative of the local Native American community shall be given an opportunity to inspect the find and submit comments regarding its disposition.

8.4 Environmental Impacts and Mitigation Measures

8.4.1 Significance Criteria

The following significance criteria for cultural resources were derived from the Environmental Checklist in CEQA Guidelines Appendix G. These significance criteria have been amended or supplemented, as appropriate, to address lead agency requirements and the full range of impacts related to the project.

An impact of the project would be considered significant and would require mitigation if it would meet one of the following criteria.

- Cause a substantial adverse change in the significance of a historic resource (CEQA Guideline 15064.5).
- Cause a substantial adverse change in the significance of an archaeological resource (CEQA Guideline 15064.5).
- Disturb any human remains, including those interred outside of formal cemeteries.

8.4.2 Summary of No and/or Beneficial Impacts

The project site is vacant and therefore would have no impact to historic resources.

8.4.3 Impacts of the Project

Impact CR-1: Cause a substantial adverse change to a known archaeological resource.

The General Plan Conservation & Open Space Figure OS-2, Archaeological Sensitivity Zones, shows the property in the "High and Moderate Archaeological Sensitivity" designation. The GP policies (OSP-398-400) allow consideration of a required preliminary archaeological report. However, City staff use a more detailed updated map that shows the project site as "Moderate Sensitivity." For this designation, a report is not required per SVMC section 17.44.130 and the City's standard condition of approval requiring on-site monitoring is required.

Furthermore, an archaeological evaluation, dated October 24, 1989, was performed as part of the previous Oak Creek Park Business Center project and no resources were found on the project site. The report was approved by the City's Cultural Resources Committee as adequate on 12/20/89.

Because there is no past evidence of known archaeological resources, and the City will require on-site project monitoring, impacts will be less than significant.

Impact CR-2: Inadvertently disturb human remains.

No known human remains are located on the project site. Pursuant to section 7050.5 of the Health and Safety Code, if human remains are discovered, there shall be no further excavation or disturbance of the discovery site or any nearby area reasonably suspected to overlie adjacent human remains until the project applicant has complied with the provisions of State CEQA Guidelines Section 15064.5(e).

In general, these provisions require that the County Coroner be notified immediately. If the remains are found to be Native American, the County Coroner is required to notify the Native American Heritage Commission within 24 hours. The most likely descendant of the deceased Native American is notified by the Commission and given the chance to make recommendations for the remains. If the Commission is unable to identify the most likely descendent, or if no recommendations are made within 24 hours, remains may be reinterred with appropriate dignity elsewhere on the property in a location not subject to further subsurface disturbance. If recommendations are made and not accepted, the Native American Heritage Commission will mediate the problem. With implementation of existing regulations, the impact would be less than significant.

8.4.4 Cumulative Impact Analysis

The geographic extent of cumulative impacts to cultural resources is highly dependent on the resource under discussion. For example, a cumulative impact to a historic architectural district

would extend across the district, while the cumulative impact to individual archaeological or paleontological resources may accumulate across the City of Scotts Valley, depending on the nature of the resources.

Impact CR-3: Contribute to cumulatively considerable effects on cultural resources.

The project, in combination with past, present, and reasonably foreseeable future projects, could result in significant impacts to archaeological resources. However, projects located in an archaeologically sensitive areas are required to conduct archaeological monitoring during construction, which would reduce cumulative impacts to a less-than-significant level. Project-level impacts to human remains would be less than significant. These standard regulatory requirements and procedures are required of other present and reasonably foreseeable future projects, and cumulative impacts would be less than significant.

8.4.5 Level of Significance after Mitigation

Table 8-1: Summary of Impacts and Mitigation Measures – Cultural Resources summarizes the environmental impacts, significance determinations, and mitigation measures for the project with regard to cultural resources.

Table 8-1: Summary of Impacts and Mitigation Measures – Cultural Resources

Impact	Impact Significance	Mitigation
Impact CR-1: Cause a substantial adverse change to a known archeological resource.	Less than significant	None required
Impact CR-2: Inadvertently disturb human remains.	Less than significant	None required
Impact CR-3: Contribute to cumulatively considerable effects on cultural resources.	Less than significant	None required

8.5 References

- Cultural Resource Evaluation for the Oak Creek Business Center Parcel, Archaeological Resource Management, 1989.

9 Geology & Soils

9.1 Introduction

This section describes effects on geology, soils, and mineral resources that would be caused by the project. Information used to prepare this section came from the following resources:

- City of Scotts Valley, General Plan, 1994.
- Updated Geotechnical Investigation for the Oak Creek Park Project for Granum Holdings at Mt. Hermon Road at Scotts Valley Drive prepared by Haro, Kasunich and Associates, Inc., 2018.
- Geologic literature from the U.S. Geological Survey and California Geological Survey.
- Geologic and soils GIS data.

9.2 Scoping Issues Addressed

During the scoping period for the project, no written comments by agencies and the public regarding geology, soils, and mineral resources were received.

9.3 Environmental Setting

This section presents information on geology, soils conditions, and mineral resources in the project area. The regional setting provides information on the baseline conditions in the project region and describes baseline conditions for geology, mineral resources, and soils.

9.3.1 Regional Setting

The City of Scotts Valley is located in the south-central Santa Cruz Mountains in a seismically active region influenced by numerous faults. Major faults in the area include the Zayante Fault, San Andreas Fault, Butano Fault, and San Gregorio Fault. The Zayante Fault is located approximately 1.5 miles north of the City and is the closest major fault. The Zayante Fault is tied into the San Andreas Fault system and is capable of producing earthquakes of magnitude 7.4 on the Richter scale (Santa Cruz County, 2009).

9.3.2 Project Setting

Topography and Slope Stability

Topographically, the project site is on a hilly terrain. The property is currently vacant and slopes upward from Mt. Hermon and Glen Canyon roads north and east to the rear yards of single-family homes on Lucia Lane. The project site is approximately 544 feet above mean sea level (AMSL) in the northeastern portion, and approximately 500 feet AMSL in the southern portion. Camp Evers Creek crosses Mt. Hermon Road to the south of the project site.

Geology

The geology in the Scotts Valley area consists of crystalline basement rock overlain by a Tertiary-aged sedimentary sequence. The crystalline basement rock that underlies the project area primarily comprises granite and quartz diorite of Cretaceous geologic age. The Tertiary-aged sedimentary sequence includes the following geologic units in order from oldest to youngest: Locatelli Formation, Butano Sandstone, Lompico Sandstone, Monterey Formation, Santa Margarita Sandstone, Santa Cruz Mudstone, Purisima Formation, and terrace deposits and alluvium.

Faults and Seismicity

The seismicity of central California is dominated by the north-northwest trending San Andreas Fault system and east-west crustal shortening of the Coast Ranges. Both systems respond to strain produced by the relative motions of the Pacific and North American Tectonic Plates. This strain is relieved by right-lateral strike-slip faulting on the San Andreas and related faults, left-lateral strike slip on the Garlock fault, and by vertical, reverse-slip or left-lateral strike-slip displacement on faults in the Coast Ranges. The effects of this deformation include mountain building, basin development, deformation of Quaternary marine terraces, widespread regional uplift, and generation of earthquakes.

The Coast Ranges are characterized by numerous geologically young faults. These faults can be classified as historically active, active, potentially active, or inactive, based on the following criteria (CGS, 1999):

Faults that have generated earthquakes accompanied by surface rupture during historic time (approximately the last 200 years) and faults that exhibit aseismic fault creep are defined as Historically Active.

Faults that show geologic evidence of movement within Holocene time (approximately the last 11,000 years) are defined as Active.

Faults that show geologic evidence of movement during the Quaternary time (approximately the last 1.6 million years) are defined as Potentially Active.

Faults that show direct geologic evidence of inactivity during all of Quaternary time or longer are classified as Inactive.

Although it is difficult to quantify the probability that an earthquake will occur on a specific fault, this classification is based on the assumption that if a fault has moved during the Holocene epoch, it is likely to produce earthquakes in the future. Blind thrust faults do not intersect the ground surface, and thus they are not classified as active or potentially active in the same manner as faults that are present at the earth's surface. Blind thrust faults are seismogenic structures and thus the activity classification of these faults is predominantly based on historic earthquakes and microseismic activity along the fault. Periodic earthquakes accompanied by surface displacement are expected to continue in the study area through the

lifetime of the project; therefore, the effects of strong ground shaking and fault rupture are of concern to safe operation of the project and associated facilities.

Active regional faults capable of producing significant ground shaking at the project site are strike-slip faults associated with the San Andreas Fault System and reverse and blind thrust faults associated with the compressional faulting and folding of the Coast Ranges. As shown in [Figure 9-1: Regional Fault Zones](#) there are no active faults are mapped on the project site. Active faults in the vicinity of the project site that are significant potential seismic sources are presented in [Table 9 1: Regional Faults and Seismicity](#).

Table 9-1: Regional Faults and Seismicity

Fault Segment	Distance from Project Site (miles)	Direction from Site	Maximum Characteristic Magnitude
San Andreas	7.5	Northeast	8.0
Zayante-Vergeles	4.5	Northeast	7.4
Butano	4	Northeast	6.4
San Gregorio	15.5	Southwest	7.0

Source: Kleinfelder, 1997

San Andreas Fault

The San Andreas Fault zone is located approximately 7.5 miles northeast of the project site. The San Andreas Fault is active and represents a major seismic hazard in northern California. The San Andreas Fault zone extends nearly the entire length of California and marks the boundary between the North American plate to the east and the Pacific plate to the west. Historical earthquakes along the San Andreas fault and its branches have caused significant seismic shaking in the Monterey Bay area. The two largest historically recent earthquakes on the San Andreas to affect the area were the moment magnitude (Mw) 7.9 San Francisco earthquake of April 1906 and the Mw 6.9 Loma Prieta earthquake of October 1989. The San Francisco earthquake caused severe seismic shaking and structural damage to many buildings in the Monterey Bay area. The Working Group on Northern California Earthquake Potential (NCEP) estimates that the San Andreas - 1906 Segment experiences earthquakes of comparable magnitudes at intervals of about 200 years.

Zayante-Vergeles Fault

The Zayante-Vergeles fault is located approximately 4.5 miles northeast of the project site. The Zayante fault lies west of the San Andreas Fault and trends about 50 miles northwest from the “Watsonville lowlands” into the Santa Cruz Mountains. The southern extension of the Zayante fault, known as the Vergeles fault, merges with the San Andreas Fault south of the City of San Juan Bautista in San Benito County.

The Zayante-Vergeles fault has a long, well-documented geological history of vertical movement, accompanied by right-lateral, strike-slip movement. Stratigraphic and geomorphic evidence indicates the Zayante-Vergeles fault has undergone late Pleistocene and Holocene movements and is considered potentially active. The NCEP considers it capable of generating a Mw 6.8 earthquake with an effective recurrence interval of 10,000 years.

Butano Fault

The Butano fault is located approximately four miles northeast of the project site. The Butano fault is tied to the San Andres fault system and is capable of producing a major earthquake of Mw 6.4.

Seal Cove-San Gregorio Fault

The Seal Cove-San Gregorio fault skirts the coastline of Santa Cruz County northward from Monterey Bay, and trends onshore at Point Año Nuevo. Northward from Año Nuevo, it passes offshore again, to connect with the San Andreas fault near Bolinas. Southward from Monterey Bay, it may trend onshore north of Big Sur to connect with the Palo Colorado fault, or continue southward through Point Sur to connect with the Hosgri Fault in south-central California. Based on these two proposed correlations, the San Gregorio Fault zone has a length of at least 100 miles and possibly as much as 250 miles.

Surface Fault Rupture

Fault rupture is the surface displacement that occurs when movement on a fault deep within the earth breaks through to the surface. The Alquist-Priolo Earthquake Fault Zoning Act delineates fault rupture zones approximately 1,000 feet wide, or 500 feet on either side of an active fault trace. Fault rupture and displacement almost always follows preexisting faults, which are zones of weakness; however, not all earthquakes result in surface rupture, i.e., earthquakes that occur on blind thrusts do not result in surface fault rupture. Rupture may occur suddenly during an earthquake or slowly in the form of fault creep. In addition to damage cause by ground shaking from an earthquake, fault rupture is damaging to buildings and other structures due to the differential displacement and deformation of the ground surface that occurs from the fault offset leading to damage or collapse of structures across this zone. Fault rupture displacements in large earthquakes can range from several feet to greater than 15 feet, i.e., displacement on the San Andreas Fault in the 1857 M 7.9 Fort Tejon earthquake was at least 18 feet (Scharer, 2010).

No known faults pass through or adjacent to the project site. Therefore, there is no potential of surface fault rupture of a known fault on or within the vicinity of the project site.

Seismic Ground Shaking

An earthquake is classified by the amount of energy released, which traditionally has been quantified using the Richter scale. Currently, however, seismologists most commonly use the Moment Magnitude (Mw) scale because it provides a more accurate measurement of the size of major and great earthquakes. For earthquakes of less than Mw 7.0, the Moment and Richter

Magnitude scales are nearly identical. For earthquake magnitudes greater than M 7.0, readings on the Moment Magnitude scale are slightly greater than a corresponding Richter Magnitude.

The intensity of the seismic shaking, or strong ground motion, during an earthquake is dependent on the distance between the project area and the epicenter of the earthquake, the magnitude of the earthquake, and the geologic conditions underlying and surrounding the project area. Earthquakes occurring on faults closest to the project area would most likely generate the largest ground motion.

Based on the proximity of active faults in the Scotts Valley area, the project site is subject to seismic ground shaking.

Liquefaction

Liquefaction tends to occur in loose, saturated, fine-grained sands, coarse silts, or clays with low plasticity. The liquefaction process typically occurs at depths less than 50 feet below the ground surface, although liquefaction can occur at deeper intervals, given the right conditions. The most susceptible zone occurs at depths shallower than 30 feet below the ground surface. For liquefaction to occur, there must be the proper soil type, soil saturation, and cyclic accelerations of sufficient magnitude to progressively increase the water pressures within the soil mass. Non-cohesive soil shear strength is developed by the point-to-point contact of the soil grains. As the water pressures increase in the void spaces surrounding the soil grains, the soil particles become supported more by the water than the point-to-point contact. When the water pressures increase sufficiently, the soil grains begin to lose contact with each other resulting in the loss of shear strength and continuous deformation of the soil where the soil begins to liquefy.

Liquefaction can lead to several types of ground failure, depending on slope conditions and the geological and hydrological settings, of which the four most common types of ground failure are: 1) lateral spreads, 2) flow failures, 3) ground oscillation and 4) loss of bearing strength.

Based on a review of regional liquefaction maps, the project site is classified as having a low potential for liquefaction.

Soils

Soils within the developed portion of the project site are categorized by the USDA Natural Resource Conservation Service as Danville loam, Elder sandy loam, and Pfeiffer gravelly sandy loam. Approximately 87.2 percent of the project site comprises of Danville loam, approximately 4.4 percent of the project site compromises of Danville loam, and the remaining approximate 8.4 percent comprises of Pfeiffer gravelly sandy loam (NRCS, 2020).

Mineral Resources

There are no mines or quarries within 1,000 feet of the project site. The project site is not within a known mapped oil or gas field.

9.3.3 Paleontological Resources Evaluation

Based on the soil characteristics on the project site, the likelihood of paleontological resources on the project site is now, and therefore a separate evaluation was not prepared. As described below, the project includes several conditions of approval that would address impacts to cultural resources, which includes paleontological resources, should they be discovered during project construction.

9.4 Applicable Regulations, Plans, and Standards

9.4.1 Federal

International Building Code

Published by the International Code Council, the scope of this code covers major aspects of construction and design of structures and buildings, except for three-story one- and two-family dwellings and town homes. The 2012 International Building Code replaced the 1997 Uniform Building Code, and it contains provisions for structural engineering design. Published by the International Conference of Building Officials, the 2012 International Building Code addresses (IBC) addresses the design and installation of structures and building systems through requirements that emphasize performance. The IBC includes codes governing structural as well as fire- and life-safety provisions covering seismic, wind, accessibility, egress, occupancy, and roofs.

9.4.2 State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act, Public Resources Code (PRC), Section 2621–2630 (formerly the Special Studies Zoning Act), regulates development and construction of buildings intended for human occupancy to avoid the hazard of surface fault rupture. This Act categorizes faults as active, potentially active, and inactive. Historic and Holocene age faults are considered active, Late Quaternary and Quaternary age faults are considered potentially active, and pre-Quaternary age faults are considered inactive. These classifications are qualified by the conditions that a fault must be shown to be “sufficiently active” and “well defined” by detailed site-specific geologic explorations to determine whether building setbacks should be established.

The Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act, PRC, Sections 2690–2699, of 1990 directs the California Department of Conservation, Division of Mines and Geology [now called California Geological Survey (CGS)] to delineate Seismic Hazard Zones. The purpose of the act is to reduce the threat to public health and safety and to minimize the loss of life and property by identifying and mitigating seismic hazards. Cities, counties, and State agencies are directed to use seismic hazard zone maps developed by CGS in their land-use planning and permitting processes. The

act requires that site-specific geotechnical investigations be performed prior to permitting most urban development projects within seismic hazard zones.

California Building Code

The California Building Code, Title 24, Part 2 (CBC, 2013) provides building codes and standards for design and construction of structures in California. The 2013 CBC is based on the 2012 International Building Code with the addition of more extensive structural seismic provisions.

Chapter 16 of the CBC contains definitions of seismic sources and the procedure used to calculate seismic forces on structures. Chapter 33 of the CBC contains requirements relevant to the construction of underground transmission lines. The Scotts Valley Building Department would review the permit application for the project to ensure compliance with the CBC.

California Building Standards Code

The California Building Code (CBC) is another name for the body of regulations known as the California Code of Regulations (CCR), Title 24, Part 2, which is a portion of the California Building Standards Code and establishes minimum requirements for a buildings structural strength and stability to safeguard the public health, safety and general welfare. Title 24 is assigned to 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.

Published by the International Conference of Building Officials, the UBC is a widely-adopted model building code in the United States. The CBC incorporates by reference the 2006 IBC, referred in the CEQA standard of significance below, with necessary California amendments.

9.4.3 Local

Scotts Valley General Plan

The following goals, policies and/actions from the Scotts Valley General Plan will avoid or help reduce impacts associated with the project:

- SP-489 In a geologic hazard area, development shall be approved only after a detailed geotechnical evaluation is completed by a registered geologist, and only if adequate measures are provided to avoid or substantially reduce any identified hazard.
- SA-490 Where new development proposed for areas of known or suspected geologic hazards, as identified in Figures S-3 or S-4 or where other information obtained by the City indicates geologic hazards exist in an area proposed for development, a detailed geotechnical and/or geologic report shall be prepared and submitted to the City as a part of the application or environmental review process.

Scotts Valley Municipal Code

See **Cultural Resources Section 8.3.3** regarding the protection of cultural resources which includes paleontological resources.

9.5 Environmental Impacts and Mitigation Measures

9.5.1 Significance Criteria

The following significance criteria for geology, soils, and mineral resources were derived from the Environmental Checklist in CEQA Guidelines Appendix G. These significance criteria have been amended or supplemented, as appropriate, to address lead agency requirements and the full range of potential impacts related to this project.

An impact of a project would be considered significant and would require mitigation if it would meet one of the following criteria.

- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - i) 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? Refer to Division of Mines and Geology Special Publication 42.
 - ii) Strong seismic ground shaking
 - iii) 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 (1994), creating substantial direct or indirect risks to life or property.
- Result in soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

9.5.2 Summary of No and/or Beneficial Impacts

Extraction of Mineral Resources

There are no mines or quarries within 1,000 feet of the project site; nor is the project site within a known mapped oil or gas field. Therefore, there would be no impact.

On-site Wastewater Disposal System

Residential development pursuant to the project would involve disposal of wastewater via a sanitary sewer, and there would be no septic systems under the project. Therefore, there would be no impact.

9.5.3 Impacts of the Project

Impact GEO-1: Directly or indirectly cause substantial adverse effects, including the risk of loss, or injury, or death involving:

- Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map or based on other substantial evidence of a known fault?
- Landslides
- Strong seismic ground shaking

The project is not located within an Alquist-Priolo Earthquake Fault Zoning Map as mapped by the State Geologist. No known faults or landslides are mapped at the project site; however, the project site is situated between two major seismically active faults; the San Andreas Fault located approximately 7.5 miles northeast of the project site and the San Gregorio Fault, about 15.5 miles southwest of the project site. The San Andreas Fault has a maximum probable earthquake magnitude of 8.0 and a maximum credible earthquake magnitude of 8.5. The Zayante-Vergeles Fault is located approximately 4.5 miles northeast of the project site and is considered a potentially active fault based on studies of the USGS. The Zayante-Vergeles Fault can produce an earthquake of magnitude 7.4 on the Richter scale. The Butano Fault is located less than a mile from the project site. The Butano Fault can produce a major earthquake of 6.4 on the Richter scale.

A seismic event is considered likely during the useful life of any structures planned under the project. This can potentially jeopardize public safety, including safety both to structures and people within the project area.

Besides the direct physical damage to structures caused by the ground shaking, marginally stable landslides, slopes, and inadequately compacted fill material could move and cause additional damage. Gas, water, and electrical lines can be ruptured during the ground shaking, or broken during movement of earth caused by the earthquake, which can jeopardize public safety.

As part of any future Planned Development application submitted to the City of Scotts Valley, the project applicant would be required to submit plans that are in compliance with the latest California Building Code (CBC) standards consistent with Title 15 – Buildings and Construction of the Scotts Valley Municipal Code. The philosophy of the California Building Code is to prevent structural collapse and thereby mitigating life safety issues. By definition, significant structural damage is acceptable in code-conforming structures; although it has been found by experience that wood-frame structures properly built to the latest building codes generally perform well in response to strong ground shaking where ground failure is not involved.

Prior to approval of any entitlements for a specific project, City staff is required to review project plans and verify that the CBC Seismic requirements are printed on the plans. Building Division staff shall verify that CBC standards are met prior to issuance of Building Permits. Building inspectors shall conduct site inspections to assure that construction occurs consistent with approved plans.

Because compliance with Title 15 – Buildings and Construction of the Scotts Valley Municipal Code is required for all future project, potential impacts associated with earthquake-related ground rupture would be less than significant and no mitigation is required.

Impact GEO-2: Result in substantial soil erosion or the loss of topsoil.

The project would involve the removal of landscape vegetation and grading activities associated with the construction of buildings, infrastructure, and roads. The loosening and exposure of soil makes it susceptible to erosion by rainfall and wind. Development pursuant to the project would also increase the amount of impervious surfaces, which may affect the natural drainage pattern. During unusually high rainfall over a short duration, excessive erosion may occur. Soil particles may be carried by stormwater to receiving water bodies, such as Camp Evers creek and Carbonera Creek, resulting in sedimentation. The effects of increased sediment loading could include increased turbidity and reduced light penetration.

Grading would largely be limited to the project site, which would limit the amount of exposed soil area that will be subject to erosion. At the project site, loose or weak soils near surface fill soils were encountered on southern portions of the project site (Haro, Kasunich and Associates, Inc, 2018). Measures to control erosion would be incorporated into the construction specifications pursuant to the National Pollution Discharge Elimination System (NPDES) requirements for construction.

In addition, to comply with the NPDES requirements for construction, projects involving construction on sites that are one acre or more are required to prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) that specifies how the discharger will protect water quality during construction activities. These measures will include, but not be limited to: design and construction of cut and fill slopes in a manner that will minimize erosion, protection of exposed slope areas, control of surface water flows over exposed soils, use of wetting or sealing agents or sedimentation ponds, limiting soil excavation in high winds, construction of

beams and runoff diversion ditches, and use of sediment traps, such as hay bales. (Also see [Chapter 11: Hydrology & Water Quality](#).)

Compliance with the erosion control ordinances and acquisition of the NPDES General Permit for construction activities would ensure that soil erosion impacts associated with development pursuant to the project would be less than significant.

Impact GEO-3: 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.

The project site is not located in an area of known or suspected geologic hazards, as identified in Figures S-3 or S-4 of the Scotts Valley General Plan.

As described in the updated Geotechnical Investigation, Haro, Kasunich and Associates, Inc., a previous report (*Geotechnical Investigation Proposed Oak Creek Park Office Center Mt. Hermon and Glen Canyon Roads Scotts Valley, California*) was prepared by Kleinfelder, Inc. in April 1997. The report prepared by Haro, Kasunich and Associates, Inc. (2018) provides an updated analysis of the project site and project description. Geotechnical design recommendations from the original report were incorporated in the updated report and have been revised to provide additional recommendations where applicable. In the original report, Kleinfelder, Inc. had conducted a field exploration that included drilling nine 8-inch diameter stem-augers borings. The borings were drilled to depths ranging between 11.5 and 26.5 feet below the existing ground surface and the test borings were excavated at the site on February 28, 1997. Representative soil samples were obtained from these test borings.

Additionally, five borings drilled by Jacobs, Raas & Associates were included as part of the report by Kleinfelder. The Kleinfelder report assumed similar drilling and sampling methods used for these five borings. Based on the results of these test borings, the potential risk of landslide, lateral spreading, subsidence, liquefaction, and collapse as a result of the project are summarized below.

Landslide

As discussed above, no landslides are mapped at the project site.

Lateral Spreading and Liquefaction

Soils in the project area are primarily Danville loam, with small areas of Pfeiffer gravelly sandy loam and Elder sandy loam. Elder sandy loam is characterized by slopes of 9-15%. Slopes on the Danville loam vary between 2-9% slope and Pfeiffer gravelly sandy loam between 30-50% slopes.

Liquefaction is a process whereby ground shaking causes saturated granular soils to become liquid-like. This type of phenomenon occurs when saturated rocks are vibrated, which increases the pore pressure and separates the grains.

At the project site, the isolated discontinuous soils deposits susceptible to liquefaction were encountered below the groundwater table, and within the upper 50 feet of the ground surface. The liquefaction analysis for the project site ranged between 13.5 feet to 22 feet thick. Non-liquefiable soil layers overlaying the liquefiable soil layers were estimated to be between 2.5 to 5 feet thick. According to past test borings results performed at the project site (See [Appendix D: Updated Geotechnical Investigation](#)), some of the liquefaction related settlement in the areas of the borings could reflect to the surface through the non-liquefiable soil layers. However, the potential for ground failures to occur in the form of sand boils or ground cracking is low. It is estimated that the ground surface may settle or depress between an estimated 0.5 to 1.5 inches total and 0.25 to 1 inches differentially in the areas of Buildings B, C, and D. Total post-earthquake settlements over 1 inch could result in non-uniform settlement of masonry-walled structures. The discontinuous nature of the layers and the thick predominantly clay and non-liquefiable cover overlying any liquefiable layers could limit any surface manifestations of liquefaction to very minor differential settlements of 1.0 inches in 50 feet (Haro, Kasunich and Associates, Inc, 2018). Building A would be outside the mapped area of liquefaction and would be outside of the areas where liquefaction is indicated in the borings. Thus, there is a low probability of seismic settlement at Building A.

Lateral spreading of the ground surface can occur where liquefaction occurs in areas of sloping ground or at a creekbank or riverbank. Haro, Kasunich and Associates, Inc. determined the potential for lateral spreading to be low because of lateral confinement at the project site, the thick layer of overlying clayey soils, and the discontinuous nature of sandy layers.

Implementation of [MM GEO-3.1](#) would reduce impacts related to lateral spreading and liquefaction to a less than significant level.

Subsidence

Subsidence is the sudden sinking or gradual downward settling and compaction of soil and other surface material with little or no horizontal motion. Subsidence may be caused by a variety of human and natural activities, including earthquakes. As discussed above, no known faults or landslides are mapped at the project site; however, the project site is situated between two major seismically active faults. The closest fault is the Zayante-Vergeles Fault, located approximately 4.5 miles northeast of the project site. As part of any future Planned Development application submitted to the City of Scotts Valley, the project applicant would be required to submit plans that are in compliance with the latest CBC standards consistent with Title 15 – Buildings and Construction of the Scotts Valley Municipal Code. Compliance with the CBC would help to prevent structural collapse and thereby mitigating life safety issues. Because compliance with Title 15 – Buildings and Construction of the Scotts Valley Municipal Code is required for all future projects, potential impacts associated with earthquake-related ground rupture would be less than significant and no mitigation is required.

Collapse

As part of any future Planned Development application submitted to the City of Scotts Valley, the project applicant would be required to submit plans that are in compliance with the latest

CBC standards consistent with Title 15 – Buildings and Construction of the Scotts Valley Municipal Code. Compliance with the CBC would help to prevent structural collapse and thereby mitigating life safety issues. Because compliance with Title 15 – Buildings and Construction of the Scotts Valley Municipal Code is required for all future projects, potential impacts associated with earthquake-related ground rupture would be less than significant and no mitigation is required.

Mitigation Impact for GEO-3

MM GEO-3.1 Implement geotechnical report recommendations.

The project applicant shall ensure that the project incorporates appropriate geotechnical recommendations for the seismic ground shaking, seismic-related ground failure and liquefaction, landslide susceptibility, erosion and erosion control, soil stability, expansive soils, and any other appropriate issue. Prior to building permit issuance, the project geotechnical engineer shall review the plans submitted for a grading/building for compliance with the recommendation of the geotechnical report. Once the plans comply with the recommendations, the project geotechnical engineer shall provide a plan review letter stating that the project design meets all of the geotechnical report recommendations.

Impact GEO- 4: Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.

As discussed in the updated Geotechnical Investigation prepared by Haro, Kasunich and Associates, Inc., the project site has a very moderate to high expansion potential. Expansive soils shrink and swell as a result of moisture changes, which can cause heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations. Building damage due to moisture changes in expansive soils can be reduced by appropriate grading practices and using post-tensioned concrete mat foundations or similarly stiffened foundation systems that are designed to resist the deflections associated with soil expansion.

The geotechnical investigation also identified loose/weak soils near surface fill soils on southern portions of the project site (Haro, Kasunich and Associates, Inc., 2018). Implementation of the **MM GEO-3.1** described above would reduce potential impacts associated with expansive soils to a less than significant level.

Impact GEO-5: Result in soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

The project would involve disposal of wastewater through the City's existing sanitary sewer system, and there would be no septic systems constructed as part of the project. Therefore, no impacts would occur.

Impact GEO-6: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

There are no known paleontological resources on the project site. However, development of the project could result in the discovery and disturbance of previously unknown or undiscovered paleontological resources. Should evidence of paleontological resources be encountered during grading and construction, adherence to City, State, and Federal historic preservation laws, regulations, and codes related to archaeological and paleontological resources would ensure the adequate protection of historic and pre-historic resources. With implementation of existing regulations, the impact would be less than significant.

9.5.4 Cumulative Impact Analysis

The geographical area for the analysis of cumulative impacts involving risks associated with geologic hazards and soils constraints is the City of Scotts Valley because it is a confined developed area with similar geologic characteristics.

Impact GEO-7: Contribute to cumulatively considerable effects on geology and soils.

Most geologic-related impacts from development are site-specific and if properly designed would not result in additive worsening of the environmental or public health and safety. Cumulative development would be subject to site-specific geologic and/or soils constraints; pursuant to the City of Scotts Valley's building permit requirements, a registered geotechnical engineer would investigate site-specific conditions and provide recommendations to minimize exposure to hazards or constraints. The Scotts Valley Building Department would require adherence to these recommendations as a condition of building permit approval.

Cumulative development would also involve the exposure of an increased number of people and/or structures to risk of earthquakes and their associated geologic hazards. New construction would be required to comply with the most current CBC, which establishes building standards to minimize risk based on the geologic and seismic conditions of the region in which a project is located.

Therefore, cumulative geologic and soils impacts would be less than significant.

9.5.5 Level of Significance after Mitigation

Table 9 2: Summary of Impacts and Mitigation Measures – Geology & Soils and Mineral Resources summarizes the environmental impacts, significance determinations, and mitigation measures for the project with regard to geology & soils and mineral resources.

Table 9-2: Summary of Impacts and Mitigation Measures – Geology & Soils and Mineral Resources

Impact	Impact Significance	Mitigation
<p>Impact GEO-1: Directly or indirectly cause expose people or structures to potential substantial adverse effects, including the risk of loss, or injury, or death involving:</p> <p>i) 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? Refer to Division of Mines and Geology Special Publication 42.</p> <p>ii) Strong seismic ground shaking</p> <p>iii) Landslides</p>	<p>Less than Significant</p>	<p>None required.</p>
<p>Impact GEO-2: Result in substantial soil erosion or the loss of topsoil.</p>	<p>Less than Significant</p>	<p>None required.</p>
<p>Impact GEO-3: 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.</p>	<p>Less than Significant with Mitigation</p>	<p>MM GEO 3.1: Implement geotechnical report recommendations</p>
<p>Impact GEO-4: Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property</p>	<p>Less than Significant with Mitigation</p>	<p>MM GEO 3.1: Implement geotechnical report recommendations</p>
<p>Impact GEO-5: Result in soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.</p>	<p>No Impact</p>	<p>None required.</p>
<p>Impact GEO-6: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.</p>	<p>Less than Significant</p>	<p>None required.</p>
<p>Impact GEO-7: Contribute to cumulatively considerable effects on geology and soils.</p>	<p>Less than Significant</p>	<p>None required.</p>

9.6 References

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10 Greenhouse Gas Emissions

10.1 Introduction

This section describes greenhouse gas (GHG) emission effects pursuant to the project. Information used to prepare this section came from the following resources:

- Project application and related materials
- Air quality data provided by the California Air Resources Board (CARB)
- California Emissions Estimator Model (CalEEMod) projections (see [Appendix B: CalEEMod Air Quality Analysis](#))

The study area for climate change and the analysis of greenhouse gas (GHG) emissions is broad because climate change is influenced by world-wide emissions and their global effects. However, the study area is also limited by the CEQA Guidelines [Section 15064(d)], which directs lead agencies to consider an “indirect physical change” only if that change is a reasonably foreseeable impact that may be caused by the project. This analysis limits discussion to those physical changes to the environment that are not speculative and are reasonably foreseeable.

10.2 Scoping Issues Addressed

During the scoping period for the project, no written comments by agencies and the public regarding greenhouse gas emissions were received.

10.3 Environmental Setting

10.3.1 Climate Change and Greenhouse Gases

Certain gases in the earth’s atmosphere classified as GHGs, play a critical role in determining the earth’s surface temperature. Solar radiation enters the earth’s atmosphere from space. A portion of the radiation is absorbed by the earth’s surface and a smaller portion of this radiation is reflected toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. Because the earth has a much lower temperature than the sun, it emits lower-frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead “trapped,” resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth.

The primary GHGs contributing to the greenhouse effect are carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). Fluorinated gases also make up a small fraction of the GHGs that contribute to climate change. Examples of fluorinated gases include chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), and nitrogen trifluoride (NF₃); however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of GHGs exceeding natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the Earth’s climate, known as global climate change or global warming.

GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants (TACs), which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (approximately one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of a GHG molecule is dependent on multiple variables and cannot be pinpointed, more CO₂ is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms of carbon sequestration. Of the total annual human-caused CO₂ emissions, approximately 55 percent is sequestered through ocean and land uptakes every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO₂ emissions remains stored in the atmosphere (Intergovernmental Panel on Climate Change, 2013). **Table 10-1: Description of Greenhouse Gases**, describes the primary GHGs attributed to global climate change, including their physical properties.

Table 10-1: Description of Greenhouse Gases

Greenhouse Gas	Description
Carbon Dioxide (CO ₂)	CO ₂ is a colorless, odorless gas that is emitted naturally and through human activities. Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood. The largest source of CO ₂ emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, and industrial facilities. The atmospheric lifetime of CO ₂ is variable because it is readily exchanged in the atmosphere. CO ₂ is the most widely emitted GHG and is the reference gas (Global Warming Potential of 1) for determining Global Warming Potentials for other GHGs.
Nitrous Oxide (N ₂ O)	N ₂ O is largely attributable to agricultural practices and soil management. Primary human-related sources of N ₂ O include agricultural soil management, sewage treatment, combustion of fossil fuels, and adipic and nitric acid production. N ₂ O is produced from biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N ₂ O is approximately 120 years. The Global Warming Potential of N ₂ O is 298.
Methane (CH ₄)	CH ₄ , a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. Methane is the major component of natural gas, approximately 87 percent by volume. Human-related sources include fossil fuel production, animal husbandry, rice cultivation, biomass burning, and waste management.

	Natural sources of CH ₄ include wetlands, gas hydrates, termites, oceans, freshwater bodies, non-wetland soils, and wildfires. The atmospheric lifetime of CH ₄ is approximately 12 years and the Global Warming Potential is 25.
Hydrofluoro-carbons (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 increasing, as the continued phase out of CFCs and HCFCs gains momentum. The 100-year Global Warming Potential of HFCs range from 124 for HFC-152 to 14,800 for HFC-23.
Perfluoro-carbons (PFCs)	PFCs have stable molecular structures and only break down by ultraviolet rays approximately 60 kilometers above Earth’s surface. Because of this, they have long lifetimes, between 10,000 and 50,000 years. Two main sources of PFCs are primary aluminum production and semiconductor manufacturing. Global Warming Potentials range from 6,500 to 9,200.
Chlorofluoro-carbons (CFCs)	CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. They are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth’s surface). CFCs were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. The Montreal Protocol on Substances that Deplete the Ozone Layer prohibited their production in 1987. Global Warming Potentials for CFCs range from 3,800 to 14,400.
Sulfur Hexafluoride (SF ₆)	SF ₆ is an inorganic, odorless, colorless, and nontoxic, nonflammable gas. It has a lifetime of 3,200 years. This gas is manmade and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas. The Global Warming Potential of SF ₆ is 23,900.
Hydrochloro-fluorocarbons (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, HCFCs are subject to a consumption cap and gradual phase out. The United States is scheduled to achieve a 100 percent reduction to the cap by 2030. The 100-year Global Warming Potentials of HCFCs range from 90 for HCFC-123 to 1,800 for HCFC-142b.
Nitrogen Trifluoride (NF ₃)	NF ₃ was added to Health and Safety Code section 38505(g)(7) as a GHG of concern. This gas is used in electronics manufacture for semiconductors and liquid crystal displays. It has a high global warming potential of 17,200.
Source: Compiled from U.S. EPA, <i>Overview of Greenhouse Gases</i> , April 11, 2018 (https://www.epa.gov/ghgemissions/overview-greenhouse-gases); U.S. EPA, <i>Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016</i> , 2018; Intergovernmental Panel on Climate Change, <i>Climate Change 2007: The Physical Science Basis</i> , 2007; National Research Council, <i>Advancing the Science of Climate Change</i> , 2010; U.S. EPA, <i>Methane and Nitrous Oxide Emission from Natural Sources</i> , April 2010.	

10.4 Applicable Regulations, Plans, and Standards

10.4.1 Federal

To date, national standards have not been established for nationwide GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level. Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 (December 2007), among other key measures, requires the following, which would aid in the reduction of national GHG emissions:

- Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020 and direct the National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
- Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

U.S. Environmental Protection Agency Endangerment Finding

The U.S. Environmental Protection Agency's (EPA) authority to regulate GHG emissions stems from the U.S. Supreme Court decision in *Massachusetts v. EPA* (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Federal Clean Air Act (FCAA) and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, the EPA finalized an endangerment finding in December 2009. Based on scientific evidence, it found that six GHGs (CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆) constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing FCAA and the EPA's assessment of the scientific evidence that form the basis for the EPA's regulatory actions.

Federal Vehicle Standards

In response to the U.S. Supreme Court ruling discussed above, Executive Order 13432 was issued in 2007 directing the EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011, and in 2010, the EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

In 2010, an Executive Memorandum was issued directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of CO₂ in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021, and

NHTSA intends to set standards for model years 2022–2025 in a future rulemaking. On January 12, 2017, the EPA finalized its decision to maintain the current GHG emissions standards for model years 2022–2025 cars and light trucks. It should be noted that the EPA is currently proposing to freeze the vehicle fuel efficiency standards at their planned 2020 level (37 mpg), canceling any future strengthening (currently 54.5 mpg by 2026).

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO₂ emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6 to 23 percent over the 2010 baseline.

In August 2016, the EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO₂ emissions by approximately 1.1 billion metric tons and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program.

Clean Power Plan and New Source Performance Standards for Electric Generating Units

On October 23, 2015, the EPA published a final rule (effective December 22, 2015) establishing the carbon pollution emission guidelines for existing stationary sources: electric utility generating units (80 Federal Register [FR] 64510–64660), also known as the Clean Power Plan (CPP). These guidelines prescribe how states must develop plans to reduce GHG emissions from existing fossil-fuel-fired electric generating units. The guidelines establish CO₂ emission performance rates representing the best system of emission reduction for two subcategories of existing fossil-fuel-fired electric generating units: one fossil-fuel-fired electric utility steam-generating unit and two stationary combustion turbines. Concurrently, the EPA published a final rule (effective October 23, 2015) establishing standards of performance for GHG emissions from new, modified, and reconstructed stationary sources: electric utility generating units (80 FR 64661–65120). The rule prescribes CO₂ emission standards for newly constructed, modified, and reconstructed affected fossil-fuel-fired electric utility generating units. The U.S. Supreme Court stayed implementation of the CPP pending resolution of several lawsuits. Additionally, in March 2017, the federal government directed the EPA Administrator to review the CPP to determine whether it is consistent with current executive policies concerning GHG emissions, climate change, and energy.

Presidential Executive Order 13783

Presidential Executive Order 13783, Promoting Energy Independence and Economic Growth issued on March 28, 2017, orders all federal agencies to apply cost-benefit analyses to

regulations of GHG emissions and evaluations of the social cost of CO₂, N₂O, and CH₄. On January Jan. 20, 2021 President Biden revoked EO 13783 in Executive Order 13990, “Protecting Public Health and the Environment and Restoring Science To Tackle the Climate Crisis.”

10.4.2 State

CARB is responsible for the coordination and oversight of State and local air pollution control programs in California. Various statewide and local initiatives to reduce California’s contribution to GHG emissions have raised awareness about climate change and its potential for severe long-term adverse environmental, social, and economic effects. California is a significant emitter of CO₂e in the world and produced 440 million gross metric tons of CO₂e in 2015. In the state, the transportation sector is the largest emitter of GHGs, followed by industrial operations such as manufacturing and oil and gas extraction.

The State of California legislature has enacted a series of bills that constitute the most aggressive program to reduce GHGs of any state in the nation. Some legislation, such as the landmark AB 32 California Global Warming Solutions Act of 2006, was specifically enacted to address GHG emissions. Other legislation, such as Title 24 building efficiency standards and Title 20 appliance energy standards, were originally adopted for other purposes such as energy and water conservation, but also provide GHG reductions. This section describes the major legislation related to GHG emissions reduction.

Assembly Bill 32 (California Global Warming Solutions Act of 2006)

AB 32 instructs the CARB to develop and enforce regulations for the reporting and verification of statewide GHG emissions. AB 32 also directed CARB to set a GHG emissions limit based on 1990 levels, to be achieved by 2020. It set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner.

CARB Scoping Plan

CARB adopted the Scoping Plan to achieve the goals of AB 32. The Scoping Plan establishes an overall framework for the measures that would be adopted to reduce California’s GHG emissions. CARB determined that achieving the 1990 emissions level would require a reduction of GHG emissions of approximately 29 percent below what would otherwise occur in 2020 in the absence of new laws and regulations (referred to as “business-as-usual”). The Scoping Plan evaluates opportunities for sector-specific reductions, integrates early actions and additional GHG reduction measures by both CARB and the state’s Climate Action Team, identifies additional measures to be pursued as regulations, and outlines the adopted role of a cap-and-trade program. Additional development of these measures and adoption of the appropriate regulations occurred through the end of 2013. Key elements of the Scoping Plan include:

- Expanding and strengthening existing energy efficiency programs, as well as building and appliance standards.
- Achieving a statewide renewables energy mix of 33 percent by 2020.

- Developing a California cap-and-trade program that links with other programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions (adopted in 2011).
- Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets (several sustainable community strategies have been adopted).
- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, heavy-duty truck measures, the Low Carbon Fuel Standard (amendments to the Pavley Standard adopted 2009; Advanced Clean Car standard adopted 2012), goods movement measures, and the Low Carbon Fuel Standard (adopted 2009).
- Creating targeted fees, including a public goods charge on water use, fees on gasses with high global warming potential, and a fee to fund the administrative costs of California's long-term commitment to AB 32 implementation.

In 2012, CARB released revised estimates of the expected 2020 emissions reductions. The revised analysis relied on emissions projections updated considering current economic forecasts that accounted for the economic downturn since 2008, reduction measures already approved and put in place relating to future fuel and energy demand, and other factors. This update reduced the projected 2020 emissions from 596 million metric tons of CO₂e (MMTCO₂e) to 545 MMTCO₂e. The reduction in forecasted 2020 emissions means that the revised business-as-usual reduction necessary to achieve AB 32's goal of reaching 1990 levels by 2020 is now 21.7 percent, down from 29 percent. CARB also provided a lower 2020 inventory forecast that incorporated state-led GHG emissions reduction measures already in place. When this lower forecast is considered, the necessary reduction from business-as-usual needed to achieve the goals of AB 32 is approximately 16 percent.

CARB adopted the first major update to the Scoping Plan on May 22, 2014. The updated Scoping Plan summarizes the most recent science related to climate change, including anticipated impacts to California and the levels of GHG emissions reductions necessary to likely avoid risking irreparable damage. It identifies the actions California has already taken to reduce GHG emissions and focuses on areas where further reductions could be achieved to help meet the 2020 target established by AB 32.

In January 2017, CARB released the 2017 Climate Change Scoping Plan Update (Second Update) for public review and comment (CARB, 2017). The Second Update sets forth CARB's strategy for achieving the state's 2030 GHG target as established in Senate Bill (SB) 32 (discussed below). The Second Update was approved by CARB's Governing Board on December 14, 2017 (CARB, 2017).

Senate Bill 32 (California Global Warming Solutions Act of 2006: Emissions Limit

Signed into law in September 2016, SB 32 codifies the 2030 GHG reduction target in Executive Order B-30-15 (40 percent below 1990 levels by 2030). The bill authorizes CARB to adopt an

interim GHG emissions level target to be achieved by 2030. CARB also must adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective GHG reductions.

With SB 32, the Legislature passed companion legislation, AB 197, which provides additional direction for developing the Scoping Plan. On December 14, 2017, CARB adopted a second update to the Scoping Plan (CARB, 2017b). The 2017 Scoping Plan details how the State will reduce GHG emissions to meet the 2030 target set by Executive Order B-30-15 and codified by SB 32. Other objectives listed in the 2017 Scoping Plan are to provide direct GHG emissions reductions; support climate investment in disadvantaged communities; and support the Clean Power Plan and other Federal actions.

SB 375 (The Sustainable Communities and Climate Protection Act of 2008)

Signed into law on September 30, 2008, SB 375 provides a process to coordinate land use planning, regional transportation plans, and funding priorities to help California meet the GHG reduction goals established by AB 32. SB 375 requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, aligns planning for transportation and housing, and creates specified incentives for the implementation of the strategies. The applicable sustainable community strategy in the Bay Area is Plan Bay Area 2040.

AB 1493 (Pavley Regulations and Fuel Efficiency Standards)

AB 1493, enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by the EPA's denial of an implementation waiver. The EPA subsequently granted the requested waiver in 2009, which was upheld by the U.S. District Court for the District of Columbia in 2011. The regulations establish one set of emission standards for model years 2009–2016 and a second set of emissions standards for model years 2017 to 2025. By 2025, when all rules will be fully implemented, new automobiles will emit 34 percent fewer CO₂e emissions and 75 percent fewer smog-forming emissions.

SB 1368 (Emission Performance Standards)

SB 1368 is the companion bill of AB 32, which directs the California Public Utilities Commission (CPUC) to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 limits carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than 5 years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant. The new law effectively prevents California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the state. The CPUC adopted the regulations required by SB 1368 on August 29, 2007. The regulations implementing SB 1368 establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, for 1,100 pounds of CO₂ per megawatt-hour.

SB 1078 and SBX1-2 (Renewable Electricity Standards)

SB 1078 required California to generate 20 percent of its electricity from renewable energy by 2017. This goal was accelerated with SB 107, which changed the due date to 2010 instead of 2017. On November 17, 2008, Executive Order S-14-08 established a Renewable Portfolio Standard target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. Executive Order S-21-09 also directed CARB to adopt a regulation by July 31, 2010, requiring the state's load serving entities to meet a 33 percent renewable energy target by 2020. CARB approved the Renewable Electricity Standard on September 23, 2010 by Resolution 10-23. SB X1-2 codified the 33 percent by 2020 goal.

SB 350 (Clean Energy and Pollution Reduction Act of 2015)

Signed into law on October 7, 2015, SB 350 implements the goals of Executive Order B-30-15. The objectives of SB 350 are to increase the procurement of electricity from renewable sources from 33 percent to 50 percent (with interim targets of 40 percent by 2024, and 45 percent by 2027) and to double the energy efficiency savings in electricity and natural gas end uses of retail customers through energy efficiency and conservation. SB 350 also reorganizes the Independent System Operator to develop more regional electricity transmission markets and improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States.

AB 398 (Market-Based Compliance Mechanisms)

Signed on July 25, 2017, AB 398 extended the duration of the Cap-and-Trade program from 2020 to 2030. AB 398 required CARB to update the Scoping Plan and for all GHG rules and regulations adopted by the State. It also designated CARB as the statewide regulatory body responsible for ensuring that California meets its statewide carbon pollution reduction targets, while retaining local air districts' responsibility and authority to curb toxic air contaminants and criteria pollutants from local sources that severely impact public health. AB 398 also decreased free carbon allowances over 40 percent by 2030 and prioritized Cap-and-Trade spending to various programs including reducing diesel emissions in impacted communities.

SB 150 (Regional Transportation Plans)

Signed on October 10, 2017, SB 150 aligns local and regional GHG reduction targets with State targets (i.e., 40 percent below their 1990 levels by 2030). SB 150 creates a process to include communities in discussions on how to monitor their regions' progress on meeting these goals. The bill also requires the CARB to regularly report on that progress, as well as on the successes and the challenges regions experience associated with achieving their targets. SB 150 provides for accounting of climate change efforts and GHG reductions and identify effective reduction strategies.

SB 100 (California Renewables Portfolio Standard Program: Emissions of Greenhouse Gases)

Signed into Law in September 2018, SB 100 increased California's renewable electricity portfolio from 50 to 60 percent by 2030. SB 100 also established a further goal to have an electric grid that is entirely powered by clean energy by 2045.

Executive Orders Related to GHG Emissions

California's Executive Branch has taken several actions to reduce GHGs using executive orders. Although not regulatory, they set the state's tone and guide the actions of state agencies.

Executive Order S-3-05

Executive Order S-3-05 was issued on June 1, 2005, which established the following GHG emissions reduction targets:

- By 2010, reduce greenhouse gas emissions to 2000 levels.
- By 2020, reduce greenhouse gas emissions to 1990 levels.
- By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be a mid-term target. Because this is an executive order, the goals are not legally enforceable for local governments or the private sector.

Executive Order S-01-07

Issued on January 18, 2007, Executive Order S-01-07 mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. The executive order established a Low Carbon Fuel Standard (LCFS) and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, CARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. CARB adopted the LCFS on April 23, 2009.

Executive Order S-13-08

Issued on November 14, 2008, Executive Order S-13-08 facilitated the California Natural Resources Agency development of the 2009 California Climate Adaptation Strategy. Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

Executive Order S-14-08

Issued on November 17, 2008, Executive Order S-14-08 expands the state's Renewable Energy Standard to 33 percent renewable power by 2020. Additionally, Executive Order S-21-09 (signed on September 15, 2009) directs CARB to adopt regulations requiring 33 percent 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 percent renewable energy by 2020 for most publicly owned electricity retailers.

Executive Order S-21-09

Issued on July 17, 2009, Executive Order S-21-09 directs CARB to adopt regulations to increase California's RPS to 33 percent by 2020. This builds upon SB 1078 (2002), which established the California RPS program, requiring 20 percent renewable energy by 2017, and SB 107 (2006), which advanced the 20 percent deadline to 2010, a goal which was expanded to 33 percent by 2020 in the 2005 Energy Action Plan II.

Executive Order B-30-15

Issued on April 29, 2015, Executive Order B-30-15 established a California GHG reduction target of 40 percent below 1990 levels by 2030 and directs CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of CO₂e (MMTCO₂e). The 2030 target acts as an interim goal on the way to achieving reductions of 80 percent below 1990 levels by 2050, a goal set by Executive Order S-3-05. The executive order also requires the state's climate adaptation plan to be updated every three years and for the state to continue its climate change research program, among other provisions. With the enactment of SB 32 in 2016, the Legislature codified the goal of reducing GHG emissions by 2030 to 40 percent below 1990 levels.

Executive Order B-55-18

Issued on September 10, 2018, Executive Order B-55-18 establishes a goal to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. This goal is in addition to the existing statewide targets of reducing GHG emissions. The executive order requires CARB to work with relevant state agencies to develop a framework for implementing this goal. It also requires CARB to update the Scoping Plan to identify and recommend measures to achieve carbon neutrality. The executive order also requires state agencies to develop sequestration targets in the Natural and Working Lands Climate Change Implementation Plan.

California Regulations and Building Codes

California has a long history of adopting regulations to improve energy efficiency in new and remodeled buildings. These regulations have kept California's energy consumption relatively flat, even with rapid population growth.

Title 20 Appliance Efficiency Regulations

The appliance efficiency regulations (California Code of Regulations [CCR] Title 20, Sections 1601-1608) include standards for new appliances. Twenty-three categories of appliances are included in the scope of these regulations. These standards include minimum levels of operating efficiency, and other cost-effective measures, to promote the use of energy- and water-efficient appliances.

Title 24 Building Energy Efficiency Standards

California's Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR Title 24, Part 6), was first adopted in 1978 in response to a legislative mandate to reduce California's

energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The 2016 Building Energy Efficiency Standards approved on January 19, 2016 went into effect on January 1, 2017. The 2019 Building Energy Efficiency Standards were adopted on May 9, 2018 and will take effect on January 1, 2020. Under the 2019 standards, residential dwellings will be required to use approximately 53 percent less energy and nonresidential buildings will be required to use approximately 30 percent less energy than buildings under the 2016 standards.

Title 24 California Green Building Standards Code

The California Green Building Standards Code (CCR Title 24, Part 11 code) commonly referred to as CALGreen, is a statewide mandatory construction code developed and adopted by the California Building Standards Commission and the Department of Housing and Community Development. The CALGreen standards require new residential and nonresidential buildings to comply with mandatory measures under the topics of planning and design, energy efficiency, water efficiency/conservation, material conservation and resource efficiency, and environmental quality. CALGreen also provides voluntary tiers and measures that local governments may adopt that encourage or require additional measures in the five green building topics. The most recent update to the 2016 CALGreen Code, went into effect January 1, 2017. Updates to the 2016 CALGreen Code will take effect on January 1, 2020 (2019 CALGreen). The 2019 CALGreen standards will continue to improve upon the existing standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The new 2019 CALGreen standards require residential buildings are required to be solar ready through solar panels (refer to Section 110.10 in the 2019 Building Energy Efficiency Standards for more details).

10.4.3 Regional & Local

Monterey Bay Air Regulation District

MBARD is the regional air agency for the North Central Coast Air Basin, which includes the project site. In February 2008, MBARD issued revised adopted guidance for assessing and reducing the impacts of project-specific air quality emissions: CEQA Air Quality Guidelines. This document included a reserved section to address project-specific GHG emissions: Climate Change and Assessment of Project Impacts from Greenhouse Gases. To date, MBARD has not adopted guidance for GHG emissions inventory, or established significance thresholds for GHG emissions.

City of Scotts Valley General Plan

The City of Scotts Valley has not adopted a Climate Action Plan and the City does not have specific guidelines regarding greenhouse gas emissions.

10.5 Environmental Impacts and Mitigation Measures

10.5.1 Significance Thresholds

According to the adopted Appendix G of the *State CEQA Guidelines*, impacts related to GHG emissions from a project would be significant if the project would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; and/or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Determining significance follows available guidelines from State or local air quality management agencies, where available. However, there is no legally adopted threshold to guide City of Scotts Valley decision-makers in determining what emission levels constitute a significant amount. Rules and policies being developed by CARB are used here, although they are evolving in response to the serious threat of climate change effects and subsequent legislation.

MBARD does not yet recommend any method or threshold for determining significance of climate change impacts or greenhouse gas emissions from a project and its operation. Nonetheless, GHG emissions caused by any project subject to CEQA must be described for a lead agency to determine the significance of impacts. The 2010 State CEQA Guidelines (Section 15064.4) provide the following direction for the assessment and mitigation of GHG emissions:

- A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project.
- A lead agency should consider the extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting.
- A lead agency should consider the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

In the absence of quantitative significance thresholds in CEQA guidance, this analysis turns to other programs. For example, the CARB Mandatory Reporting program requirements are triggered for sources of GHG emissions exceeding 2,500 MTCO₂e) per year. AB 32 requires California agencies to take actions that will reduce GHG emissions by 2020 to the levels of 1990, and then substantially further reduce emissions by 2050.

The MBARD drafted potential quantitative thresholds for projects undergoing CEQA review in February 2014. The draft thresholds include an annual threshold of 10,000 metric tons for

stationary sources and a tiered approach for land use projects, whereby one of the following is applied: a bright-line (numeric) threshold of 2,000 metric tons annually; or compliance with an adopted climate action plan. Although MBARD has adopted a GHG threshold for stationary source projects that rely on operational processes and equipment that are subject to MBARD permitting requirements, land use projects do not have a formally adopted policy recommending any specific threshold.

For CEQA analyses, project-related GHG impacts can be categorized as either direct or indirect. Direct emissions refer to those emitted by stationary sources at the project site or caused by project activity on-site, and these emissions are normally within control of the project sponsor or applicant. Indirect emissions include those emissions that are not within the direct control of the project sponsor or applicant, but may occur as a result of the project, such as the motor vehicle emissions induced by the project. Indirect emissions include emissions from any off-site facilities used for project support as a result of the construction or operation of a project, and these emissions are likely to occur outside the control of the project far off-site or even outside of California.

Construction-phase GHG emissions are quantified as part of the air quality impact assessment (see [Chapter 5, Air Quality](#) and [Appendix B: CalEEMod Air Quality Analysis](#) for supporting calculations).

The effects of the project are also considered based on whether the project implements reduction strategies identified in AB 32, the Governor's Executive Order S-14-08, or other strategies to help reduce GHGs to the level proposed by the Governor. If so, it could reasonably follow that the project would not result in a significant contribution to the cumulative impact of global climate change.

10.5.2 Study Methodology

The project's construction and operational emissions were calculated using the California Emissions Estimator Model version 2016.3.2 (CalEEMod). Details of the modeling assumptions and emission factors are provided in [Appendix B: CalEEMod Air Quality Analysis](#). For construction, CalEEMod calculates emissions from off-road equipment usage and on-road vehicle travel associated with haul, delivery, and construction worker trips. The project's construction-related GHG emissions were forecasted based on the proposed construction schedule and applying the mobile-source and fugitive dust emissions factors derived from CalEEMod. The project's construction-related GHG emissions would be generated from off-road construction equipment, on-road hauling, and vendor (material delivery) trucks, and worker vehicles.

The project's operations-related GHG emissions would be generated by vehicular traffic, area sources (e.g., landscaping maintenance, consumer products), electrical generation, natural gas consumption, water supply and wastewater treatment, and solid waste.

Details of the modeling assumptions and emission factors are provided in [Appendix B: CalEEMod Air Quality Analysis](#), and a summary of adjustments is provided below.

CalEEMod default emission factors incorporate compliance with some, but not all, applicable rules and regulations regarding energy efficiency and vehicle fuel efficiency, and other GHG reduction policies, as described in the CalEEMod User's Guide (CAPCOA, 2016). The reductions obtained from each regulation and the source of the reduction amount used in the analysis are described below.

The following regulations are incorporated into the CalEEMod emission factors:

- Pavley I motor vehicle emission standards
- Low Carbon Fuel Standard (LCFS)
- 2016 title 24 Energy Efficiency Standards

The following regulations have not been incorporated into the CalEEMod emission factors:

- Pavley II (LEV III) Advanced Clean Cars Program (extends to model year 2025)
- Renewable Portfolio Standards (RPS)
- Green Building Code Standards (indoor water use)
- California Model Water Efficient Landscape Ordinance (Outdoor Water)
- 2019 Title 24 Energy Efficiency Standards (effective January 1, 2020)

10.5.3 Cumulative Impact Analysis

It is generally the case that an individual project of the project's size and nature is of insufficient magnitude by itself to influence climate change or result in a substantial contribution to the global GHG inventory. GHG impacts are recognized as exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective. The additive effect of project-related GHG emissions would not result in a reasonably foreseeable cumulatively considerable contribution to global climate change. In addition, the project as well as other cumulative related projects, would be subject to all applicable regulatory requirements, which would further reduce GHG emissions.

Impact GHG-1: Contribute to cumulatively considerable effects on construction-related greenhouse gas emissions.

Construction of the project would result in direct emissions of CO₂, N₂O, and CH₄ from the operation of construction equipment and the transport of materials and construction workers to and from the project site. MBARD does not have a threshold for construction GHG emissions, which are one-time, short-term emissions and therefore would not significantly contribute to long-term cumulative GHG emissions impacts of the project.

However, the construction GHG emissions are disclosed and a determination on the significance of construction GHG emissions in relation to meeting AB 32 GHG reduction goals should be made. Total GHG emissions generated during all phases of construction were combined and are presented in [Table 10-2: Construction Greenhouse Gas Emissions](#). The CalEEMod outputs are contained in [Appendix B: CalEEMod Air Quality Analysis](#).

Table 10-2: Construction Greenhouse Gas Emissions

Construction Year	MTCO _{2e} ¹
2020	220.05
2021	293.87
Total	513.92

1. Due to rounding, total MTCO_{2e} may be marginally different from CalEEMod output. MTCO_{2e} = metric tons of carbon dioxide equivalent.
Source: CalEEMod version 2016.3.2. Refer to [Appendix B: CalEEMod Air Quality Analysis](#) for model outputs.

As shown in [Table 10-2: Construction Greenhouse Gas Emissions](#), project construction-related activities would generate approximately 514 MTCO_{2e} over the course of construction. Once construction is complete, the generation of construction-related GHG emissions would cease. This is less than the 2,000 MTCO_{2e} per year threshold. As a result, the short-term emission of GHG during construction would be less than significant.

Impact GHG-2: Contribute to cumulatively considerable effects on long-term operations-related greenhouse gas emissions.

Operational or long-term emissions would occur over the project's life. GHG emissions would result from direct emissions such as project generated vehicular traffic, on-site combustion of natural gas, and operation of any landscaping equipment. Operational GHG emissions would also result from indirect sources, such as off-site generation of electrical power over the life of the project, the energy required to convey water to, and wastewater from the project site, the emissions associated with solid waste generated from the project site, and any fugitive refrigerants from air conditioning or refrigerators. [Table 10-3: Operational Greenhouse Gas Emissions](#), summarizes the total GHG emissions associated with the project.

Table 10-3: Operational Greenhouse Gas Emissions

Category	MTCO ₂ e ¹
Area Source	0.90
Energy	110.76
Mobile	915.37
Waste	11.23
Water and Wastewater	11.25
Total Project ²	1,050
Threshold	2,000
Exceeds Threshold?	No
Notes: 1. Emissions were calculated using CalEEMod version 2016.3.2. 2. Emissions may not total due to rounding.	

Source: CalEEMod version 2016.3.2. Refer to [Appendix B: CalEEMod Air Quality Analysis](#) for model outputs.

Project development would emit approximately 1,050 MTCO₂e per year (see [Appendix B: CalEEMod Air Quality Analysis](#)), directly from on-site activities and indirectly from off-site motor vehicles. The project would meet CalGreen and CBC standards for energy efficiency standards as well as including “cool” roofs, passive solar design such as tall windows, natural ventilation and natural lighting, and provide electric landscape equipment.

Additionally, the project includes water-efficient landscape, water-reducing features, and low-impact development practices to reduce water use. The project is an example of “smart growth” strategies based on infill, density, and unit types. This level of emissions would be less than the GHG operational threshold of 2,000 MTCO₂e per year. As a result, the GHG emissions caused by long-term residential use on the project site would be adverse, but less than significant.

Impact GHG-3: Conflict with a plan, policy or regulation adopted for the purpose of reducing greenhouse gas emissions.

Per Impact GHG-1 and GHG-2, the project would not exceed MBARD thresholds for construction or operation of the project. The project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. GHG emissions resulting from the project would be partially offset by the incorporation of energy and water conserving features and green building designs. The project would comply with all MBARD applicable rules and regulations during construction and would not interfere with the State’s goals of reducing GHG emission to 1990 levels by 2020 as stated in AB 32; a 40 percent reduction below 1990 levels by 2030 as noted in SB 32; and, an 80 percent reduction in GHG emissions below 1990 levels by 2050 as stated in EO S-3-05. Therefore, impacts would be adverse, but less than significant.

10.5.4 Level of Significance after Mitigation

Table 10-4: Summary of Impacts and Mitigation Measures- Greenhouse Gas Emissions summarizes the environmental impacts, significance determinations, and mitigation measures for residential development on the project site resulting from the project with regard to greenhouse gas emissions.

Table 10-4: Summary of Impacts and Mitigation Measures- Greenhouse Gas Emissions

Impact	Impact Significance	Mitigation
Impact GHG-1: Contribute to cumulatively considerable effects on construction-related greenhouse gas emissions.	Less than Significant	None required
Impact GHG-2: Contribute to cumulatively considerable effects on long-term operations-related greenhouse gas emissions.	Less than Significant	None required
Impact GHG-3: Conflict with plan, policy, or regulation adopted for the purpose of reducing greenhouse gas emissions.	Less than Significant	None required

10.6 References

California Air Pollution Control Officers Association (CAPCOA). 2016. California Emissions Estimator Model: User’s Guide, Version 2013.2. Available at: <http://www.calemod.com/>

_____. January 2008. CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA). Available at: <http://opr.ca.gov/docs/june08-ceqa.pdf>

CARB (California Air Resources Board). 2008. Climate Change Scoping Plan, Framework for Change, as Approved December 2008, Pursuant to AB32. Available at: <http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm>

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Intergovernmental Panel on Climate Change (IPCC). 2007. Climate Change 2007: Synthesis Report, the Fourth IPCC Assessment Report. Available at: <http://www.ipcc-nggip.iges.or.jp/public/index.html>

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US EPA. April 2018. Overview of Greenhouse Gases. Available at: <https://www.epa.gov/ghgemissions/overview-greenhouse-gases>

_____. April 2018. Inventory of U.S. Greenhouse Gas Emissions and Sinks. Available at: <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2016>

11 Hydrology & Water Quality

11.1 Introduction

This section describes effects on water resources (hydrology and water quality) from residential development pursuant to the project. Information used to prepare this section came from the following resources:

- Aerial photography
- City of Scotts Valley, *General Plan*, 1994.
- Montgomery & Associates, *Annual Report - Water Year 2018 Scotts Valley Water District Groundwater Management Plan*, 2019.
- Kennedy/Jenks Consultants, *Scotts Valley Water District Annual Groundwater Report*, 2015.
- Kennedy/Jenks Consultants, *2015 Scotts Valley Water District Urban Water Management Plan*, 2015.
- Todd Engineers, *Re: Application of City of Scotts Valley General Plan Open Space Action 344 to the proposed Oak Creek Park Mixed Use Project*.
- C2G/Civil Consultants Group, Inc., *Stormwater Control Plan for Oak Creek Mixed Use*, July 30, 2019.

11.2 Scoping Issues Addressed

During the scoping period for the project, no written comments by agencies and the public regarding hydrology and water quality were received.

11.3 Environmental Setting

11.3.1 Surface Water

The project site is located within the watershed of Carbonera Creek and adjacent to the watershed of Bean Creek (see [Figure 11-1: Watersheds](#)). Carbonera Creek is a tributary of the San Lorenzo River system, which drains south from the Santa Cruz Mountains into Monterey Bay at the City of Santa Cruz. The San Lorenzo River watershed drains approximately 137 square miles, and its principal tributaries include Boulder Creek, Kings Creek, Bear Creek, Newell Creek, Zayante Creek, Bean Creek, and Branciforte Creek (City of Scotts Valley, 1994).

The Carbonera Creek watershed drains approximately 3.6 square miles at the southern boundary of the Scotts Valley Water District (SVWD). Unlike Bean Creek, Carbonera Creek typically becomes dry or near dry during the summer months. Carbonera Creek flows generally southwest from its headwaters in the Santa Cruz Mountains, and discharges to Branciforte Creek in the City of Santa Cruz. Branciforte Creek discharges into the San Lorenzo River near Soquel Avenue, approximately one mile downstream of the Carbonera Creek confluence. Bean

Creek drains approximately 8.8 square miles just beyond the western boundary of the SVWD (City of Scotts Valley, 1994).

Flooding

The project site is not located within a Federal Emergency Management Agency (FEMA) mapped Flood Insurance Rate Map (FIRM) because no major waterways are located on the project site or immediately adjacent.

11.3.2 Groundwater

The project site is located within SVWD, which relies on local groundwater for its potable water supply. Existing SVWD potable water supply lines traverse the project site. SVWD also utilizes recycled water as water supply for permitted uses (e.g. landscape irrigation). There are no recycled water lines on the project site.

The following provides a description of the groundwater basin, which is accessed by SVWD for its water supply.

Santa Margarita Groundwater Basin

Groundwater Basin boundaries are defined by the California Department of Water Resources (DWR). The Santa Margarita Groundwater Basin (SMGB or the Basin) covers more than 30 square miles in the Santa Cruz Mountains. The Basin forms a roughly triangular area that extends from Scotts Valley in the east, to Boulder Creek in the northwest, to Felton in the southwest (see [Figure 11-2: DWR Groundwater Basins](#)). The SVWD Groundwater Management Area includes the portion of the SMGB served primarily by the SVWD.

The SMGB consists of a sequence of sandstone, siltstone, and shale that are underlain by granite that lie within a geologic trough called the Scotts Valley Syncline. This sequence of sedimentary rocks is divided into several geologic formations. These units are defined on the basis of the type of rock and their relative geologic age based on studies by the United States Geological Survey. In the SMGB, the sandstone units serve as the primary aquifers that provide the majority of groundwater production for the local water supply. The main aquifers in the Basin include:

- Santa Margarita Sandstone (Santa Margarita)
- Monterey Formation (Monterey)
- Lompico Sandstone (Lompico)
- Butano Formation (Butano)

The Santa Margarita, Lompico, and Butano are the major water-bearing units of the four aquifers. The Basin includes portions of DWR Basins 3-21, 3-027, and 3-50 (Kennedy/Jenks Consultants, 2015).

Over the past 25 years, groundwater levels in many parts of the SMGB, especially in the Lompico Aquifer, have declined more than 200 feet. The greatest declines occurred between the late 1960s and mid-1990s. A variety of factors probably contributed to these declines, including:

- Increased groundwater pumping due to growth in area.
- Reduced recharge from the surface to groundwater due to an increase in paved areas and other land use changes associated with urbanization.
- Reduced groundwater recharge due to the drought.

The Groundwater Reporting Area (GWRA) is the area of reported annual data for the SVWD Groundwater Management Area and the Pasatiempo Groundwater Subarea, located south of the SVWD GWRA. The Pasatiempo Groundwater Subarea includes the portion of the SMGB served by the San Lorenzo Valley Water District and the Mt. Hermon Association.

SVWD Groundwater Use

SVWD relies on groundwater from the SMGB for providing potable water to its customers. Recycled water is also available for non-potable uses such as landscape irrigation.

Groundwater production by SVWD in WY2018 was 1,211 acre-feet, which was 31 acre-feet less than WY2017. Since WY2003, groundwater production by SVWD declined by over 900 acre-feet (%), and declines in production have occurred in nine of the past 14 years (SVWD, 2019). The sharp decline is likely in response to successful water use efficiency efforts in response to the drought at that time.

In WY2018, the District obtained about 73% of its water supply from the Lompico aquifer and 26% of its water supply from the Butano aquifers. An estimated 884 acre-feet was extracted from the Lompico aquifer, making it the highest producing aquifer. An estimated 322 acre-feet was extracted from the Butano aquifer in WY2018, making it the second highest producing aquifer for the District.

As described in Table 11-1: SVWD Groundwater Production by Aquifer and Recycled Water Usage (afy), the aquifers are currently being pumped well below their historical maximum annual production. Annual groundwater pumping from both the Lompico and Butano aquifers has noticeably declined over the past few years. For the Lompico aquifer, WY2018 pumping was 40% lower than the high of 1,483 acre-feet in WY2003. Similarly, WY2018 pumping in the Butano aquifer was 56% lower than the high of 735 acre-feet in WY1997, although WY2015 represented the largest decrease at 67% of the high pumped in WY1997.

Table 11-1: SVWD Groundwater Production by Aquifer and Recycled Water Usage (afy)

Aquifer	Historical Maximum	WY 2009	WY 2010	WY 2011	WY 2012	WY 2013	WY 2014	WY 2015	WY 2016	WY 2017	WY 2018
Monterey	426 (1984)	16	3	3	4	35	23	0	2	6	4
Lompico	1,483 (2003)	1,047	1,009	969	964	1,020	989	896	814	923	884
Butano	735 (1997)	443	346	320	383	345	365	237	323	312	322
GW	2,100 (2003)	1,507	1,357	1,292	1,351	1,400	1,376	1,133	1,139	1,242	1,211
RW	200 (2013)	146	134	163	184	200	199	184	195	162	196
Total	2,096 (2003)	1,653	1,491	1,455	1,535	1,600	1,575	1,317	1,334	1,404	1,407

Notes:

GW – Water Year Groundwater Pumping Total

RW – Water Year Recycled Water Usage Total

Source: Montgomery & Associates, 2019.

Regional Groundwater Production

In addition to SVWD, groundwater production in the GWRA includes pumping from wells operated by other water purveyors and private pumpers, as well as for environmental remediation. The users include:

San Lorenzo Valley Water District (SLVWD). SLVWD’s Pasatiempo and Manana Woods systems are within the GWRA. Groundwater production by SLVWD in the GWRA was about 225 acre-feet in WY2017, down from 320 acre-feet in WY2018, and 55% of the highest pumping of 447 acre-feet in WY2002. SLVWD pumping from wells outside the GWRA is not included here. Recent production is from the Lompico aquifer.

Mt. Hermon Association (MHA). Pumping by MHA was 145 acre-feet in WY2017 and 129 acre-feet in WY2018. WY2015 had the lowest production on record at 114 acre-feet. The high on record was 232 acre-feet in WY2008. Production is derived from the Lompico aquifer.

Industrial Wells. Historically, most industrial groundwater pumping was carried out by the Hanson Quarry before the quarry was closed in 2004. Currently, no large industrial wells are identified in the GWRA. The maximum industrial pumping was 485 acre-feet in WY1987. Groundwater pumping was primarily from the Santa Margarita and Lompico aquifers.

Environmental Remediation. Groundwater pumped for environmental remediation has steadily declined from 465 acre-feet in WY1986 to an estimated 43 acre-feet in WY2016. Groundwater

pumping is primarily from the Santa Margarita aquifer. The last two active groundwater remediation systems were deactivated in WY2016.

Private Wells. Pumping from private wells for domestic use, golf course irrigation, landscape ponds and irrigation is not metered, but is estimated at approximately 178 acre-feet in the GWRA for WY2018 (Table 2). The maximum historical private pumping estimate was 381 acre-feet in WY1987 (Todd, 1998). We assumed private pumping declined since the start of the recent drought starting in WY2012 due to public awareness and statewide drought restrictions. Private wells pump groundwater from the Santa Margarita, Monterey and Lompico aquifers. Appendix A of the GMRA describes the assumptions used to estimate private pumping.

Table 11-2: Groundwater Production in the GWRA, summarizes total groundwater pumping in the GWRA by aquifer. In the GWRA for WY2018, about 80% of the total pumping is from the Lompico aquifer, 18% is from the Butano aquifer, and the remaining 3% is from the Santa Margarita and Monterey aquifers. Larger municipal and private wells typically pump from the Lompico and Butano aquifers which can sustain higher pumping rates. Santa Margarita and Monterey aquifer pumping is generally from smaller wells or for environmental remediation (Montgomery & Associates, 2019).

Table 11-2: Groundwater Production in the GWRA (afy)

Aquifer	Historical Maximum	WY 2009	WY 2010	WY 2011	WY 2012	WY 2013	WY 2014	WY 2015	WY 2016	WY 2017	WY 2018
Santa Margarita ¹	894 (1987)	40	53	63	56	74	72	74	57	14	14
Monterey	587 (1984)	62	49	49	50	81	69	37	39	43	41
Lompico	2,705 (2003)	1,862	1,782	1,743	1,739	1,815	1,752	1,449	1,322	1,421	1,462
Butano	738 (1997)	446	349	323	386	348	368	237	323	312	322
Total	3,679 (1997)	2,410	2,233	2,178	2,231	2,319	2,261	1,797	1,740	1,790	1,838

Notes:

1. The Santa Margarita aquifer is not listed in Table 11-1 as SVWD does not pump groundwater from this shallow aquifer.

Source: Montgomery & Associates, 2019.

11.4 Applicable Regulations, Plans, and Standards

11.4.1 Federal

Clean Water Act

The Clean Water Act (CWA) (33 U.S.C. Section 1251 et seq.), formerly the Federal Water Pollution Control Act of 1972, was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States (U.S.) and has given the U.S. Environmental Protection Agency (U.S. EPA) the authority to implement pollution control programs. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water. Those discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) permit process (CWA Section 402). In California, NPDES permitting authority is delegated to, and administered by, the nine Regional Water Quality Control Boards (RWQCBs). The project is within the jurisdiction of the Central Coast RWQCB.

Section 402 of the Clean Water Act authorizes the California State Water Resources Control Board (SWRCB) to issue NPDES General Construction Storm Water Permit (Water Quality Order 99-08-DWQ), referred to as the “General Construction Permit.” Construction activities can comply with and be covered under the General Construction Permit if they:

- Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) which specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting storm water and with the intent of keeping all products of erosion from moving off-site into receiving waters.
- Eliminate or reduce non-storm water discharges to storm sewer systems and other waters of the nation.
- Perform inspections of all BMPs.

The SWPPP must contain a visual monitoring program; a chemical monitoring program for “non-visible” pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the project site discharges directly to a water body listed on the 303(d) list for sediment. Increased compliance tasks under the adopted 2009 Construction General Permit include project risk evaluation, effluent monitoring, receiving water monitoring, electronic data submission of the SWPPP and all other permit registration documents, and a Rain Event Action Plan (REAP), which must be designed to protect all exposed portions of a project site within 48 hours prior to any likely precipitation event.

Section 401 of the CWA requires that any activity—including river or stream crossing during road, pipeline, or transmission line construction—that may result in discharges into a State waterbody be certified by the RWQCB. This certification ensures that the proposed activity

does not violate State and/or federal water quality standards. The limits of non-tidal waters extend to the Ordinary High Water Mark (OHWM), which is defined as the line on the shore established by the fluctuation of water and indicated by physical characteristics, such as natural line impressed on the bank, changes in the character of the soil, and presence of debris. The U.S. Army Corps of Engineers (USACE) may issue either individual, site-specific permits or general, nationwide permits for discharge into US waters.

Section 404 of the CWA requires a permit for construction activities involving placement of any kind of fill material into waters of the U.S. or wetlands. A Water Quality Certification pursuant to Section 401 of the CWA is required for Section 404 permit actions. If applicable, construction would also require a request for Water Quality Certification (or waiver thereof) from the RWQCB.

When an application for a Section 404 permit is made, the applicant must show it has:

- Taken steps to avoid impacts to wetlands or waters of the U.S. where practicable;
- Minimized unavoidable impacts on waters of the U.S. and wetlands; and
- Provided mitigation for unavoidable impacts.

Section 303(d) of the CWA (CWA, 33 USC 1250, et seq., at 1313(d)) requires states to identify “impaired” water bodies as those which do not meet water quality standards. States are required to compile this information in a list and submit the list to U.S. EPA for review and approval. An affected waterbody, and associated pollutant or stressor, is then prioritized in a list of impaired water bodies known as the 303(d) List. The CWA further requires the development of a Total Maximum Daily Load (TMDL) for each listing.

National Flood Insurance Program (NFIP)

The NFIP, implemented by the Congress of the United States in 1968, enables participating communities to purchase flood insurance. Flood insurance rates are set according to flood-prone status of property as indicated by FIRMs developed by the FEMA. FIRMs identify the estimated limits of the 100-year floodplain for mapped watercourses, among other flood hazards. As a condition of participation in the NFIP, communities must adopt regulations for floodplain development intended to reduce flood damage for new development through such measures as flood proofing, elevation on fill, or floodplain avoidance.

11.4.2 State

Senate Bill (SB) 610

SB 610 was passed on January 1, 2002, amending California state law to require detailed analysis of water supply availability for large development projects. An SB 610 Water Supply Assessment (WSA) must be prepared if the following three conditions are met: 1) the project is subject to CEQA under Water Code Section 10910; 2) the project meets criteria to be defined as a “Project” under Water Code Section 10912; and 3) the applicable water agency’s current

Urban Water Management Plan (UWMP) does not account for the water supply demand associated with the project. A project would meet the definition of “Project” per Water Code Section 10912 if it is:

- A proposed residential development of more than 500 dwelling units;
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space;
- A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space;
- A proposed hotel or motel, or both, having more than 500 rooms;
- A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area;
- A mixed-use project that includes one or more of the projects specified in this subdivision; or
- A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling unit project (DWR, 2003).

Porter-Cologne Water Quality Control Act

SWRCB regulates water quality through the Porter-Cologne Water Quality Act of 1969, which contains a complete framework for the regulation of waste discharges to both surface waters and groundwater of the state. On the regional level, the project falls under the jurisdiction of the Central Coast RWQCB, Region 3, which is responsible for the implementation of state and federal water quality protection statutes, regulations and guidelines.

California Department of Fish & Wildlife Code

Section 1602 of the California Department of Fish & Wildlife (CDFW) Code protects the natural flow, bed, channel, and bank of any river, stream, or lake designated by the CDFW in which there is, at any time, any existing fish or wildlife resources, or benefit for the resources. Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state, and requires any person, state or local governmental agency, or public utility to notify the CDFW before beginning any activity that will:

- Substantially divert or obstruct the natural flow of any river, stream or lake;
- 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.

A Streambed Alteration Agreement is required prior to any construction if CDFW determines that a project could substantially adversely affect an existing fish and wildlife resource. The

Agreement includes measures to protect fish and wildlife resources while conducting the project. CDFW must comply with CEQA before it may issue a final Agreement; therefore, CDFW must wait for the lead agency to fully comply with CEQA before it finalizes the Agreement.

California Water Code §13050-§13260

California Water Code §13050. California Water Code §13050(e) defines “waters of the state” as “any surface water or groundwater, including saline waters, within the boundaries of the state.” California Water Code §13260 requires that any person discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the State, other than into a community sewer system, must submit a report of waste discharge to the applicable RWQCB.

Central Coast RWQCB Post-Construction Stormwater Management Requirements

In July 2013, the Central Coast Regional Water Quality Control Board (RWQCB) adopted Order R3-2013-0032, which requires new and more stringent Post-Construction Requirements (PCRs) for proposed development projects. The PCRs mandate that development projects use Low Impact Development (LID) features and facilities to detain, retain, and treat site runoff. LID incorporates and conserves on-site natural features, together with constructed hydrologic controls to more closely mimic pre-development hydrology and watershed processes. Projects that receive their first discretionary approval after March 6, 2014, are subject to the PCRs if they create or replace 2,500 sf or more of impervious area.

The PCR tiers range from Tier 1 to Tier 4, with requirements strengthened for each additional tier. Tier 4 projects have the most stringent requirements. For these projects which create or replace 22,500 sf or more of impervious surface, post-development peak flows discharged from the project site must not exceed pre-project peak flows for the 2-year through 10-year storm events. This requirement is in addition to other requirements for Tier 1-3 projects.

11.4.3 Local

City of Scotts Valley General Plan

The following goals, policies and/actions from the Scotts Valley General Plan will avoid or help reduce impacts associated with the project:

- | | |
|---------|--|
| OSA-338 | As part of the permit process, the city shall require the dedication of easements for natural drainage channels. |
| OSA-342 | A percentage of storm drainage fees will be put into a fund to acquire recharge areas and construct improvements thereto when the need arises. These lands shall be maintained as open space and/or neighborhood parks. |
| OSA-343 | As part of the environmental review process the city shall, in cooperation with the water district, require developers to study and mitigate any loss of recharge. Mitigations may take the form of on-site recharge, construction of recharge |

improvements, contributions to the program cited above, or a combination of any or all of these.

OSA-344 Any construction proposed in zones designated high protection or high management in the 1988 Todd Report and shown on Figure OS-5 [of the General Plan] shall provide a detailed hydrological evaluation to mitigate loss of recharge.

OSP-345 New developments shall minimize the amount of impervious surfaces.

11.5 Environmental Impacts and Mitigation Measures

11.5.1 Significance Criteria

The following significance criteria for hydrology and water quality were derived from the Environmental Checklist in CEQA Guidelines Appendix G. These significance criteria have been amended or supplemented, as appropriate, to address lead agency requirements and the full range of potential impacts related to this project.

An impact of a project would be considered significant and would require mitigation if it would meet one of the following criteria.

- Violate any water quality standards or waste discharge requirements, create any substantial new sources of polluted runoff, or otherwise degrade surface water or groundwater quality.
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, such that the project may impede sustainable groundwater management of the basin.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would
 - Result in substantial erosion or siltation on- or offsite.
 - Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite.
 - 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.
 - Impede or redirect flood flows
- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.

- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

11.5.2 Summary of No and/or Beneficial Impacts

The project site is not located within a 100-year flood hazard area. Additionally, based on the project site's location, it would not be subject to inundation by seiche, tsunami, or mudflow. Therefore, these thresholds are not evaluated further in this section.

11.5.3 Impacts of the Project

Impact HYD-1: Contribute to the depletion of local groundwater supplies or interfere with groundwater recharge.

The project could substantially deplete local groundwater supplies or interfere with groundwater recharge if it:

- Affected a groundwater basin in overdraft conditions;
- Caused the affected groundwater basin to be in overdraft;
- Caused a substantial local groundwater level drawdown at wells in the area; or
- Redirected natural recharge to the basin, such as through the introduction of impervious areas that prevent infiltration.

Groundwater Demand

As described in Impact PSU-4, below, the project would use approximately 12,000 gallons per day (13 acre-feet per year) of water. This demand would not exceed the capacity of the groundwater production system described in the Environmental Setting, above. It would not cause the groundwater basin to be in overdraft, and it would not result in substantial local groundwater level drawdown at wells in the area.

Based upon preliminary review of the project, the Scotts Valley Water District issued a "Will Serve" letter to the project applicant in 2019 (SVWD, 2019). This water would be delivered to the project site via new main and service lines connecting to SVWD's distribution system.

SVWD has a recycled water line in Mt. Hermon Road, adjacent to the project site. Per SVMC Chapter 17.47 Recycled Water Regulations, project construction would be required to use recycled water for common area irrigation, thereby reducing potable water demand for the project site.

Groundwater Recharge

The Scotts Valley General Plan Figure OS-5 Hydrological Resources identifies a portion of the project site as being in an area designated High Protection / recharge. However, as part of a

previous project application, two letters dated 9/8/06 and 12/14/16 from the City of Scotts Valley Planning staff discuss how the project site was incorrectly identified and is not subject to the preparation of a hydrological study per General Plan policy OSA-344.

This fact was confirmed by the Scotts Valley Water District (email from Piret Harmon, SVWD to Todd Creamer, C2G Engineers, 8/8/19). The basis for this conclusion is that the project site is not located in an area within the City that is potentially suitable for different recharge methods such as large scale surface spreading, low impact development, and injection wells (Kennedy Jenks, 2011). SVWD concludes that the project's proposed solution for installing bioswales is appropriate and optimal for the project site.

In July 2013, the Central Coast Water Quality Control Board adopted Order R3-2013-0032, which requires new and more stringent Post-Construction Requirements (PCRs) for proposed development projects. The PCRs mandate that development projects use Low Impact Development (LID) features and facilities to detain, retain, and treat site runoff. LID incorporates and conserves on-site natural features, together with constructed hydrologic controls to more closely mimic pre-development hydrology and watershed processes.

The project would create approximately 107,000 sf of impervious surface area and would therefore, be subject to state Tier 4 PCRs, as previously identified, requiring the implementation of LID measures in conjunction with construction and operational phases of future development. The project's Stormwater Control Plan would incorporate LID design elements which would allow for infiltration and replenishment of the groundwater basin. Implementation of these features would reduce impact to less than significant.

Impact HYD-2: Increase stormwater runoff due to the increase in impervious surfaces.

The rate and amount of surface runoff is determined by multiple factors, including the amount and intensity of precipitation; amount of water that enters a watershed; and the amount of precipitation and water that infiltrates to the groundwater. Infiltration is determined by several factors, including soil type, antecedent soil moisture, rainfall intensity, the amount of impervious surfaces within a watershed, and topography. The rate of surface runoff is largely determined by topography and the intensity of rainfall over a given period of time.

Project development would include earth-disturbing activities, which may affect site-specific infiltration and permeability during construction (temporary) and operation (permanent). The project would result in 106,914 sf (approximately 69 percent of the project site) of net new impervious surfaces, which would increase stormwater flows.

A Stormwater Control Plan for the project was submitted to the City as part of the project application (C2G/Civil Consultants Group, Inc., July 30, 2019). The Plan notes that measures for stormwater control and/or mitigation include a natural low point adjacent to the municipal storm system and sufficient difference in grade across the site to assure the consistent conveyance of runoff utilizing only gravity-based systems. Constraints include the very low

infiltration rate of soils and the steep slopes found on the northwestern portion of the site. Additionally, the project will result and in increase of impervious surfaces, limiting areas available for surface treatment and/or conveyance of runoff.

As shown in **Figure 3-11: Stormwater Control Plan**, C2G divided the project site into 38 drainage management areas (DMAs) which included rooftop drainage and at-grade areas. Impervious and pervious areas for each DMA were tabulated to determine the rate of runoff and the amount of area required for bioretention facilities. The Plan identified two stormwater control measure (SCM) areas design to collect, filter and control off-site flows.

SCM #1, would contain a series of flow-through planters which step down from north to south, roughly parallel to Mt. Hermon Road. Planters would be designed to provide treatment, retention, and detention of stormwater runoff from Lot 1, the residential portion of the project site, along with associated improvements.

SCM #2 would provide treatment, retention, and detention for stormwater runoff from Lot 2, the mixed-use and commercial portions of the project site, along with the site runoff associated with these improvements. Stormwater facilities would include underground storage chamber system designed to provide treatment of runoff by infiltration

Based on preliminary design review by City Public Works staff, both SCMs have been designed to maintain or reduce stormwater runoff consistent with City regulations including the Stormwater Technical Guide – Compliance with Stormwater Post Construction Requirements and RWQCB Tier 4 PCR requirements. Therefore, project impacts would be less than significant.

Impact HYD-3: Substantially alter drainage patterns on- or off-site that would result in the storm water transport of contaminants, pollutants, bacteria, salts, and sediment into downstream facilities.

Because the project would disturb more than one acre of land, the project applicant would be required to submit a Notice of Intent to the State Board and apply for coverage under the State NPDES General Permit for Construction Activities, prepare a Stormwater Pollution Prevention Plan (SWPPP), and submit it for review and approval prior to commencing construction. In addition, the project could create more (or less) impervious surface area and be subject to state Tier 4 PCRs, requiring the implementation of LID measures.

The SWPPP details the project site-specific BMPs to control erosion and sedimentation and maintain water quality during the construction phase of the project. Potential erosion control plans include silt fences, fiber rolls, drop inlet protection and curb inlet sediment barriers, and rock construction site entrances. The SWPPP would also contain a summary of the structural and non-structural BMPs to be implemented during the post-construction period, pursuant to the nonpoint source practices and procedures as required by the City Public Works Department. Once grading begins, the SWPPP must be kept on-site and updated as needed while construction progresses.

Given that existing regulations require future project-specific applicants to prepare and submit a project SWPPP for review and approval prior to construction activities occurring on the project site, as well as adhere to Tier 4 PCR requirements for operation, the impacts from stormwater runoff would be less than significant.

Impact HYD-4: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Based upon the SVWD 2015 Urban Water Management Plan, SVWD has adequate supply to meet demand during normal, dry, and multiple-dry years through 2040.⁶ The project-generated increase in water demand of 13.36 afy (see **Impact PSU-4**, below) would not exceed the supply capacity nor the capacity of the water delivery system. In addition, SVWD issued a “Will Serve” letter to the project applicant in 2019, confirming that it has adequate water supplies to serve the project site. Thus, impacts would be less than significant.

11.5.4 Cumulative Impact Analysis

The geographical area for cumulative hydrology and water quality impacts is the Santa Margarita Groundwater Basin.

Impact HYD-5: Contribute to cumulatively considerable effects on hydrology and water quality.

As described above, the project has been evaluated for the potential to interfere with groundwater recharge, the potential to increase stormwater run-off, and the potential to transport of pollutants from the site that could degrade water quality. As part of project development, the project applicant would be required to prepare a SWPPP and adhere to Tier 4 PCR requirements, pursuant to existing regulations.

Present and reasonably foresee future projects larger than one acre would also be required to prepare a SWPPP. Similarly, present and reasonably foreseeable future projects that create or replace 2,500 sf or more of impervious area would be required to meet PCR standards, with the Tier dependent upon the total impervious surface created or replaced.

Regarding groundwater overdraft and recharge, past, present, and reasonably foreseeable future projects are encompassed within the SVWD demand projections through 2040 (SVWD Urban Water Management Plan, 2015). Based upon the plan, SVWD has adequate supply to meet demand during normal, dry, and multiple-dry years, based on City and County growth projections. The project’s incremental increase in water demand would not exceed the supply capacity nor the capacity of the water delivery system. The use of recycle water service would reduce overall potable water demand. Since the recent multi-year drought, SVWD has

⁶ Refer to Tables 7-3, 7-4, and 7-5 of the SVWD 2015 Urban Water Management Plan for normal, dry, and multiple dry-years supply and demand comparison.

experienced a downward trend in the systemwide demand and anticipates continued per capita consumption decreases due to the changes in plumbing fixtures, outdoor irrigation improvements, and customer awareness on water use efficiency.

The project, combined with these projects, would result in less-than-significant cumulative impacts to groundwater, stormwater quantity and water quality.

11.5.5 Level of Significance after Mitigation

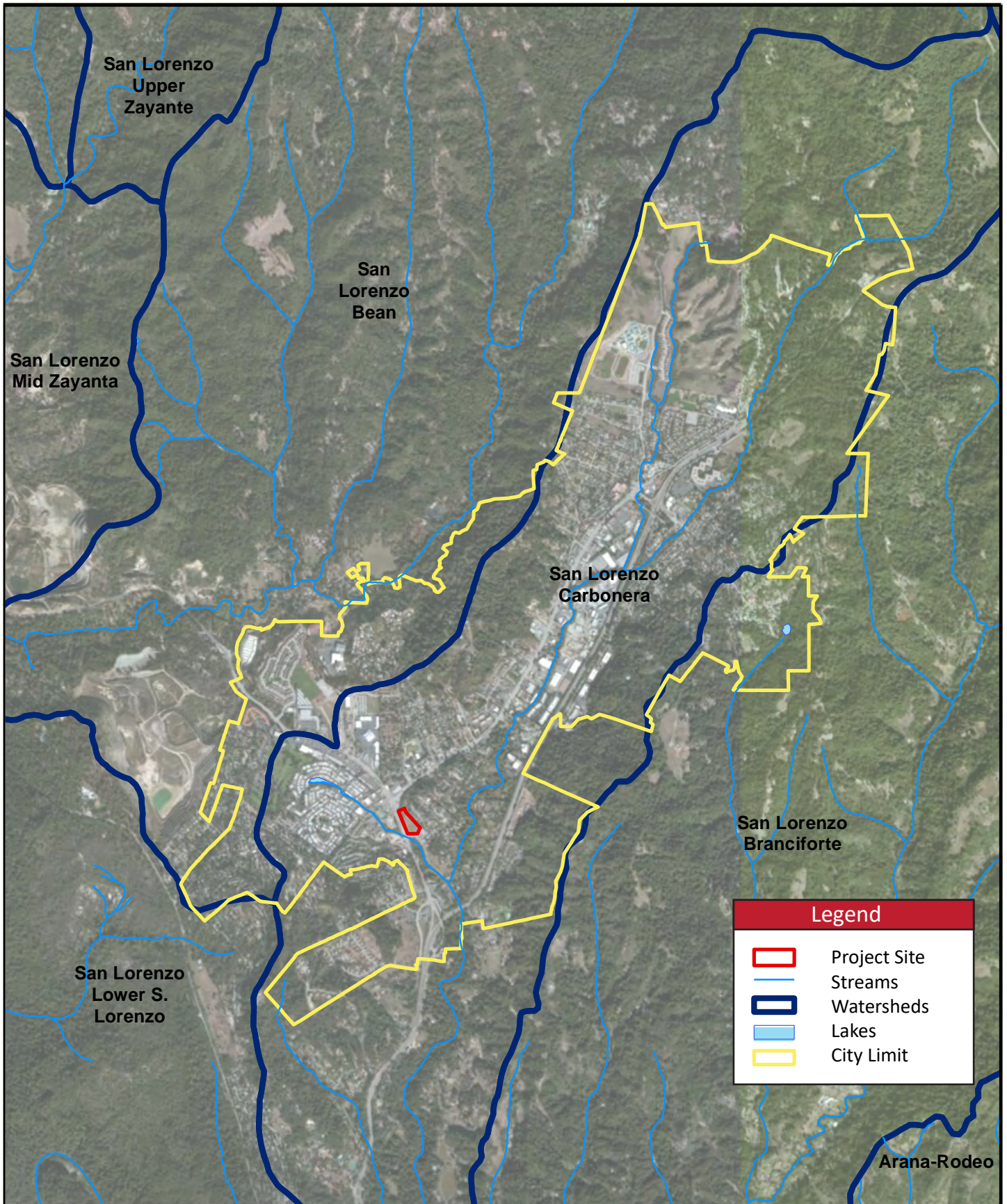
Table 11 3: Summary of Impacts and Mitigation Measures – Hydrology & Water Quality summarizes the environmental impacts, significance determinations, and mitigation measures for the project with regard to hydrology & water quality.

Table 11-3: Summary of Impacts and Mitigation Measures – Hydrology & Water Quality

Impact	Impact Significance	Mitigation
Impact HYD-1: Contribute to the depletion of local groundwater supplies or interfere with groundwater recharge.	Less than Significant	None required
Impact HYD-2: Increase stormwater runoff due to the increase in impervious surfaces.	Less than Significant	None required
Impact HYD-3: Substantially alter drainage patterns on- or off-site that would result in the storm water transport of pollutants, bacteria, salts, and sediment into downstream facilities.	Less than Significant	None required
Impact HYD-4: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	Less than Significant	None required
Impact HYD-5: Contribute to cumulatively considerable effects on hydrology and water quality.	Less than Significant	None required

11.6 References

- CASQA (California Stormwater Quality Association). 2019. "Construction BMP Online Handbook." Available at: <https://www.casqa.org/resources/bmp-handbooks/construction>.
- DWR (California Department of Water Resources). 2003. "Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001 to assist water suppliers, cities, and counties in integrating water and land use planning."
- Kennedy Jenks, "Tech Memo Evaluation Recharge Potential", 2011. Available at: <https://www.svwd.org/sites/default/files/documents/reports/Tech%20Memo%20Evaluation%20Recharge%20Potential%20Feb%202011.pdf>
- Montgomery & Associates. 2019. Annual Report - Water Year 2018 Scotts Valley Water District Groundwater Management Plan Scotts Valley Water District Groundwater Management Plan.
- Scotts Valley Water District (SVWD). 2019. Letter RE: Will Serve Letter for Mt. Hermon Road/Glen Canyon Road, APN #022-162-76. August 27.
- U.S. ACE (U.S. Army Corps of Engineers). 2008. A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual.

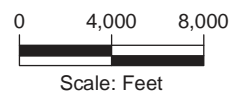
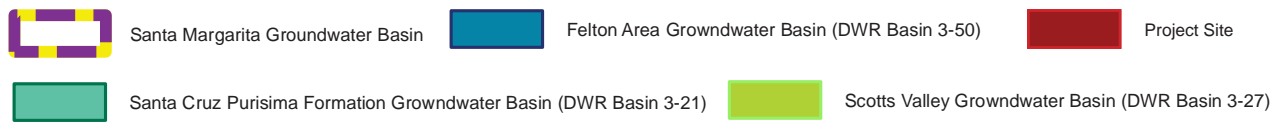
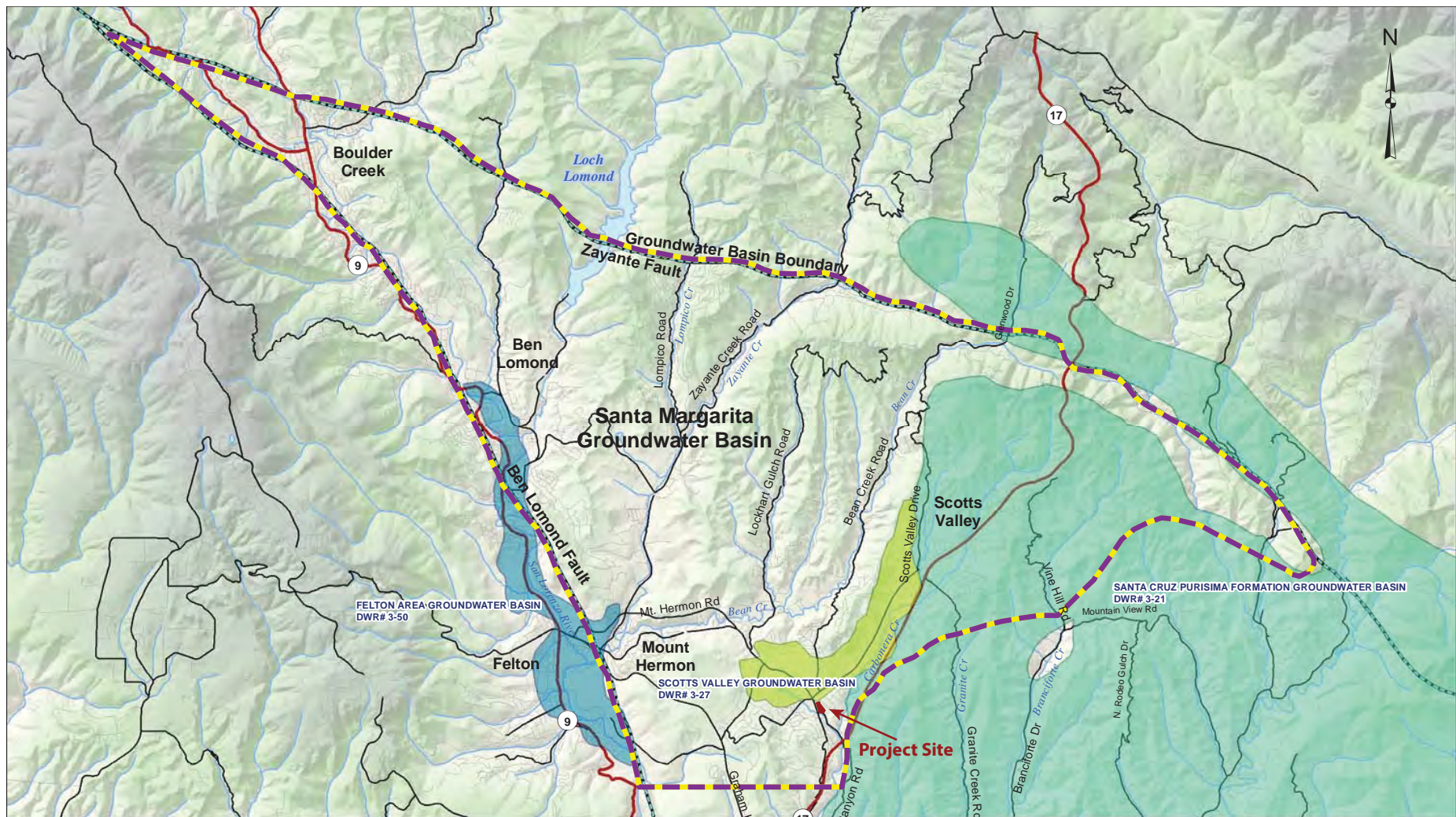


Source: City of Scotts Valley, 2013

Figure 11-1: Watersheds
 Oak Creek Park
 Draft EIR



Not to scale



Source: Kennedy/Kenks Consultants, 2015 "Annual Report 2014 Water Year Scotts Valley Water District Groundwater Management Program"

Figure 11-2: DWR Groundwater Basin
 Oak Creek Park
 Draft EIR



Not to scale

12 Land Use & Planning

12.1 Introduction

This section describes effects on land use that would be caused by implementation of the project. The following discussion addresses existing environmental conditions in the affected area, identifies and analyzes environmental impacts, and recommends measures to reduce or avoid adverse impacts from project construction and operation. In addition, existing laws, regulations, and standards relevant to land use and recreation are described. In some cases, compliance with these existing laws and regulations would serve to reduce or avoid certain impacts.

Information used to prepare this section came from the following resources:

- City of Scotts Valley, *General Plan*, 1994.
- City of Scotts Valley, *Municipal Code*, as amended.

12.2 Scoping Issues Addressed

During the scoping period for the project, no written comments by agencies and the public regarding land use was received.

12.3 Environmental Setting

This section presents information on the existing conditions of the project site for land use.

12.3.1 Project Site Land Uses

The project site is currently vacant and was previously approved for a three-lot subdivision to build three commercial buildings in 1991, however, the project was never constructed. In 1997, the City approved the Oak Creek Park Business Center to create three lots and build three commercial buildings (two 2-story buildings and one 1-story building). The one-story building was built at 3600 Glen Canyon Road. The approved two 2-story buildings (approx. 48,000 square feet) were not built. In 2008, the Planning Commission recommended to the City Council for approval the Oak Creek Mixed-Use Planned Development project to create 13 lots and build two one-story commercial buildings (24,500 sf.) and a three-story, 10-unit townhouse building. However, due to a potential legal challenge, the public hearing was continued to a date uncertain and the City Council did not consider the proposed development.

12.3.2 Adjacent Land Uses

Mt. Hermon Road borders the project site to the west. Across Mt. Hermon Road are commercial uses comprised of small businesses, such as a coffee shop, restaurant, yoga studio, salon, gas station and laboratory equipment suppliers. North of the project site is an area entitled for 19 residential residences known as The Terrace, which is currently under

construction. Northeast of the site are single-family residences. Southeast of the project site is a one-story commercial building.

12.3.3 Existing Planning Designations

General Plan Land Use

The project site is designated as Service Commercial (C-S) under the City of Scotts Valley General Plan. As defined in the City's General Plan, the C-S designation is intended for commercial and service related land uses. Very high density mixed use residential uses at a density range of 15.1 to 20 units/acre are also permitted, providing adjacent uses are compatible and the residential is secondary to the retail use.

As described in the City's 2015 – 2023 Housing Element, the project site is identified as one of six "Opportunity Sites" that have zoning and development standards, infrastructure and public facilities in place to accommodate the construction of new housing. This criteria allows high-density residential as part of a mixed-use project. Furthermore, the project site is identified as suitable for the construction of two low income affordable units and eight market units in the City's Regional Housing Needs Assessment (RHNA) allocation.

Zoning

The project site is currently zoned Service Commercial (C-S). This district is designed to create and maintain areas accommodating city-wide and regional service that may be inappropriate in neighborhood or pedestrian-oriented shopping areas and which generally require automotive access for customer convenience

Permitted uses in the C-S district include:

- Retail establishments
- Banks
- Business and personal service establishments
- Emergency shelters (≤25 occupants)
- Medical, professional and general business offices
- Radio and television broadcast studios (excluding transmission towers)
- Accessory structures and uses located on the same site with a permitted use which are customarily incidental to the permitted use
- Multiple-family dwellings located either above the ground-level commercial use or at ground level at the rear of a commercial space on sites designated in the Housing Element
- Day care centers

12.4 Applicable Regulations, Plans, and Standards

12.4.1 Local

Scotts Valley General Plan

The project is subject to the existing City of Scotts Valley General Plan (the General Plan), which was adopted by the City of Scotts Valley City Council in 1994. The General Plan, as amended, establishes policies for the orderly growth and development of the City of Scotts Valley. Among other purposes, the plan identifies policies necessary to protect and enhance those features and services which contribute to the quality of life of the community in which it serves.

The General Plan is a comprehensive policy plan which sets forth a series of written statements (goals, policies and objectives) defining the direction, character and composition of future land use development, and establishes guidelines (policies and actions) necessary to attain conformance with the plan. It is made up of 8 elements and various maps which accompany the elements. The elements are: 1) Land Use, 2) Circulation, 3) Housing (2009–2014), 4) Open Space and Conservation, 5) Noise, 6) Safety, 7) Public Services and Facilities, and 8) Parks and Recreation. The General Plan Land Use Plan Map visually represents the physical relationship of all portions of the text, including development densities.

General Plans are reviewed annually and should be updated every three years to ensure that the most recent technical data, community goals and state law requirements are recognized. Major updates typically occur every 10 to 30 years, depending on changes in land use patterns, growth and development pressures, and new regulations.

The following goals, policies and/actions from the Scotts Valley General Plan will avoid or help reduce impacts associated with the project:

- LP-3 The City shall promote the availability of adequate sites for a variety of housing types and densities consistent with Housing Element goals and environmental constraints.

- LA-5 The City shall re-designate, as appropriate, non-residential land uses for residential use to meet the identified housing demand if the report of the Planning Director so justifies it.

- LP-28 The City shall promote availability of commercial sites to accommodate a mix of professional office, service commercial, and shopping center developments consistent with the environmental, service, and economics goals of the City.

- LP-33 Commercial developments shall be designed and screened in an attractive manner and thereafter maintained so as to integrate the entire development visually with the overall natural beauty of the Planning Area.

- LO-37 Ensure compatibility between commercial developments and surrounding land uses.
- LP-45 Commercial land uses should be concentrated along the urban core of the City.
- HE 1.1 Encourage the production of new residential development which provides a choice of housing type, density, and cost to meet the housing needs of all segments of the community.
- HE 1.3 Facilitate and encourage the development of mixed-use residential and commercial projects at appropriate locations along major corridors, within established design guidelines.
- HE 1.4 Offer regulatory incentives and concessions for affordable housing, such as modified development standards, density bonuses, or fee waivers where deemed to be appropriate.
- HE 1.7 Encourage density levels and incentives, for affordable housing, sufficient to facilitate the production of quality affordable housing.

12.5 Environmental Impacts and Mitigation Measures

12.5.1 Significance Criteria

The following significance criteria for land use & planning were derived from the Environmental Checklist in CEQA Guidelines Appendix G. These significance criteria have been amended or supplemented, as appropriate, to address lead agency requirements and the full range of potential impacts related to this project.

An impact of the project would be considered significant and would require mitigation if it would meet one of the following criteria.

- Physically divide an established community.
- Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect

12.5.2 Summary of No and/or Beneficial Impacts

Physically Divide an Established Community

The project would not physically divide an established community because it is located in within the City limits and proposed land use designation and zoning changes for the project site would be compatible with surrounding land uses. In addition, existing roadway connections to the surrounding community would be maintained. Therefore, there would be no impact.

The environmental effects related to compatibility between proposed on-site land uses and adjacent land uses during both construction and operation are described in the respective impact section of the following environmental resource chapters: Aesthetics, Air Quality, GHG emissions and Noise.

12.5.3 Impacts of the Project

Impact LU-1: Substantially conflict with an applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

General Plan Amendment

As shown in [Figure 3-12: Existing and Proposed General Plan Amendment](#), the project would include a General Plan Amendment to re-designate Lot 1 from Commercial-Service (C-S) to Medium High Residential/Planned Development (R-H/PD) which allows for a density range of 5 to 9 units per acre. Lot 1 would be just over one acre, resulting in a maximum allowable density of nine dwelling units per acre; 7.7 are proposed.

Lot 2 would remain Commercial Service (C-S), which allows very high density mixed use residential uses at a density range of 15.1 to 20 units/acre are, providing adjacent uses are compatible and the residential is secondary to the retail use.

Lot 2 would be 110,100 sf. and be comprised of 24,973 net sf. of commercial and 45,200 sf. of residential, the latter of which would be located to the rear of the lot, away from Mt. Hermon Road. The residential density would be 17.4 DU/acre.

The total average density on the project site would be 15.1 dwelling units per acre.

The C-S zoning for Lot 2 allows mixed use commercial/residential by right (principal permitted use) per 17.20.020 (H) with a specified density in the Land Use Element (Table LU-1) of 15-20 units/acre; and as long as multiple-family dwellings are located either above the ground-level commercial use or at ground level at the rear of a commercial space on sites designated in the Housing Element. The residential density for Lot 2 is 17 units/acre.

Housing Element – Housing Opportunity Sites

As described in the City's 2015 – 2023 Housing Element, the project site is identified as one of six "Opportunity Sites" that have zoning and development standards, infrastructure and public facilities in place to accommodate the construction of new housing. This criteria allows high-density residential as part of a mixed-use project and was estimated to be 10 units, two low income affordable units and eight market units as part of the City's Regional Housing Needs Assessment (RHNA) allocation.

Zone Change

As shown in [Figure 3-13: Existing and Proposed Zoning Designation](#), a portion of the project would include a zone change for Lot 1 from Service Commercial (C-S) to Medium High

Residential/Planned Development (R-M-6/PD). The R-M-6 classification is intended to provide areas for single-family subdivisions and townhouse and condominium development at lower density ranges than the R-H district.

PD districts may be combined with base zoning districts and are individually designed to meet the needs of the property. Development of the property can only occur pursuant to a PD permit issued in strict conformity with the general development plan, or with the underlying base district. The general development plan must be adopted as part of the PD, and includes detailed specifications, such as permitted land uses and sizes, landscape areas and open space, dimensioned streets and driveways (both public and private), use standards, and other development standards.

Lot 2 would remain Service Commercial (C-S) which allows for a 45% maximum parcel building coverage and a 35 ft. height limit. This district is designed to create and maintain areas accommodating city-wide and regional service that may be inappropriate in neighborhood or pedestrian-oriented shopping areas and which generally require automotive access for customer convenience, servicing of vehicles or equipment, loading or unloading, or parking of commercial service vehicles. Multiple-family dwellings located either above the ground-level commercial use or at ground level at the rear of a commercial space on sites designated in the Housing Element (which applies to this project) are permitted.

General Plan and Zoning Consistency

Concurrent with City Council approval, the project would be consistent with the amended General Plan land use and zoning designations for Lot 1. For Lot 2, the City Council would need to make a determination that the residential component of the project is consistent with the General Plan.

Any potential conflicts with the development standards—such as maximum height, setback, or other requirements—would be resolved through the Planned Development (Zoning) Overlay and Permits (PD) general development plan approval process.

Ordinances and Regulations

The project would be required to comply with all applicable City of Scotts Valley ordinances and regulations. Furthermore, the project would be required to comply with all approved Conditions of Approval, as augmented by the decision-makers.

12.5.4 Cumulative Impact Analysis

The geographic area for the analysis of cumulative impacts to land use and planning is the City of Scotts Valley.

Impact LU-2: Contribute to cumulatively considerable land use impacts.

Land use impacts would be cumulatively considerable if the project, in conjunction with other past, present, reasonably foreseeable future projects, would either preclude a permitted land use or create a disturbance that would diminish the function of a particular land use.

As described above, concurrent with City Council approval, the project would be consistent with the amended General Plan land use and zoning designations for Lot 1. For Lot 2, the City Council would need to make a determination that the residential component of the project is consistent with the General Plan. All feasible mitigation measures to address environmental impacts of the project have been described in this EIR.

As such, the project would result in a general intensification of residential land uses in the City of Scotts Valley. There is no indication that the increase in residential uses would result in any inherent land use conflicts that would diminish the function of another land use. To the contrary, the consistency of residential projects, combined with the proposed commercial-service development in other designated locations, would generally complement existing and proposed development. Cumulative land use impacts would be less than significant.

12.5.5 Level of Significance after Mitigation

Table 12-1: Summary of Impacts and Mitigation Measures – Land Use & Planning summarizes the environmental impacts, significance determinations, and mitigation measures for the project with regard to land use & planning. Potential impacts would be less than significant and no mitigation measures are required.

Table 12-1: Summary of Impacts and Mitigation Measures – Land Use & Planning

Impact	Impact Significance	Mitigation
Impact LU-1: Substantially conflict with an applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect	Less than significant	None required
Impact LU-2: Contribute to cumulatively considerable land use impacts	Less than significant	None required

12.6 References

City of Scotts Valley. 1994. General Plan.

City of Scotts Valley. 2021. Municipal Code

13 Noise & Vibration

13.1 Introduction

This section describes the potential noise effects of residential development pursuant to the project.

Information used to prepare this section came from the following resources:

- Project application and related materials
- City of Scotts Valley, *General Plan*, 1994
- City of Scotts Valley, *Municipal Code*, as amended
- Noise measurement field sheets (see [Appendix F: Noise Measurement Data](#))

13.2 Scoping Issues Addressed

During the scoping period for the project, no written comments by agencies and the public regarding noise and vibration were received.

13.3 Environmental Setting

13.3.1 General Information on Noise

Noise is defined as loud, unexpected, or annoying sound. The fundamental acoustics model consists of a noise source, receptor, and the propagation path between the two. The loudness of the noise source, obstructions, or atmospheric factors affecting the propagation path, determine the perceived sound level and noise characteristics at the receptor. Acoustics deal primarily with the propagation and control of sound. A typical noise environment consists of ambient noise that is the sum of many distant and indistinguishable noise sources.

Superimposed on this ambient noise is the sound from individual local sources. These sources can vary from an occasional aircraft or train passing by to continuous noise from traffic on a major highway. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a large range of numbers. To avoid this, the decibel (dB) scale was devised. The dB scale uses the hearing threshold of 20 micropascals (μPa) as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range.

Noise Descriptors

The dB scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Several rating scales have been developed to analyze the adverse effect of community

noise on people. Because environmental noise fluctuates over time, these scales consider that the effect of noise on people is largely dependent on the total acoustical energy content of the noise, as well as the time of day when the noise occurs. The equivalent noise level (L_{eq}) is the average noise level averaged over the measurement period, while the day-night noise level (DNL) and Community Equivalent Noise Level (CNEL) are measures of energy average during a 24-hour period, with dB weighted sound levels from 7:00 p.m. to 7:00 a.m. Most commonly, environmental sounds are described in terms of L_{eq} that has the same acoustical energy as the summation of all the time-varying events. Each is applicable to this analysis and defined [Table 13-1: Definitions of Acoustical Terms](#).

Table 13-1: Definitions of Acoustical Terms

Term	Definitions
Decibel (dB)	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in μPa (or 20 microneutons per square meter), where 1 pascals is the pressure resulting from a force of 1 newton exerted over an area of 1 square meter. The sound pressure level is expressed in dB as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g. 20 μPa). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level (dBA)	The sound pressure level in dB as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level (L_{eq})	The average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
Maximum Noise Level (L_{max}) Minimum Noise Level (L_{min})	The maximum and minimum dBA during the measurement period.
Exceeded Noise Levels (L_{01} , L_{10} , L_{50} , L_{90})	The dBA values that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day-Night Noise Level (DNL)	A 24-hour average L_{eq} with a 10 dBA weighting added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity at nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.4 dBA DNL.
Community Noise Equivalent Level (CNEL)	A 24-hour average L_{eq} with a 5 dBA weighting during the hours of 7:00 a.m. to 10:00 a.m. and a 10 dBA weighting added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.7 dBA CNEL.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.

Term	Definitions
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends on its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

The A-weighted decibel (dBA) sound level scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be used. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends on the distance between the receptor and the noise source.

Addition of Decibels

The dB scale is logarithmic, not linear, and therefore sound levels cannot be added or subtracted through ordinary arithmetic. Two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic dB is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound and twice as loud as a 60-dBA sound. When two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dBA higher than one source under the same conditions. Under the dB scale, three sources of equal loudness together would produce an increase of 5 dBA.

Sound Propagation and Attenuation

Sound spreads (propagates uniformly outward in a spherical pattern, and the sound level decreases (attenuates) at a rate of approximately 6 dB for each doubling of distance from a stationary or point source. Sound from a line source, such as a highway, propagates outward in a cylindrical pattern. Sound levels attenuate at a rate of approximately 3 dB for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics. No excess attenuation is assumed for hard surfaces like a parking lot or a body of water. Soft surfaces, such as soft dirt or grass, can absorb sound, so an excess ground-attenuation value of 1.5 dB per doubling of distance is normally assumed. For line sources, an overall attenuation rate of 3 dB per doubling of distance is assumed.

Noise levels may also be reduced by intervening structures; generally, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm reduces noise levels by 5 to 10 dBA. The way older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25

dBa with closed windows. The exterior-to-interior reduction of newer residential units is generally 30 dBA or more.

Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day or night or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60 to 70 dBA range, and high above 70 dBA. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet, suburban, residential streets with noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with noisier urban residential or residential-commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80 dBA). Regarding increases in dBA, the following relationships should be noted:

- Except in carefully controlled laboratory experiments, a 1-dBA change cannot be perceived by humans.
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference.
- A minimum 5-dBA change is required before any noticeable change in community response would be expected. A 5-dBA increase is typically considered substantial.
- A 10-dBA change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

Effects of Noise on People

While physical damage to the ear from an intense noise impulse is rare, a degradation of auditory acuity can occur even within a community noise environment. Hearing loss occurs mainly due to chronic exposure to excessive noise but may be due to a single event such as an explosion. Natural hearing loss associated with aging may also be accelerated from chronic exposure to loud noise. The Occupational Safety and Health Administration has a noise exposure standard that is set at the noise threshold where hearing loss may occur from long-term exposures. The maximum allowable level is 90 dBA averaged over 8 hours. If the noise is above 90 dBA, the allowable exposure time is correspondingly shorter.

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. A noise level of about 55 dBA DNL is the threshold at which a substantial percentage of people begin to report annoyance⁷.

13.3.2 General Information on Vibration

Sources of groundborne vibrations include natural phenomena (earthquakes, volcanic eruptions, sea waves, landslides, etc.) or man-made causes (explosions, machinery, traffic, trains, construction equipment, etc.). Vibration sources may be continuous (e.g. factory machinery) or transient (e.g. explosions). Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is the peak particle velocity (PPV); another is the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. The RMS velocity is defined as the average of the squared amplitude of the signal. The PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration.

Table 13-2: Human Response to Different Levels of Groundborne Vibration, displays the reactions of people and the effects on buildings produced by continuous vibration levels. The annoyance levels shown in the table should be interpreted with care since vibration may be found to be annoying at much lower levels than those listed, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high noise environments, which are more prevalent where groundborne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

Ground vibration can be a concern in instances where buildings shake, and substantial rumblings occur. However, it is unusual for vibration from typical urban sources such as buses and heavy trucks to be perceptible. Common sources for groundborne vibration are planes, trains, and construction activities such as earth-moving which requires the use of heavy-duty earth moving equipment. For the purposes of this analysis, a PPV descriptor with units of inches per second (in/sec) is used to evaluate construction-generated vibration for building damage and human complaints.

⁷ Federal Interagency Committee on Noise, *Federal Agency Review of Selected Airport Noise Analysis Issues*, August 1992.

Table 13-2: Human Response to Different Levels of Groundborne Vibration

Peak Particle Velocity (in/sec)	Approximate Vibration Velocity Level (VdB)	Human Reaction	Effect on Buildings
0.006-0.019	64-74	Range of threshold of perception	Vibrations unlikely to cause damage of any type
0.08	87	Vibrations readily perceptible	Recommended upper level to which ruins and ancient monuments should be subjected
0.1	92	Level at which continuous vibrations may begin to annoy people, particularly those involved in vibration sensitive activities	Virtually no risk of architectural damage to normal buildings
0.2	94	Vibrations may begin to annoy people in buildings	Threshold at which there is a risk of architectural damage to normal dwellings
0.4-0.6	98-104	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Architectural damage and possibly minor structural damage

Source: California Department of Transportation, Transportation and Construction-Induced Vibration Guidance Manual, 2004.

13.3.3 Existing Noise Sources

The City of Scotts Valley is impacted by various noise sources. Mobile sources of noise, especially cars and trucks, are the most common and significant sources of noise in most communities. Other sources of noise are the various land uses (i.e., residential, commercial, institutional, and recreational and parks activities) throughout the City that generate stationary-source noise.

The project site is located near the city center. Noise generated from vehicles traveling along Highway 17 through the City of Scotts Valley represents one of the city’s largest noise generation sources. The project site is located adjacent to Mt. Hermon Road and near Scotts Valley Drive. Mt. Hermon and Scotts Valley Drive are both four-lane divided arterials. These two roadways produce substantial noise from motor vehicle traffic. Other roadways within the project site’s vicinity that could produce motor vehicle traffic noise include Skypark Drive, Bluebonnet Lane, and Bean Creek Road.

Noise Measurements

To determine ambient noise levels in the project area, three 10-minute noise measurements were taken using a 3M SoundPro DL-1 Type I integrating sound level meter between 9:50 AM and 10:43 AM on November 19, 2019; refer to [Appendix F: Noise Measurement Data](#) for

existing noise measurement data and [Figure 13-1: Noise Measurement Location](#). Location # 1 was taken to represent the existing residential area north of the project site while Location # 2 was taken east of the project site to represent the ambient noise level in the existing commercial area. Location # 3 was taken south of the project site to represent the existing Mt. Hermon Road traffic. The primary noise sources during all three measurements were traffic, landscaping equipment, and dogs. [Table 13-3: Noise Measurements](#), provides the ambient noise levels measured at these locations.

Table 13-3: Noise Measurements

Site No.	Location	Leq (dBA)	Lmin (dBA)	Lmax (dBA)	Time
1	Residences on Lucia Lane	82.3	41.8	107.7	9:50 AM
2	Commercial area on Glen Canyon Road	90.2	45.0	107.9	10:22 AM
3	Mount Hermon Road	78.9	46.1	93.8	10:43 AM

Source: Noise Measurements taken by Kimley-Horn on November 19, 2019. See [Appendix F: Noise Measurement Data](#).

13.3.4 Sensitive Receptors

Noise exposure standards and guidelines for various types of land uses reflect the varying noise sensitivities associated with each of these uses. Residences, hospitals, schools, guest lodging, libraries, and churches are treated as the most sensitive to noise intrusion and therefore have more stringent noise exposure targets than do other uses, such as manufacturing or agricultural uses that are not subject to impacts such as sleep disturbance. As shown in [Table 13-4: Sensitive Receptors](#), sensitive receptors near the project site include adjoining single-family residences. Single-family residential communities are located surrounding the project site. These distances are from the project site to the sensitive receptor property line.

Table 13-4: Sensitive Receptors

Receptor Description	Distance and Direction from the Project Site
Single-family residential community	25 feet north
The Evolving Door Halfway House	480 feet southwest
Scotts Valley Middle School	730 feet north
Hocus Pocus Park	815 feet west
Camp Evers Fishing Park	970 feet south

13.4 Applicable Regulations, Plans, and Standards

To limit population exposure to physically or psychologically damaging as well as intrusive noise levels, the Federal government, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise.

13.4.1 State

California Government Code

California Government Code Section 65302(f) mandates that the legislative body of each county and city adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines established by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of “normally acceptable”, “conditionally acceptable”, “normally unacceptable”, and “clearly unacceptable” noise levels for various land use types. Single-family homes are “normally acceptable” in exterior noise environments up to 60 CNEL and “conditionally acceptable” up to 70 CNEL. Multiple-family residential uses are “normally acceptable” up to 65 CNEL and “conditionally acceptable” up to 70 CNEL. Schools, libraries, and churches are “normally acceptable” up to 70 CNEL, as are office buildings and business, commercial, and professional uses.

Title 24 – Building Code

The State’s noise insulation standards are codified in the California Code of Regulations, Title 24: Part 1, Building Standards Administrative Code, and Part 2, California Building Code. These noise standards are applied to new construction in California for interior noise compatibility from exterior noise sources. The regulations specify that acoustical studies must be prepared when noise-sensitive structures, such as residential buildings, schools, or hospitals, are located near major transportation noise sources, and where such noise sources create an exterior noise level of 65 dBA CNEL or higher. Acoustical studies that accompany building plans must demonstrate that the structure has been designed to limit interior noise in habitable rooms to acceptable noise levels. For new multi-family residential buildings, the acceptable interior noise limit for new construction is 45 dBA CNEL.

13.4.2 Local

City of Scotts Valley General Plan

The Scotts Valley General Plan identifies goals, policies, and implementations in the Noise Element. The Noise Element provides a basis for comprehensive local programs to regulate environmental noise and protect citizens from excessive exposure. [Table 13-5: Land Use Compatibility Guidelines for Community Noise in Scotts Valley](#), highlights five land-use categories and the outdoor noise compatibility guidelines.

Table 13-5: Land Use Compatibility Guidelines for Community Noise in Scotts Valley

Land-Use Category	Exterior Noise Exposure (DNL), in dBA		
	Normally Acceptable ¹	Normally Unacceptable ²	Conditionally Acceptable ³
Residential Low Density Single-Family, Duplex, Mobile Homes	Up to 60	>55 to 70	>70 to 75
Residential – Multi-Family	Up to 65	>60 to 70	>70 to 75
Transient Lodging – Motels, Hotels	Up to 65	>60 to 70	>70 to 80
Schools, Libraries, Churches, Hospitals, Nursing Homes	Up to 70	>60 to 70	>70 to 80
Auditoriums, Concert Halls, Amphitheaters	N/A	Up to 70	N/A
Office Buildings, Business Commercial, and Professional Offices	Up to 70	>65 to 75	>75
Sports Area, Outdoor Spectator Sports	Up to 75	N/A	N/A
Playgrounds, Neighborhood Parks	Up to 70	N/A	>65 to 75
Golf Courses, Riding Stables, Water Recreation, Cemeteries	Up to 75	N/A	>80
Industrial, Manufacturing Utilities, Agricultural	Up to 75	>70 to 80	>75

Sound levels above are as measured at the exterior of the proposed location of the new development (e.g., residential unit, commercial building, etc.) rather than at the property boundary of the source or the property to be developed.

¹ Normally Acceptable – Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction. There are no special noise insulation requirements.

² Normally Unacceptable – New construction should be discouraged and may be denied as inconsistent with the General Plan and City Code. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

³ Conditionally Acceptable – New construction should be undertaken only after a detailed analysis of the noise reduction requirement is conducted and needed noise insulation features included in the design.

Source: City of Scotts Valley General Plan, 1994.

The following goals, policies and/actions from the Scotts Valley General Plan will avoid or help reduce impacts associated with the project:

- LP-38 Land uses located adjacent to commercial uses should be protected from excessive noise, unsightliness, offending odors and other nuisances.
- NA-457 New residential development should not be allowed in regions where the annual day-night noise level exceeds 75 dBA.
- N0-441 Promote new land uses which have noise generation/sensitivity characteristics that are compatible with neighboring land uses, based on the day-night average A-weighted noise levels.
- NP-442 New developments which may increase the day through night noise level by more than the levels shown in Table 3 shall be approved only when proper noise attenuation design measures have been incorporated to the City's satisfaction.

- NA-444 New developments that are considered noise sensitive shall not be located in proximity to existing noise generating uses where the existing noise level is considered incompatible with the proposed new sensitive use.
- NP-445 New developments shall include measures to minimize increase in local ambient noise levels.
- NA-447 Commercial and industrial noise level performance standards shall be retained in the zoning ordinance to restrict noise level increases and hours of operation.
- NA-448 Through the environmental review process, identify and require noise level mitigation of potentially significant noise impacts. Deny new developments which cannot mitigate significant adverse noise level impacts on neighboring land uses.
- NP-451 New developments shall include noise attenuation measures to reduce the effects of existing noise to an acceptable level.
- NA-454 Exterior noise levels measured at the property line of proposed new residential developments shall be limited at or below an average annual day-night level of 60 dBA.

City of Scotts Valley Municipal Code

Section 17.44.020.C3 of the Municipal Code (SVMC) states:

Noise. At the lot line of all uses specified in Chapters 17.20, 17.22, 17.24, 17.26 and 17.28 of this title, the maximum sound generated by any user shall not exceed seventy-five dbA when adjacent users are industrial or wholesale users. When adjacent to offices or retail, the sound level shall be limited to seventy dbA. When users are adjacent or contiguous to residential, park or institutional uses, the maximum sounds level shall not exceed sixty dbA. Excluded from these standards are occasional noises which are specifically exempted under Section 5.17.030.

Vibration. No vibration shall be permitted which is discernible without instruments at the lot line of the establishment or use.

The noises exempted under Section 5.17.030 include the proper use of a siren or other alarm by a police, fire, or other authorized emergency vehicle, a stationary fire alarm operated by the Fire District, the use of emergency generators by privately owned service facilities (up to a maximum of 75 dBA at the property line), and noise generated by City-permitted construction activities during authorized construction hours.

Section 17.46.160 of the Municipal Code (SVMC) states:

All construction activity shall be limited to the hours between eight a.m. and six p.m., Monday through Friday, and nine a.m. through five p.m. on Saturday. No construction activity is allowed on Sunday.

13.5 Environmental Impacts and Mitigation Measures

13.5.1 Significance Criteria

The following significance criteria for noise were derived from the Environmental Checklist in CEQA Guidelines Appendix G. These significance criteria have been amended or supplemented, as appropriate, to address lead agency requirements and the full range of impacts related to this project.

An impact of the project would be considered significant and would require mitigation if it would meet one of the following criteria.

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- Generation of excessive groundborne vibration or groundborne noise levels.
- For a project located within the vicinity of a private airstrip or 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 levels.

Impacts Assessment Methodology

The analysis of noise impacts considers the effects of both temporary construction-related noise and operational noise associated with long-term project-related activities, including, without limitation, project-generated traffic.

CEQA does not define what construction or operational noise level increase would be considered substantial. Typically, a noise increase of 3 dBA Ldn or greater at a residential receptor would be considered significant when existing ambient noise levels are between 60 and 65 dBA Ldn (FICON, 1992). A noise increase of 5 dBA Ldn or greater at the receptor would be considered a significant impact when existing ambient noise levels are less than 60 dBA Ldn (FICON, 1992).

Construction

Construction noise estimates are based upon noise levels from the Federal Highway Administration (FHWA) Roadway Construction Noise Model (FHWA-HEP-05-054) as well as the distance to nearby receptors. Reference noise levels from FHWA are used to estimate noise levels at nearby sensitive receptors based on a standard noise attenuation rate of 6 dB per

doubling of distance (line-of-sight method of sound attenuation for point sources of noise). Construction noise level estimates do not account for the presence of intervening structures or topography, which may reduce noise levels at receptor locations. Therefore, the noise levels presented herein represent a conservative, reasonable worst-case estimate of actual temporary construction noise.

Noise due to construction activities is usually considered to be less than significant under CEQA if the construction activity is temporary and the use of heavy construction equipment and noisy activities are limited to daytime hours. As noted above, City of Scotts Valley Zoning Ordinance (Title 17.46.160) exempts noise sources associated with temporary construction activities, provided such activities occur between 8:00 a.m. and 6:00 p.m. Monday through Friday; 9:00 a.m. and 5:00 p.m. on Saturday; but not on Sundays or federal holidays.

This analysis of the existing and future noise environments is based on noise prediction modeling and empirical observations. Predicted construction noise levels were based on typical noise levels generated by construction equipment. The traffic noise levels in the project vicinity were calculated using the FHWA Highway Noise Prediction Model (FHWA-RD-77-108).

Groundborne vibration levels associated with construction-related activities for the project were evaluated utilizing typical groundborne vibration levels associated with construction equipment, obtained from Federal Transit Administration (FTA) published data for construction equipment. Potential groundborne vibration impacts related to structural damage and human annoyance were evaluated, considering the distance from construction activities to nearby land uses and typically applied criteria for structural damage and human annoyance.

Operational

The City's General Plan indicates that increases in noise levels of up to 3 dBA from a proposed development are acceptable for noise-sensitive and residential areas. Therefore, off-site project impacts would be considered significant if an increase of more than 3 dBA occur from project-related activities. On-site noise levels would be considered significant if the proposed uses would be exposed to noise levels above thresholds set in section 17.44.020.C.3 of the City's Municipal Code.

13.5.2 Summary of No and/or Beneficial Impacts

Groundborne Operational Vibration

The project would not generate ground-borne vibrations that could be felt at surrounding uses. The project would not involve railroads or substantial heavy truck operations, and therefore would not result in vibration impacts at surrounding uses. As such, no impact would occur in this regard.

Proximity to a Public or Private Airport

The project site is not located within any airport noise impact contours and not located within the vicinity of any private air strip. Therefore, potential residential development on the project

site would not expose residents or workers to excessive noise levels from airport or private air strip operations.

13.5.3 Impacts of the Project

Construction Impacts

Impact N-1: Cause a temporary or periodic increase in ambient noise levels during construction that would substantially disturb sensitive receptors.

Construction noise typically occurs intermittently and varies depending on the nature or phase of construction (e.g. land clearing, grading, excavation, paving). Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. During construction, exterior noise levels could affect the residential neighborhoods surrounding the construction site. Project construction would occur adjacent from existing single-family residences to the east on Lucia Lane. However, construction activities would occur throughout the project site and would not be concentrated at a single point near sensitive receptors. Noise levels typically attenuate (or drop off) at a rate of 6 dB per doubling of distance from point sources, such as industrial machinery. During construction, exterior noise levels could affect the residential neighborhoods near the construction site.

Grading and excavation phases of project construction tend to be the shortest in duration and create the highest construction noise levels due to the operation of heavy equipment required to complete these activities. It should be noted that only a limited amount of equipment can operate near a given location at a particular time. Equipment typically used during this stage includes heavy-duty trucks, backhoes, bulldozers, excavators, front-end loaders, and scrapers. Operating cycles for these types of construction equipment may involve one or two minutes of full-power operation followed by three to four minutes at lower power settings. Other primary sources of noise would be shorter-duration incidents, such as dropping large pieces of equipment or the hydraulic movement of machinery lifts, which would last less than one minute. According to the applicant, no pile-driving would be required during construction.

Construction activities associated with future development would include demolition, site preparation, grading, construction, paving, and architectural coating. Such activities would require graders, scrapers, and tractors during site preparation; graders, dozers, and tractors during grading; cranes, forklifts, generators, tractors, and welders during building construction; pavers, rollers, mixers, tractors, and paving equipment during paving; and air compressors during architectural coating. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full power operation followed by 3 to 4 minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. Typical noise levels associated with individual construction equipment are listed in [Table 13-6: Typical Construction Equipment Noise Levels](#).

Table 13-6: Typical Construction Equipment Noise Levels

Equipment On-site	Typical Level (dBA) 50 Feet from the Source	Typical Level (dBA) 25 Feet from the Source	Typical Level (dBA) 100 Feet from the Source
Air Compressor	80	86	74
Backhoe	80	86	74
Compactor	82	88	76
Concrete Mixer	85	91	79
Bulldozer	85	91	79
Generator	82	88	76
Grader	85	91	79
Jack Hammer	88	94	82
Pavement Roller	85	91	79
Scraper	85	91	79
Dump Truck	84	90	78

Calculated using the inverse square law formula for sound attenuation: $dBA_2 = dBA_1 + 20\log(d_1/d_2)$ where: dBA_2 = estimated noise level at receptor; dBA_1 = reference noise level; d_1 = reference distance; d_2 = receptor location distance.

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, September 2018.

Table 13-6: Typical Construction Equipment Noise Levels shows typical noise levels associated with activities during various phases of construction at a distance of 25, 50, and 100 feet from the construction activity. Sensitive receptors near the project area include: residences approximately 25 feet north of the project site. The majority of Project construction would occur at least 50 feet from the project site. These distances are from the project site to the sensitive receptor property line. These sensitive uses may be exposed to elevated noise levels during project construction.

The City of Scotts Valley does not have construction noise standards. As shown in Table 13-6: Typical Construction Equipment Noise Levels noise levels at the sensitive receptor are below 94 dBA at 25 feet. The highest anticipated construction noise level for the adjoining residential uses are approximately 94 dBA during the building construction phase. However, most construction does not occur at the property line, the majority of construction would occur at least 50 feet away where noise levels would attenuate to 88 dBA.

The project construction would comply with Section 17.46.160 of the Municipal Code, which states that all construction activity shall be limited to the hours between 8 AM and 6PM, Monday through Friday, and 9 AM through 5 PM on Saturday. No construction activity is allowed on Sunday. These permitted hours of construction are included in the code in recognition that construction activities undertaken during daytime hours are a typical part of living in an urban environment and do not cause a significant disruption. Construction would occur throughout the project site and would not be concentrated or confined in the area

directly adjacent to sensory receptors. Therefore, construction noise would be acoustically dispersed throughout the project site. **Mitigation measure N-1.1 Construction Noise Reduction** would reduce the temporary noise impacts associated with construction of the project. **MM N-1.1** includes maintaining good condition of construction equipment and including mufflers, limiting idling to less than five minutes, locating stationary equipment as far from residences as possible, and assigning a noise disturbance coordinator. With implementation of **MM N-1.1**, construction noise impacts would be less than significant.

In addition, construction noise may be generated by large trucks moving materials to and from the project site. Large trucks would be necessary to deliver building materials as well as remove dump materials. During the grading phase approximately 5,900 cy would be cut and 7,900 cy would be filled. This requires approximately 2,000 cy of import. Based on the California Emissions Estimator Model (CalEEMod) default assumptions, the project would generate the highest number of daily trips during the grading phase. The project would generate approximately 250 daily hauling trips for twenty days. This would be temporary and short-term. The highest number of worker and vendor trips are during the building construction phase. The model estimates up to 78 worker trips and 22 vendor trips per day.

The State of California establishes noise limits for vehicles licensed to operate on public roads. For heavy trucks, the State pass by standard is consistent with the federal limit of 80 decibels (dB). The State pass by standard for light trucks and passenger cars (less than 4.5 tons gross vehicle rating) is also 80 dB at 15 meters from the centerline. According to the FHWA, dump trucks typically generate noise levels of 76 dBA and flatbed trucks typically generate noise levels of 74 dBA, at a distance of 50 feet from the truck (FHWA, 2006). As such, noise from truck trips associated with the project would not exceed FTA threshold levels of 90 dBA (one-hour L_{eq}) or 80 dBA (eight-hour L_{eq}) (FTA, 2006).

Mitigation for Impact N-1

MM N-1.1 Construction Noise Reduction

To reduce the effects of construction noise, the project applicant shall ensure that the following notes are included as part of all relevant grading and building construction plans:

Construction Equipment. Properly maintain construction equipment and ensure that all internal combustion engine driven machinery with intake and exhaust mufflers and engine shrouds (if the equipment had such devices installed as part of its standard equipment package) that are in good condition and appropriate for the equipment. Equipment engine shrouds shall be closed during equipment operation. The project applicant shall require all contractors, as a condition of contract, to maintain and tune-up all construction equipment to minimize noise emissions.

Vehicle and Equipment Idling. Construction vehicles and equipment shall not be left idling for longer than 5 minutes when not in use.

Stationary Equipment. All noise-generating stationary equipment, such as air compressors or portable power generators, shall be located as far as possible from sensitive receptors. Temporary noise barriers shall be constructed to screen stationary noise generating equipment when located near adjoining sensitive land uses. Temporary noise barriers could reduce construction noise levels by 10 dBA.

Construction Route. All construction traffic to and from the project site shall be routed via designated truck routes where feasible. All construction-related heavy truck traffic in residential areas shall be prohibited where feasible.

Workers' Radios. All noise from workers' radios shall be controlled to a point that they are not audible at sensitive receptors near the construction activity.

Construction Plan. Prior to issuance of any grading and/or building permits, the contractor shall prepare and submit to the City of Scotts Valley Building Department for approval a detailed construction plan identifying the schedule for major noise-generating construction activity.

Disturbance Coordinator. A "noise disturbance coordinator" shall be designated by the contractor and be responsible for responding to any local complaints about construction noise. The noise disturbance coordinator shall determine the cause of the noise complaint (e.g. starting too early, bad muffler, etc.) and shall require that reasonable measures warranted to correct the problem be implemented. The coordinator shall conspicuously post a name and telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule.

Impact N-2: Temporarily generate excessive groundborne vibration or groundborne noise.

Increases in groundborne vibration levels attributable to the project would be primarily associated with construction-related activities. Construction on the project site would have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and the operations involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. 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.

The FTA has published standard vibration velocities for construction equipment operations. In general, depending on the building category of the nearest buildings adjacent to the potential pile driving area, the potential construction vibration damage criteria vary. For example, for a building constructed with reinforced concrete with no plaster, the FTA guidelines show that a vibration level of up to 0.50 inch per second (in/sec) peak particle velocity (PPV) is considered

safe and would not result in any construction vibration damage. In general, the FTA architectural damage criterion for continuous vibrations (i.e. 0.2 in/sec) appears to be conservative. The types of construction vibration impacts include human annoyance and building damage. Human annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time. Building damage can be cosmetic or structural. Ordinary buildings that are not particularly fragile would not experience cosmetic damage (e.g. plaster cracks) at distances beyond 30 feet. This distance can vary substantially depending on soil composition and underground geological layer between vibration source and receiver.

Table 13-7: Typical Vibration Levels for Construction Equipment, lists vibration levels at 25 feet for typical construction equipment. Groundborne vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. As indicated in **Table 13-7: Typical Vibration Levels for Construction Equipment**, based on FTA data, vibration velocities from typical heavy construction equipment operations that would be used during Project construction range from 0.003 to 0.089 in/sec PPV at 25 feet from the source of activity. The nearest sensitive receptors are the single-family residences approximately 25 feet north of the project site.

Table 13-7: Typical Vibration Levels for Construction Equipment

Equipment	Approximate peak particle velocity at 25 feet (inches/second)	Approximate peak particle velocity at 50 feet (inches/second)	Approximate peak particle velocity at 100 feet (inches/second)
Vibratory Roller	0.21	0.0742	0.0263
Large bulldozer	0.089	0.0315	0.0111
Loaded trucks	0.076	0.0269	0.0095
Jack Hammer	0.035	0.0124	0.0044
Small Bulldozer	0.003	0.0011	0.0004

Notes:

1. Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Guidelines*, May 2006. Table 12-2.
2. Calculated using the following formula: $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$ where:
 PPV (equip) = the peak particle velocity in inch per second of the equipment adjusted for the distance
 PPV (ref) = the reference vibration level in inch per second from Table 12-2 of the FTA *Transit Noise and Vibration Impact Assessment Guidelines*
 D = the distance from the equipment to the receiver

Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Guidelines*, May 2006.

As shown in **Table 13-7: Typical Vibration Levels for Construction Equipment**, the highest vibration levels are achieved with the vibratory roller operations. Groundborne vibration decreases rapidly with distance. As indicated in **Table 13-7: Typical Vibration Levels for Construction Equipment**, based on the FTA data, vibration velocities from typical heavy construction equipment operation that would be used during project construction range from 0.003 to 0.0089 inches-per-second peak particle velocity (PPV) at 25 feet from the source of activity. As such, the residences located approximately 30 feet from the projects construction

area would not be exposed to vibrations levels exceeding the FTA's 0.20 in/sec PPV significance threshold vibrations.

In general, other construction activities would occur throughout the project site and would not be concentrated at the point closest to the nearest residential structure. Therefore, vibration impacts would be less than significant.

Impact N-3: Result in a substantial permanent increase in ambient noise levels.

Implementation of the project would create new sources of noise in the project vicinity. The major noise sources associated with the project that would potentially impact existing and future nearby residences include the following:

- Off-site traffic noise;
- Mechanical equipment (i.e., trash compactors, air conditioners, etc.);
- Delivery trucks on the project site, and approaching and leaving the loading areas;
- Parking areas (i.e., car door slamming, car radios, engine start-up, and car pass-by); and
- Landscape maintenance activities.

As discussed above, the closest sensitive receptors are single-family residences located approximately 25 feet north of the project site. The land use compatibility standard for residential areas is also 60 dBA DNL for normally acceptable conditions ([Table 13-5: Land Use Compatibility Guidelines for Community Noise in Scotts Valley](#)).

Traffic Noise

Implementation of the project would generate increased traffic volumes during some peak periods. According to the traffic impact analysis, the project would result in a net addition of 1,678 average daily weekday trips. During the AM peak hour, there would be a net increase of 206 trips and during the PM peak hour there would be a net increase of 126 trips.

Traffic volumes on area streets would have to approximately double for the resulting traffic noise levels to increase by three dBA. The project would not result in a doubling of traffic on any City street, nor on Highway 17. Moreover, project traffic would traverse and disperse over City roadways and Highway 17, where existing ambient noise levels are very high. Therefore, permanent increases in traffic noise would be less than significant.

Stationary Noise

Implementation of the project would create new sources of noise in the project vicinity from residential sources, mechanical equipment, truck loading areas, parking lot noise, and landscape maintenance.

Residential Areas

Noise that is typical of residential areas includes group conversations, pet noise, vehicle noise (see discussion below) and general maintenance activities. Noise from residential stationary

sources would primarily occur during the “daytime” activity hours of 7:00 a.m. to 7:00 p.m. Furthermore, the residences would be required to comply with the noise standards set forth in the City’s General Plan and Municipal Code. Per General Plan Policies LP-38, NA-457, NO-441, and NA-444 land uses which include residential uses should not be allowed in areas with excessive noise.

Mechanical Equipment

Regarding mechanical equipment, the project would generate stationary-source noise associated with heating, ventilation, and air conditioning (HVAC) units. HVAC units typically generate noise levels of approximately 50 to 60 dBA at 50 feet. Mechanical equipment for the project would be located in fully enclosed spaces throughout the proposed building. In addition, there would be dedicated rooms/spaces for mechanical exhaust. Mechanical equipment noise levels typically average between 50 and 60 dBA L_{eq} at 50 feet.

An enclosure would provide a noise level reduction of 10 dBA or more, which would reduce noise levels below the City’s 60 dBA standard. Therefore, the project would not place mechanical equipment near residential uses, and noise from this equipment would not be perceptible at the closest sensitive receptor (existing single-family residences adjoining the project site). Impacts from mechanical equipment would be less than significant.

Loading Area Noise

The project includes commercial and office which would necessitate occasional deliveries. The primary noise associated with deliveries is the arrival and departure of trucks. Operations of proposed mix use structure would potentially require deliveries of vans and light trucks and not heavy-duty trucks. Normal deliveries typically occur during daytime hours. During loading and unloading activities, noise would be generated by the trucks’ diesel engines, exhaust systems, and brakes during low gear shifting’ braking activities; backing up toward the loading areas; dropping down the dock ramps; and maneuvering.

The project is not anticipated to require a significant number of truck deliveries. The majority of deliveries for the commercial and office uses would consist of vendor deliveries in vans and would be infrequent and irregular. The closest that the project could be located to sensitive receptors would be approximately 50 feet away. However, the proposed truck activities would occur at least 100 feet from the sensitive receptors. While there would be temporary noise increases during truck maneuvering and engine idling, these impacts would be of short duration and infrequent. Typically, heavy truck operations generate a noise level of 68 dBA at a distance of 30 feet. At 50 feet, noise levels would attenuate to 63.6 dBA however at 100 feet noise levels would be 57.5 dBA. Noise levels would be further attenuated by intervening terrain and structures.

Because noise levels associated with trucks and loading/unloading activities would be infrequent and irregular, impacts would be less than significant.

Parking Areas

Traffic associated with parking areas is typically not of sufficient volume to exceed community noise standards, which are based on a time-averaged scale such as the CNEL scale. However, the instantaneous maximum sound levels generated by a car door slamming, engine starting up and car pass-bys may be an annoyance to adjacent noise-sensitive receptors. Parking lot noise can also be considered a “stationary” noise source.

The instantaneous maximum sound levels generated by a car door slamming, engine starting up, and car pass-bys range from 60 to 63 dBA at 50 feet and may be an annoyance to noise-sensitive receptors. Conversations in parking areas may also be an annoyance to sensitive receptors. Sound levels of speech typically range from 33 dBA at 48 feet for normal speech to 50 dBA at 50 feet for very loud speech. It should be noted that parking lot noise are instantaneous noise levels compared to noise standards in the DNL scale, which are averaged over time. As a result, actual noise levels over time resulting from parking lot activities would be far lower.

The project includes two levels of underground parking and a ground level parking lot for a total of 208 parking stalls. Noise impacts associated with the parking garage would be considered minimal since the parking area would be enclosed within a structure. In addition, parking lot noise would also be partially masked by the background noise from traffic along, Scotts Valley Drive, Mt. Hermon Road, and SR-17. Noise associated with parking lot activities is not anticipated to exceed the City’s Noise Standards or the California Land use Compatibility Standards during operation. Therefore, noise impacts from parking lots would be less than significant.

Landscape Maintenance Activities

Development and operation of the project includes new landscaping that would require periodic maintenance. Noise generated by a gasoline-powered lawnmower is estimated to be approximately 70 dBA at a distance of five feet. Maintenance activities would operate during daytime hours for brief periods of time as allowed by the City Municipal Code and would not permanently increase ambient noise levels in the project vicinity and would be consistent with activities that currently occur at the surrounding uses. Therefore, with adherence to the City’s Municipal Code, impacts associated with landscape maintenance would be less than significant.

Based on the analysis above, the project would not have a noticeable effect on ambient noise levels in the project site vicinity, and impacts would be less than significant.

13.5.4 Cumulative Impacts

The geographic area for the analysis of cumulative noise impacts is the City of Scotts Valley.

Impact N-4: Contribute to cumulatively considerable noise impacts.

Cumulative development would result in construction-related and operational noise increases in the project site vicinity. However, based on the noise analysis above, impacts from the

project’s noise would be less than significant with mitigation. Based on the fact that noise dissipates as it travels away from its source, noise impacts from on-site activities and other stationary sources would be limited to the project site and vicinity. Thus, cumulative operational noise impacts from related projects, in conjunction with project-specific noise impacts, would not be cumulatively significant.

13.5.5 Level of Significance after Mitigation

Table 13-8: Summary of Impacts and Mitigation Measures - Noise summarizes the environmental impacts, significance determinations, and mitigation measures for the project with regard to noise.

Table 13-8: Summary of Impacts and Mitigation Measures – Noise & Vibration

Impact	Impact Significance	Mitigation
Impact N-1: Cause a temporary or periodic increase in ambient noise levels during construction that would substantially disturb sensitive receptors.	Less than Significant with Mitigation	MM N-1.1: Construction Noise Reduction
Impact N-2: Temporarily generate excessive groundborne vibration or groundborne noise.	Less than Significant	None required
Impact N-3: Result in a substantial permanent increase in ambient noise levels	Less than Significant	None required
Impact N-4: Contribute to cumulatively considerable noise impacts.	Less than Significant with Mitigation	MM N-1.1: Construction Noise Reduction

13.6 References

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USEPA (United States Environmental Protection Agency). 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. Available at:

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Source: Kimley-Horn, 2019

Figure 13-1: Noise Measurement Locations

Oak Creek Park
Draft EIR

14 Public Services, Utilities & Service Systems

14.1 Introduction

This section describes effects on public services, utilities, and service systems that would be caused by implementation of the project. The discussion addresses existing environmental conditions in the affected area, identifies and analyzes environmental impacts, and recommends measures to reduce or avoid adverse impacts anticipated from project construction and operation. In addition, existing laws and regulations relevant to public services, utilities, and service systems are described. In some cases, compliance with these existing laws and regulations would serve to reduce or avoid certain impacts that might otherwise occur with the implementation of the project.

14.2 Scoping Issues Addressed

During the scoping period for the project, no written comments by agencies and the public regarding public services or utilities and service systems were received.

14.3 Environmental Setting

This section presents information on public services, utilities, and service systems in the project area. Physical impacts to public services, utilities, and service systems are usually associated with population in-migration and growth in an area, which increase the demand for a particular service, leading to the need for expanded or new facilities.

14.3.1 Public Services

Police Protection

The Scotts Valley Police Department (SVPD) is headquartered at One Civic Drive in the City of Scotts Valley, approximately 0.56-mile northeast of the project site. The major goals of SVPD are to reduce crime through prevention, detection and apprehension; to provide the orderly and safe movement of vehicular traffic through law enforcement, to provide accident prevention and accident investigation; to ensure public safety through regulation and control of hazardous conditions; to recover and return of lost and stolen property and; to provide non-enforcement services through programs reflecting community needs and desires.

SVPD has 20 sworn officers and eight civilian employees. In 2020, the SVPD's Emergency Dispatch Center handled more than 3,000 emergency calls. The average response time to emergency calls in 2020 was two minutes and 54 seconds (SVPD, 2020).

Fire Protection

The Scotts Valley Fire District (SVFD) provides emergency response to all fires, medical calls and vehicle accidents for both the City of Scotts Valley and the surrounding unincorporated areas. SVFD is an autonomous special district, with all funding generated from the area's property taxes. SVFD serves approximately 20,000 people in a 22-square-mile area. The City of Scotts

Valley lies within the district boundaries and represents 4.5 square miles of the total area served and approximately 60 percent of the SVFD's service area population.

The SVFD boundaries run from the Scotts Valley city limits to the south to just beyond Laurel Road along upper Highway 17 to the north, and from east of Highway 17 to west of Lockhart Gulch Road. SVFD has a mutual aid agreement with numerous regional fire districts, including the Santa Cruz City Fire Department, Central Fire Protection District, Aptos/La Selva Fire Protection District, Felton Fire Protection District, Zayante Fire Department, and Cal Fire, the State's firefighting agency.

SVFD operates two fire stations (both within the Scotts Valley city limits) and has 24-line firefighting personnel. Station One (headquarters), is located at 7 Erba Lane, and Station Two is located on Glenwood Drive. The district currently operates two engines (plus a third in relief), a wildland engine, a 2,500-gallon water tender, and a hazardous materials response truck, along with other support equipment. The district has 27 full-time firefighters, the administrative staff, 2 part time staff, and 7 paid call / volunteers.

SVFD responded to approximately 2,300 district wide calls in 2017. The majority (more than 55 percent) of these calls were medical emergency calls. The SVFD's response time goal is 5 minutes or less of notification. Response time is measures from the time a call is received in the Fire Dispatch Center until the time the first unit arrives on the scene of an emergency (SVFD, 2020).

Schools

The Scotts Valley Unified School District (SVUSD) operates the public school system within City of Scotts Valley. SVUSD administers two elementary schools (Vine Hill Elementary and Brook Knoll Elementary), Scotts Valley Middle School, and Scotts Valley High School.

Total school enrollment for elementary and secondary students for the 2019/2020 academic year was 2,717, 11% more than the 2,421 in the 2018/2019 academic year (California Department of Education, 2021).

Additionally, there are students that reside in the City of Scotts Valley who attend private schools. These include Baymonte Christian School, Child's Reflection, Montessori Scotts Valley, and Monterey Coast Preparatory School.

Recreation

The City of Scotts Valley Parks and Recreation Department provides parks, recreation facilities, and recreation programs for the community. The Parks and Recreation Department maintains seven parks and recreational facilities in the City. Amenities available at these facilities include basketball courts, play areas, hiking trails, baseball fields, BBQ areas, and a community pool. The closest park to the project site is the Hocus Pocus Park located at 700 Lundy Lane, approximately 0.14 mile west of the project site. The next closest facility to the project site is

Camp Evers Fishing Park located at 3541 Glen Canyon Road, approximately 0.17 mile south of the project site.

14.3.2 Utilities and Service Systems

Water

Water Supply

The Scotts Valley Water District (SVWD) was formed under County Water District Law in 1961. Its service area includes most of the City of Scotts Valley as well as some unincorporated areas north of the City with the service area of 5.5 square miles. SVWD relies entirely on local groundwater for its potable water supply. Currently surface water is not part of the water supply portfolio, however, supplemental supply planning includes diversification of the supply and supplementing the groundwater with surface water via a conjunctive use with neighboring agencies, as well as utilization of the excess recycled water for future permitted uses.

SVWD owns and maintains approximately 60 miles of potable water mains, several potable water storage tanks, pump stations, production wells, and water treatment facilities. Additionally, SVWD owns a recycled water distribution system.

Groundwater

As described in [Chapter 11: Hydrology & Water Quality](#), groundwater production in the Groundwater Reporting Area (GWRA) includes pumping from wells by other water districts and private wells, in addition to pumping by SVWD. Groundwater production by SVWD in WY2016 was 1,139 acre-feet, which was 28 acre-feet less than WY2015. The sharp decline of 240 acre-feet in groundwater pumping observed between WY2014 and WY2015 is likely in response to successful water use efficiency efforts in response to the drought at that time (HydroMetrics, 2017).

As of 2018, the SVWD has six production wells that have a combined capacity of approximately 2,000 gallons per minute (gpm), or 2.87 million gallons per day (mgd), or 3,214 acre feet per year (afy). Groundwater production by SVWD in WY2017 (October 1, 2016 through September 30, 2017) was 1,242 acre-feet. From the 1970's to the 2000's, groundwater production steadily rose to a peak of 2,077 afy in 2003. Since then, average production has declined by 40% due to water use efficiency measures, and service connection conversions from potable to recycled water.

The annual yield, which represents the annual amount of water that can be taken from existing wells in the portion of the SMGB underlying Scotts Valley without causing adverse effects, is 2,600 afy.

SVWD maintains several ongoing programs to support the management of the groundwater resource, including the use of recycled water and water conservation. These programs have contributed to the reduced water demand that results in less groundwater production.

Recycled Water

SVWD, in coordination with the City of Scotts Valley Water Reclamation Facility, produces and distributed recycled water that is also available for non-potable uses, such as landscape irrigation. Recycled water deliveries have gradually increased since the program started in WY 2002. From WY2002 through WY2016, approximately 1,960 acre-feet of recycled water was delivered to customers. The cumulative use of the Recycled Water is equivalent to 170% of the District's groundwater pumping in WY2016. Since recycled water is used in lieu of pumped groundwater, an equivalent volume of groundwater has remained in the SMGB and is available to support future water supply needs (Montgomery & Associates, 2019).

The SVWD currently requires the use of reclaimed water for irrigation in any development near a reclaimed water distribution main.

Water Demand

SVWD Service Area

Pursuant to the California Urban Water Management Planning Act, SVWD prepared their latest Urban Water Management Plan in 2015 (Kennedy/Jenks, 2016). SVWD's 2015 UWMP stated that, in 2015, water demand from metered deliveries was 1,333 afy. 2020 water demand was predicted to be 1,558 afy, and 2035 water demand was predicted to be 1,635 afy (Kennedy/Jenks, 2016).

Demand projections assume that from 2020-2040, usage by existing customers will rebound to average of the 2010-2015 demand. This is estimated by calculating the gallons per day (gpd) per account for each use type then applying it to the number of existing accounts in 2020 and future years. Demands for new development are based on a water use efficient unit demand and applied to specific proposed developments that are either in the entitlement process or have approached the City of Scotts Valley for entitlement (Kennedy/Jenks, 2016).

Vulnerability to Water Shortages

Aquifer Storage Analysis

Aquifer storage is a measure of the volume of groundwater present in the aquifer. The change in aquifer storage measures the increase or decrease in the volume of groundwater in the aquifer resulting from changes in groundwater levels primarily in response to variations in annual precipitation and groundwater pumping. As part of the SVWD's 2016 Groundwater Management Program, aquifer storage analysis was conducted for SMGB.

Given the geologic complexity of the SMGB, the updated SMGB Model in the Groundwater Management Program provides an appropriate quantitative tool to evaluate the changes in groundwater conditions over time. The updated SMGB Model was set up using data from WY 1985 through WY 2016.

Table 14 1: Average Annual Change in Aquifer Storage (AFY), provides a summary of the long-term change in aquifer storage per aquifer as calculated by the updated SMGB Model. The model results indicate that groundwater storage in the GWRA decreased by 292 acre-feet in WY2015 and increased by 379 acre-feet in WY2016, with a net increase of 87 acre-feet. The WY2016 aquifer storage increase occurred in an average rainfall year. A study in the neighboring Santa Cruz Mid-County Groundwater Basin (HydroMetrics, 2011) concludes that not much groundwater recharge is anticipated in average rainfall years. However, groundwater pumping over the past two years is roughly 400 acre-feet per year lower than the years prior. Therefore, the overall increase in aquifer storage is attributed primarily to reduced pumping.

Table 14-1: Average Annual Change in Aquifer Storage (AFY)

Aquifer	WY 1985 – WY 1992	WY 2005 – WY 2011	WY 2013	WY 2014	WY 2015	WY 2016
Santa Margarita	-310	91	-344	-302	-248	55
Monterey	-201	20	-29	-44	-8	25
Lompico	-793	92	-174	-369	-43	251
Butano	-378	-93	-152	-208	7	48
Total	-1,682	111	-699	-922	-292	379

Source: Kennedy/Jenks Consultants, 2015.

Table 14 1: Average Annual Change in Aquifer Storage (AFY) shows that a 193 acre-feet cumulative decline in aquifer storage occurred in the Santa Margarita aquifer over WY2015 and WY2016. Since this change in aquifer storage is distributed over a large area of several square miles, the change in groundwater levels are relatively minor. For the Lompico and Butano aquifers, storage increased cumulatively by 263 acre-feet over WY2015 and WY2016. The greatest increases in storage occurred in the Lompico aquifer, where the recovery in groundwater levels were between 3 to 10 feet. In the Butano aquifer, which had increased pumping in WY2016, an increase in storage still occurred that resulted in a minor amount of observed groundwater level recovery.

Global Climate Change

Increasing attention has been paid to the issue of global climate change and its effects on water resources and supplies. Potential impacts and consequences of climate change on California’s water resources include reduction of the State’s average annual snow pack; changes in the timing, intensity, location, amount, form and variability of precipitation; long-term changes in watershed vegetation that can change intensity and timing of runoff; sea level rise; increased water temperatures that can affect water quality; and changes in evapotranspiration rates that can result in increased water demands.

Studies prepared by the State of California indicate that climate change may seriously affect the State’s water resources as a result of temperature increases, changes in timing and amount of

precipitation, and sea level rise that could adversely affect coastal areas. Simulations conducted by the State of California predict drier conditions in the future, although at the same time there is continued risk from intense rainfall events that can generate more frequent and/or more extensive runoff; some recent reports indicate that warming temperatures, combined with changes in rainfall and runoff patterns, will exacerbate the frequency and intensity of droughts. Although average annual precipitation may not change, more intense wet and dry periods also are anticipated. Regions that rely heavily upon surface water could be particularly affected as runoff becomes more variable.

Wastewater

Sanitary sewer service in the City is provided by the City of Scotts Valley Department of Public Works – Wastewater Division. The collection system comprises 40 miles of pipeline, as well as seven lift stations (City of Scotts Valley, 2019).

All wastewater is conveyed to and treated at the Scotts Valley Water Reclamation Facility. This facility is owned and operated by the City and provides wastewater treatment services as well as recycled water for landscape irrigation and other uses.

The plant's current capacity is 1.5 million gallons per day (mgd) for wastewater treatment and one mgd for recycled water processing (City of Scotts Valley, 2019). In 2018, average daily dry weather flow (ADDWF) has a remaining dry weather capacity of 0.796 mgd.

Stormwater

The rate and amount of surface runoff is determined by multiple factors, including the amount and intensity of precipitation; amount of other imported water that enters a watershed; and amount of precipitation and imported water that infiltrates to the groundwater. Infiltration is determined by several factors, including soil type, antecedent soil moisture, rainfall intensity, the amount of impervious surfaces within a watershed, and topography. The rate of surface runoff is largely determined by topography and the intensity of rainfall over a given period of time.

In July 2013, the Central Coast Regional Water Quality Control Board (RWQCB) adopted Order R3-2013-0032, which requires new and more stringent Post-Construction Requirements (PCRs) for proposed development projects. The PCRs mandate that development projects use Low Impact Development (LID) features and facilities to detain, retain, and treat site runoff. LID incorporates and conserves on-site natural features, together with constructed hydrologic controls to more closely mimic pre-development hydrology and watershed processes. Projects that receive their first discretionary approval after March 6, 2014, are subject to the PCRs if they create or replace 2,500 sf or more of impervious area on a site.

The PCR tiers range from Tier 1 to Tier 4, with requirements strengthened for each additional tier. The largest projects considered by the new guidelines, Tier 4 projects, have the most stringent requirements. For these projects which create or replace 22,500 sf or more of impervious surface, post-development peak flows discharged from the project site must not

exceed pre-project peak flows for the two-year through 10-year storm events. This requirement is in addition to other requirements for Tier 1-3 projects, which also apply to Tier 4 projects.

Electricity

Electricity in Scotts Valley is provided by Pacific Gas & Electric (PG&E). In 2018 (the most recent year for which data is provided), the electricity mix comprised 15 percent natural gas, 34 percent nuclear, 13 percent large hydroelectric, and 39 percent renewables, and 21 percent unspecified (PG&E, 2019a).

Natural Gas

PG&E operates one of the largest natural gas distribution networks in the country, including 42,141 miles of natural gas transmission and distribution pipelines (PG&E, 2019b). Service is provided to 4.3 million accounts statewide. A transmission gas pipeline traverses the southern portion of Scotts Valley, and small-diameter pipelines serve the City (PG&E, 2019c).

Telecommunications

Telecommunication services, which includes cable television and internet services, in Scotts Valley is provided by AT&T Internet, Xfinity, Earthlink, and Sonic.

Solid Waste

GreenWaste Recovery, a private contractor, provides weekly collection of garbage, recyclable materials, and yard trimmings for residents and businesses in the City of Scotts Valley. Solid waste is transported to either the Buena Vista Sanitary Landfill, which is operated by Santa Cruz County; or the Ben Lomond Transfer Station, where it is then delivered to the Monterey Peninsula Landfill; which is operated by the Monterey Regional Waste Management District.

The Buena Vista Sanitary Landfill, located in Santa Cruz County, is permitted until 2031 and has a maximum capacity of 7,537,700 cubic yards of solid waste, with approximately 2,206,541 cubic yards of remaining capacity. The Buena Vista Sanitary Landfill is permitted to receive 838 tons of solid waste per day (CalRecycle, 2019a). The Monterey Peninsula Landfill, located in Marina, has a maximum capacity of 49,700,000 cubic yards of solid waste, with approximately 48,560,000 cubic yards of remaining capacity. The Monterey Peninsula Landfill is permitted to receive 3,500 tons of solid waste per day (CalRecycle, 2019b). Given the project site is currently vacant, no solid waste is currently collected by GreenWaste Recovery.

14.4 Applicable Regulations, Plans, and Standards

14.4.1 Federal

Wastewater

Clean Water Act

The Federal Water Pollution Control Act of 1972, more commonly known as the Clean Water Act (CWA), regulates the discharge of pollutants into watersheds throughout the U. S. Under

the CWA, the United States Environmental Protection Agency (U.S. EPA) implements pollution control programs and sets wastewater treatment standards.

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program was established pursuant to the CWA to regulate municipal and industrial discharges to surface waters of the United States. Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities.

Wastewater discharge is regulated under the NPDES permit program for direct discharges into receiving waters and by the National Pretreatment Program for indirect discharges to a sewage treatment plant.

In California, the federal requirements are administered by the State Water Resources Control Board (SWRCB), and individual NPDES permits are issued by the California Regional Water Quality Control Boards (RWQCBs).

14.4.2 State

Police Services

All law enforcement agencies within California are organized and operate in accordance with the applicable provisions of the California Penal Code. This code sets forth the authority, rules of conduct, and training for police officers.

Fire Protection

Fire hazards are addressed mainly through the application of the State Fire Code and the California Building Code (CBC). The Fire Code addresses access, including roads, and vegetation removal in high fire hazard areas. The UBC requires development in high fire hazard areas to show proof of nearby water sources and adequate fire flows.

Schools

Senate Bill (SB) 50 (1998), which is funded by Proposition 1A, limits the power of cities and counties to require mitigation of developers as a condition of approving new development and provides instead for a standardized fee. SB 50 generally provides for a 50/50 state and local school facilities match. SB 50 also provides for three levels of statutory impact fees. The application level depends on whether state funding is available; whether the school district is eligible for state funding; and whether the school district meets certain additional criteria

involving bonding capacity, year-round schools, and the percentage of moveable classrooms in use.

California Government Code sections 65995–65998 set forth provisions to implement SB 50. Specifically, in accordance with Section 65995(h), the payment of statutory fees is “deemed to be full and complete mitigation of the 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 governmental organization or reorganization...on the provision of adequate school facilities.” The school district is responsible for implementing the specific methods for mitigating school impacts under the Government Code.

Pursuant to Government Code section 65995(i), “A state or local agency may not deny or refuse to approve a legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization as defined in Section 56021 or 56073 on the basis of a person’s refusal to provide school facilities mitigation that exceeds the amounts authorized pursuant to this section or pursuant to Section 65995.5 or 65995.7, as applicable.”

California Education Code Section 17620(a)(1) states that the governing board of any school district is authorized to levy a fee, charge, dedication, or other requirement against any construction within the boundaries of the district, for the purpose of funding the construction or reconstruction of school facilities.

Water Supply

Senate Bill 610

Senate Bill (SB) 610 amended the Public Resources and Water Codes as they pertain to consultation with water supply agencies and water supply assessments (WSA). SB 610 requires water supply assessments (WSAs) for “projects” as defined by Water Code Section 10912 which are subject to CEQA as a 500-unit or more residential development, or a project that would increase the number of the public water system’s existing service connections by 10%.

Because the project does not meet the definition of a “project” as specified in the Water Code, the preparation of a WSA in compliance with SB 610 is not required.

Senate Bill 221

Whereas SB 610 requires a written assessment of water supply availability, SB 221 requires lead agencies to obtain an affirmative written verification of sufficient water supply prior to approval of certain specified subdivision projects. For this purpose, water suppliers may rely on an Urban Water Management Plan (if the project is accounted for within the UWMP), a Water Supply Assessment prepared for the project, or other acceptable information that constitutes “substantial evidence.”

“Sufficient water supply” is defined in SB 221 as the total water supplies available during normal, single-dry and multiple-dry water years within the 20-year (or greater) projection period that are available to meet the projected demand associated with a project, in addition to existing and planned future uses.

The 2014 Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act of 2014 (SGMA), enacted in October 2014, applies to all groundwater basins in the state. Pursuant to SGMA, local agencies had until June 30, 2017 to form a groundwater sustainability agency. To comply with this act, three public agencies (SVWD, SLVD and Santa Cruz County) formed the Santa Margarita Groundwater Agency through a joint powers agreement in June 2017.

Executive Order B-29-15

On April 1, 2015, Governor Brown signed an executive order that recognized the possibility of the ongoing drought extending into 2016 and beyond. The order includes a series of statewide measures intended to reduce overall water demand, including updating the State Model Water Efficient Landscape Ordinance, replacing 50 million square feet of lawns with artificial turf or drought-tolerant landscapes, restricting landscape irrigation, revising water rate structures to encourage conservation, and requiring agricultural suppliers to prepare drought management plans, among several other measures.

Under the order, the SWRCB and California Public Utilities Commission (PUC) must impose restrictions to achieve a statewide 25 percent reduction in potable urban water usage through February 2016, as compared to the amount of water used in 2013. Water suppliers with higher per capita use shall achieve proportionally greater reductions than suppliers with lower per capita use. In April 2017, the SWRCB rescinded the water supply “stress test” requirements and remaining mandatory conservation standards.

Wastewater

Central Coast Regional Water Quality Control Board

The Central Coast RWQCB is the local division of the SWRCB that has oversight authority over the project. SWRCB is a State department that provides a definitive program of actions designed to preserve and enhance water quality and to protect beneficial uses of water in California. NPDES permits allow RWQCB to collect information on where the waste is disposed, what type of waste is being disposed, and what entity is disposing of the waste. RWQCB is also charged with conducting inspections of permitted discharges and monitoring permit compliance.

Solid Waste

California Integrated Waste Management Act

California's Integrated Waste Management Act of 1989 (AB 939) requires that cities and counties divert 50 percent of all solid waste from landfills as of January 1, 2000, through source reduction, recycling, and composting. AB 939 also establishes a goal for all California counties to provide at least 15 years of ongoing landfill capacity.

To help achieve this goal, the Act requires that each city and county prepare a Source Reduction and Recycling Element to be submitted to the Department of Resources Recycling and Recovery (CalRecycle), a department within the California Natural Resources Agency, which administers programs formerly managed by the State's Integrated Waste Management Board and Division of Recycling.

As part of CalRecycle's Zero Waste Campaign, regulations affect what common household items can be placed in the trash. Household materials—including fluorescent lamps and tubes, batteries, electronic devices and thermostats—that contain mercury are no longer permitted in the trash and must be disposed separately.

In 2007, SB 1016 amended AB 939 to establish a per capita disposal measurement system. The per capita disposal measurement system is based on a jurisdiction's reported total disposal of solid waste divided by a jurisdiction's population. CalRecycle sets a target per capita disposal rate for each jurisdiction. Each jurisdiction must submit an annual report to CalRecycle with an update of its progress in implementing diversion programs and its current per capita disposal rate.

SB 1383

SB 1383 regulations require that jurisdictions conduct education and outreach on organics recycling to all residents, businesses (including those that generate edible food that can be donated) haulers, solid waste facilities, and local food banks and other food recovery organizations.

In communities where a substantial number of residents speak non-English languages, jurisdictions are required to translate education and outreach materials to ensure all residents and businesses can effectively participate in organics collection services.

California Solid Waste Reuse and Recycling Access Act of 1991

The California Solid Waste Reuse and Recycling Access Act requires areas in development programs to be set aside for collecting and loading recyclable materials. The Act requires CalRecycle to develop a model ordinance for adoption by any local agency relating to adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model, or an ordinance of their own, governing adequate areas in development programs for collection and loading of recyclable materials.

CALGreen Building Code

The California Green Building Standards Code (CALGreen) came into effect for all projects beginning after January 1, 2011. Section 4.408, Construction Waste Reduction Disposal and Recycling, mandates that, in the absence of a more stringent local ordinance, a minimum of 50 percent of non-hazardous construction and demolition debris must be recycled or salvaged. The Code requires the applicant to have a waste management plan for on-site sorting of construction debris.

14.4.3 Local

City of Scotts Valley General Plan

The following goals, policies and/actions from the Scotts Valley General Plan will avoid or help reduce impacts associated with the project:

- PSO-532 Ensure that police and fire services are available to serve development in the City.

- PSP-533 The City shall require that all new development proposals and/or changes in land use be referred to the police department for law enforcement evaluation and to the fire department for evaluation of fire and life safety issues.

- PSP-541 As part of the environmental review process, the City shall evaluate new residential developments for their potential impact on student enrollment in the public school system. Applicants for approval of residential development projects will be expected to demonstrate that adequate mitigation measures will be in place to offset the identified increase in student enrollment directly related to the residential development project. The adequacy of the proposed mitigation measures shall be determined on a case by case basis, consistent with the stated goals, objectives, policies and programs under the City's General Plan. Consideration of adequate mitigation measures shall include, but not be limited to, those measures set forth under California Government Code Section 65996.

- PSA-542 The City should assess the impact of proposed residential development on public school facilities and resources. Impact assessment shall include, but not be limited to, data submitted by the Scotts Valley Union School District addressing student enrollment projections and the capacity of existing public school facilities.

- PSA-550 During permit processing, development, and design review, the City shall consider the need for sidewalks, bicycle lanes, and passenger loading and unloading facilities when planning or considering roadway improvements from residential areas to schools.

- PSA-543 Unless otherwise limited by State law, the decision-making body may require, as a condition of approval of the development project, adequate mitigation measures to be undertaken to address the identified impact on public school facilities related to the development project's increase in student enrollment.
- PSA-562 The City shall condition new development to extend water lines and increase their capacity as necessary.
- PSA-583 As a part of the environmental review process, the Planning Department should assess the potential significant impacts associated with utility installation proposals and require full mitigation.
- PSP-587 The City shall require the extension of new power distribution lines and communication lines underground.

14.5 Environmental Impacts and Mitigation Measures

14.5.1 Significance Criteria

The following significance criteria for public services, utilities, & service systems were derived from the Environmental Checklist in CEQA Guidelines Appendix G. These significance criteria have been amended or supplemented, as appropriate, to address lead agency requirements and the full range of impacts of the project.

An impact of the project would be considered significant and would require mitigation if it would meet one of the following criteria.

- Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, 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.
- Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.
- Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?
- General solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

- Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

14.5.2 Summary of No and/or Beneficial Impacts

Compliance with Solid Waste Regulations

The project would be located within City limits and would be provided solid waste collection and disposal services by a City contractor requiring compliance with federal, state, and local solid waste regulations. Therefore, there would be no impact.

14.5.3 Impacts of the Project

Impact PSU-1: Introduce in a new service population requiring the construction of new or altered police or fire facilities.

The project would result in the construction of up to 52 residential units on the project site. Based on the 2017 five-year Estimates U.S. Census American Community Survey, the average household size is 2.8 persons per household in the City of Scotts Valley resulting approximately 145 new residents.

As indicated in the Population and Housing discussion in **Chapter 4: Introduction to Environmental Analysis**, the City's General Plan was crafted with a projected buildout of 6,500 housing units and 15,000 residents. Therefore, the population increase generated by the project would not exceed the planned public service provision of the City.

Additionally, the project site is located within City limits and is surrounded by areas of the residential and recreational use that are currently within the service areas of SVPD and SVFD. Both the police and fire department require project plans as part of project entitlements to ensure adequate emergency services can be provided per General Plan Policy PSP-533.

Therefore, the additional population of 145 new residents would not represent a substantial increase of population that would trigger the need to construct new police or fire facilities or altered facilities. Impacts would be less than significant.

Impact PSU-2: Require construction of new or expanded educational facilities..

Residential development pursuant to the project would result in the construction of up to 52 residential units on the project site. Based on SVUSD's student yield factor of 0.4346 students per dwelling unit, the project could generate up to 22 school age children. (See **Table 14-1 Project Estimated Student Generation**).

Table 14-1 Project Estimated Student Generation

Residential Units	Student Yield Factor (per unit)	Students Generated
52	0.4346	22

Source: SVUSD and Kimley-Horn, 2021.

These students would be expected to attend schools within SVUSD. Student enrollment in SVUSD has been very consistent (less than 2% change) since the 2016/2017 school year and based on limited growth projections and the fact that the City of Scotts Valley is largely built-out, SVUSD schools are not anticipated to operate above capacity as a result of the project. (Education Data Partnership, 2021).

Moreover, payment of statutory fees for new development is deemed adequate to address impacts to public schools. Therefore, the project would not require construction of new or expanded educational facilities and impacts to schools would be less than significant.

Impact PSU-3: Require construction of new or expanded park facilities.

The project would result in a relatively small increase in population and housing that is consistent with the growth projections of the City’s General Plan. Pursuant to Section 16.35 of the City Municipal Code, the project sponsor applicant is required to pay in-lieu fees for the provision of recreational resources. The fee shall be reduced by any applicable credit for the provision of private open space.

The project seeks a reduction from 100 to 72 sf of private open space per residential units in Building A. The design of the mixed use apartment building is based on an integration of shared and private open spaces, typical for this type of housing. The Scotts Valley standard for C-S mixed use projects is 100 sf of private open space per unit; however, the ordinance does allow for variation per 17.20.045.C.

The total open space associated with the project would be 9,230 sf. at an average rate of 177.5 sf. per unit. This open space would be comprised of both private and common open space. Private open space would include apartment balconies and patios and townhouse decks. Net private open space would total 3,752 sf at an average rate of 72.2 sf. per unit. Common open space includes terraces and the roof top of the apartment building. Net common open space would total 5,478 sf. at an average rate of 105.3 sf. per unit.

Because the project provides private and common open space on the project site. Additionally, per Chapter 16.35 – Dedication of Land for Parks and Recreational Purposes, the project would be required to provide private and common open space and/or pay in-lieu fees for the provision of recreational resources where deficient from project site open space. Therefore, the project would not result in the substantial deterioration of existing recreational facilities or parks and would not require the construction of new facilities or parks, and impacts would be less than significant.

Impact PSU-4: Require new or expanded water treatment facilities.

The project’s water demand is shown in **Table 14-2: Projected Potable Water Demand**. In total, the project would utilize approximately 13.36 acre-feet of potable water per year. This estimate is based on the fact that as a condition of approval, the project would be required to connect to the existing recycled water line on Mt. Hermon Road and use recycled water for all outdoor landscape irrigation.

Table 14-2: Projected Potable Water Demand

Use	Daily Water Use Factor ¹	Daily Water Demand (gallons/day)	Annual Water Demand (AFY)
High-Density Residential (52 units)	55 (gallons per capita/day)	8,008 ²	9
Commercial (23,629 sf. net)	60 (gallons per net sf./day)	3,890	4.36
Total	--	11,898	13.36

Notes:

1. Per SVWD, 2020.
2. Assumes 2.8 persons per household per the 2017 five-year Estimates U.S. Census American Community Survey.

According to the SVWD 2015 Urban Water Management Plan (UWMP), SVWD’s 2015 UWMP stated that, in 2015, water demand from metered deliveries was 1,333 afy. 2020 water demand was predicted to be 1,558 afy, and 2035 water demand was predicted to be 1,635 afy (Kennedy/Jenks, 2016). As stated above, the annual yield for the portion of the SMGB beneath Scotts Valley is 2,600 afy, although the yield is shared among SVWD, SLVWD, and other water districts. Regardless, the projected SVWD 2035 demand, plus demand of the project, would not exceed the entitlements of the SVWD.

Regarding the capacity of the SVWD treatment and distribution system, SVWD currently owns six wells that have a combined capacity of 1,995 gallons per minute (gpm), or 2.87 million gallons per day (mgd), or 3,214-acre fee per year (afy). Groundwater production by SVWD in WY2016 was 1,139 acre-feet, which was 28 acre-feet less than WY2015 (Montgomery & Associates, 2019).

The demand of approximately 13.36 afy of water generated by the project would not exceed the capacity of the groundwater production system, and no new wells or treatment plants would be required. Construction and operational impacts on water treatment facilities would be less than significant.

Impact PSU-5: Require the construction or expansion of new wastewater treatment facilities.

Conservatively assuming that all of the project’s potable water use becomes wastewater, the project would generate 11,898 gallons of wastewater per day (gpd), which equates to 0.012 mgd. Therefore, the project’s wastewater would be accommodated within the Scotts Valley

Water Reclamation Facility’s remaining dry weather capacity of 0.796 mgd and construction and operational impacts would be less than significant.

Impact PSU-6: Require the construction or expansion of stormwater drainage facilities.

Project development would include construction of a new stormwater collection, retention, and treatment system to comply with Tier 4 Post-Construction Requirements (PCRs) per the Central Coast Regional Water Quality Control Board (RWQCB). Because the project would create 22,500 sf. or more of impervious surface, post-development peak flows discharged from the project site must not exceed pre-project peak flows for the two-year through 10-year storm events. This requirement is in addition to other requirements for Tier 1-3 projects, which also apply to Tier 4 projects. As described in **Chapter 11 Hydrology & Water Quality – Impact HYD-2**, pre- and post-off-site stormwater impacts would not be significant.

Given that existing regulations require the project applicant to adhere to Tier 4 PCR requirements, and the fact that post stormwater run-off would not exceed existing pre stormwater runoff conditions, the project would not require the construction or expansion of stormwater drainage facilities and impacts from the project would be less than significant.

Impact PSU-7: Require the construction or expansion of electric power, natural gas, or telecommunications.

The project would require new connections to PG&E for electricity and natural gas. In addition, the project would require new telecommunication connections with the respective service providers. The project site is surrounded by commercial development to the west, south, and east and single-family residential to the north, which are serviced by various dry utility providers. Because these utilities would be readily extended from existing infrastructure adjacent to the project site, impacts from the project would be less than significant.

Impact PSU-8: Generate solid waste that would exceed the capacity of area landfills.

Solid waste generated by the project are shown in **Table 14-3: Project Estimated Daily Solid Waste Generation**.

Table 14-3: Project Estimated Daily Solid Waste Generation

Use	Units / Net SF	Generation Rate ¹	Total lbs. per Day
Residential	52	12.23 / unit	636
Commercial	24,973	2.5 / 1,000 sf	62
Total	--		698

Notes:
1. CalRecycle, 2021.
Source: Kimley-Horn, 2021.

The 698 pounds of daily solid waste generated by the project would represent less than one percent of the daily permit capacities of Buena Vista and Monterey Peninsula landfills, respectively. As described above, both landfills have adequate capacity.

The project would also generate waste during the construction phase. As described above, CalGREEN Section 4.408, Construction Waste Reduction Disposal and Recycling, mandates that, in the absence of a more stringent local ordinance, a minimum of 50 percent of non-hazardous construction (and demolition) debris must be recycled or salvaged. Adherence to the Building Code would reduce total waste generated by demolition and construction, and the waste would be appropriately sorted disposed at landfills with adequate capacity.

Based on the analysis above, construction and operational Impacts would be less than significant.

14.5.4 Cumulative Impact Analysis

The geographic area for the analysis of cumulative public service and utility service impacts is the service area of provider.

Impact PSU-9: Contribute to cumulatively considerable public services, utilities, and service system impacts.

Public Services

Regarding police and fire protection services, the General Plan includes adequate public services to buildout of 6,500 housing units at 15,000 people. The project, combined with past, present, and reasonably foreseeable future projects, would not exceed those projections, and impacts to police and fire protection services would be less than significant.

Regarding schools, SVUSD total enrollment has been decreasing since the 2004–2005 school year, and it is anticipated to continue decreasing (SVUSD, 2015). Moreover, payment of statutory fees for new development is deemed adequate to address impacts to public schools. Developers of present and reasonably foreseeable future projects would be required to pay these fees and impacts to schools would be less than significant.

Utilities

Regarding water demand, the SVWD has analyzed water demand through 2035—inclusive of past, present, and reasonably foreseeable future projects—and finds that adequate entitlement and groundwater pumping capacity exists to serve that development (SVWD, 2011).

Wastewater generation from cumulative projects would similarly be accommodated within the City's Water Reclamation Facility's remaining dry weather capacity of 0.796 mgd.

Regarding stormwater, adherence to the RWQCB's stringent Post-Construction Requirements (PCRs) for proposed development projects would ensure that cumulative development minimizes stormwater flows. Lastly, the Buena Vista and Monterey Peninsula landfills have

estimated closure years of 2031 and 2107, respectively, which based upon anticipated tipping tonnage and volume, as well as capacity. Solid waste generation from past, present, and reasonably foreseeable future projects would be accommodated within those capacities.

In conclusion, cumulative impacts to public services, utilities and service systems would be less than significant.

14.5.5 Level of Significance after Mitigation

Table 14-4: Summary of Impacts and Mitigation Measures – Public Services, Utilities & Service Systems summarizes the environmental impacts, significance determinations, and mitigation measures for the project with regard to public services, utilities, & service systems.

Table 14-4: Summary of Impacts and Mitigation Measures – Public Services, Utilities & Service Systems

Impact	Impact Significance	Mitigation
Impact PSU-1: Introduce in a new service population requiring the construction of new or altered police or fire facilities.	Less than Significant	None required
Impact PSU-2: Require construction of new or expanded educational facilities.	Less than Significant	None required
Impact PSU-3: Require construction of new or expended park facilities.	Less than Significant	None required
Impact PSU-4: Require new or expanded water treatment facilities.	Less than Significant	None required
Impact PSU-5: Require the construction or expansion of new wastewater treatment facilities.	Less than Significant	None required
Impact PSU-6: Require the construction or expansion of stormwater drainage facilities.	Less than Significant	None required
Impact PSU-7: Require the construction or expansion of electric power, natural gas, or telecommunications.	Less than Significant	None required
Impact PSU-8: Generate solid waste that would exceed the capacity of area landfills.	Less than Significant	None required
Impact PSU-9: Contribute to cumulatively considerable public services, utilities and service system impacts.	Less than Significant	None required

14.6 References

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15 Transportation

15.1 Introduction

This section evaluates the potential effects of implementing the 2040 General Plan on the circulation system including vehicle miles traveled (VMT), transit, safety, bicycle and pedestrian facilities, and emergency access. Information used to prepare this section is referenced from the following resources:

- Scotts Valley General Plan (1994 and Draft Update, 2021)
- Highway Capacity Manual (HCM) 6th, Transportation Research Board
- City of Scotts Valley Bicycle Transportation Plan (2012)
- City of Scotts Valley Guide for the Preparation of Traffic Impact Studies (2003)
- Caltrans Guide for the Preparation of Traffic Impact Studies (2002)
- Senate Bill 743 (regarding VMT)
- Aerial photography
- Project application and related materials
- Appendix G: Transportation Modelling Data & Analysis

Relative to LOS analysis, Section 15064.3 was added to the State CEQA Guidelines effective December 28, 2018 as part of a comprehensive guidelines update and addresses the determination of significance for transportation impacts under CEQA. This section requires that transportation impact analysis be based on VMT instead of a congestion metric (such as LOS) and states that a project's effect on automobile delay shall not constitute a significant environmental impact. It is provided at the end of this section to evaluate consistency with the currently adopted General Plan (1994), in particular; policies CA-149 and CA-150.

15.2 Scoping Issues Addressed

During the scoping period for the project, no written comments by agencies and the public regarding transportation and circulation were received.

15.3 Environmental Setting

This section presents information on transportation and circulation conditions in the project area.

15.3.1 Existing Roadway Network

State Highways

Highway 17

Highway 17 is a four-lane north-south highway connecting the San Francisco Bay Area in the north to Scotts Valley and Santa Cruz in the south. The posted speed limit on Highway 17 is 65 miles per hour (mph) in the project vicinity. A partial clover interchange connects Mt. Hermon Road to Highway 17.

City Streets

Mt. Hermon Road

Mt. Hermon Road is a four-lane divided arterial in the project vicinity and extends from Graham Hill Road to Highway 17. Mt. Hermon Road connects local residents to city retail, businesses, and amenities and provides access to the regional network through Highway 17. The posted speed limit is 35-mph in the project vicinity.

Scotts Valley Drive

Scotts Valley Drive connects the northern Scotts Valley area to Mt. Hermon Road. Within the study area, Scotts Valley Drive is a four-lane divided arterial. Scotts Valley Drive is an important road within the City because it connects local residents to retail, businesses, and amenities. The posted speed limit is 35-mph in the project vicinity (and 25-mph when school children are present near the Bean Creek Road / Scotts Valley Drive intersection). It is a four-lane divided roadway at the study intersections.

Whispering Pines Drive

West of Mt. Hermon Road, Scotts Valley Drive is signed as Whispering Pines Drive, and is a two-lane undivided local road with a 30-mph posted speed limit. Whispering Pines Drive connects local residential neighborhoods to Mt. Hermon Road and Scotts Valley Drive arterials.

Bean Creek Road

Bean Creek Road is a two-lane undivided roadway which intersects Scotts Valley Drive and extends north with several side-street stop controlled intersections. This roadway primarily serves local residents and the posted speed limit is 25-mph.

Glen Canyon Road

Glen Canyon Road is a two-lane undivided roadway which intersects Mt. Hermon Road and extends southeast with several side-street intersections. This roadway primarily serves local residents and the posted speed limit is 30-mph.

La Madrona Drive

La Madrona Drive is a two-lane undivided roadway in the project vicinity that connects at the intersection of Mt. Hermon Road and Highway 17 SB Off Ramp. This roadway primarily serves local residence, business, a hotel. The posted speed limit is 35-mph.

15.3.2 Pedestrian Facilities

Existing pedestrian facilities in the project vicinity include sidewalks along both sides of Mt. Hermon Road, north of La Madrona Drive. There are sidewalks along the project frontage on Mt. Hermon Road and Glen Canyon Road.

15.3.3 Bicycle Facilities

Bicycle facilities are divided into four classes. Class I bike paths are physically separated from motor vehicle lanes and offer two-way bicycle travel. Class II bike lanes on roadways are marked by signage and pavement striping. Painted buffers may separate the vehicle travel lanes from the bike lane and green bike lane pavement coloring are typically used to highlight potential conflict zones between vehicles and cyclists. Class III bike routes share the travel lane with motor vehicles and only have signs and sharrow striping to guide bicyclists on paved routes. Class IV bike facilities are protected cycletracks that provide a physical barrier between motor vehicles and cyclists.

In the project vicinity, Class II bike lanes exist on the following roadway segments: Mt. Hermon Road from Highway 17 On/Off Ramps extending west of Graham Hill Road; Scotts Valley Drive from Highway 17 SB Ramps to Estrella Drive (on Whispering Pines Drive); Bean Creek Road from Bluebonnet Lane to Scotts Valley Road; La Madrona Drive from Mt. Hermon Road to Silver Wood Drive.

The project site will have direct access to the existing Class II bicycle lanes on Mt. Hermon Road.

15.3.4 Transit Facilities

The Santa Cruz Metropolitan Transit District (SCMTD) provides transit service in the City of Scotts Valley. SCMTD bus route in the project site vicinity is Route 35.

Bus stops are located at Mt. Hermon Road / Whispering Pines (approximately 0.15 miles north of Project site), and Scotts Valley Drive / Bean Creek Road (approximately 0.30 mile north of Project site).

The Cavallaro Transit Center is located on Kings Village Road approximately 0.7 miles north of the project site.

15.4 Applicable Regulations, Plans, and Standards

15.4.1 Federal

Americans with Disabilities Act

The Americans with Disabilities Act (ADA) of 1990 prohibits discrimination toward people with disabilities and guarantees that they have equal opportunities as the rest of society to become employed, purchase goods and services, and participate in government programs and services. The ADA includes requirements pertaining to transportation infrastructure. The Department of Justice's revised regulations for Titles II and III of the ADA, known as the 2010 ADA Standards for Accessible Designs, set minimum requirements for newly designed and constructed or altered State and local government facilities, public accommodations, and commercial facilities to be readily accessible to and usable by individuals with disabilities. These standards apply to accessible walking routes, curb ramps, and other facilities.

Surface Transportation Assistance Act Routes (STAA – Federal Designation)

The Surface Transportation Assistance Act (STAA) of 1982 allows large trucks, referred to as STAA trucks that comply with maximum length and wide requirements, to operate on routes that are part of the National Network. The National Network includes the Interstate System and other designated highways that were a part of the Federal-Aid Primary System on June 1, 1991; states are encouraged, however, to allow access for STAA trucks on all highways. Highway 17 is classified as an STAA route (Terminal Access).

15.4.2 State

Senate Bill 743 – Transportation Impacts

Adopted in 2013, Senate Bill (SB) 743 changes how transportation impacts are evaluated under CEQA. Previously, CEQA analysis was conducted using an LOS measurement that evaluated traffic delay. As specified under SB 743, and implemented under Section 15064.3 of the State CEQA Guidelines (effective December 28, 2018), VMT is the required metric to be used for identifying CEQA impacts and mitigation. In December 2018, OPR published a Technical Advisory on Evaluating Transportation Impacts, including guidance for VMT analysis. The Office of Administrative Law approved the updated CEQA Guidelines and lead agencies were given until July 1, 2020 to implement the updated guidelines for VMT analysis.

VMT was chosen as the primary metric to better integrate land use and multimodal transportation choices, to encourage alternative transportation, promote greater efficiency, and reduce GHG emissions. The most recent technical guidance on analyzing the transportation impacts under CEQA, released by the Governor's Office of Research and Planning (OPR) in December of 2018, provides recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures. OPR offered a generalized recommendation of a 15 percent reduction below existing VMT as a threshold of CEQA significance.

For the VMT analysis, OPR recommends using a trip-based assessment of VMT that captures the full extent of the vehicle trip length – even the portion that extends beyond the jurisdictional boundary (trips that extend into another county). This differs from the traditional boundary-based assessment of VMT impacts that quantifies only the length of the vehicle trips that occurs within the boundaries of a jurisdiction.

Additionally, SB 743 also amended the State congestion management program statutes lifting the sunset clause for the designation of infill opportunity zones, where CMP LOS standards would no longer apply.

California Complete Streets Act of 2008

This act requires that the circulation elements of local general plans accommodate a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways in a manner that is suitable to the rural, suburban, or urban context of the jurisdiction. Users are defined to include motorists, pedestrians, bicyclists, children, persons with disabilities, seniors, movers of commercial goods, and riders of public transportation.

California Transportation Development Act

The Mills-Alquist-Deddeh Act (SB 325) (also known as the Transportation Development Act [TDA]) was enacted in 1971 to improve public transportation services and encourage regional transportation coordination. This law provides funding to be allocated to transit- and non-transit-related purposes that comply with regional transportation plans. The TDA provides two funding sources: 1) the Local Transportation Fund (LTF), which is derived from a ¼ cent of the general sales tax collected statewide, and 2) the State Transit Assistance fund (STA), which is derived from the statewide sales tax on diesel fuel.

California Environmental Quality

The Steinberg Act (SB 743) (also known as the Environmental Act) was enacted in 2013 to shift the focus of transportation analysis from driver delay to reducing greenhouse gas emissions, creating multimodal networks, and promoting mixed land uses. SB 743 requires the Governor's Office of Planning and Research (OPR) to amend the CEQA Guidelines to provide alternative level of service metrics for transportation impact evaluations. The alternative criteria must encourage greenhouse gas emissions reductions, support the development of multimodal transportation networks, and promote a diversity of land uses. In August 2014, OPR released a preliminary discussion draft of changes to the CEQA Guidelines for review and comment, and the office is currently developing a revised draft for further review and comment. Under the new guidelines, measurements of transportation impacts may include vehicle miles traveled, vehicle miles traveled per capita, automobile trip generation rates, or automobile trips generated.

Measure D

Measure D was a proposed ½ cent local sales tax increase included on the November 2016 ballot in Santa Cruz County. The Measure, which will focus on transportation safety upgrades,

roadway repairs, traffic relief, and transit augmentation, was approved by voters via a super majority (over 67% voting “yes”).

The improvement plan will provide steady and direct funding to Santa Cruz County and all Cities within the County to improve the transportation network, including Highway 17. Transportation improvements will include improvements of local streets, road maintenance, bicycle and pedestrian projects, transit and paratransit service upgrades, as well as implementation of many other projects and programs. These improvements are voter approved and by default law, must be implemented.

15.4.3 Local

Scotts Valley General Plan

The following goals, policies and/actions from the Scotts Valley General Plan will avoid or help reduce impacts associated with the project:

- LA-44 New Commercial developments shall be required to provide to the City a trip generation and distribution analysis as a part of the project plans. The City should review and evaluate this analysis for impacts to residential zones.
- CP-109 The integrated transportation system shall be designed, constructed, and maintained to minimize adverse impacts on the Planning Area, particularly on adjoining uses of land.
- CP-132 The traffic circulation system of the city shall be improved to extend and connect streets as needed for future development and present convenience.
- CP-151 Require new development to identify traffic problem areas as a part of the monitoring program and condition projects to mitigate problems.
- CP-152 The City Engineer will require new development to provide traffic counts and LOS development to provide traffic counts and LOS analysis based upon the City’s formula for improvements to roadway system problem area.
- CP-153 On-Street parking along arterials shall be prohibited.
- CP-165 The City shall plan for sidewalk construction as part of new development and improvement projects in appropriate areas.
- CP-167 Adequate provision shall be made for pedestrian crossings at appropriate locations.
- CP-171 The City shall require the undergrounding of utilities along roadways.
- CP-173 The City shall require appropriate landscaping and/or barrier screening in all new projects to screen off objectionable views along roads, streets and highways.

Scotts Valley Bicycle Transportation Plan

Relevant plans, policies, and programs regarding bicycle facilities are included in the *Scotts Valley Bicycle Transportation Plan (2012)*. The project site is not located along a designated bicycle route.

Draft VMT Implementation Guidelines

SB 743 identifies significance thresholds and a methodology for analyzing a land use and transportation project's potential impacts associated with vehicle miles travelled (VMT). It also includes travel demand management strategies to help mitigate VMT impacts. Consistent with SB 743, the City has developed the Draft VMT Implementation Guidelines (Kimley-Horn and Associates, 2021), which is pending review and adoption by the City Council.

15.5 Environmental Impacts and Mitigation Measures

15.5.1 Significance Criteria

CEQA Criteria

The following significance criteria for transportation and circulation were derived from the Environmental Checklist in CEQA Guidelines Appendix G. These significance criteria have been amended or supplemented, as appropriate, to address lead agency requirements and the full range of potential impacts related to this project.

A Project impact would be considered significant and would require mitigation if it would meet one of the following criteria.

- Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.
- Conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Result in inadequate emergency access.

For the purposes of VMT, implementation of the General Plan would have a significant transportation impact if it would result in VMT exceeding the thresholds as shown in Exhibit 5: Scotts Valley VMT Thresholds of Significance for Land Use Projects of the City's Draft VMT Implementation Guidelines (2021), which is shown below for reference.

Exhibit 5: Scotts Valley VMT Thresholds of Significance for Land Use Projects

Land Use	VMT Threshold	Basis
Residential	10.0 VMT/capita ¹	15% below the existing City’s average VMT per capita.
Office	7.4 Work VMT/Employee ²	15% below existing Santa Cruz County-wide average Work VMT per employee.
Retail	Net regional change	Using Santa Cruz County as the basis.
Industrial	11.0 Work VMT/Employee ²	15% below existing county-wide average Work VMT per employee.
Other Employment	Work VMT/Employee ²	15% below existing county-wide average Work VMT per employee for similar land uses.
Other Customer	Net regional change	Using Santa Cruz County as the basis.
Transportation Projects	Net increase to countywide VMT	Using Santa Cruz County as the basis.

Notes:

1. Residential VMT specifically applies to all Home-Based trips residential trips as represented in the Travel Demand Model. Refer to Appendix A of the City’s VMT Implementation Guidelines for additional information.
2. Work VMT specifically applies to commute trips as represented in the Travel Demand Model. Refer to Appendix A of the City’s VMT Implementation Guidelines for additional information.

Source: City of Scotts Valley Draft VMT Implementation Guidelines (Kimley-Horn & Associates, 2021).

15.5.2 Summary of No and/or Beneficial Impacts

Change in Air Traffic Patterns

The project site is not located near an airport or private air strip and would not result in a change in air traffic patterns. Therefore, there would be no impact.

Conflict with Adopted Policies, Plans, or Programs Supporting Alternative Transportation

The project would not result in the construction of new or altered public roadways, pedestrian paths , bicycle paths or lanes, or transit facilities. The existing transit facility located adjacent to the project site on Mt. Herman Road would remain. Therefore, the project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or decrease the performance or safety of such facilities. Therefore, there would be no impact.

Emergency Access & Hazards

Access via public roadways to the project site would remain unchanged and would be adequate for emergencies. Therefore, there would be no impact.

15.5.3 Impacts of the Project

Impact TR-1: Exceed VMT Thresholds

Developed in coordination with Santa Cruz County and the cities of Santa Cruz, Capitola, and Watsonville, the City's Draft VMT Implementation Guidelines (Kimley-Horn and Associates, 2021), which is consistent with and implements SB 743, describes the methodology and performance mitigation measures for analyzing VMT impacts. If there are multiple distinct land uses within the project (residential, office, retail, etc.), they are analyzed separately, unless they are determined to be insignificant to the total VMT. Mixed use projects are permitted to account for internal capture which depending on the methodology. Project impacts are analyzed using the "VMT Calculator" which analyzes a project relative to the region's AMBAG traffic model.

The mixed-use project includes both residential and commercial retail uses. Because no single tenancy is greater than 50,000 gross square feet, it is considered a "local serving retail" use and is exempt from further analysis per both the Draft VMT Implementation Guidelines and SB 743.

The residential portion of the project includes eight townhouses and 44 multi-family units. Per the Draft VMT Implementation Guidelines and SB 743, the VMT threshold of significance is a reduction of 15% below the City's existing average VMT per capita of 11.7, which equates to 10 VMT per capita.

Because the project contains retail uses, an adjustment of 9.5% is made for internal trip captures. As shown in [Table 15-1: Project Transportation Demand Strategies and Features to Reduce VMT/Capita for Residential Uses](#), to further reduce VMT, the project includes a number of transportation demand management strategies that reduce the VMT per capita to less than 10 and thereby resulting in a less than significant impact and therefore, no mitigation is required.

Table 15-1: Project Transportation Demand Strategies to Reduce VMT/Capita for Residential Uses

TDM # / Strategy	Description	VMT Reduction Credit
Existing City VMT Per Capita		11.7
Mixed-Use Adjustment	Internal trip capture	9.5 %
20: Include Bike Parking in excess of City Code	The project will include 46 individual bike lockers as well as a separate bike storage area in the garage of Building A for use by the residents of the apartment units.	2 %
21: Include Secure Bike Parking and Showers in excess of City Code	Secure bike parking and showers will be provided for use by employees of the commercial uses.	2 %
24: Pedestrian Network Improvement	A network of sidewalks and paths are included throughout the site to facilitate pedestrian circulation	2 %
Total % VMT Credit		15.5 %
Net Change in VMT		(1.8)
VMT with TDM Strategies		9.9
VMT Residential Threshold		10

Impact TR-2: Substantially increase hazards due to a design feature or incompatible us.

As shown in **Figure 15-2: Proposed Project Site Plan**, the site plan shows at least 17 feet parking stalls and 26 feet for the drive aisle, which meets City parking stall geometric requirements as shown in Figure 17.44.030A of City of Scotts Valley Municipal Code.

The site plan also shows that the project will be accessible by two unsignalized driveways. One will utilize the existing driveway along Glen Canyon Road, just east of Mt. Hermon Road, and the second will be a new driveway along Mt. Hermon Road, just north of Glen Canyon Road. The proposed Mt. Hermon Road driveway also serves as a pull-out for transit, may result in safety hazard to vehicles as they decelerate,. Implementation of **Mitigation Measure MM TR-2.1: Mt. Hermon Road Project Site Access**, would reduce the impact to a less-than-significant level.

Mitigation for Impact TR-2

MM TR-2.1 Mt. Hermon Road Project Site Access

Prior to issuance of the grading permit, the project applicant shall submit an analysis by a qualified traffic engineer demonstrating that ingress access from Mt. Hermon Road is designed to adequately accommodate bus access to the existing transit stop (even if not

currently used) and provide safe access for vehicles entering the project site from Mt. Hermon Road.

15.5.4 Level of Significance after Mitigation

Table 15 2: Summary of Impacts and Mitigation Measures – Transportation and Circulation, summarizes the environmental impacts, significance determinations, and mitigation measures for the project with regard to transportation and circulation.

Table 15-2: Summary of Impacts and Mitigation Measures – Transportation and Circulation

Impact	Impact Significance	Mitigation
Impact TR-1: Exceed VMT Thresholds	Less than significant	None required
Impact TR-2: Substantially increase hazards due to a design feature or incompatible use.	Less than Significant with Mitigation	MM TR-2.1: Mt. Hermon Road Project Site Access

15.6 Level of Service Analysis

An impact analysis for the following level of service analysis is not required by CEQA. Instead, it is provided to evaluate consistency with the Draft General Plan (2021) policies, in particular; **Policy M-3.9 Level of Service Standard**, **Policy M-3.10 Lower Level of Service**, and **Policy M-3.14 Traffic Impact Analysis**.

City of Scotts Valley Criteria

As stated in the City of Scotts Valley *Guide for the Preparation of Traffic Impact Studies (2003)*, the City of Scotts Valley considers intersections with LOS C or better under “Existing Conditions” to be operating at an acceptable level. For intersections operating at LOS C or better under “Cumulative Conditions,” a project would cause a deficiency if it would result in intersection operations of LOS D, LOS E, or LOS F. This criteria is applied to signalized intersections within the City’s jurisdiction, as well as Caltrans intersections.

Furthermore, the Scotts Valley General Plan Transportation Element Action CA-149 has established a threshold of LOS D for Mt. Hermon Road / Scotts Valley Drive and Granite Greek Road / Scotts Valley Drive. All other signalized intersections are required to maintain a LOS of C or better, per CA-150.

For signalized intersections that already operate at unacceptable (LOS D, E, or F) under “Existing Conditions” or “Cumulative Conditions,” a project would cause a deficiency if congestion would worsen measurably at the intersection as a result of the project.

For unsignalized intersection, a project would cause a deficiency if the intersection meets the peak hour signal warrant per California MUTCD.

Caltrans Criteria

The following significant impact criterion applies to all Caltrans facilities:

- Change the LOS of a state highway roadway segment from acceptable operation (LOS A, B, or C) to deficient operation (LOS D, E, or F) or result in a change in LOS for a segment currently operating at a deficient level based on Caltrans significance criteria (Caltrans, 2002).

15.6.1 Study Intersections & Segments

The study intersections are those through which the majority of the project-generated traffic would traverse, and where potential traffic deficiencies would be most likely to occur. Study intersection selection criteria are based on City of Scotts Valley and Caltrans traffic impact study guidelines, which indicates that study intersections shall be selected based on the expected project-generated trips, assumed trip distribution, and engineering judgement.

Given that regional access to the project site is provided from Highway 17 via Mt. Hermon Road ramps, the highway segments north and south of these terminals were considered for analysis.

As shown in [Figure 15-1: Study Intersections & Trip Distribution](#), the following intersections were analyzed as part of the LOS traffic analysis:

1. Mt. Hermon Road / Spring Lakes Drive (Signalized)
2. Mt. Hermon Road / Scotts Valley Drive (Signalized)
3. Mt. Hermon Road / Glen Canyon Road (Signalized)
4. Mt. Hermon Road / La Madrona Drive / SR 17 Southbound off-ramp (Signalized)
5. Bean Creek Road / Scotts Valley Drive (Signalized)
6. Glen Canyon Road / Project Driveway (Unsignalized)
7. Mt. Hermon Road / Project Driveway (Unsignalized)

15.6.2 Traffic Analysis Methodology

Level of Service

Traffic conditions are measured by average daily traffic (ADT), peak hour traffic volumes, level of service (LOS), average delay, and volume to capacity (V/C) ratio. Average daily traffic is the total number of cars passing over a segment of the roadway, in both directions, on an average day. Peak hour volumes are the total number of cars passing over a roadway segment during the peak hour in the morning (AM) or afternoon/evening (PM).

Signalized Intersections

Signalized intersections were analyzed based on *Highway Capacity Manual 6* (HCM6) methodology using Synchro Version 10 software. HCM 6 evaluates signalized intersection operations on the basis of average control delay time for all vehicles at the intersection. Control delay is the amount of delay that is attributed to the particular traffic control device at the intersection, and includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

Signal phasing at Mt. Hermon Road / La Madrona Drive / SR 17 Southbound off-ramps is non-standard. Due to HCM 6 methodology limitations, HCM 2000 methodologies were used to determine delays and LOS at this study intersection. The shared left-through northbound and southbound lanes at Mt Hermon Road / Springs Lakes Drive resulted in HCM 6 reporting much higher delays than what was observed in the field and the Synchro timing methodologies were used to determine delay and LOS at this study intersection.

Both the City of Scotts Valley and Caltrans endeavors to maintain a target LOS at signalized intersections at the transition between C and D (LOS C is acceptable and LOS D is unacceptable).

These standards are identified in both the *City of Scotts Valley Traffic Impact Studies Guide (2003)* and the *Caltrans Traffic Impact Study Guide (2002)*.

The Scotts Valley General Plan Transportation Element Action CA-149 has established a threshold of LOS D for Mt. Hermon Road / Scotts Valley Drive and Granite Creek Road / Scotts Valley Drive. All other signalized intersection are required to maintain an LOS C or better, per CA-150.

Unsignalized Intersections

LOS at unsignalized intersections is based on the HCM 6 methodologies using Synchro Version 10 software. This method is applicable for both two-way (SSSC or TWSC) and all-way stop-controlled (AWSC) intersections. For two-way stop-controlled intersections, delay is calculated for each stop-controlled movement and for the uncontrolled left turns, if any, from the main street. For two-way stop controlled intersections, the overall average delay and LOS are reported, as are the delay and LOS for the worst intersection movement. For all-way stop controlled intersections, the overall intersection average delay and LOS are reported.

Both the City of Scotts Valley and Caltrans endeavors to maintain a target LOS at unsignalized intersections at the transition between C and D (LOS C is acceptable and LOS D is unacceptable). These standards are identified in both the *City of Scotts Valley Traffic Impact Studies Guide (2003)* and the *Caltrans Traffic Impact Study Guide (2002)*.

Table 15-3: Signalized and Unsignalized Intersection LOS Criteria summarizes the relationship between control delay and LOS for signalized and unsignalized intersections.

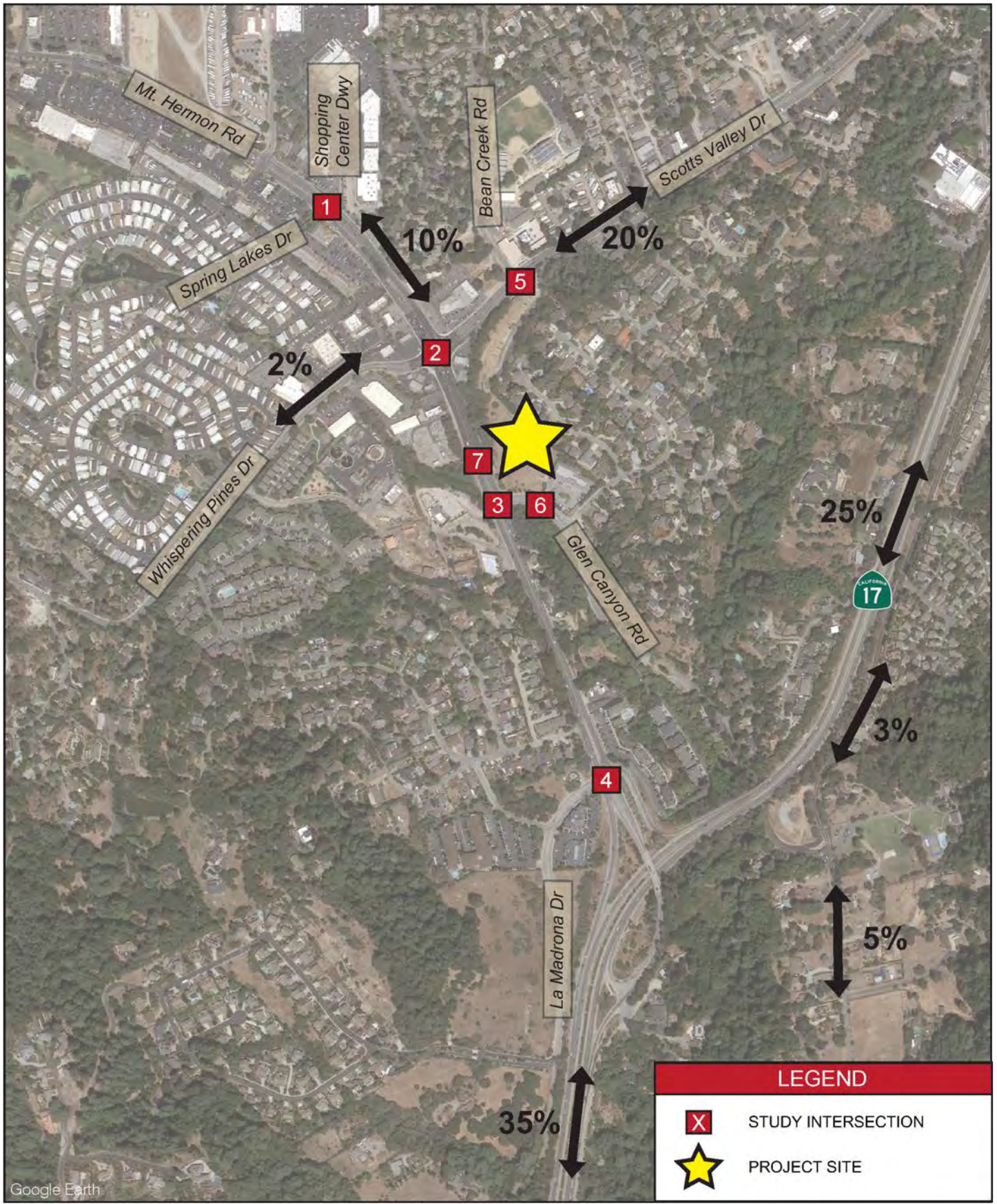


Figure 15-1: Study Intersections and Trip Distribution
 Oak Creek Park
 Draft EIR

Table 15-3: Signalized and Unsignalized Intersection LOS Criteria

Level of Service	Description	Average Control Delay (Seconds Per Vehicle)	
		Signalized	Unsignalized
A	Operations with very low delay occurring with favorable traffic signal progression and/or short cycle lengths.	≤ 10.0	≤ 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10.0 to 20.0	> 10.0 to 15.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20.0 to 35.0	> 15.0 to 25.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35.0 to 55.0	> 25.0 to 35.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 to 80.0	> 35.0 to 50.0
F	Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths.	> 80.0	> 50.0

Source: *Highway Capacity Manual*, Transportation Research Board, 2016

Study Conditions

This LOS traffic analysis evaluates project conditions under the following traffic conditions:

1. Existing Conditions: Existing peak-hour traffic volumes on the existing roadway network. Existing traffic volumes were obtained from current AM and PM peak hour traffic counts.
2. Existing + Project Conditions: Projected peak hour traffic volumes are estimated by adding existing traffic volumes to Project generated traffic.
3. Cumulative Conditions: Cumulative conditions are future traffic volumes on the roadway network and based on cumulative approved projects.
4. Cumulative + Project Conditions: Forecasted peak hour traffic volumes are estimated by adding Cumulative traffic volumes to Project generated traffic.

15.6.3 Existing Conditions

Existing conditions lane geometry for study intersections are shown in [Appendix G: Transportation Modelling Data & Analysis](#).

Existing conditions traffic counts were collected at study intersections #1 through #5 on October 11, 2018 and at study intersection #6 on May 23, 2018 from 7:00am to 9:00am and 4:00pm to 6:00pm. Existing conditions traffic volumes at study intersections are shown in [Appendix G: Transportation Modelling Data & Analysis](#). Given that these counts were conducted prior to COVID, that are considered more conservative than current conditions.

Roadway Improvements

Scotts Valley Short Term Capital Improvement Plan (CIP) Projects

There are no fully funded roadway improvement projects in the project study area that are expected to be completed in the near term.

15.6.4 Trip Generation Estimates

Trip generation estimates were prepared for weekday traffic conditions (worst case). In determining project trip generation, the magnitude of traffic accessing and departing the project site is estimated for the AM and PM peak hours. Through empirical research, data have been collected that correlate common land uses with their propensity for producing traffic. Thus, for the most common land uses there are standard trip generation rates that can be applied to help predict the traffic increases that would result from a new development.

Project trip generation was estimated by applying to the proposed size and uses of the development to the appropriate trip generation rates published in the *Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition (2017)*. Since the project includes complementary land uses, an internal capture reduction was taken to account for residents, employees of the office, and retail patrons accessing the complimentary uses without creating additional vehicle trips. Internal capture was based on methodology from *ITE Trip Generation Handbook, 3rd Edition*.

As shown in [Table 15-4: Project Trip Generation](#), the project would generate 1,678 net new daily trips, with 206 net new trips (130 in and 76 out) occurring during the AM peak hour and 126 net new trips (60 in and 66 out) occurring during the PM peak hour.

Table 15-4: Project Trip Generation

Land Use	Size	Daily		AM Peak Hour			PM Peak Hour				
		Rate	Trips	Rate	In	Out	Total	Rate	In	Out	Total
Multi-Family Residential (ITE 221) ¹	52 DU	-	282	-	5	13	18	-	14	10	24
Office (ITE 710) ²	7,955 SF	-	92	-	29	5	34	-	2	8	10
Retail (ITE 820) ³	12,716 SF	-	1,480	-	98	60	158	-	57	61	118
Total Project Trips			1,854		132	78	210		73	79	152
Internal Capture ⁴			-176		-2	-2	-4		-13	-13	-26
Net New Project Trips			1,678		130	76	206		60	66	126

Notes:

1. Multi-Family Housing (Mid-Rise) - ITE Code 221; Based on ITE equation.
 2. General Office Building - ITE Code 710; Based on ITE equation.
 3. Shopping Center – ITE Code 820; Based on ITE equation.
 4. Internal capture for AM and PM Peak hour were calculated using methodology in *ITE Trip Generation Handbook, 3rd Edition*. Daily internal capture assumed average percentage for AM and PM peak hour.
- Source: Kimley-Horn & Associates, 2021.

15.6.5 Trip Distribution

Project trip distribution estimates the origins and destinations to and from which the project trips would travel. In the project trip assignment, the project trips are assigned to specific streets and intersections. The directional distribution of project-generated traffic to and from the site was developed based on existing traffic patterns, recent transportation impact analyses, and knowledge of the study area. [Figure 15-1: Study Intersections & Trip Distribution](#) shows the distribution of project trips throughout the study area. The peak hour trips generated by the proposed uses are assigned to the roadway system by the model at each study location.

As shown in [Figure 15-1: Study Intersections & Trip Distribution](#), it was estimated that approximately 32 percent of the estimated Project trips will travel north of the project site, where 10 percent continues east on Mt. Hermon Road, 20 percent on Scotts Valley Drive, and 2 percent on Whispering Pines Drive. Approximately 60 percent of the project trips will travel along SR 17, where 25 percent traveling north and 35 percent traveling south. The remaining 8 percent will travel along Glen Canyon Road.

Project trip assignments to the network are shown in Figure F-6 in [Appendix G: Transportation Modelling Data & Analysis](#). Project trips added to Existing and Cumulative volumes are summarized in Figure F-7 and Figure F-8 in [Appendix G: Transportation Modelling Data & Analysis](#), respectively.

Caltrans Traffic Impact Analysis Guidelines state that for projects that generate 1 to 49 peak hour trips assigned to a State highway facility or add trips to State highway facilities experiencing significant delay, unstable, or forced traffic flow conditions, a traffic impact study (or some lesser analysis) may be needed. As shown in [Table 15-5: Project Trips Assigned to Highway 17](#), the project will generate between up to 46 AM peak hour trips and up to 23 trips during the PM peak hour.

Table 15-5: Project Trips Assigned to Highway 17

Segment	Direction	Peak Hour Trips	
		AM Peak	PM Peak
North of Mt. Hermon Road	Northbound	19	17
	Southbound	33	15
South of Mt. Hermon Road	Northbound	46	21
	Southbound	26	23

In addition, the existing level of service (LOS) on Highway 17 segments in the project vicinity is LOS D or better during peak periods. Therefore, a freeway analysis on Highway 17 segments is not required.

15.6.6 Existing and Existing + Project

As shown in [Table 15-6: Existing and Existing + Project Transportation Delay & LOS](#), all study intersections operate at acceptable levels of service under the “Existing + Project Conditions” during the weekday AM and PM peak hours with the exception of:

Mt. Hermon Road / Scotts Valley Drive (Intersection #2)

- Would degrade from acceptable LOS D to and unacceptable **LOS E** during the AM Peak.

Mt. Hermon Road / Scotts Valley Drive

As shown in [Table 15 6: Existing and Existing + Project Transportation Delay & LOS](#), the addition of project traffic to the intersection to Scotts Valley Drive / Mt. Hermon Road would result in an average delay from 54.7 to 56.7 seconds (a two second increase) during the AM peak hour, resulting in a change from an acceptable LOS D to unacceptable LOS E.

Because the construction of additional lanes is not feasible due to space limitations and the pedestrian and bicycle improvements, nor consistent with State and local Complete Street design principles; improving the LOS could be cost-effectively addressed by coordinating the Scotts Valley Drive / Mt. Hermon Road traffic signal with the other traffic signals along Mt. Hermon Road from Mt. Hermon Road/Lockwood Lane west to the Mt. Hermon Road / La Madrona Drive / SR 17 Southbound off-ramp intersection ; particularly during the AM and PM peak traffic periods. As shown in [Table 15-7: Existing + Project Transportation Delay & LOS with](#)

Improvements, this improvement would result in an acceptable level of service for all intersections.

Traffic signal timing involves determining the sequence of operation and assigning green time to each approach at an intersection while considering time for pedestrians and other users. Because the signals on Mt. Herman Road are relatively close together, they are considered “system” intersections. System intersections are usually closely spaced and any timing changes at one intersection has an effect on the upstream and downstream intersections. Signal system corridors are typically coordinated on a time of day basis for each associated peak period. The most common peak periods are the AM, PM, and midday. Typically, these peak periods are driven by traffic patterns or daily commutes by direction. AM and PM peaks may be associated with “inbound” or “outbound” traffic patterns. Midday traffic patterns are most often balanced by direction

In March of 2010, the City Council adopted the following fair share contribution requirement, which will be included as a condition of approval for any future Planned Development permit for the project site:

“Any project which meets the trip generation threshold of an additional five peak hour trips in both AM and PM peak hours at Scotts Valley Drive/Mt. Hermon Road, or five additional PM peak hour trips at Mt. Hermon Road/La Madrona Drive will be conditioned to pay, in addition to all regular impact fees, the additional fees as follows:

- \$240 per peak hour trips (the sum of AM and PM trips) for improvements to Mt. Hermon Road/Scotts Valley Drive.
- \$712 per PM peak hour trips for improvements to Mt. Hermon Road/La Madrona Drive.

The project generates 206 AM peak hour trip and 126 PM peak hour trips for a total of 332 trips. This equates to an impact mitigation payment of \$79,680 (332 x \$240) for improvements to Mt. Hermon Road/Scotts Valley Drive and \$89,712 (126 x \$712) for improvements to Mt. Hermon Road/La Madrona Drive. These impact mitigation fees are payable to the City prior to issuance of the first building permit. Additionally, the project will be required to pay a city-wide development impact fee, a portion of which is allocated to roadway improvements. Payment of these fair-share impact mitigation fees would reduce project impacts at the Scotts Valley Drive/Mt. Hermon Road to less than significant.

Table 15-6: Existing and Existing + Project Transportation Delay & LOS

	Intersection	Control Type	Agency	LOS Threshold	Existing						Existing + Project					
					AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
					Movement	Delay (sec)	LOS	Movement	Delay (sec)	LOS	Movement	Delay (sec)	LOS	Movement	Delay (sec)	LOS
1	Mt. Hermon Road / Spring Lake Drive	Signal	City	C	-	12.7	B	-	21.6	C	-	12.8	B	-	21.7	C
2	Mt. Hermon Road / Scotts Valley Drive	Signal	City	D	-	54.7	D	-	40.2	D	-	56.7	E	-	40.6	D
3	Mt. Hermon Road / Glen Canyon Road	Signal	City	C	-	10.6	B	-	15.8	B	-	13.1	B	-	17.6	B
4	Mt. Hermon Road / La Madrona Drive /SR 17 Southbound off-ramp	Signal	CalTrans	C	-	28.2	C	-	30.0	C	-	30.8	C	-	30.8	C
5	Bean Creek Road / Scotts Valley Drive	Signal	City	C	-	9.2	A	-	8.5	A	-	9.2	A	-	8.5	A
6	Glenn Canyon Road / Project Driveway	SSSC	City	C	-	0.1	A	-	0.4	A	-	2.4	A	-	1.8	A
	<i>Worst Approach</i>				SB	11.1	B	SB	10.9	B	SB	12.7	B	SB	11.1	B
7	Mt. Hermon Road / Project Driveway	SSSC	City	C	Future Intersection						-	0.1	A	-	0.1	A
	<i>Worst Approach</i>				SB	16.3	C	SB	22.8	C						

Notes:
 1. NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound
 2. Analysis performed using Highway Capacity Manual 6 (HCM 6) methodologies at all study intersection except Intersections #1 and #4. Shared left-through lanes analyzed using Synchro Timing methodologies at Intersection #1; non-standard phasing analyzed using HCM 2000 methodologies at Intersection #4.
 3. Each study intersection is controlled by a traffic signal, a side-street stop-controlled (SSSC), or an all-way stop-controlled (AWSC).
 4. Delay refers to the average control delay for the entire intersection measured in seconds per vehicle. According to HCM methodology, overall LOS is not defined for side street stop controlled intersections, instead the worst approach control delay is used in seconds.
 5. If a specific movement has a delay less than the approach or intersection average, and the trips are increased for this movement, the overall intersection delay is decreased.
 6. Intersections that are operating below acceptable levels are shown in BOLD and shaded light blue.
 Source: Kimley-Horn & Associates, Inc. 2021.

Table 15-7: Existing + Project Transportation Delay & LOS with Improvements

	Intersection	Control Type	Agency	LOS Threshold	Existing + Project						Existing + Project with Improvement					
					AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
					Movement	Delay (sec)	LOS	Movement	Delay (sec)	LOS	Movement	Delay (sec)	LOS	Movement	Delay (sec)	LOS
2	Mt. Hermon Road / Scotts Valley Drive	Signal	City	D	-	56.7	E	-	40.6	D	-	32.3	C	-	36.9	D

Notes:
 1. NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound
 2. Analysis performed using Highway Capacity Manual 6 (HCM 6) methodologies at all study intersection except Intersections #1 and #4. Shared left-through lanes analyzed using Synchro Timing methodologies at Intersection #1; non-standard phasing analyzed using HCM 2000 methodologies at Intersection #4.
 3. Each study intersection is controlled by a traffic signal, a side-street stop-controlled (SSSC), or an all-way stop-controlled (AWSC).
 4. Delay refers to the average control delay for the entire intersection measured in seconds per vehicle. According to HCM methodology, overall LOS is not defined for side street stop controlled intersections, instead the worst approach control delay is used in seconds.
 5. If a specific movement has a delay less than the approach or intersection average, and the trips are increased for this movement, the overall intersection delay is decreased.
 6. Intersections that are operating below acceptable levels are shown in BOLD and shaded light blue.
 Source: Kimley-Horn & Associates, Inc. 2021.

15.6.7 Cumulative Conditions

To evaluate “Cumulative + Project Conditions,” it is necessary to develop a forecast of cumulative traffic volumes in the study area under “Cumulative Conditions” without the project. This forecast provides a basis against which to measure the project’s effect on LOS. The City of Scotts Valley provided a Cumulative Projects list, which is included in [Appendix G: Transportation Modelling Data & Analysis](#). The year 2030 was selected for analysis based on the cumulative buildout condition based on population growth projections, assumed in the Town Center EIR, which will affect future travel patterns in the study area and traffic volumes on the highways serving the project site.

Traffic volumes under “Cumulative Conditions” are based on the peak hour forecasts determined in collaboration with City of Scotts Valley staff and are shown in Figure F-5 in [Appendix G: Transportation Modelling Data & Analysis](#).

As shown in [Table 15 8: Cumulative and Cumulative + Project Transportation Delay & LOS](#), all study intersections operate at acceptable levels of service under the “Cumulative + Project Conditions” during the weekday AM and PM peak hours with the exception of:

Mt. Hermon Road / Scotts Valley Drive (Intersection #2)

- Would continue to operate at **LOS E** during AM Peak

Mt. Hermon Road/ La Madrona Drive-Hwy 17 SB Ramps (Intersection #4)

- Would continue to operate at **LOS D** during AM Peak
- Would continue to operate at **LOS D** during PM Peak

Mt. Hermon Road / Project Driveway (Intersection #7)

- Would operate at **LOS D** during AM Peak

Mt. Hermon Road / Scotts Valley Drive

Given the fact that the existing right-of-way is fully utilized, future constructed improvements at this intersection are limited without acquiring additional land and making major modifications to the infrastructure, which would be prohibitively expensive.

Payment by the applicant of their fair-share traffic impact mitigation fee and other City improvement fees as described above would help fund other improvements such as traffic signal controllers, which would improve the LOS. Implementation of the recommended signal timing devices from Mt. Hermon Road/Lockwood Lane west to the Mt. Hermon Road / La Madrona Drive / SR 17 Southbound off-ramp intersection would improve operations to LOS D or better in AM and PM peak hours at the intersection of Mt. Hermon Road / Scotts Valley Drive. [Table 15-9: Mitigated Cumulative + Project Transportation Delay & LOS](#) shows mitigated LOS and control delay.

Mt. Hermon Road / La Madrona Road / SR 17 Southbound Off-Ramp

The addition of project traffic to the intersection to Mt. Hermon Road / La Madrona Road / SR 17 Southbound Off-Ramp would cause control slight increases in delay (less than 5 seconds) during the AM and PM peak hours. Improvements to signal timing would improve the condition from LOS D to C during the AM peak hour. However, the LOS would remain at LOS D during the PM peak hour due to ramp delays, which is not consistent with Caltrans which endeavors to maintain a target LOS at signalized intersections at the transition between C and D.

The *Scotts Valley Town Center Specific Plan EIR* identified a second westbound right-turn lane on the SR 17 off-ramp as mitigation for deficient operations at Mt. Hermon Road / La Madrona Road / Hwy 17 Ramps (Mitigation Measure T-1). However, as noted in the Draft EIR, even with this improvement, the intersection would continue to operate at LOS D, which is not sufficient to meet Caltrans LOS C/D standard.

Because no further feasible mitigation could be identified to avoid the future cumulative delays, the *Scotts Valley Town Center Specific Plan EIR* determined at this impact would remain “significant and unavoidable”.

Mt. Hermon Road / Project Driveway

The intersection of Mt. Hermon Road / Project Driveway is expected to operate at LOS D during the PM peak hour; however, this intersection does not satisfy signal warrant and is located to close to the Mt. Hermon Road / Glen Canyon Road intersection, and therefore no improvement is recommended.

Table 15-8: Cumulative and Cumulative + Project Transportation Delay & LOS

	Intersection	Control Type	Agency	LOS Threshold	Cumulative						Cumulative + Project					
					AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
					Movement	Delay (sec)	LOS	Movement	Delay (sec)	LOS	Movement	Delay (sec)	LOS	Movement	Delay (sec)	LOS
1	Mt. Hermon Road / Spring Lake Drive	Signal	City	C	-	14.3	B	-	20.2	C	-	9.3	A	-	24.8	C
2	Mt. Hermon Road / Scotts Valley Drive	Signal	City	D	-	37.0	D	-	61.3	E	-	39.1	D	-	74.6	E
3	Mt. Hermon Road / Glen Canyon Road	Signal	City	C	-	8.7	A	-	16.0	B	-	11.2	B	-	21.4	C
4	Mt. Hermon Road / La Madrona Drive /SR 17 Southbound off-ramp	Signal	Caltrans	C/D	-	36.1	D	-	47.0	D	-	37.7	D	-	51.4	D
5	Bean Creek Road / Scotts Valley Drive	Signal	City	C	-	8.9	A	-	8.7	A	-	9.0	A	-	8.8	A
6	Glenn Canyon Road / Project Driveway	SSSC	City	C	-	0.1	A	-	0.3	A	-	2.1	A	-	1.8	A
	<i>Worst Approach</i>				SB	9.4	A	SB	11.1	B	SB	10.4	B	SB	11.4	B
7	Mt. Hermon Road / Project Driveway	SSSC	City	C	Future Intersection						-	0.1	A	-	0.1	A
	<i>Worst Approach</i>										SB	16.3	C	SB	25.1	D

Notes:
 1. NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound
 2. Analysis performed using Highway Capacity Manual 6 (HCM 6) methodologies at all study intersection except Intersections #1 and #4. Shared left-through lanes analyzed using Synchro Timing methodologies at Intersection #1; non-standard phasing analyzed using HCM 2000 methodologies at Intersection #4.
 3. Each study intersection is controlled by a traffic signal, a side-street stop-controlled (SSSC), or an all-way stop-controlled (AWSC).
 4. Delay refers to the average control delay for the entire intersection measured in seconds per vehicle. According to HCM methodology, overall LOS is not defined for side street stop controlled intersections, instead the worst approach control delay is used in seconds.
 5. If a specific movement has a delay less than the approach or intersection average, and the trips are increased for this movement, the overall intersection delay is decreased.
 6. Intersections that are operating below acceptable levels are shown in **BOLD** and shaded light blue.
 Source: Kimley-Horn & Associates, Inc. 2021.

Table 15-9: Mitigated Cumulative + Project Transportation Delay & LOS

	Intersection	Control Type	Agency	LOS Threshold	Cumulative + Project						Mitigated Cumulative + Project						Recommended Improvement
					AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			
					Movement	Delay (sec)	LOS	Movement	Delay (sec)	LOS	Movement	Delay (sec)	LOS	Movement	Delay (sec)	LOS	
1	Mt. Hermon Road / Spring Lake Drive	Signal	City	C	-	9.3	A	-	24.8	C							Adjust signal timing.
2	Mt. Hermon Road / Scotts Valley Drive	Signal	City	D	-	39.1	D	-	74.6	E	-	35.4	D	-	51.7	D	Adjust signal timing.
3	Mt. Hermon Road / Glen Canyon Road	Signal	City	C	-	11.2	B	-	21.4	C							Adjust signal timing.
4	Mt. Hermon Road / La Madrona Drive /SR 17 Southbound off-ramp	Signal	Caltrans	C/D	-	37.7	D	-	51.4	D	-	21.8	C	-	51.4	D	Adjust signal timing. No further improvement is recommended.
5	Bean Creek Road / Scotts Valley Drive	Signal	City	C	-	9.0	A	-	8.8	A							
6	Glenn Canyon Road / Project Driveway	SSSC	City	C	-	2.1	A	-	1.8	A							
	<i>Worst Approach</i>				SB	10.4	B	SB	11.4	B							
7	Mt. Hermon Road / Project Driveway	SSSC	City	C	-	0.1	A	-	0.1	A							
	<i>Worst Approach</i>				SB	16.3	C	SB	25.1	D							

Notes:
 1. NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound
 2. Analysis performed using Highway Capacity Manual 6 (HCM 6) methodologies at all study intersection except Intersections #1 and #4. Shared left-through lanes analyzed using Synchro Timing methodologies at Intersection #1; non-standard phasing analyzed using HCM 2000 methodologies at Intersection #4.
 3. Each study intersection is controlled by a traffic signal, a side-street stop-controlled (SSSC), or an all-way stop-controlled (AWSC).
 4. Delay refers to the average control delay for the entire intersection measured in seconds per vehicle. According to HCM methodology, overall LOS is not defined for side street stop controlled intersections, instead the worst approach control delay is used in seconds.
 5. If a specific movement has a delay less than the approach or intersection average, and the trips are increased for this movement, the overall intersection delay is decreased.
 6. Intersections that are operating below acceptable levels are shown in **BOLD** and shaded light blue.
 Source: Kimley-Horn & Associates, Inc. 2021.

15.6.8 References

Caltrans (California Department of Transportation). 2002. Guide for the Preparation of Traffic Impact Studies. Available at:

http://www.dot.ca.gov/hq/tpp/offices/ocp/igr_cega_files/tisguide.pdf

City of Scotts Valley. 2003. Guide for the Preparation of Traffic Impact Studies. Available at:

http://www.scottsvalley.org/downloads/public_works/Traffic_Impact_Studies%20Guide.pdf

City of Scotts Valley. 2012. Bicycle Transportation Plan. Available at:

http://www.scottsvalley.org/downloads/public_works/BicycleTransportationPlan.2012.pdf

City of Scotts Valley VMT Implementation Guidelines. 2021. Prepared by Kimley-Horn and Associates.

16 Alternatives

This section describes the CEQA requirements related to alternatives and describes the process used to define alternatives to the project. It describes an alternative to the project and provides a comparative analysis for the alternative to the project. It also describes the alternatives that were considered, but eliminated from detailed evaluation. It includes the evaluation of the No Project Alternative, as required by CEQA and a comparison of alternatives. Finally, it identifies the environmentally superior alternative.

16.1 CEQA Requirements for Alternatives

CEQA requires that an EIR “...describe a reasonable range of alternatives to the project, or to the location of the 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.” (CEQA Guidelines §15126.6(a))

To comply with this requirement, the City evaluated possible alternatives based on the following factors:

- Does the alternative accomplish most of the basic project objectives?
- Is the alternative potentially feasible (from economic, environmental, legal, social, technological standpoints)?
- Does the alternative avoid or substantially lessen any significant effects of the project? Alternatives need be environmentally superior to the project in only some, not all, respects.
- Is the alternative reasonable and realistic? An EIR need not consider an alternative whose effect cannot reasonably be ascertained or whose implementation is remote and speculative, because unrealistic alternatives do not contribute to a useful analysis.

Each of these requirements is described in more detail in the following sections.

It is noted that in the case of the Aviza project, the unique characteristics of the project site and its location limit the range of alternatives that may be considered.

16.2 Consistency with Project Objectives

The basic purpose of an EIR’s discussion of alternatives is to suggest ways project objectives might be achieved at less environmental cost. Accordingly, alternatives must be able to implement most project objectives, but they need not be able to implement all of them. As stated in the CEQA Guidelines, the EIR’s alternatives analysis should focus on alternatives that can eliminate or reduce significant environmental impacts even if they would impede attainment of project objectives to some degree or be costlier (14 Cal Code Regs §15126.6(b)).

The alternatives discussed must, however, be able to attain most of the basic objectives of the project (14 Cal Code Regs §15126.6(a)). The basic objectives of the project are as follows:

- Change the land use designation and zoning of the project site to allow for construction and operation of a financially feasible development
- Preserve the undeveloped portions of the project site as open space
- Provide adequate public and emergency access to and through the project site
- Obtain entitlements to allow for development of a project consistent with the surrounding residential, open space, and recreational uses
- The determination of whether to eliminate or retain alternatives in this EIR was based on the alternatives' ability to meet most of these objectives, even if the alternatives may be costlier

16.3 Potential Feasibility

CEQA requires that an EIR analyze alternatives that are potentially feasible. Among the factors that may be considered when addressing the potential feasibility of alternatives include site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or other regulatory limitations, jurisdictional boundaries, and proponent's control over alternative sites in determining the range of alternatives to be evaluated in the EIR (14 Cal. Code Regs 15126.6(f)(1)). The potential feasibility of potential alternatives considers the following factors:

Economic Feasibility. Is the additional cost of the alternative or lost profits from the alternative sufficiently severe to render it impractical and not feasible? Alternatives that are capable of eliminating or reducing significant environmental effects even though they may be costlier must be considered (14 Cal. Code Regs 15126.6(b)). However, if the additional costs of implementing an alternative or lost profitability associated with an alternative are sufficiently severe, then these factors may render the alternative impractical or economically infeasible.

Legal Feasibility. Are there legal constraints to implementing the alternative? For example, constructing the project on an alternative site may not be legally feasible if the applicant does not own the project site or applicable land use regulations or property restrictions prohibit the project. For example, the project may not be legally permissible in wilderness areas, wilderness study areas, restricted military bases, airports, and Indian reservations or on property that is not zoned to allow such a use. Any potential legal constraints affecting an alternative are identified based on a review of applicable local, State, and federal laws, regulations, plans, and policies.

Social Feasibility. Would the alternative cause significant damage to the socioeconomic structure of the community and be inconsistent with important community values and needs? Similar to the environmental feasibility addressed below, this subject is primarily considered in regard to significant environmental effects.

Technical Feasibility. Is the alternative feasible from a technological perspective, considering available technology? Are there any construction, operation, or maintenance constraints that cannot be overcome?

16.4 Potential to Eliminate Significant Environmental Effects

A key CEQA requirement for an alternative is that it must have the potential to “avoid or substantially lessen any of the significant effects of the project” (CEQA Guidelines Section 16126.6(a)). If an alternative is identified that clearly does not have the potential to provide an overall environmental advantage as compared to the project, it is usually eliminated from further consideration. The significant environmental effects of the project are summarized in [Table ES-1: Summary of Significant Impacts of the Project](#) for significant and unavoidable impacts and significant impacts that can be mitigated.

16.5 Alternatives Evaluation Process

The City identified a range of alternatives based on the screening criteria set forth above. The City also considered oral and written comments received during the CEQA scoping process that recommended or identified potential project alternatives. The range of alternatives considered in the screening analysis encompasses:

- Potentially feasible alternatives that may have been identified during the public scoping process.
- Potentially feasible alternatives that the City has identified as a result of the independent review of the project impacts.

16.6 Alternatives Eliminated from Further Consideration

Existing Zoning Alternative

The City considered an analysis of an alternative that would comprise approvals necessary for the redevelopment of the developed portion of the project site pursuant to its current Commercial Services (C-S) zoning district. Such a development would not be substantially different from the project as multiple-family residential units are a permitted use as long as they are located either above the ground-level commercial use or at ground level at the rear of a commercial space on sites designated as “Opportunity Sites” in the Housing Element, which applies to this project site.

This alternative was eliminated from further consideration because it would be too similar to the project and would not reduce or eliminate identified significant impacts.

16.7 No Project Alternative

In addition to studying a reasonable range of alternatives based on the criteria set forth above, CEQA requires the EIR to analyze a “no-project” alternative. Consideration of the No Project

Alternative is required by Section 15126.6(e) of the CEQA Guidelines. The analysis of the No Project Alternative must discuss the existing conditions at the time the Notice of Preparation was published, as well as: “what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services” (CEQA Guidelines Section 15126.6 (e)(2)). The requirements also specify that: “If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this ‘no project’ consequence should be discussed” (CEQA Guidelines Section 15126.6 (e)(3)(B)).

Description

Under the No Project Alternative, the project site would remain vacant. The project site may or may not be redeveloped according to the provisions of Services Commercial General Plan land use designation and zoning district.

Ability to Meet Project Objectives

The No Project Alternative would not meet any of the project objectives.

Comparative Analysis of Environmental Impacts

The No Project Alternative would avoid all of the significant impacts of development pursuant to the project. Given that redevelopment of the project site is unlikely under the No Project Alternative, construction-related air pollutant and GHG emissions and noise impacts would not occur. Biological resources would be no further affected than they are under existing conditions. There would be no greater use of public services, utilities, and service systems. Transportation impacts associated with VMT would not occur.

16.8 Alternatives Retained for Analysis

16.8.1 Alternative A: Reduced Residential Development

Description

The C-S land use designation allows mixed use commercial/residential uses by right (principal permitted use) with a residential density range of 15-20 residential units/acre. Under the Reduced Residential Development Alternative, the General Plan land use designations for Lot 1 would be amended from Commercial Service to Residential Medium. Consistent with the General Plan Amendment, Lot 1 would be rezoned from C-S (Commercial Service) to R-1-10 (Residential: Medium Density).

The land use classification amendment and re-zoning would allow future residential development on the project site, but at a lower density. The Residential Medium designation allows between two and five dwelling units per gross acre and the R-1-10 zoning would require a minimum lot size of 10,000 sf. This would result in approximately four residential units on Lot 1 (instead of the eight proposed), and 48 units total or four less than proposed.

The commercial space would remain the same (24,973 sf). The entirety of the project site would be still be developed, resulting in similar ground disturbances and similar on-site circulation and parking.

Consistency with Project Objectives

This alternative would meet most of the project objectives. This alternative would still provide a mix of residential and commercial uses that would be compatible with adjacent uses. It would still provide affordable and market-rate housing, albeit fewer units. It would also result in the development of a vacant and underutilized site in the City where existing infrastructure and utilities exist.

Comparative Analysis of Environmental Impacts

Construction and most operational impacts from this alternative would be similar to the project. No new or substantially greater or lesser impacts would occur as a result of this alternative.

Construction related impacts associated with air quality, greenhouse gas emissions, and noise would not change significantly as compared to the proposed project. Impacts to biological resources and geology would be similar to the proposed project as the same amount of area would be disturbed and any construction will be required to adhere to the final geotechnical report and construction codes. VMT would be less, although not significant.

Given the small change in the number of residential units (46 as compared to 52 units), there would be no appreciable change in public services, utilities, and service systems as compared to the proposed project.

In conclusion, impacts associated with this alternative would largely be the same and no impacts would be reduced to less than significant, as compared to the proposed project.

16.8.2 Alternative B: Previous Oak Creek Park Mixed-Use Planned Development

Description

This Alternative B considers the previous Oak Creek Mixed-Use Planned Development that was reviewed but not approved by the City of Scotts Valley City Council in 2008. The application included a Planned Development, land division, and design review to create 13 lots (Parcel B, C and 10 townhouse lots within Parcel D). Parcels B and C was proposed to include two one-story commercial buildings totaling 24,500 sf. Parcel D was proposed to include 10 three-story townhomes, one of which would have been constructed as an affordable unit. Site access was proposed to be similar to the proposed project. A Mitigated Negative Declaration (MND) was prepared for the project and found significant impacts, all of which could be mitigated to: aesthetics, air quality, biological resources, geology, hazards, hydrology and water quality, noise, public services, and traffic.

Consistency with Project Objectives

This alternative would not meet a number of project objectives. It would not provide a balanced mix of residential and commercial uses. It would not expand and improve the City's housing supply by developing high-quality housing in a portion of a City-designated "Opportunity Sites," which is also contrary to the City's 2015-2023 Housing Element. It would also not provide affordable and market-rate housing consistent with the City of Scotts Valley General Plan Housing Element goals and policies. Furthermore, this alternative would not provide a project that balances housing with job-creating uses.

However, given the substantially reduced number of residential units that could be constructed this alternative would not likely meet the objective to provide a mix of residential and commercial uses that achieves a financially feasible project. Although regional demand for housing is high, this alternative, if financially feasible, could require development of units at an elevated price point to recover costs associated with development costs.

Furthermore, this would not meet the project objectives to create a high-quality mixed-use development that is visually and aesthetically compatible with adjacent land uses. It would not expand and improve the City's housing supply by developing high-quality housing in a portion of a City-designated "Opportunity Sites." And finally, it would not provide affordable and market-rate housing consistent with the City of Scotts Valley General Plan Housing Element goals and policies.

Comparative Analysis of Environmental Impacts

Construction and most operational impacts from this alternative would be similar to the project. No new or substantially greater or lesser impacts would occur as a result of this alternative.

Construction related impacts associated with air quality, greenhouse gas emissions, and noise would not change significantly as compared to the proposed project. Impacts to biological resources and geology would be similar to the proposed project as the same amount of area would be disturbed and any construction will be required to adhere to the final geotechnical report and construction codes. VMT would be less, although not significant.

The project would use less water and generate less waste, but would be well within the service provider's ability to serve the project site. Because there would be fewer residential units (10 as compared to 52 units), the level of police and emergency services would likely be less. However, as neither would require additional personal or the construction of new public facilities, there would be no appreciable difference in the level of impacts and no new mitigation would be required.

In conclusion, impacts associated with this alternative would largely be the same and no impacts would be reduced to less than significant, as compared to the proposed project.

16.9 Comparison of Alternatives

CEQA requires the following for alternatives analysis and comparison:

The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed (CEQA Guidelines Section 15126.6(d)).

Table 16-2: Comparison of Significant Impacts: Project and Alternatives, shows the significant impacts of the project. For each significant impact identified, the table provides a comparison of the relative impact under the No Project Alternative, and Alternatives A and B.

Table 16-2: Comparison of Significant Impacts: Project and Alternatives

Impact	Project	No Project Alternative	Alternative A: Reduced Residential Development	Alternative B: Previous Oak Creek Park Mixed-Use Planned Development
Impact AQ-2: Future construction activities would generate dust and exhaust emissions of criteria pollutants and toxic air contaminants	LTSM	NI	LTSM ↓	LTSM ↓
Impact AQ-6: Contribute to cumulatively considerable air quality impacts.	LTSM	NI	LTSM ↓	LTSM ↓
Impact BIO-1: Cause a direct or indirect adverse effect on special-status invertebrate species.	LTSM	NI	LTSM	LTSM
Impact BIO-2: Cause a direct or indirect adverse effect on native trees and associated nesting bird sites.	LTSM	NI	LTSM	LTSM
Impact BIO-3: Contribute to cumulatively considerable effects on biological resources.	LTSM	NI	LTSM	LTSM
Impact GEO-3: Be located on a geologic unit or soil	LTSM	NI	LTSM	LTSM

Impact	Project	No Project Alternative	Alternative A: Reduced Residential Development	Alternative B: Previous Oak Creek Park Mixed-Use Planned Development
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.				
Impact GEO-4: Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property	LTSM	NI	LTSM	LTSM
Impact N-1: Cause a temporary or periodic increase in ambient noise levels during construction that would substantially disturb sensitive receptors.	LTSM	NI	LTSM	LTSM
Impact N-4: Contribute to cumulatively considerable noise impacts.	LTSM	NI	LTSM ↓	LTSM ↓
Impact TR-2: Substantially increase hazards due to a design feature or incompatible use.	LTSM	NI	LTSM	LTSM
LTS = Less than Significant LTSM = Less than Significant with Identified Mitigation Measures SI = Significant Impact SU = Significant and Unavoidable Impact with Identified Mitigation Measures ↑ = Impact of Greater Severity than Under the Proposed Project ↓ = Impact with Lesser Severity than Under the Proposed Project				

16.9.1 Environmentally Superior Alternative

In this section, the City of Scotts Valley has identified the Environmentally Superior Alternative, as required by CEQA Guidelines Section 15126.6(d) and (e)(2). Based upon the comparison above, the No Project Alternative would result in the fewest environmental impacts.

If the environmentally superior alternative is the No Project Alternative, CEQA requires identification of an environmentally superior alternative among the other alternatives (CEQA Guidelines Section 15126.6(e)(2)).

Pursuant to the CEQA Guidelines, Alternative B: Previous Oak Creek Park Mixed-Use Planned Development is the Environmentally Superior Alternative. This alternative would slightly, although not significantly reduce construction-related impacts to air quality and noise. In addition, it would generate fewer peak-hour vehicular trips, and as result reduce VMT, as compared to the proposed project. However, Alternative B would not reduce the level of impact to such a degree that would alter the significance of any impact.

17 Other CEQA Considerations

This section presents several topics required by CEQA: cumulative analysis, alternatives analysis, growth-inducing effects, significant irreversible commitment of resources, significant effects of the project, and energy conservation.

17.1 Growth-Inducing Effects

Section 15126.2(d) of the State CEQA Guidelines provides the following guidance on growth-inducing impacts: a project is identified as growth inducing if it “could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.”

A project can have direct and/or indirect growth-inducement potential. Direct growth inducement would result if a project involves construction of new housing. A project can have indirect growth-inducement potential if it would establish substantial new permanent employment opportunities (e.g., commercial, industrial or governmental enterprises) or if it would involve a substantial construction effort with substantial short-term employment opportunities and indirectly stimulate the need for additional housing and services to support the new employment demand.

Similarly, under CEQA, a project would indirectly induce growth if it would remove an obstacle to additional growth and development, such as removing a constraint on a required public service. Increases in population could tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. The CEQA Guidelines also require analysis of the characteristics of projects that may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively.

The project’s 52 residential units would directly result in a population increase of 139 persons, based on a 2.67 person per household generation rate. This population increase would not represent a substantial increase in housing and/or residents in the City. Furthermore, this amount of growth would be within existing growth projections for the City. Equally, the increase in population would not represent a substantial indirect growth inducement factor. Residential development on the project site would not propose new infrastructure that would induce substantial growth in the project site vicinity that was not previously considered for development. Residential development on the project site, like other development in the project site vicinity, would connect to existing utilities and occur within an urbanized area adequately served by transportation systems and infrastructure.

17.2 Significant Irreversible Commitment of Resources

Section 15126.2(c) of the State CEQA Guidelines states that irreversible commitments of resources should be evaluated to assure that such consumption is justified. Uses of nonrenewable resources during the initial and continued phases of the project may be

irreversible because a large commitment of such resources makes removal or nonuse thereafter unlikely, and certain types of impacts may commit future generations to similar uses.

Changes that Commit Future Generations to Similar Uses

The project would change the current land use designation and zoning of the project site and commit future generations to similar land uses. Depending on market demand, the residential use could change or be replaced in the future. However, residential development, once constructed, is rarely replaced by new uses within the first few generations after construction.

Use of Nonrenewable Resources

Construction of the project would consume natural resources (gasoline, sand and gravel, asphalt, oil, etc.) during construction activities. During operation of the residential units, energy would be consumed for lighting, heating/cooling, and transportation. Neither the construction nor operation would consume nonrenewable resources in amounts substantially different from or greater than typical urban development or similar land uses. The project would not affect agricultural resources or mineral resources or access to such resources. Therefore, the project would not involve a large commitment of nonrenewable resources.

Irreversible Damage from Environmental Accidents

The project may include storage of hazardous materials, such as cleaning products and other products, which would not be regarded as sufficient to create a significant hazard to the public. All hazardous materials would be subject to existing storage, handling, and disposal regulations that limit the potential exposure to workers and the public.

17.3 Significant Effects that Cannot Be Avoided

17.3.1 Significant Direct Effects of the project

As indicated in [Chapter 15: Transportation and Circulation](#), project implementation would increase congestion and travel delays on regional and local roadways or exceed an established LOS standard ([Impact TR-3](#)). There is no feasible mitigation measure identified.

17.3.2 Significant Cumulative Effects

As indicated in [Chapter 15: Transportation and Circulation](#), the project, combined with past, present, and reasonably foreseeable future projects, would result in significant impacts to transportation and circulation, and the project would considerably contribute to the cumulative impact ([Impact TR-3](#)). There is no feasible mitigation measure identified.

Energy Conservation

According to Appendix F of the State CEQA Guidelines, the goal of conserving energy implies the wise and efficient use of energy including decreasing reliance on natural gas and oil and increasing reliance on renewable energy sources. The project would be constructed to Title 24

standards, which would reduce energy demand as compared to traditional development. Therefore, the project would not result in substantial or wasteful consumption of energy.

17.4 References

County of Santa Cruz. 2009. Fault Zone Hazard Areas. Map. Available online:
<https://gis.santacruzcounty.us/mapgallery/Emergency%20Management/Hazard%20Mitigation/FaultZoneMap2009.pdf>.

18 EIR Preparers

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